

The background of the entire page is an aerial photograph. In the foreground, there are lush green forests. A dirt road winds through the trees. In the middle ground, there are green agricultural fields and a large, brown plowed field. In the distance, an industrial facility with several tall chimneys and buildings is visible, set against a backdrop of rolling hills and a blue sky with light clouds.

INTEGRATING COMPANIES WITHIN PLANETARY BOUNDARIES

Feedback from the first companies to set Science
Based Targets for Nature (SBTN)
SEPTEMBER 2024

WWF

WWF is an independent nature conservation organisation. With over 35 million supporters and a global network active in over 100 countries thanks to its local leaders, WWF's mission is to stop the degradation of the earth's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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EXECUTIVE SUMMARY

SBTN FRAMEWORK

The **Science-Based Targets for Nature (SBTN)** methodology is a voluntary framework for setting science-based targets for nature. It helps companies understand the impacts they have on ecosystems and to act on these impacts by taking into account both the various pressures linked to their business throughout their value chain, and the state of nature in the areas where these pressures are exerted.

SBTN is aligned with key international frameworks, most notably the Paris Climate Agreement and the Kunming-Montreal Global Biodiversity Framework, and is based on the best scientific knowledge of ecological thresholds (planetary boundaries, etc.).

It is also linked to other benchmark environmental tools, such as the SBTi (*Science Based Targets initiative*), which helps companies set scientific climate targets and the TNFD (*Taskforce on Nature-related Financial Disclosures*), which offer a reliable reporting framework for nature. Deploying the SBTN approach also enables us to meet many of the requirements of the CSRD (*Corporate Sustainability Reporting Directive*) which sets new norms and obligations on extra-financial reporting.

The SBTN methodological framework consists of **5 steps**:

- 1 Assessing the material impacts that the company has on nature all along its value chain, and carrying out a detailed quantitative analysis of its impacts in the regions in which it operates (impact materiality);
- 2 Interpreting and prioritising the analyses carried out in step 1 to identify the most significant sites, raw materials and geographies from an ecological and strategic point of view for the company;
- 3 Setting science-based targets for the various environmental components: freshwater, terrestrial ecosystems, oceans, to ensure that the thresholds for good ecological status are met;
- 4 Defining action plans to achieve the targets;
- 5 Monitoring, reporting and checking progress by an independent third party.

Methodological guides are currently available for steps 1 & 2 for all environmental components. Specific guides on target setting (step 3) have also been published for freshwater and terrestrial ecosystems, and 2025 will see the publication of the step 3 methodology for oceans, along with the first guides for steps 4 and 5.

LESSONS LEARNED FROM THE SBTN PILOT GROUP, MADE UP OF PIONEERING COMPANIES

In order to set and implement science-based targets companies must have them first validated. This is an independent process involving expert review to ensure the integrity of the target(s). Companies with validated targets meet all requirements set out in the methods and are aligned with what science requires. In May 2023 SBTN commenced a target validation pilot with a group of 17 pioneering companies. The pilot companies were required to prepare and submit freshwater and land targets for validation in alignment with the SBTN methods.

Teams from WWF France and WWF Sweden worked with four of the seventeen companies in the pilot group selected by SBTN to develop targets for these companies based on the SBTN guidelines. These companies were the first in the world to deploy step 3 of the SBTN framework, as part of a learning-by-doing approach and to share their experience back to the SBTN team. The main purpose of this document is to present **feedback and lessons learned from this pilot**, in particular from the experiences of Alpro, Bel, Carrefour and H&M Group.

Summary of lessons learned from steps 1 and 2

The first SBTN step, materiality analysis, provides an **overall view of the main 'nature' issues** likely to be tangible for the company. It must also identify the list of its priority raw materials (*High Impact Commodity List*) in view of their high potential impact on nature.

This introduction is an **important step** for the teams to get acquainted with the topic.

This is followed by an in-depth quantitative analysis of the company's impact on nature. First, the company must collect a certain amount of data used to measure the pressure it exerts on nature, both on its direct operating sites and on the entire scope of its purchases (raw materials and services). These pressure data are cross-referenced with indicators of the state of nature, to highlight priority sites and raw materials in terms of the interactions they have with particularly important or sensitive ecosystems in terms of biodiversity.

This step shows how crucial it is for companies to reconnect with their local suppliers, particularly those in the agricultural sector, through traceability.

Summary of lessons learned from step 3

The case of freshwater

Step 3 focuses on defining science-based targets, with **the aim of to contribute to** improving the status of ecological systems based on the best available science. The targets defined will therefore be specific to each ecosystem with which the company interacts and to each of the pressures it exerts.

Freshwater is already considered a strategic issue for many companies, which, in some locations in recent years, have had to cope with temporary restrictions on use or disruptions to supply leading to yield losses during periods of water stress. Freshwater pollution also presents a direct reputational risk to companies while also increasing the costs of purifying water for use in the supply chain in addition to devastating ecosystems.

While freshwater overuse and pollution are global issues, they play out in specific, very different local contexts. Companies therefore need to address freshwater impacts based on local data and context for all drainage basins in which they are located. The impact that these companies have on water resources can be linked to direct water withdrawal (for the industrial processes of their plants),



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to upstream water withdrawal (to irrigate crops in their supply chains) or to the discharge of water of degraded quality into aquatic environments.

