AN IBM GUIDE

SEEING THE WOOD FOR THE TREES

TACKLING THE RISK OF DEFORESTATION FOR THE RETAIL INDUSTRY

Produced in collaboration with IBM Consulting and the British Retail Consortium

IBM

BRC CLIMATE ACTION ROADMAP

CONTENTS

WHAT TO EXPECT FROM THIS GUIDE

IBM has collaborated with the BRC's Forest Risk Commodity Working Group to produce a guide to support retailers in addressing the risk of deforestation for their businesses, focused on the challenges and opportunities for global supply.

This guide explores:

1. **The cost of deforestation to people, the planet and business.**
2. **Insight into the BRC's perspective on the current and emerging deforestation regulations and frameworks.**
3. **A snapshot of the common challenges faced by BRC retail members when looking to quantify & mitigate the risk of deforestation within their extended supply chains.**
4. **The key stages of the journey towards deforestation-free goods, along with some transformation success factors for retailers to consider.**
5. **An exploration of some of the measures retailers can take to reduce or reverse revert the impacts of deforestation.**

"We all have a moral duty, soon to become a legal one, to prevent deforestation in our supply chains. It's time to think beyond carbon reduction and put nature at the heart of our retail business model."

Helen Dickinson
CEO of the British Retail Consortium

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OVERVIEW

In this section

Deforestation contributes to 20% of all greenhouse gas (GHG) emissions, thus exacerbating climate change. Our forest ecosystem, a valuable human, ecological, and financial asset, has been excessively exploited to support the global consumer market and will inevitably require regulation, similar to other limited resources.

Global mandates are now in place to oversee our forests. in this section of the guide we emphasise the social, economic, and legislative regulations that will affect the retail industry. These regulations include the CMA Green Claims code for brand marketing oversight, the TNFD framework, DEFRA's restrictions on large-scale forest loss, new international sustainability standards, and the EU directive regarding deforestation-free products (EUDR).

There is a growing body of evidence supporting a shift in the way we consume forest-linked products products. Recognising the need for this change will form the foundation of every retailer's supply and trading policies.

Economic demand for crops & timber has already reduced our global forests coverage by 10% and is set to continue...

What is deforestation & why is it still happening?

Deforestation, and forest clearance, is a major global issue contributing to nearly 20% of greenhouse gas emissions [1] and thus driving climate change. It is predominantly caused by human activities, with agricultural expansion accounting for 90% of global deforestation [2]. Over 90% of forest loss is as a result from conversion to cropland, and a shift to livestock grazing.

As such, the extent of deforestation is alarming. The Amazon rainforest has already lost 18% of its area, with an additional 1% disappearing every three years [3]. The challenge lies in the irreplaceable nature of primary forests. Despite pledges to enhance reforestation, with over 100 countries committing $19 billion to tree planting initiatives [4], new forests cannot replicate the complex biodiversity of the original ecosystems in the short term.

Where are we now?

Our challenge is that economic incentives for land expansion drive deforestation, threatening the livelihoods of nearly 300 million indigenous people worldwide who depend on these forests [5]. While more robust regulations can aid forest preservation, this is slow work and does not keep pace with the rate of global deforestation.

Looking forward

However economics could offer a potential solution. Annually, $150 billion is spent on nature conservation, but over 12 times that amount is allocated to subsidies for environmentally harmful activities. Research demonstrates that sustainable practices can significantly boost a business's profits. Consider the value that could be added across the entire Quadruple Bottom Line of People, Purpose, Planet, and Profit with a $1.8 trillion investment in sustainable practices.

Currently, the Food and Agriculture Organization of the United Nations (FAO) estimates that 420 million hectares of forest, roughly 10% of the world's remaining forests, were lost globally between 1990 and 2020. Recovering and maintaining these forests will necessitate transparent supply chains, enabling businesses to account for all forestry-related costs and source sustainably for consumers

(1) CFF5-2019-ENG-DIGITAL.pdf (climatefundsupdate.org)
(2) COP26: Agricultural expansion drives almost 90 percent of global deforestation (fao.org)
(3) https://news.globallandscapesforum.org/54916/the-amazon-rainforest-is-nearing-its-tipping-point-but-what-does-that-mean/
(4) https://ig.ft.com/one-trillion-trees/
(5) FOREST PEOPLES: Numbers across the world | IUCN

Taking stock of our natural resources

How do forests contribute to the wider ecosystem?

Nature, like retail businesses, has a finite level of stock. Natural Stock refers to its total amount of renewable and non-renewable resources. The goods and services Nature provides is our 'natural capital'. Investing into this asset can boost the contribution to the economy whilst pressures on limited stock will translate into real economic cost.

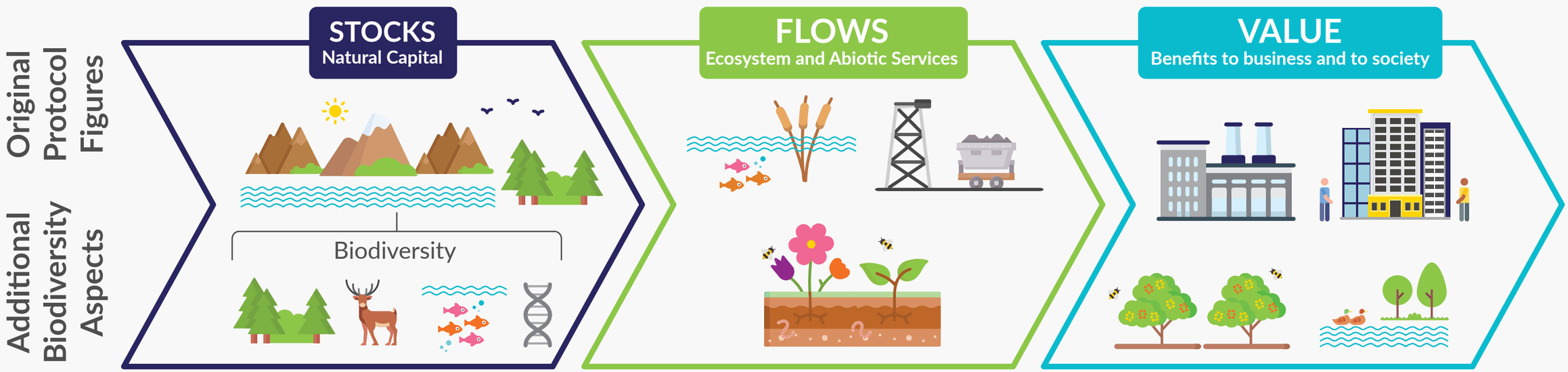
Framing it as a question of effective stock management creates a clearer view of how Nature aids the economy and places importance on its value. In 2022 the World Benchmarking Alliance evaluated 400 companies and found that less than 1% knew the degree to which their business depended on nature [1]. Achieving more transparency in our supply chains will help fix this shortfall in understanding.

Natural capital is already worth almost $10 billion a year, with the right investment this could be amplified even further [2]. Forests are a key part of Nature's stock, working to revive and expand forestry's capacity can give us far more economic opportunities than its exploitation.

[1] - WBA: Fewer than 1% of firms understand their impact on nature - Just Style (just-style.com
[2] - Valuing natural capital is key to the future of investment | World Economic Forum (weforum.org)