As part of the pilot, companies had to work on identifying SBTN targets in a priority basin for a direct operating site, and another priority basin for their supply chain.

Setting targets for freshwater **requires a great deal of consultation with stakeholders** and other water users, in order to identify public data, local ecological threshold models, key players, the specific local context, and so on. Although access to local stakeholders is sometimes a challenge, and scientific data are not always available (in which case a generic SBTN model can be used), this consultation work generally leads to good results and greatly encourages the involvement of the various stakeholders in the future implementation of water action plans.

It should be noted that this step is also an opportunity to **take stock of the actions already taken** by companies, in order to connect SBTN to existing projects (water recycling in factories, programmes to engage farmers in the agro-ecological transition, etc.). **This will help reinforce these approaches using scientific data** specific to the local context, leading to greater resilience.

Summary of lessons learned from step 3 The case of terrestrial ecosystems

With regard to terrestrial ecosystems, pilot companies have tested the SBTN method - step 3, which has three objectives:

- avoiding conversion of natural ecosystems and reducing the land footprint, two objectives at the scale of the company's overall business ;
- entering into landscape initiatives (objective at a local scale, aiming for transformation on the scale of ecoregions).

Companies exploiting raw materials listed by SBTN as including conversion risk must set a **no conversion of natural ecosystems** target. This covers forest ecosystems as well as other natural ecosystems (grasslands, wetlands, mangroves, savannah, etc.).

Many companies have already introduced zero deforestation policies covering a number of priority raw materials, particularly those covered by the EU Regulation on Deforestation and Forest Degradation (EUDR). However, **SBTN requires a broader scope than that of the EUDR**, to include a greater number of raw materials and extend the commitment to all types of natural ecosystems (readers should note that there are different timelines required for different categories of commodities).

The SBTN approach to the topic requires a **sufficiently developed level of traceability by the target year** to be able to check, via satellite imagery, that for a given production area, there has been no conversion of natural ecosystems since a reference year. Companies may also **use certifications to guarantee no conversion**, or prove that they source from regions with a very low conversion of natural ecosystems risk.

As for the target for **reducing the land footprint**, it is in line with the IPCC's SSP1 scenario, which recommends freeing up 500 million hectares of agricultural land by 2050 (i.e. 10.6% of cultivated land). This freed-up land can then be regenerated and restored, helping to restore ecosystems to a good ecological status.

Companies in the agri-food sector or with a significant agricultural input need to **define a trajectory for reducing their land footprint**, using a range of solutions: shifting their offer towards more plant-based products, choosing ingredients with a better ecological profile, improving yields through agroecological practices, etc. Companies have the option of setting an absolute land footprint or intensity based target. For companies in other sectors solutions could include interventions that reduce the need for raw materials such as more circular business models and waste reduction.

This target, which is new for companies, raises **essential questions about the development paths of the company's business, and the ability to make it compatible with sustainable trajectories**.

Finally, the target of **developing landscape projects** aims to encourage companies to get involved in collective ecological improvement initiatives at local level.

As part of the pilot, companies were given the choice between contributing to a landscape initiative covering at least ten per cent of the land area on which the company has an impact, or getting involved in two separate landscape initiatives, regardless of their surface area. Some companies chose to submit existing initiatives, while others joined collective action projects currently being developed for some of their key raw materials.

STRENGTHS AND CHALLENGES OF SBTN METHODOLOGIES

These various pilots showed that the SBTN approach brought many benefits to the pilot companies:

- SBTN requires companies to improve their understanding of their upstream value chain and impacts, particularly up to raw materials in a way that many have not been doing.
- SBTN is a holistic framework for building a strong biodiversity policy, from measurement to monitoring, reporting and verification, as well as target-setting and action plans, and addresses issues across the company's entire value chain;
- SBTN can be used to identify scientific targets in line with good ecological status targets;
- SBTN can be used to identify priority issues based on companies business, and on the state of nature;
- SBTN encourages companies to reconnect with their value chain upstream in order to respond to local issues;
- SBTN lends credibility to companies 'nature' approach, thanks to a scientific approach validated by a third party;
- SBTN helps companies be more prepared to respond to the CSRD, in particular with regard to reporting requirements on impact indicators, targets and transition plans.

The SBTN method highlights a number of new issues for companies (managing the land footprint, for example), but also helps strengthen the approaches already in place for various environmental issues (forestry policy or water).

A number of success factors have also been identified:

- In particular, the successful application of the SBTN approach depends on good **project governance and the support of the senior management**;

- During the target setting phase the project team responsible for implementing SBTN, needs to have access to data from across the company (purchasing, suppliers, etc.) which requires broad support from other staff members. Once the targets are identified a great deal of work needs to be done in-house to get employees acquainted with the SBTN approach, to help them understand the issues and adopt the method;



- **Involving suppliers** is key to successfully applying the various steps of the methodology and to achieving targets. They are often the ones holding the information on major data (for example pressures associated with purchased goods, locations of upstream activities, etc.), and they are also the ones who will have to put in place a number of new practices to reduce their impact on nature.
- Improving **traceability**, particularly for the most strategic and impactful raw materials, is an important factor in applying the SBTN approach.

Finally, there are certain difficulties that cannot be denied:

- A **large amount of data** needs to be mobilised, particularly upstream in the supply chains. In some cases, companies do not have sufficiently detailed traceability to access these data;
- The **SBTN methodological guides are still being developed**. At this stage, guides do not always include all material elements for companies (for instance, the water quality target currently focuses on nitrogen and phosphorus, but not on other pollutants that are more relevant for non-agri-food industries, which will be included in future developments);
- **The method is a little complex to implement** and requires a fairly long phase of the teams getting acquainted with it.

Despite these difficulties, it emerged from the pilots that SBTN helps companies implement a strong holistic approach to the topic of nature, helping them transform themselves in depth, in order to make their business model compatible with the proper functioning of ecosystems. SBTN also provides a more unified framework according to which companies can set comparable targets to their peers and to know if they are doing the right things in the right places.

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ABBREVIATIONS

AFi: Accountability Framework initiative	LCA: life cycle assessment
AR3T: Avoid, Reduce, Restore, Regenerate and Transform	MSA: Mean Species Abundance
BII: Biodiversity Intactness Index	MST: Materiality Screening Tool
BRF: Biodiversity Risk Filter	OECD: Organisation for Economic Co-operation and Development
CEP: Corporate Engagement Programme	SAGE: Schéma d'Aménagement et de Gestion de l'Eau (Water Development and Management Plan)
CSDDD: Corporate Sustainability Due Diligence Directive	SAI: Sustainable Agriculture Initiative
CSRD: Corporate Sustainability Reporting Directive	SBTi: Science-Based Targets initiative
EFPD: Extra-Financial Performance Declaration	SBTN: Science-Based Targets for Nature
EII: Ecoregion Intactness Index	SDAGE: Schéma Directeur d'Aménagement et de Gestion des Eaux (Master Plan for Water Development and Management)
ENCORE: Exploring Natural Capital Opportunities, Risks and Exposure (tool)	STAR: Species Threat Abatement and Restoration
ESRS: European Sustainability Reporting Standards	TNFD: Task Force on Nature-related Financial Disclosures
EUDR: European Regulation on Deforestation and Forest Degradation	UNEP WCMC: United Nations Environment Programme World Conservation Monitoring Centre
FLAG: Forest, Land and Agriculture	WEF: World Economic Forum
GBF: Global Biodiversity Framework (Kunming-Montreal Global Biodiversity Framework)	WFD: Water Framework Directive
GBS: Global Biodiversity Score	WRF: Water Risk Filter
HICL: High Impact Commodity List	WWF: World Wide Fund for Nature
IPBES: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services	
IPCC: Intergovernmental Panel on Climate Change	
ISO: International Organization for Standardization	
KPI: Key Performance Indicator	

INTRODUCTION

For several years now, companies have been increasingly aware of their dependency on nature and the risks that the collapse of biodiversity poses to their business.

Most companies have had to deal with disruptions to their value chains linked to the impacts of climate change or the erosion of biodiversity: reduced yields in periods of drought, regulatory restrictions on access to water, soaring prices and disruption to supplies of certain commodities due to extreme weather events, falling pollinator numbers, reduced soil fertility, high costs of treating polluted water etc. These situations, previously considered to be temporary 'crises', are set to become more frequent, and to be seen as structural elements requiring far-reaching changes rather than one-off responses.

Yet, the topic of nature, and the importance for companies of reducing their impact on biodiversity in the same way as they are reducing their impact on the climate, is struggling to establish itself as a strategic issue to be managed at the highest level of an organisation's decision-making bodies.

But new regulations, such as the CSRD (*Corporate Sustainability Reporting Directive*), the EUDR (EU Regulation on Deforestation and Forest Degradation) and the CSDDD (*Corporate Sustainability Due Diligence Directive*), are calling for profound changes in business models, and are helping to make these issues unavoidable.

In addition, a number of tools and voluntary frameworks are emerging to help companies equip themselves and build strong biodiversity policies to meet the challenges they face. However, the diversity of these frameworks creates a degree of complexity, since they do not all take into account the same issues (dependencies, impacts, risks, opportunities), do not cover the same scope (footprint measurement, target setting, transition plans, holistic framework) and do not have the same level of ambition (continuous improvement, alignment with good ecological status thresholds).

One of WWF's major areas of work is to encourage companies to transform their business model to make them compatible with the proper functioning of nature. To achieve this, WWF is taking a number of strategic actions, including contributing to the development of the *Science-Based Targets for Nature* (SBTN) framework. As a founding member of the *Science Based Targets Network*, WWF acts at several levels:

- WWF experts contributing to the development of various SBTN methodologies;
- Working with partner companies to apply SBTN methodologies, in order to ensure the framework is operational and strong, and to encourage its corporate partners to implement ambitious biodiversity policies;
- Sharing the lessons learned from these partnerships, in order to encourage the private sector as a whole to adopt this framework.

The aim of this publication is to share feedback from the first companies to have deployed the first three steps of the SBTN methodology (from measuring impacts to setting targets) as part of the pilot involving 17 pioneering companies. Four of these companies have received support from WWF (Alpro, Bel, Carrefour and H&M Group).