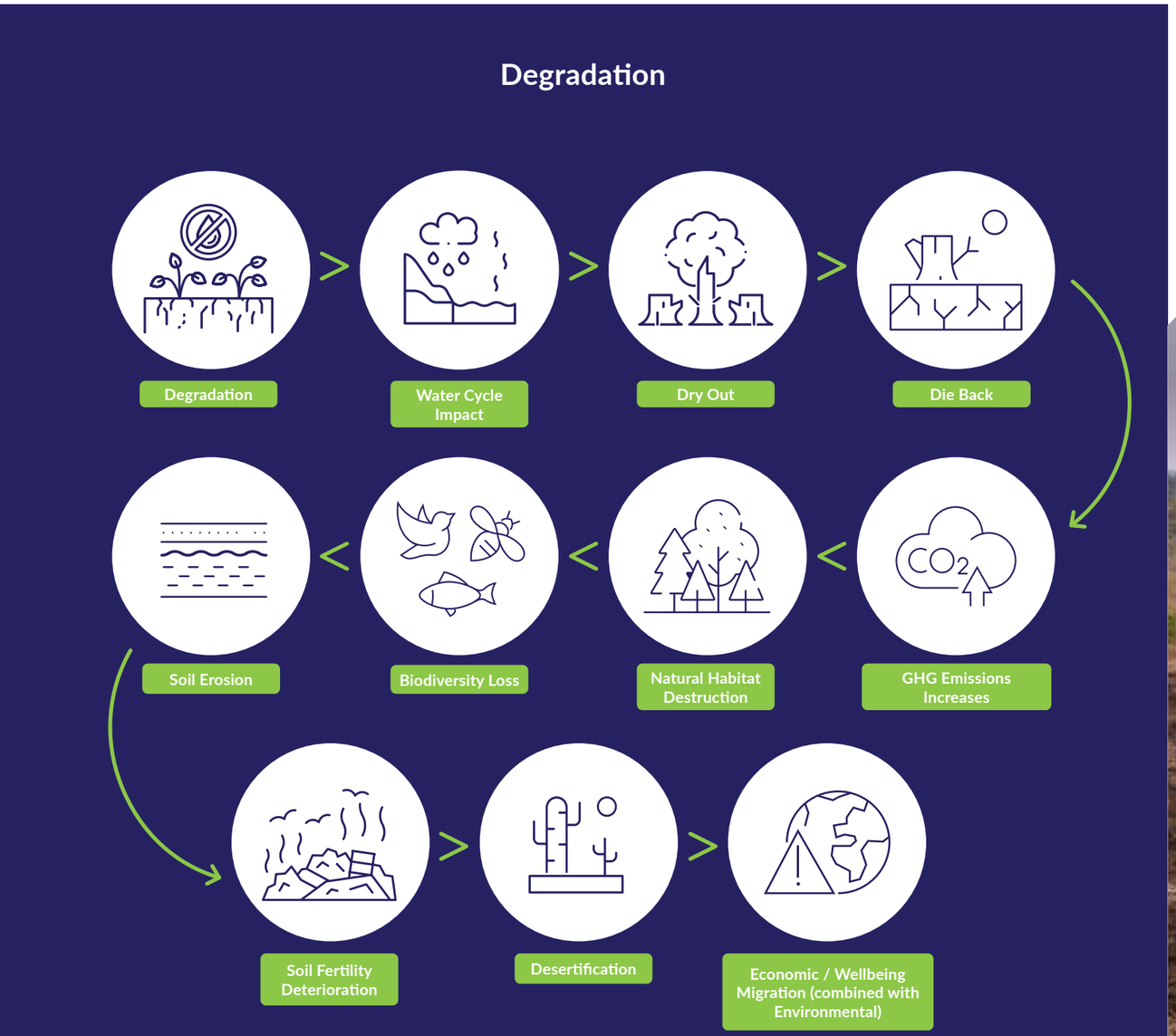
"Nature, including forests, is a finite resource that organisations should manage as closely as any other business metric"

Simon Glass
IBM Supply Chain & Sustainability Consultant



Our challenge is Forest Degradation and Deforestation

Deforestation has significant consequences; it creates biodiversity loss, habitat destruction, soil erosion, climate change and disruption to local communities. Whilst deforestation itself has growing public awareness, forest degradation, the process by which the biological wealth of a forest area is permanently diminished, is often overlooked.



Forest degradation is where forest ecosystems lose their capacity to provide ecological services and to support biodiversity due to human activity or natural disturbances. Unsustainable, selective, or illegal logging practices can disrupt forest structures, damaging ecosystems and causing soil erosion. Uncontrolled forest fires cause severe degradation leading to long-term ecological consequences. Additionally, fragmentation; where forests are divided into smaller patches by human activity, disrupts biodiversity whilst increasing vulnerability to external threats.

Currently our rainforests are approaching a dangerous tipping point. Once 25% of the Amazon rainforest is lost, the biome cannot function effectively. It's a point we are quickly approaching with almost 20% of forest cover destroyed within the past 50 years [1].

The question may ultimately become – which aspects of our planet and society ***aren't*** likely to be impacted by widespread deforestation in the long run?

[1] https://www.cfr.org/amazon-deforestation/#/en

The thin end of the wedge – What is the cost of inaction to retail businesses?

Competitive & commercial advantage

BRC member discussions during last year's Sustainable Sourcing Pathway (4) workshops echoed findings from IBM's own research.

In challenging economic conditions, organisations which do not invest in sustainable transformation are increasingly vulnerable to several adverse business factors.

IBM Institute for Business Value researchers recently heard from global business leaders, who reported that ESG is having an increasing impact on performance metrics including customer engagement, risk management and access to finance [1].

Consequences of inaction

Businesses failing to address the sustainable and ethical business practices intent / action gap leave themselves exposed to the following risks:

- **INCREASED RISK TO REVENUE, OPERATIONS & BRAND**
- **UNNECESSARY SPENDING ON FINES, TAXES & LEVIES**
- **MISSING OUT ON 'GREEN' INVESTMENTS, AND RECEIVING POORER FINANCING TERMS**
- **FAILING TO APPEAL TO PURPOSE-DRIVEN CONSUMERS, LOST REVENUE & MARKET SHARE FROM ACCUSATIONS OF GREENWASHING**
- **INCREASED EFFORT, COMPLEXITY AND COST TO COMPLETE ESG AUDITS & DISCLOSURES**

[1] IBM Institute for Business Value (2023) - The ESG data conundrum | IBM.

Scrutiny over the sustainability of Retail operations, goods and services is increasing

Organisations facing punitive% of global revenue fines for non-conformance.

Several UK retailers have been suspected of breaching the UK Competition and Markets Authority's (CMA) Green Claims Code for their marketing of sustainability statements, negatively impacting both brand image and market valuation [1].

Stamping down on "Greenwashing"

In early 2023, the Advertising Standards Agency announced stricter standards for ESG responsibility claims in advertising, requiring statements to be substantiated with data and scientific evidence [2].

Misleading environmental claims and social responsibility

The CMA has also announced that it will focus on examining the accuracy of "green" claims made about household essentials such as food, drink, and toiletries to ensure shoppers are not being misled [3].

Accurately communicating our limits

For example:

- Marketers must base environmental claims on the product's full lifecycle, unless the marketing states otherwise, and must make clear the limits of its green claims.
- Marketers should include accurate information about whether, or to what degree they are actively reducing carbon emissions or basing claims on offsetting. This will ensure consumers do not wrongly assume that products or their manufacture generate few to no emissions.

[1] GOV.UK (2021) - Greenwashing: CMA puts businesses on notice
[2] Committee of Advertising Practice CAP-guidance-on-misleading-environmental-claims-and-social-responsibility.pdf
[3] GOV.UK (2023) - CMA to scrutinise 'green' claims in sales of household essentials

For deforestation specifically, regulatory pressures are ramping up in Europe, with secondary regulations set to follow in the UK

Department for Environment Food & Rural Affairs

In December 2021, DEFRA initiated a consultation on enforcing due diligence provisions within the Environment Act to combat illegal deforestation in UK supply chains.

Stamping down on forest loss

These regulations, introduced by the UK Government in November 2020, will require larger UK businesses to avoid commodities linked to large-scale forest loss not permitted under local law. They must demonstrate compliance and report annually – although much of the detail is to be seen.

Targeting priority commodities

Due diligence provisions form part of a wider package of measures to improve the sustainability of our supply chains and will contribute to global efforts to protect forests and other ecosystems.

By June 2022, DEFRA had received 16,838 responses to the consultation on "tackling illegal deforestation in UK supply chains," with 48% of respondents favouring the initial inclusion of two commodities in secondary legislation. These commodities were prioritised for their significant environmental impact on biodiversity loss and climate change.

Secondary legislation is required to enforce due diligence provisions, DEFRA intends to do so in due course. DEFRA is expected to publish guidance for businesses on how to comply with regulations alongside the legislation. This will cover:

- which commodities will be in scope of regulations (beef, cocoa, coffee, leather, maize, palm oil, rubber, soy)
- which businesses will be subject to provisions
- what businesses in scope will be required to undertake and report on regarding their due diligence exercise
- how the requirements will be enforced

This regulation will play a vital role in supporting UK businesses concerning their brand, compliance, and risk management in relation to deforestation.

The British Retail Consortium (BRC) will keep its members informed of further developments.

A growing collection of global nature commitments & frameworks

Science Based Targets for Nature

The Science Based Targets Network (SBTN) is a global coalition of 80+ environmental non-profits and mission-driven organisations. SBTN's climate targets have already been set by over 2,600 companies.

The SBTN, which is aligned with the Global Biodiversity Framework, the Paris Agreement, and the UN SDGs, has released the first corporate science-based targets for nature to give companies guidance for the realisation of an equitable, net zero and nature positive future.

The SBTN vision is to transform business models toward a nature positive economy, based on the best available science, where companies can incorporate nature into their decision-making processes in the most impactful and efficient way.