This document aims to:

- Provide insights into the practical application of the SBTN methodologies by demonstrating concrete examples of how companies deployed them

- Share the most interesting lessons learned and recommendations drawn from these pilots for the implementation of the SBTN framework;
- Highlight the transformative nature of the methodologies for the company: what are the learnings? How has it helped to develop concrete projects? How does it call into question what already exists?
- Share experience of some of the difficulties and challenges for companies in applying the SBTN methodologies and how these can be approached

This document does not:

- Replace the official SBTN guidelines. Companies need to consult the SBTN website for the comprehensive methodology and can refer to this report as a supplementary resource that provides further case studies to help interpret the guidelines.



"Applying the SBTN methodology has really helped us understand how our company impacts biodiversity, and take heed of how far we have to go to ensure that our business does not exceed planetary boundaries."



"SBTN has helped us really accelerate our understanding of our supply chains. Traceability is the absolute key to understanding one's impact, defining a relevant target and identifying the best actions to undertake."



"SBTN has really helped us link up the programmes we were already putting in place for Nature and Biodiversity and strengthen them by basing them on science."



"The SBTN approach truly is an operational transformative approach. Reflecting on the company's position in the face of such major challenges calls for large-scale actions to ensure the good ecological status of ecosystems that are essential to our business."



"When you take the SBTN plunge, you should be prepared to ask questions that will be influencing the company's long-term future, to look ahead and to define an ambitious strategy for nature."



"After having defined ambitious targets for Climate with SBTi, it was important and natural for the Bel Group to follow the same scientific approach to meet the challenges linked to Nature, by taking part in the SBTN methodology pilot test. This approach has confirmed our conviction that Biodiversity, Climate and Water are inseparable issues that must be tackled together."



"We need a common science-based method and framework that garners broad support. Something that will make our actions, goals and results understandable and comparable to other companies actions."



1. INTRODUCTION TO THE SBTN FRAMEWORK

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A. SBTN, A VOLUNTARY FRAMEWORK FOR COMPANIES, USED TO ADAPT THEIR BUSINESS IN ORDER TO COMPLY WITH ECOLOGICAL THRESHOLDS

Science-Based Targets for Nature (SBTN), which started development in 2019 along the same lines as the SBTi (*Science-Based Targets initiative*: <https://sciencebasedtargets.org/>), is a **voluntary framework for setting science-based environmental targets**.

The initiative, which was founded by 7 civil society organisations and international institutions (WWF, CDP, UNEP WCMC, UN Global Compact, WEF and Conservation International) now brings together over 80 partners (NGOs, universities, institutions, consultants, etc.), united to develop methodologies aimed at helping companies set scientific targets for nature.

Many companies around the world are already adopting the framework, with nearly 250 economic players (companies, manufacturers, consultants, financial institutions) already taking part in the Corporate Engagement Programme (CEP), to test the methodology and provide feedback. In France, over twenty companies are already involved (Alpro, Bel, Carrefour, Cartier, Chanel, Decathlon, EDF, Engie, Kering, La Poste, L'Occitane, L'Oréal, LVMH, Pernod Ricard, etc.). And the first science-based targets have already been validated by SBTN.

The **SBTN framework** is a **voluntary** framework providing methods, tools and guidance that companies use to understand their impacts on nature, and to act on these impacts, by taking into account the various pressures linked to their business throughout the value chain, as well as the state of nature in the different areas where these pressures are exerted. This detailed analysis shall serve as a basis to set science-based targets, which then give rise to strong action plans to ensure ecological integrity in areas where the companies are present in their value chain. Target achievement will have to be monitored and progress shared.

By applying the SBTN framework, one can have an **overall monitoring of a company's business** in relation with nature, while ensuring that **actions are locally based**, as close as possible to ecosystems and impacts.

B. LINKS WITH THE MAIN GLOBAL FRAMEWORKS

Companies committed to an SBTN approach will be able to set targets for nature in line with the main global policy frameworks:

- The **Paris Climate Agreement**: it was adopted at COP21 by 196 Parties in 2015 and aims to contain the rise in average global temperature to well below 1.5°C above pre-industrial levels (through the SBTi framework);

- The **Kunming-Montreal Global Biodiversity Framework**: it was adopted in 2022 and aims to halt and reverse nature loss; it includes a number of global targets to be achieved by 2030. Target 15 of the agreement, called “Company impacts and dependencies”, aims to encourage companies to regularly assess and disclose their risks, dependencies and impacts on biodiversity throughout their operations, supply and value chains and portfolios, and to provide the required information to consumers in order to promote sustainable consumption patterns.
- The concept of **earth system boundaries**: SBTs (Science-based Targets) are defined as measurable, applicable and time-bound targets based on the best available scientific data, used by stakeholders to get in line with the planet's ecological boundaries (**earth system boundaries**) and with societal targets (e.g. **sustainable development targets**).
- The **Sustainable Development Goals**: The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet. At its heart are the 17 Sustainable Development Goals (SDGs). SBTN echoes some of these goals, particularly Target 6 “Clean Water and Sanitation”, Target 12 “Responsible Production and Consumption”, Target 14 “Life Below Water” and Target 15 “Life on Land”.

The SBTN methodology is designed to help companies get in line with the major targets in these agreements, as well as those defined by the IPCC (Intergovernmental Panel on Climate Change) and the IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services).

SBTN : Align targets with global goals and objectives

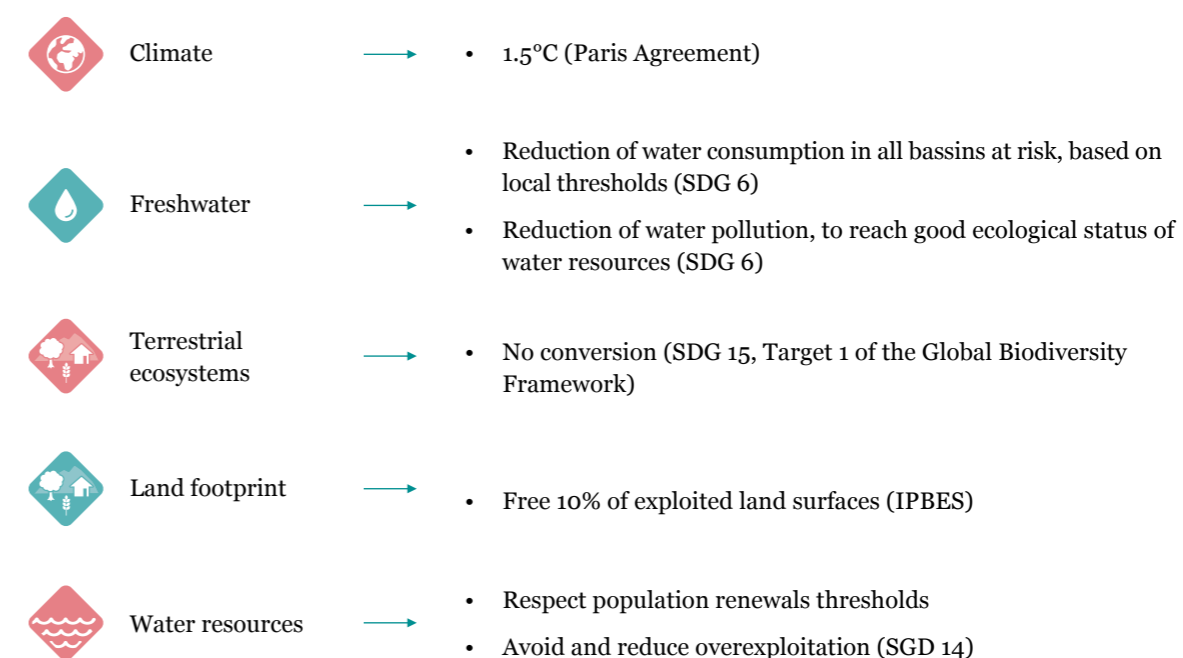


Figure 1: The main targets of the SBTN methodology, in relation to different global targets (Source: WWF)



C. SBTN'S DEFINITION OF NATURE

The SBTN defines nature as all non-human living entities and their interaction with other living or non-living entities and processes (SBTN, 2023)¹. This definition recognises the interactions between humans and nature, as well as between the components of nature (species, soils, rivers, nutrients). It also recognises that atmospheric pollution, climate regulation and carbon cycles are all part of nature.

This definition of nature is therefore broader than that of biodiversity, since it includes flows and non-living elements.

By adopting the SBTN framework, companies will be taking control of a number of issues, including climate (covered by the SBTi approach), freshwater resources (quality and quantity), land use and the exploitation of natural resources (marine resources, commodities with an impact). SBTN also focuses on the interactions between the company's business and areas of high biodiversity.

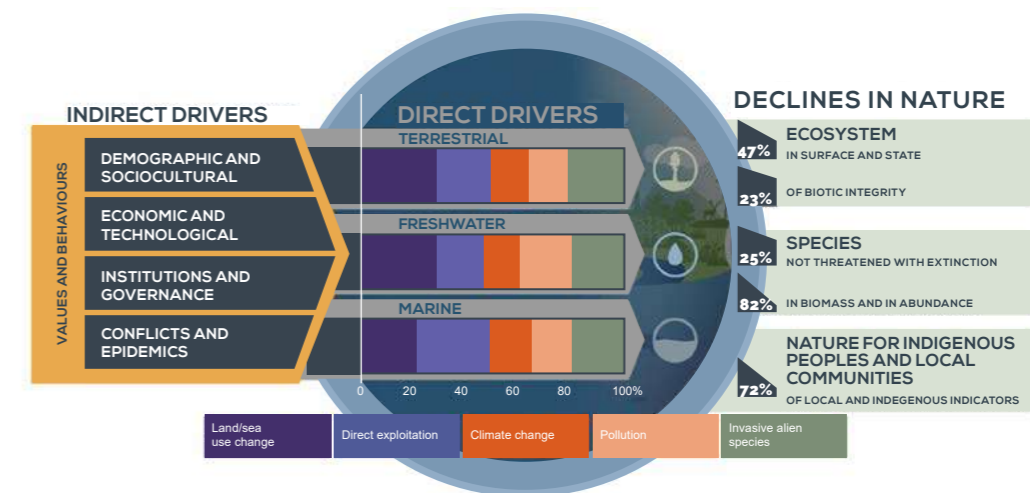


Figure 2: Indirect drivers, pressures and states of nature loss, adapted from IPBES Global Assessment, 2019 (Source: Science-Based Targets Network)