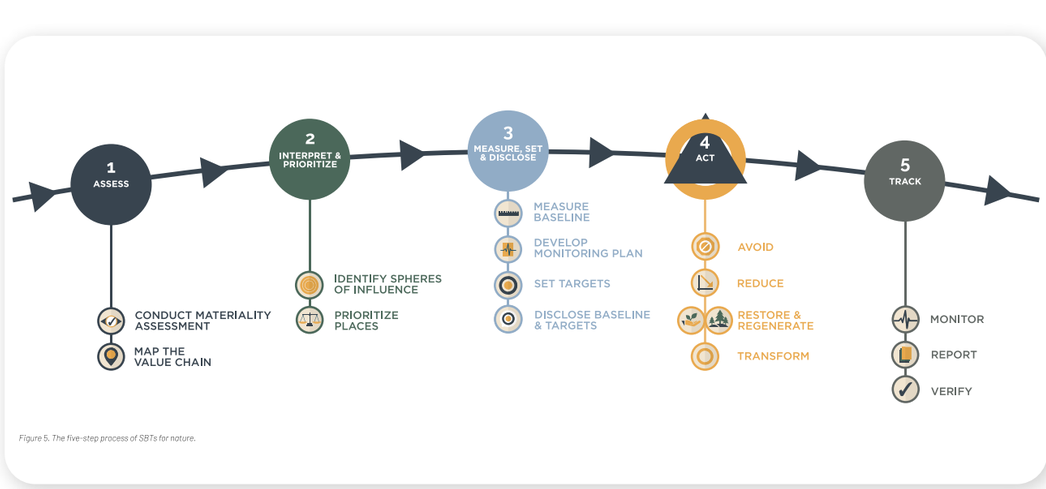


Figure 5. The five-step process of SBTs for nature.

These first nature targets will focus on freshwater quantity and quality (specific to nitrogen and phosphorus), along with protecting & restoring terrestrial ecosystems. The second phase will focus on companies prioritising action based on geographic ***location.***

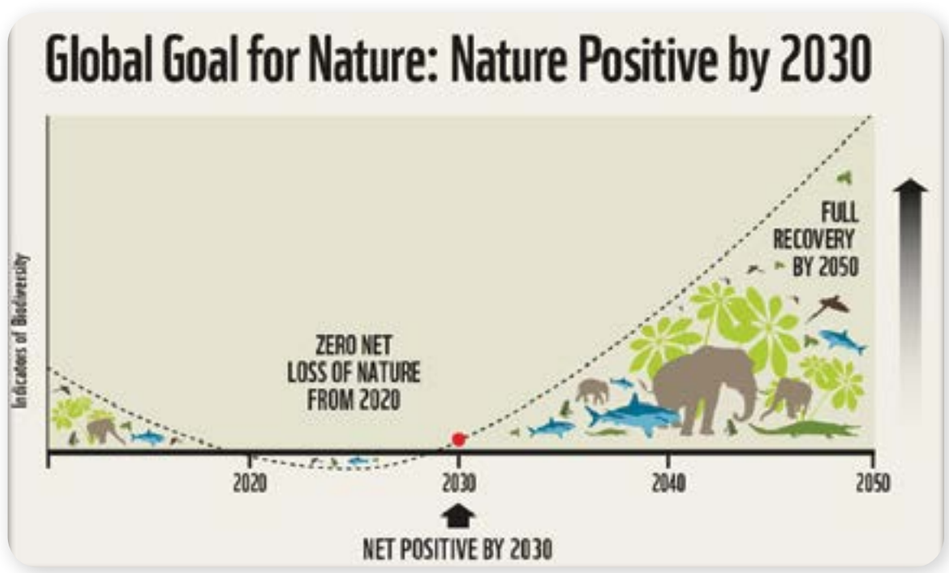
Convention on Biological Diversity

The Convention on Biological Diversity (CBD), held in 2022, agreed to the Kunming-Montréal Global Biodiversity Framework with the aim of safeguarding nature, stabilising biodiversity loss by 2030 and then halting & reversing the trend, and so putting nature on a path to recovery by 2050.

Halting and reversing biodiversity loss requires real collaboration, transformative change, and cross-sector accounting for the true value of nature. The framework provides a strategic vision and a global roadmap for the conservation, protection, restoration and sustainable management of biodiversity and ecosystems for the next decade.

Framework Alignment

SBTN and the Taskforce on Nature-related Financial Disclosures (TNFD) share the same vision: transforming business models toward a nature positive economy, based on the best available science. SBTN focuses on guiding companies with setting science-based targets for nature. TNFD is developing a framework to enable companies and financial institutions to manage and disclose their nature-related risks.



https://www.canada.ca/en/services/environment/wildlife-plants-species/biodiversity/cop15.html

A growing collection of global nature commitments & frameworks

The TNFD disclosure framework consists of conceptual foundations for nature-related disclosures, a set of general requirements, a set of recommended disclosures structured around the four recommendation pillars of governance, strategy, risk & impact management, and metrics & targets. This is consistent with the approach of the TCFD and the ISSB's IFRS Standards.

TNFD closely follows the Taskforce for Climate-related Financial Disclosures framework (TCFD), which was launched in 2017 and became mandatory in 2022. The UK Government will soon be implementing the Biodiversity Net Gain legislation, and the Environmental Audit Committee Chair has called on government to make TNFD mandatory for companies, as with TCFD. Even though TNFD reporting is not yet mandatory, investors may start asking for corporate disclosures on their impact on nature and start assessing their own exposure to biodiversity risk.

The TNFD has adopted 11 disclosures from the TCFD framework, adding three new disclosures to make 14 disclosures in total. The new disclosures are:

1. Engagement with indigenous peoples and local communities.
2. Disclosure of locations of assets or activities in your organisation's direct operations, ecologically sensitive areas, and, where possible, upstream and downstream value chains (e.g., areas of rapid decline or high biodiversity).
3. Assessment of value chain's impact on biodiversity – in addition to direct operations.

As part of the package of updates and new components released in September 2023, the TNFD has also released draft guidance on:

- Engagement with affected stakeholders
- Four sectors – Agriculture & Food; Mining & Metals; Energy; and Financial Institutions
- Four biomes, including tropical forests.

TNFD releases fourth and final beta framework

> *""The TNFD recommendations provide a way for organisations to disclose their nature-related issues, aligned with the global sustainability reporting baseline, existing and emerging regulatory requirements and in response to growing demands from investors for more information on these issues".*
>
> **TNFD**

A growing collection of global nature commitments & frameworks

June 2023

The International Sustainability Standards Board (ISSB) issued its first two IFRS Sustainability Disclosure Standards:

- IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information
- IFRS S2 Climate-related Disclosures

The ISSB has also commenced work on a range of nature-related issues as extensions of its standards.

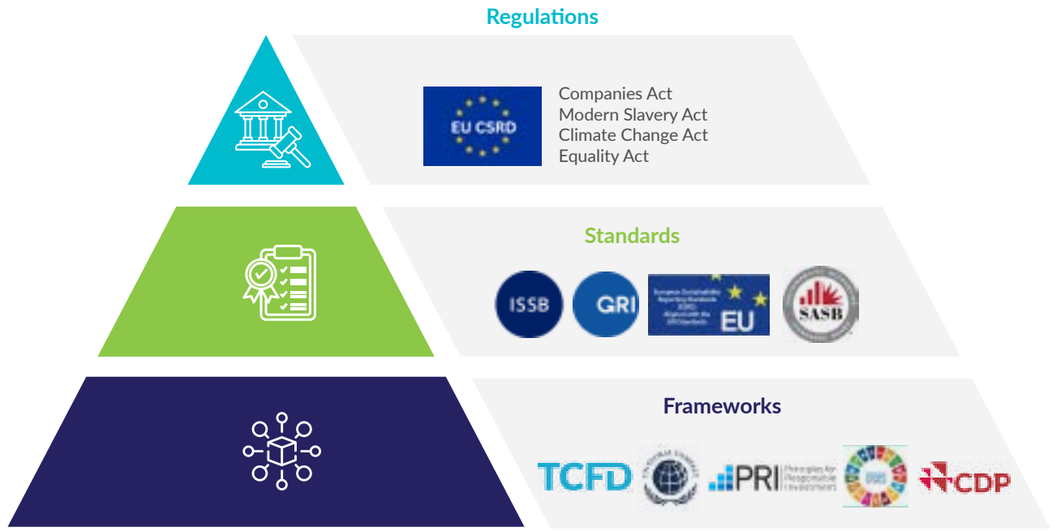
July 2023

The European Commission adopted the European Sustainability Reporting Standards (ESRS) for use by all companies subject to the Corporate Sustainability Reporting Directive (CSRD).

This is in addition to other related EU regulation, including the Sustainable Finance Disclosure Regulation (SFDR). Under these requirements, companies and financial institutions with substantial activity in the EU must now make nature-related disclosures.

Meanwhile, across the globe...

Regulators such as those in India and Brazil, already require nature-related corporate disclosures or have signaled their intention to introduce nature-related disclosure requirements.



https://tnfd.global/tnfd-releases-fourth-final-beta-framework-v0-4/

Biodiversity is now being included in regulatory frameworks alongside more mature reporting topics such as carbon emissions

The Corporate Sustainability Reporting Directive (CSRD) is a regulation that aims to improve the transparency and accountability of companies in the European Union (EU) regarding their sustainability practices [1]. The CSRD aims to strengthen and extend the scope of the existing EU reporting requirements from its predecessor, the Non-Financial Reporting Directive (NFRD).