D. SBTN TARGETS

By applying the SBTN methodology, companies will be able to:

- Understand and analyse the **company's impacts (both in direct operations and upstream)** on most components of nature and on the most impacted part of the value chain;
- Identify the **company's priority activities for nature, as well as the geographical areas where these activities take place and which are the most sensitive for nature;**
- **Set science-based targets, i.e. aligned with good ecological status thresholds** (including planetary boundaries);

¹ https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/SBTN-Steps-1-3-Glossary_2023.docx-1.pdf

- Develop and implement **strong action plans** to achieve these targets and guarantee the good ecological status of ecosystems;
- **Monitor, report and check** progress.

SBTN is based on a number of fundamentals:

- The use of a **holistic approach** (all pressures, the entire value chain, the different compartments of nature, etc.);
- Methodologies in line with the **best scientific knowledge and international targets** (Global Biodiversity Framework, IPCC, etc.);
- A framework using the **best tools available** (impact measurement tools, etc.): LCA (life cycle assessments), Exiobase, Ecoinvent, etc.; tools for measuring the state of nature: WWF RFS (*WWF Risk Filter Suite*), Global Forest Watch, STAR (*Species Threat Abatement and Restoration*), BII (*Biodiversity Intactness Index*), etc.;
- A preference for **primary pressure data** (as opposed to modelled data), encouraging companies to develop **traceability** in their supply chains;
- A process that is **independently audited** at every step.

While the framework is particularly well suited to large companies, small and medium-sized enterprises can also use the SBTN methodology.

Furthermore, there are currently no methodological guides for specific sectors. All sectors have potentially significant interactions with nature. However, a number of sectors stand out as being particularly affected, particularly those with a high agricultural input, mining activities or business development involving a high level of land use.

E. THE 5 STEPS OF THE SBTN METHODOLOGICAL FRAMEWORK: A HOLISTIC APPROACH TO DEPLOY AN AMBITIOUS AND STRONG NATURE POLICY

SBTN is structured around **5 steps**:

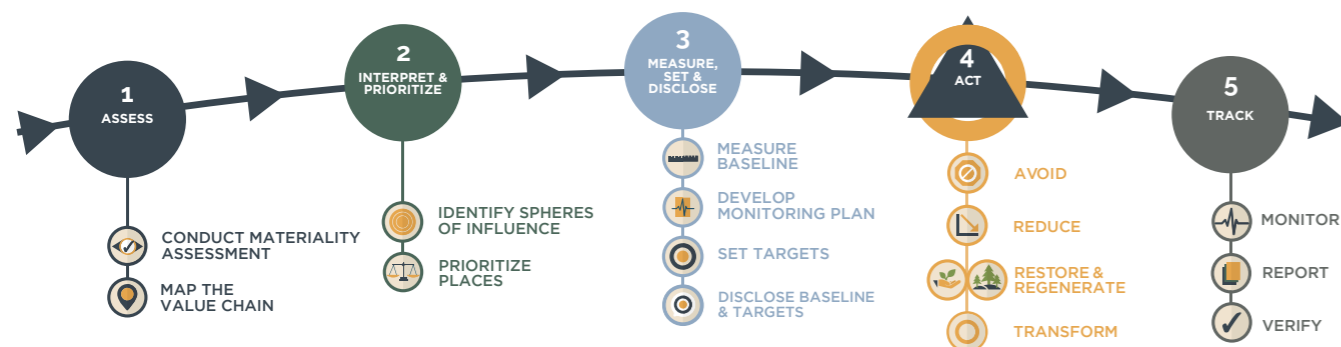


Figure 3: The 5 steps of the SBTN methodological framework (Source: Science-Based Targets Network)

Step 1, “**Assess**”, means evaluating the material stakes for a company, based on a generic sector analysis. This is supplemented by a more detailed quantitative analysis of the company’s impact on the regions in which it operates, using data on traceability, specific company-related pressures (volumes of priority raw materials purchased, volumes of water consumed), the state of nature, etc.

Step 2, “**Interpret and Prioritize**”, aims to analyse the prioritisation carried out in step 1 in more detail, by incorporating more detailed knowledge of the company’s business, such as its capacity to hire suppliers and teams, the future development of a line of business, the existence of potentially competing projects currently being rolled out, etc. These factors will help prioritise the most important sites and raw materials from an environmental point of view, but also from a strategic point of view and in relation to the company’s capacity for transformation.

Step 3, “**Set Targets**”, involves the company setting scientific targets for a number of environmental issues relating to freshwater, terrestrial ecosystems and oceans, in order to reach the thresholds for good ecological status. The targets may be local and specific to an area (for freshwater, for example), or global (for conversion or land use).

Step 4, “**Act**”, requires companies to define an action plan to achieve the targets defined in step 3. The methodological guides for this step are still being developed, but it has already been determined that the action plans will have to be built around the AR3T principles (Avoid, Reduce, Restore, Regenerate and Transform), which aim to avoid impacts in the first place, then to reduce them when avoidance is not possible, and then to regenerate and restore ecosystems. As with a transition plan, the action plans will have to include elements of governance, timetable, funding and identification of specific actions.

Finally, step 5, “**Track**” involves monitoring, reporting and verifying progress against the defined targets.

F. DEVELOPING METHODOLOGICAL GUIDES

At the time of writing, in September 2024, methodological guides have been published for the first 3 steps: “Assess”, “Prioritize” and “Set Targets”. For step 3, the methodological guides cover issues relating to Terrestrial Ecosystems and Freshwater. The guide on Oceans is due to be published in the second quarter of 2024.

The **issues currently covered by the various SBTN methodological guides are:**

- for freshwater systems: the quantitative aspect (volumes consumed) and a number of qualitative aspects (nitrogen and phosphorus pollution);
- for land-based systems: the conversion of natural ecosystems, the reduction of land use and a commitment to landscape initiatives.

Other topics will be covered as the methodology develops, including:

- Pollution of freshwater ecosystems by molecules other than nitrogen and phosphorus (chemical pollution, pollution by herbicides, pesticides, etc.);
- Ocean systems: overexploitation of fisheries resources (sustainable management of populations, reduction of losses), and marine ecosystem protection & restoration;
- Invasive species;
- The downstream value chain.



LESSON LEARNED: committing to the SBTN approach - No regrets

The methodologies in step 3 are still subject to amendment and development. These are iterative processes, taking into account developments in science and feedback from pilot companies. However, future developments in no way prevent companies from committing to this approach. **Deploying SBTN helps build a solid foundation for understanding the Nature issue, the company's impact, the priority areas and issues to be addressed, and set strong targets** that will only change slightly over time.

In addition, it is likely to take several years for SBTN to be rolled out across the company as a whole. So **taking ownership of the approach as early as possible, building the tools, the governance, and the first deployment cases, will help companies scale up and have an impact as soon as possible.**

G. SBTN COMPLEMENTARITY WITH OTHER FRAMEWORKS

SBTN has established links with a number of organisations in order to develop a strong, cohesive methodological framework:

- **Science-Based Targets Initiative (SBTi)**: This is a voluntary framework designed to limit climate change by enabling companies to set targets for reducing their greenhouse gas emissions. In particular, the SBTi framework includes the FLAG methodology (*Forest, Land and Agriculture*) for emissions specific to the agricultural and forestry sectors and for land use, which includes an obligation to commit to zero deforestation targets across all value chains;
- **The TNFD (Task Force on Nature-related Financial Disclosures)**: this is another voluntary framework focused on nature, which is more centred on setting up governance for the nature issue, on reporting, and on identifying risks, opportunities, impacts and dependencies related to nature. The TNFD also refers to the SBTN framework, in particular for the part on setting nature targets;



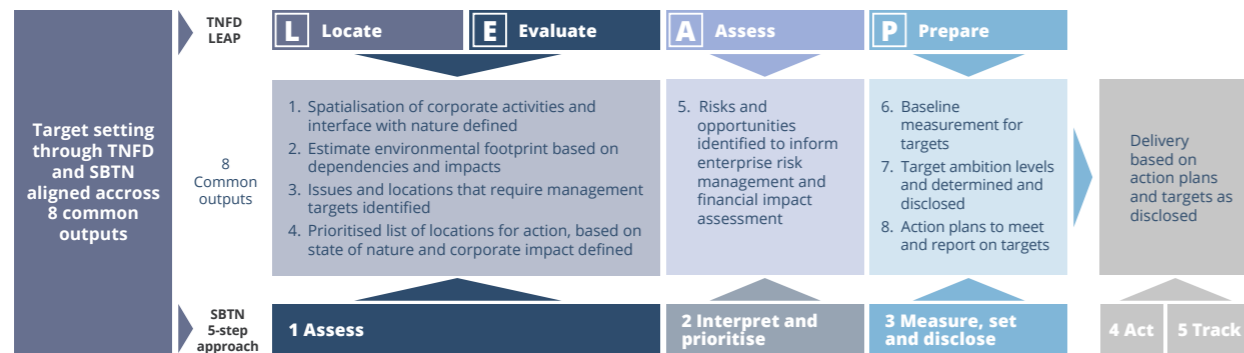


Figure 4: Correspondences between the SBTN and the TNFD LEAP framework (Source: Task Force on Nature-related Financial Disclosures)

- The **Accountability Framework initiative (AFi)** is a roadmap for achieving ethical supply chains that protect forests, natural ecosystems and human rights. SBTN draws from this initiative, especially for the No Conversion of Natural Ecosystems Target;
- The SBTN framework also echoes other regulatory requirements such as **the EUDR** (European Regulation on Deforestation and Forest Degradation). The SBTN methodology identifies a list of conversion-risk commodities, on which companies have to make commitments. This methods also emphasise action on the 7 commodities covered by the EUDR (cattle, cocoa, coffee, oil palm tree, rubber, soya, wood) and goes further by including other commodities identified as critical in terms of conversion risk. By implementing SBTN, companies can be prepared to take into account commodities that may, in the future, be subject to specific regulations.
- Finally, the **CSDDD** (Corporate Sustainability Due Diligence Directive) calls for companies' climate commitments to be in line with the 1.5°C global warming limit. Although there is currently no equivalent for nature, it is important for companies to be able to anticipate the arrival of ambitious targets on nature and biodiversity, so as to be prepared and in a position to act.