The CSRD incorporates the concept of double materiality, mandating organisations to publicly disclose how their business strategy addresses environmental and social issues' risks and opportunities. Additionally, they must report on how these issues affect their business beyond just financial impacts.

- **Scope:** The CSRD applies to large EU-based public-interest entities (e.g., listed companies, banks, insurers) with over 500 employees.
- **Reporting Requirements:** Companies must include a dedicated sustainability section in their annual reports, covering ESG factors, human rights, anti-corruption, diversity, and more.
- **Standardised Framework:** CSRD mandates the use of standardised reporting frameworks like GRI or SASB to ensure consistency and comparability in sustainability reporting.
- **Materiality:** Firms must report on sustainability issues with significant financial or stakeholder relevance.
- **Stakeholder Engagement:** CSRD requires companies to engage with stakeholders, including employees, customers, suppliers, and civil society organisations, to report on their engagement activities.
- **Board Responsibility:** The board of directors must oversee sustainability reporting and align policies with business strategy.
- **External Assurance:** Companies can seek external assurance from independent parties like auditors or consultants to enhance report credibility.
- **Penalties:** Non-compliance can result in fines or administrative sanctions under CSRD to ensure adherence.

[1] – CSRD - Corporate sustainability reporting (europa.eu)

The latest EU rules aim to guarantee that the products EU citizens consume do not contribute to deforestation or forest degradation worldwide

EUDR

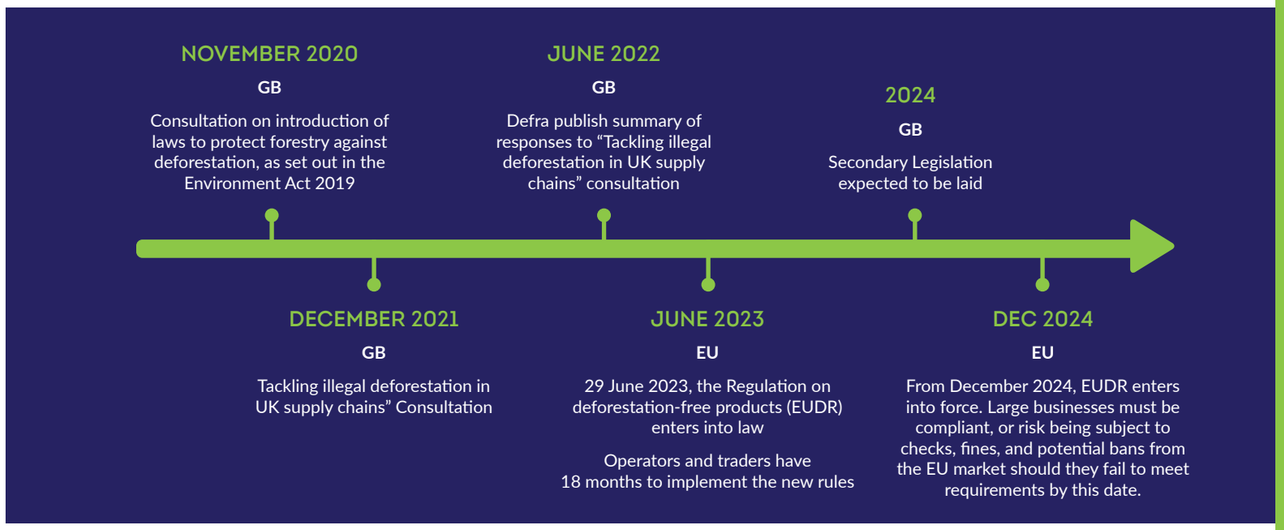
The EU have pushed ahead with their ***Regulation on Deforestation-free Products (EUDR).*** Through the promotion of 'deforestation-free' products, this regulation aims to reduce the EU's impact on global deforestation and forest degradation, and in turn reduce greenhouse gas emissions and biodiversity loss.

This regulation is part of a broader plan of actions as outlined in the 2019 Commission Communication on Stepping up EU Action to Protect and Restore the World's Forests.

As of 29 June 2023, operators and traders will have 18 months to implement the new rules.

EUDR requires companies placing products containing one of the six forest risk commodities (palm oil, beef, soy, coffee, cocoa, wood) on the EU market to exercise mandatory due diligence and analyse and evaluate risks in their supply chain. **This applies to products produced after 31st December 2020.**

Companies will need to take mitigative actions to confirm the production of goods is not connected to deforested or degraded land. Companies will publish their due diligence findings to national authorities via a digital system, sharing relevant information on their commodities / products such as geographic coordinates and country of production.



Some retailers will be more affected than others depending on their trading territories, supply base and product assortments

Which products should retailers look out for?

According to the Global Canopy Programme a Forest Risk Commodity (FRC) is defined as "globally traded goods and raw materials that originate from tropical forest ecosystems, either directly from within forest areas, or from areas previously under forest cover, whose extraction or production contributes significantly to global tropical deforestation and degradation".

In addition to the six commodities named in the EUDR, the derivatives of these goods are also listed in the regulation's annex. This includes meat products, leather, chocolate, coffee, palm nuts, palm oil derivatives, glycerol, natural rubber products, soybeans, soy-bean flour and oil, etc.

Many of these commodities are imported to the UK in their derived forms. Currently 73% of leather, 70% of cocoa and 90% of rubber imports are processed products making it harder to track their deforestation risk [1].

Palm oil and soy have the greatest percentage of forest-risk footprints, with palm oil in almost 50% of packaged supermarket products. In 2018 less than 2% of the soy's volume and production area was certified under VSS (voluntary standards scheme) [1].

Products harvested from **wood** are the third greatest driver of deforestation globally [1] with global timber removals in 2015 totalling 2.997 billion m2 of wood from forests [2].

[1] https://www.wwf.org.uk/sites/default/files/2022-03/WWF-UK_Designing%20Due%20Diligence%20-%20Final%20.pdf
[2] https://www.wwf.org.uk/updates/8-things-know-about-palm-oil

Cattle ranching, largely for beef, accounts for 80% of current deforestation (1). Similarly, the forest500 assessment, analysing supply chains across influential companies, found that 72% of leather industry actors had no deforestation commitments [1].

Cocoa has a growing culture of sustainability. Currently 80% of the cocoa sector is represented by the World Cocoa foundation, which aims to eliminate deforestation in its supply chain [1]. Whilst the commodity has growing certification rates, this only covers a limited number of the estimated 5-6 million local producers in this sector [1].

Roughly 100,00 hectares of forest is lost each year from expanding coffee plantations, the farms producing over 45 million tons of CO_2 every year [1]. A solution currently being explored to reduce this impact is shade growing coffee; a traditional method where coffee trees grow among mature trees, reducing the need for virgin deforested areas required for expanding sun-grown plantations.

Meanwhile, **rubber** and **maize** are likely to be considered under UK legislation, similarly reflecting high deforestation risk and habitat conversion. Maize represents the 3rd largest contribution to UK deforestation risk, following palm oil and soy [4].

(1) https://wwf.panda.org/discover/knowledge_hub/where_we_work/amazon/amazon_threats/unsustainable_cattle_ranching/
(2)https://foe.org/forests-and-forest-risk-commodities/#:~:text=Seven%20forest%20risk%20commodities%20caused,such%20as%20timber%20and%20paper.
(3) https://www.wwf.org.uk/sites/default/files/2017-10/Risky%20Business%20-%20October%202017.pdf
(4) https://www.wwf.org.uk/sites/default/files/2022-03/WWF-UK_Designing%20Due%20Diligence%20-%20Final%20.pdf

OVERVIEW

1 THE CASE FOR CHANGE

2 OUR RETAIL CHALLENGE

3 SUSTAINABLE SUPPLY

In this section

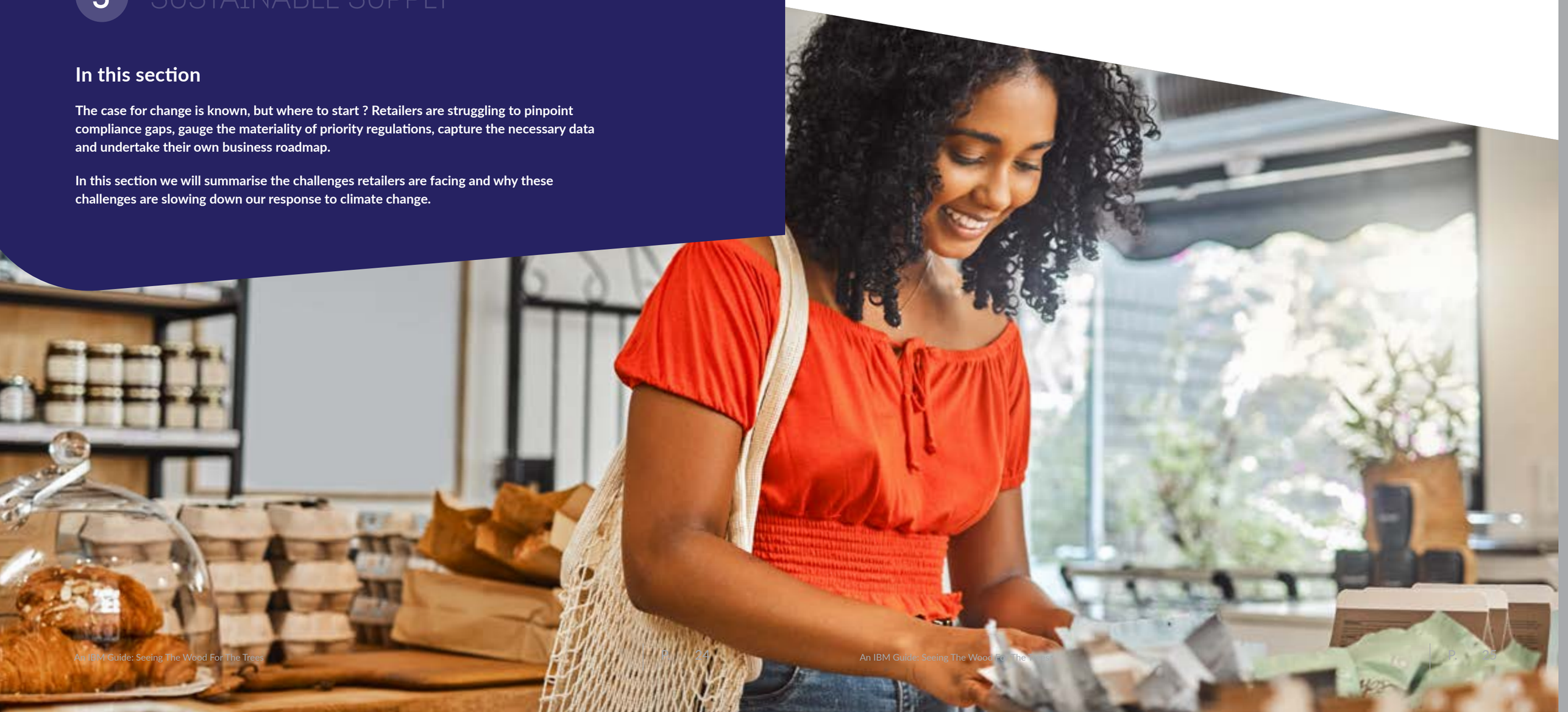
The case for change is known, but where to start ? Retailers are struggling to pinpoint compliance gaps, gauge the materiality of priority regulations, capture the necessary data and undertake their own business roadmap.

In this section we will summarise the challenges retailers are facing and why these challenges are slowing down our response to climate change.

Retailers are struggling to see the wood for the trees

Reducing the environmental and social impact of today's multi-tiered, globalised supply chains will be a defining challenge of our age.

To successfully bridge the current sustainability & deforestation intent / action gap, we must examine in more detail the barriers retailers are facing. Last year's Sustainable Sourcing Pathway (4) workshops and our BRC Forest Risk Commodity Meeting in June provided the opportunity to do just that.



WHAT IS HOLDING US BACK ?

Broadly the challenges raised fell into these 5 categories:

01 Lack of strategic priority & direction Strategies may be vague in terms of their remit, timescales, & business area accountability. A lack of current ESG performance data is common.	No clear guidance on due diligence data required	Broad scope of impacted Commodities	In need of *practical* compliance steps	EUDR-DD Geolocation Requirements	Synergies/ Alignment between UK & EU legislation
02 Limited supply chain engagement Beyond Tier 1 visibility of the supply chain is often limited. Obtaining information can be challenging due to cultural and technical barriers.	Commodities with more opaque supply chains (soy, palm & leather)	Lack of conformance influence	Poor vendor collaboration anticipated	Resources, cost & effort to ensure compliance	
03 Logistical data challenges Lack of clarity around which data points to capture, from where and how. Concerns over the accuracy and authenticity of data shared.	Short implementation timescales	Data complexity, quality & volume	Poor Forestry traceability	Little visibility on precise forest locations	Technology enablers unclear
04 Data aggregation & reporting Guidance required on how best to collate, store and analyse data. Clarity needed on which emissions factors & databases to trust. Assessment of solutions – existing tools & additional technologies.	Excessive effort and cost	How to audit / verify due diligence checks	Guidance on practical steps to map supply chain	What reporting / collation technology is required / available	
05 Managing reputational risk Without sufficient data, organisations potentially expose themselves to greenwashing accusations. or exposure of non-conformances.Any data captured needs to be held securely and support auditing.	Impact on consumers – higher costs	Avoiding Greenwashing and non-compliance	Conducting effective 'due diligence' checks	Impact on exporters – interrupted supply	Impacting procurement decisions

Summary

Retailers were struggling to gauge their potential compliance gaps – lacking guidance around the specific information they need to capture, and how the requirements may differ for the EU and UK markets.

Another challenge was assessing the materiality of the regulation(s) against product assortments, particularly when the upper stages of the supply chain were unknown.

Logistically, capturing and processing the additional data in the required timescales was seen as a significant obstacle. Obtaining precise, verified data regarding specific forest locations was a key hurdle to increased supply chain visibility and sustainability.

Implementing additional due diligence and technologies to support this process, whilst limiting the impact on the cost of goods sold was also flagged as an area of interest.

Getting to the root cause of the issues

Lack of strategic priority & direction

Many retailers are lacking a clear prioritisation of ESG initiatives. In some cases, this has been exacerbated by the lag in the UK's deforestation management legislation, which had led some leaders to gauge the matter as a lesser priority. The presence of multiple frameworks and certification bodies has also contributed to the confusion.

As a solution some retailers have opted to work towards self-driven targets, such as the Soy Manifesto: a UK government-backed food industry collaboration to ensure all physical soy shipments to the UK are deforestation and conversion free.

Limited supply chain engagement

Convincing each tier within the supply chain to engage and shift towards more sustainable practices has consistently been flagged as a challenge. Retailers are facing push back from suppliers, who are reticent to share information regarding their raw materials sourcing and manufacturing. Contributing factors include audit fatigue, perceived commercial sensitivity, technical limitations, and language barriers. This challenge is greatest where the retailer does not command a significant stake in the supplier's production volumes.

Striking a balance between disclosure and mitigation actions is a current hurdle.

Increasingly, retailers are calling for examples of 'what good looks like' – leading practices they can implement to reduce the risk of deforestation in their extended supply chains.

Logistical data challenges

Gathering data across a globalised upstream supply chain is a complex task. In the absence of a unified data structure, regulatory framework or methodology this challenge is amplified significantly. The call for guidance on how to best leverage technology to minimise the duplication of effort, and ideally to 'cross-pollinate' data already submitted and approved by suppliers is clear.

Data aggregation & reporting

Collating and assessing the accuracy and authenticity of ESG-related data at scale is critical. Without clear data lineage and auditability, the ability to make product specific sustainability claims is impaired.

An increasing number of retailers are committing to public disclosures and ESG targets, against which they need to demonstrate credible progress for various stakeholders. Automating the data crunching process, so that ESG teams can focus on identifying and implementing mitigation strategies, is vital.

Managing reputational risk

Retailers are acutely aware of the reputational risked posed by regulatory non-compliance.

Retailers are seeking examples of 'what good looks like' and the leading practices to reduce risk of deforestation in their extended supply chains. This includes guidance on prerequisites to evidence a deforestation claim and the criteria for using phrase 'deforestation free'.

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3 SUSTAINABLE SUPPLY

In this section

We bring together the case for change, the challenges seen across the retail industry and propose how every Retailer can adopt their own roadmap of change to deliver benefits to their organisation

"Delivering sustainable and circular products requires businesses to rethink their end-to-end operations, and the goods and services that they offer"

Beatrice Elliott
Climate Action Roadmap Engagement Lead at IBM Consulting

REDUCING THE RISK OF DEFORESTATION WITH SUSTAINABLE SUPPLY CHAINS

1. Identifying & communicating the Case for Change

Key questions:

- "Why do we need to act now and what's the cost of inaction?"
- "Have nature-related impacts been considered as part of our organisation's strategy (business model, value chain, and financial planning)?"
- "What degree of oversight does our board have of immediate, near and long-term nature-related dependencies, impacts, risks and opportunities?"
- "What policies does our organisation have in place regarding deforestation & biodiversity including our engagement of indigenous peoples, local communities affected, and other stakeholders?"

As outlined in the opening sections of this guide, various factors are now driving retailers to address the risk of deforestation within their extended value chains. Compelling reasons to act include increased scrutiny from investors and customers, and the potential financial and reputational impacts of non-compliance with evolving ESG regulations.

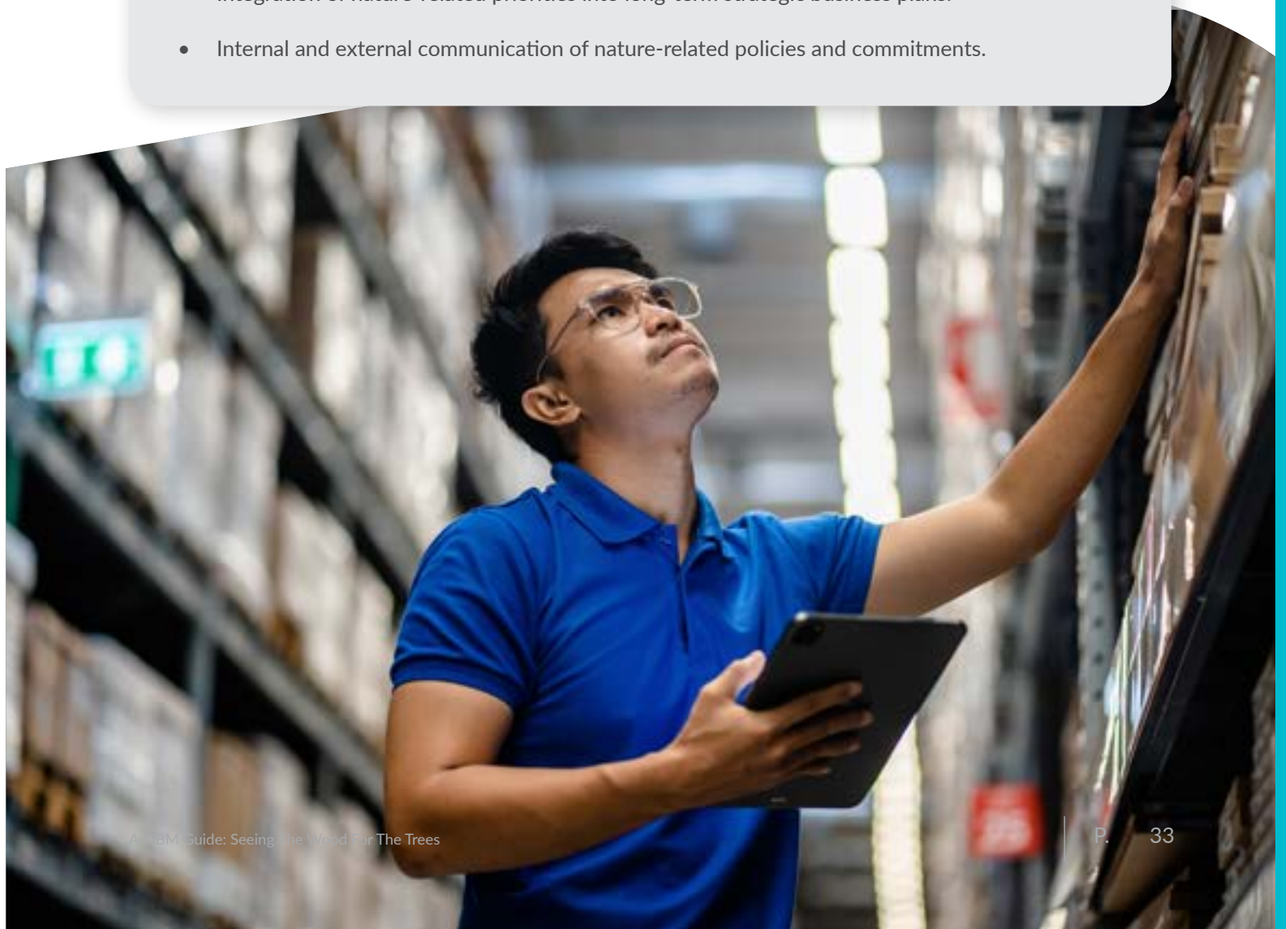
[1] - KPI_Forest_FactSheet.pdf (cdp.net)

Core considerations:

- Determine which ESG legislations will apply to your organisation now, and in the near-future. This can vary depending on your organisation's size, operating & trading territories and product assortment.
- Informed by the applicable legislations, consider which frameworks your organisation wishes to adopt as legislation and standards are often closely aligned.
- Understand what good looks like. CDP's 15 forest-related key performance indicators [1] provide an insightful perspective on how organisations can monitor progress against actions needed to eradicate the risk of deforestation from supply chains.

Optimal outputs:

- Commitment to timebound milestones, targets and measurable KPIs relating to deforestation & biodiversity loss reduction.
- Integration of nature-related priorities into long-term strategic business plans.
- Internal and external communication of nature-related policies and commitments.



2. Start small & make changes from within

Key questions:

- “Where do we rely on FRCs internally?”
- “What is the impact of our internal operations?”
- “What interventions can we apply?”

As with many initiatives, change often starts from within. By making changes internally, organisations can lead by example when extending deforestation conformance expectations to their supply chain members.

Core considerations:

- Determine where the organisation relies on FRCs across internal operations. Don’t forget Goods not For Resale (GnFR), from timber used in store and head office fit-outs, to paper for packaging for stock transportation, signage and record keeping.
- Assess where consumption can be reduced, and recycling / reuse increased internally. Determine where you can create your own closed-loop systems.

Optimal outputs:

- An understanding of the internal business processes and materials which are currently reliant on FRCs.
- A view of the commercially-viable alternatives, and measures to reduce consumption of timber / paper-based materials.

THE JOURNEY TO SUSTAINABLE SUPPLY

An IBM Guide: Seeing The Wood For The Trees

3. Identify material product categories & componentry →

4. Determine where to deep-dive

Key questions:

- “Do we know which products contain FRCs?”
- “What do we perceive our greatest risks to be, and where are they located across our value chain?”

With thousands, if not millions, of SKUs and suppliers to cover, this process can seem daunting. At this stage, the focus should be on determining which products and suppliers may be implicated in deforestation, informed by the available internal and external datasets.

Core considerations::

- Determine where product composition and sourcing data is held across the organisation so that it can be analysed as part of a materiality assessment to understand where best to invest time, effort and resources.
- Organisations may opt to tackle this by commodity, supplier, supply region, etc. Prioritisation factors will vary for each organisation, but may include stock volumes, values, perceived degree of risk, supplier maturity, etc.
- Supplier maturity assessment and engagement are also crucial. A robust approach to conducting these assessments is set out in our earlier report ‘Overcoming the Supply Chain Sustainability Conundrum’ [2].
- Explore available external datasets. Global Forest Watch (GFW) is a free, powerful tool which leverages publicly available data, including satellite imagery, to monitor forests globally. GFW was created by the World Resources Institute with over 40 partners, including Google, ESRI, the University of Maryland, Amazon, Center for Global Development, and the U.N. Environment Programme (UNEP).
- Don’t forget commodity derivatives and packaging!

Optimal outputs:

- Prioritised backlog of commodities / products, suppliers and sources for further investigation, along with a perceived baseline of deforestation exposure.
- An understanding of the accuracy, availability and completeness of product composition and sourcing data.

[1] – Global Forest Watch - https://www.globalforestwatch.org/about/
{2} - Overcoming the Supply Chain Sustainability Conundrum (brc.org.uk)

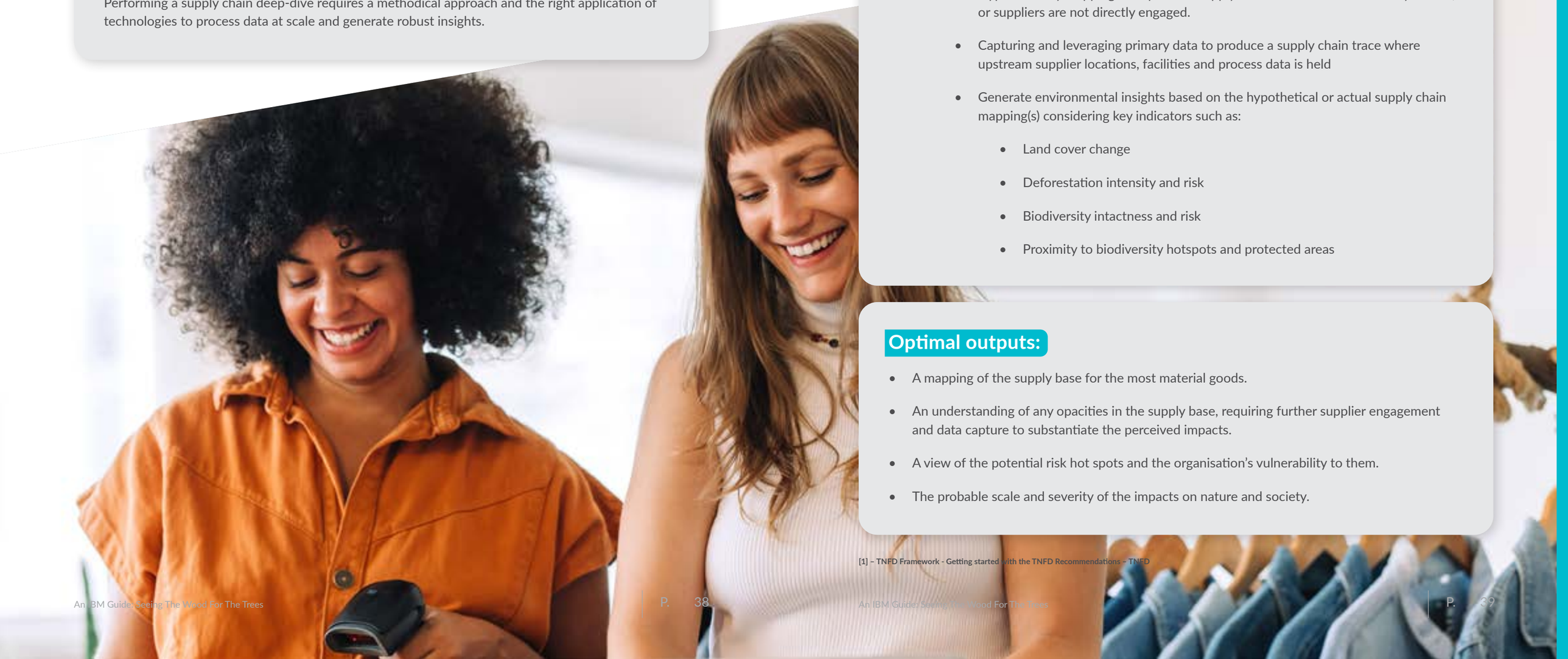
5. Perform the deep-dive →

6. Refine the baseline

Key questions:

- “How do we determine our upstream supply base and generate a mapping?”
- “How can we identify and substantiate the potential dependencies, risks and impacts?”

Performing a supply chain deep-dive requires a methodical approach and the right application of technologies to process data at scale and generate robust insights.



Core considerations:

- **The TNFD framework [1] identifies four steps to report on nature-related risks and opportunities: Locate, Evaluate, Assess and Prepare, which are then related to realms and biomes of ecological importance.**
    - Locate their interface with nature,
    - Evaluate their impacts and dependencies on the natural environment,
    - Assess their material risks and opportunities,
    - Prepare to respond to and report the identified risks and impacts
- **A range of technologies can be leveraged to support the process of determining where and how supply chains interface with and impact nature:**
    - Hypothetically mapping the upstream supply chain where it is not currently known, or suppliers are not directly engaged.
    - Capturing and leveraging primary data to produce a supply chain trace where upstream supplier locations, facilities and process data is held
    - Generate environmental insights based on the hypothetical or actual supply chain mapping(s) considering key indicators such as:
        - Land cover change
        - Deforestation intensity and risk
        - Biodiversity intactness and risk
        - Proximity to biodiversity hotspots and protected areas

Optimal outputs:

- A mapping of the supply base for the most material goods.
- An understanding of any opacities in the supply base, requiring further supplier engagement and data capture to substantiate the perceived impacts.
- A view of the potential risk hot spots and the organisation’s vulnerability to them.
- The probable scale and severity of the impacts on nature and society.

[1] – TNFD Framework - Getting started with the TNFD Recommendations – TNFD

7. Operationalise, report, & publicise findings

Key questions:

- “How can the identified dependencies, impacts, and risks be mitigated through transition planning?”
- “How can we progress the nature-related opportunities we have identified?”

Armed with some provisional insights, organisations then need to substantiate, monitor and mitigate the identified risks. This may require revisions to the end-to-end product lifecycle.

Core considerations:

- Engage business users to understand when and how sourcing decisions are being made,and where opportunities to infuse these processes with nature-related insights might lie.
- Validate whether the timeframes of existing goals and targets are sufficiently ambitious, yet achievable.
- Determine whether the correct metrics / KPIs are being used to monitor and communicate progress.

Optimal outputs:

- A robust view of nature-related impacts which stands up to external auditing & assurance (as is required with emerging ESG regulations) and streamlines disclosure against frameworks.
- Communication of current performance and nature-related exposures, along with a clear action plan to expand the scope of assessments, to inform your organisation’s strategy (business model, value chain, and financial planning)
- Ongoing adjustments to product design, composition, sourcing and manufacture to reduce nature-related impacts.

In summary

Organisations will cycle through the stages of this sustainability-catalysed journey multiple times, as they refine their objectives and increase the scope of products mapped & risk types assessed.

Ultimately, effective ESG management across transparent supply chains relies on a combination of strategic direction, eco-system collaboration, investment of appropriate resources and the application of the optimal suite of technologies.

The journey towards more sustainable supply chains -Intervention Strategies

1. Transitioning to deforestation-free sourcing

In some instances, it isn't possible to remove the commodities (as named in the EUDR) from a product's composition. When faced with this challenge, retailers will need to explore how they can source these commodities more sustainably.

'Deforestation-free' is defined as the condition of the goods produced on land that has not been subject to deforestation or forest degradation after December 31, 2020 [1].

Switching to alternative sources of supply isn't necessarily the sliver bullet. Suddenly withdrawing from previous business agreements can create more damage than good. Often working with suppliers to enhance their sustainability whilst building economic relationships, minimises the costs of transitioning and allows for the greatest innovation opportunities. Mindful transitioning is central to maximising sustainability, whilst considering the social and economic impact of adapting supply chains alongside ecological impact also.

Verifying that goods are deforestation free can be a complex process. Some retailers have partially outsourced this due diligence by switching to certified sources. On the other end of the spectrum, some retailers have purchased their own forests.

[1] - New rules for deforestation-free products (europa.eu)

2. Clearing space for new growth by transforming products

The shift away from high-risk materials is an important aspect to limiting deforestation, as 40% of global deforestation is commodity-driven [1].

One approach to reducing the stress on forests is transitioning to new materials, such as bamboo.

Bamboo is a sustainable and rapidly growing alternative to trees, with some species growing up to 90cm a day. Bamboo acts as a carbon sink; producing 35% more oxygen than trees and capturing up to 12 tonnes of CO_2 per hectare every year [2].

The global bamboo products market is growing rapidly and is anticipated to reach over $130Bn in 2033. Bamboo now features in building materials, charcoal, textiles, toilet paper and more [3].

These non-timber forest products (NTFPs), particularly products from tropical forests like the bamboo acai, are growing in popularity. As a result, they are receiving increased funding from groups such as REDD+ [4], a United Nations framework for mitigating climate change through enhanced forest management in developing countries. REDD+ promotes sustainable livelihoods of local communities with NTFPs' total household income growing from under 5% to over 90% depending on the level of involvement and value addition of the resource (6).

[1] - Impact of Supply Chains on Forest Resources | Deforestation & Commodities | GFW (globalforestwatch.org)
[2] - Truth or Trend: Is Bamboo Sustainable? (ecoandbeyond.co)
[3] - Bamboo Products Market Size, Share, Type & Forecast by 2033 (futuremarketinsights.com)
[4] - https://cieem.net/wp-content/uploads/2021/08/Carbon-and-Habitats-Position-Statement-FINAL.pdf
(5) - https://www.conservation.org/blog/what-on-earth-is-a-non-timber-forest-product
(6) - https://www.sciencedirect.com/science/article/abs/pii/S1389934113001500

3. Reforestation and the role of offsets – Moving beyond 'no deforestation'

Reforestation reintroduces tree cover to degraded land, with the aim of restoring biodiversity, stabilising soils and increasing carbon sequestration again. This is a more straight-forward opportunity to offset carbon, as 678m hectares of land could already be reforested globally [1].

However, ***re-wilding*** places focus on restoring the holistic ecosystems damaged by deforestation. It builds ecosystem resilience and promotes long term biodiversity conservation. On a national scale, Rewilding Britain estimates that restoring landmasses across 6 million hectares could achieve a carbon sequestration of 47 million tonnes – over a tenth of the UK's GHG emissions [2]. It is not limited to forestland but similarly tackles peatland damage and marine degradation - a powerful means of carbon capture with seagrass beds in the UK capturing 5.06 tonnes of CO_2 on average per hectare every year [3].

Applying both practices yields the greatest results in terms of biodiversity and carbon capture.

Additionally, regeneration alone cannot be seen as a remedy for carbon capture, as CO_2 lost from decade-long mature trees outweighs the capacity of intake new saplings have. The average tree can sequester around 21kg of CO_2 per year but ***only*** when it is fully grown [3]. It is imperative, therefore, that sustainable foresting methods, which maintain forests, are deployed.

Managed cutting systems also allow forests to mature for long periods without significant harvesting. It is predicted a single tree can absorb a tonne of CO_2 across 100 years, becoming a long-term carbon sink [3]. However, delaying harvests is not always economically feasible. A managed forestry approach implements planned cutting cycles, utilising selective logging then replanting to control forest health. It sustains an economic output whilst creating new job opportunities however it cannot claim the same carbon sink capacity as maturing forests.

Many countries and international organisations are now implementing reforestation programs, sustainable forest management practices, and the establishment of protected areas.

[1] - https://www.theguardian.com/environment/2021/oct/28/could-planting-a-trillion-trees-stop-global-heating-terraformation-yishan-wong#:~:text=A%20recent%20study%20found%20678m,they%20did%20not%20occur%20originally
[2] - https://ecologi.com/articles/blog/reforestation-vs-rewilding
[3] - https://cieem.net/wp-content/uploads/2021/08/Carbon-and-Habitats-Position-Statement-FINAL.pdf

Whilst offsetting is not a substitute for reducing the carbon emitted, for many retailers it will form part of a longer-term strategy to mitigate their organisation's ecological impacts.

To ensure that carbon credits channel finance towards genuine and additional greenhouse gas reduction & removal initiatives that go above and beyond what can otherwise be achieved, and contribute to climate resilient development, retailers should assess programs for their governance, emissions impact and sustainable development.

> *"Sustainable forest management practices are crucial to preventing and reversing forestry degradation. These include implementing proper logging techniques, fire management strategies, invasive species control, and promoting reforestation and habitat restoration efforts.*
>
> *Conservation and protected area designations also play a vital role in preserving intact forest ecosystems and preventing further degradation."*
>
> **Sophie De Salis**
> Policy Advisor, BRC

The Integrity Council for the Voluntary Carbon Market (Integrity Council) [1] advocates action in terms of governance, emissions impact and sustainable development.

1. **Governance**

- **Tracking:** the programme should uniquely identify, record and track mitigation activities and the carbon credits which are issued.
- **Transparency:** information regarding mitigation activities should be publicly available and be accessible to non-specialist audiences.
- **Independent verification:** mitigation activities must be independently validated and verified

2. **Emissions Impact**

- Emissions reductions / removals must not have occurred in the absence of the incentive created by carbon credit revenues.
- Emissions reductions / removals must be permanent, or if there is a risk of reversal, there must be measures in place to address those risks and compensate for those losses.
- Emission reductions / removals should be robustly quantified, based on conservative approaches, completeness and scientific methods
- Emission reductions / removals must only be counted once towards achieving mitigation targets or goals. (Double counting covers double issuance, double claiming, and double use.)

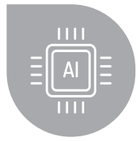
3. **Sustainable Development**

- Programs must ensure mitigation activities conform with industry leading practices on social and environmental safeguards and deliver positive sustainable development impacts.
- **Contribution to net zero transition:** activities should avoid the use of technologies or carbon-intensive practices that are incompatible with the objective of achieving net zero GHG emissions by mid-century.

Note:

To dissuade prolific deforestation, the price of carbon credits (offsetting) needs to be competitive with, or higher than the profits that can be obtained from agriculture, housing, industry and (most challengingly mining for raw materials, fossil fuels, rare metals, and precious elements.

[1] - Benchmarking for Voluntary Carbon Markets (icvcm.org)



4. A unique combination – Indigenous Communities and Artificial Intelligence

There is growing awareness about the importance of preserving forests for their ecological, economic, and social benefits.

Today, only 10% of indigenous peoples' land is legally recognised. Securing these land rights is a cost-efficient, successful way to offset deforestation with a 2016 study revealing carbon capture is up to 29 times more expensive than securing indigenous lands in Bolivia, Brazil and Colombia [1].

Implementing AI technology in partnership with indigenous communities has the potential to amplify sustainability. MapBiomas [2] (a multi-institutional initiative involving universities, NGOs and technology companies) in São Paulo use satellite images to map out high-risk activities often causing deforestation. MapBiomas then pairs with indigenous communities to enhance forest monitoring, gaining local knowledge and increasing forest protection.

As discussed in this guide, palm oil is now ubiquitous in the products we consume. However, in Malaysia and Indonesia, where 85% of the world's palm oil is grown, multinational corporations continually destroy irreplaceable rainforests and carbon-rich peatlands for its production.

> *"AI gifts us a new ability to change our physical world. When linked with indigenous communities it becomes a powerful mitigation tool."*
>
> **Nathalie Bagge**
> IBM Summer Intern

[1] - https://www.ordnancesurvey.co.uk/insights/indigenous-land-rights-can-fight-climate-change
[2] – MapBiomas Brasil

CONCLUSION

Final thoughts and a call to action

The risk of deforestation extends beyond our lands and into our oceans...

Deforestation under the sea

Marine deforestation refers to the destruction or removal of marine vegetation, particularly in coastal or shallow water environments. These underwater forests are primarily composed of large, dense communities of marine plants species, such as kelp forests and seagrass meadows. They are considered one of the oceans' most productive ecosystems and play a vital part in oxygenating both the oceans and the planet.

Some key human influences on undersea deforestation and marine ecosystem disruption are bottom trawling, dredging operations and pollution from industrial discharge, agricultural runoff or oil spills. We are already seeing a steady decline in marine ecosystems from these harmful practises, with 38% of global kelp forests already destroyed [1].

Climate change amplifies this destruction, increasing ocean temperatures, ocean acidification and changing water chemistry. The bleaching of coral reefs are a clear example of the impact of climate change. Whilst they support over a quarter of marine life, 90% of this coral ecosystem is predicted to disappear by 2050 as they cannot survive the warmer temperatures and increased acidity [2].

Underwater forests provide essential habitats for numerous marine species, support biodiversity, and contribute to the overall health and productivity of coastal ecosystems. Their loss can disrupt food chains, decrease fish populations, and lead to the degradation of coastal water quality.

[1] - https://theconversation.com/underwater-health-check-shows-kelp-forests-are-declining-around-the-world-68569
[2] - https://news.un.org/en/story/2021/03/1087592#:~:text=Coral%20reefs%20are%20in%20grave,a%20result%20of%20climate%20change.

How can technology help

Driving sustainable change requires an exponential shift in the way we do business and that the right use of technology is critical in facilitating this scale of transformation.

Supplier Management

Retailers can leverage Supplier Management platforms to monitor the environmental and social performance of their suppliers through:

- Aggregating disparate supplier datasets including audits, non-conformances, sustainability credentials, policies, strategies and contracts.
- Analysing and ranking the performance of suppliers based on this data
- Identifying performance outliers, then defining and tracking performance against improvement targets, along with providing rigor to the grievance management process

Armed with these capabilities, Retailers can prioritse sourcing from responsible suppliers who adhere to sustainable practices.

Supply Chain Mapping

Retailers can implement supply chain mapping and traceability systems to uncover and monitor their upstream value chain.

Where the upper tiers are unknown, hypothetical supply chain models can be generated using pre-configured templates.

As supply chain members are then identified and engaged, data regarding the actual sources of supply and manufacturing processes can be gathered and analysed to produce a more accurate view of ecological impacts and risks.

Supply Chain Analytics

Retailers can deploy a range of tools, including predictive analytics, machine learning and AI to analyse these large, structured and unstructured datasets. This analysis can surface patterns and trends in the supply chains which may indicate deforestation or biodiversity loss. One such example is the use of geospatial mapping technologies to track the location and extent of forests and other ecosystems. This information can help identify areas of high conservation value and potential deforestation hotspots, allowing retailers to take proactive steps to mitigate risks.

Conclusion

Deforestation is a significant global issue that contributes to climate change and biodiversity loss both on land and under the sea. Businesses that do not invest in sustainable transformation are vulnerable to numerous risks, from reputational damage, to fines and restricted access to finance.

With regulations and frameworks increasingly focusing on deforestation and biodiversity, and now naming specific commodities (palm, soy, cattle, wood, cocoa, coffee, etc.) and their derivatives, businesses must act.

Each Retailer is uniquely impacted by these requirements, based on their scale, trading territories and product assortment. What remains constant is the need to drive increased supply chain engagement and transparency, to tackle the threats posed by deforestation, and other ESG risks associated with the upstream supply base.

Getting Started:

There are a host of resources to support organisations with their nature-based targets and to help them be mindful of what could be coming next. Organisations can work through the prompts outlined in this guide as they progress from identifying and communicating the initial case for change, through to mapping the supply chain and operationalising the insights they uncover.

- Review the TNFD ***'how to' guidance*** to support you in adopting and implementing these recommendations, following their 'LEAP' approach.
- Ask yourself how TNFD reporting could fit within your organisation's existing work to tackle deforestation and biodiversity risks and harness the opportunities for nature recovery.
- Do not hesitate to get involved in the upcoming BRC discussions on nature, and the anticipated updates from DEFRA regarding deforestation.
- To find out more about the BRC's ***CSR Community*** and Forest Risk Commodity Working Group, get in touch with Sophie De Salis and find the latest updates ***here.***

BRC CLIMATE ACTION ROADMAP

The retail sector has an ambitious goal to reach net zero by 2040, ten years ahead of the UK government's target. Almost 90 retailers have commited to the our Climate Action Roadmap which supports members through the process to reach this goal. We work with partners including Mitsubishi Electric to provide the insights and guidance to help members on their journey.

brc.org.uk/climate-roadmap

climate@brc.org.uk

020 7854 8900

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