Synergies between SBTN and the CSRD (Corporate Sustainability Reporting Directive)

While SBTN aims to engage companies in a deep transformation of their business to be in line with the thresholds of good ecological status in the environments in which they interact, the CSRD focuses on the disclosure of environmental, social and governance information.

The CSRD, which has been applicable since 1 January 2024, is compulsory for companies that are already subject to the Non-Financial Reporting Directive (NFRD) and its French version, the Déclaration de Performance Extra-Financière (DPEF), as well as for those with more than 500 employees, a turnover exceeding €50 million or a balance sheet of more than €25 million.

It is broken down into a number of standards corresponding to the Environmental, Social and Governance issues on which companies are required to report. For the environmental pillar, there are 5 ESRS (European Sustainability Reporting Standards): ESRS E1 climate change, ESRS E2 pollution, ESRS E3 water and marine resources, ESRS E4 biodiversity and ecosystems and ESRS E5 use of resources and circular economy.

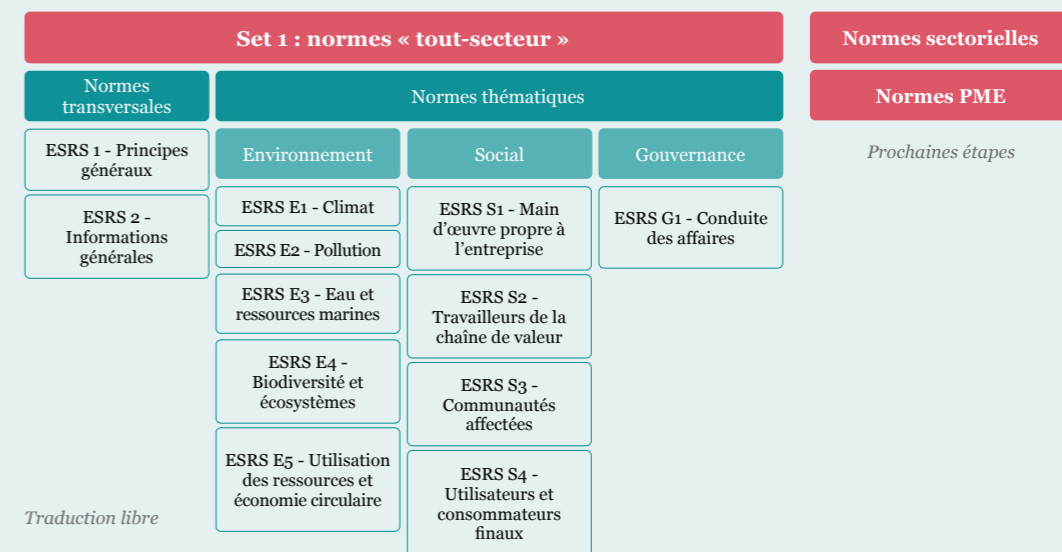


Figure 5: Corporate sustainability reporting standards (ESRS) (Source: CSRD sustainability reporting, AMF (2024))

Within these Environmental ESRS, we can find multiple references to the SBTN methodological framework with explicit recommendations in the various 'Metrics and Targets' sections: 'If the undertaking refers to ecological thresholds when setting targets, it may refer to the guidance provided by the Science-Based Targets Initiative for Nature (SBTN)'. The convergence between European standards and the SBTN methodology extends beyond the definition of environmental targets. SBTN provides at least a partial response to some of the issues raised in ESRS E2, E3 and E4. For example, with regard to the mandatory requirements of ESRS E4: material impacts relating to soil degradation, desertification and soil sealing, as well as the existence of biodiversity-related targets and policies (see Appendix 1 for an in-depth look at the relationship between ESRS E4 and SBTN).

Companies implementing the SBTN approach can claim to meet a large number of data points in several sections of the environmental standards (excluding ESRS E1 - Climate Change): Transition plan, Actions and resources, Metrics and targets...

Some of the companies pioneering the SBTN approach have already been able to reap the benefits of completing the first SBTN steps and validating them to begin structuring their response to the disclosures required by the CSRD.



By applying the SBTN approach, we are more prepared to meet the requirements of the CSRD, thanks to a highly thorough method. These requirements are the first step towards defining a genuine sustainability report, which can only be contextual, taking ecological thresholds into account. SBTN is one of the methodologies helping us to respond to these environmental challenges by ensuring that our strategy is on the right track.

H. CONNECTION BETWEEN SBTN AND PUBLIC COMMITMENT FRAMEWORKS IN FRANCE

The remarkable support given to the SBTN approach by a whole coalition of complementary committed players on a national level (NGOs, companies, consultants, academics, etc.) has led the French economic ecosystem to take a clear leadership role on an international level. This is shown in the large share of French companies in the pilot group covered by this publication. At the time of writing, this proactive approach and lead has also resulted in the convergence of different frameworks for corporate commitment to nature. In particular, SBTN has been identified as a reference approach in the current revision of the public scheme *Entreprises Engagées pour la Nature* (Companies Committed to Nature) from the Office Français pour la Biodiversité (French Biodiversity Agency), which should soon lead to formal links between these initiatives. Similarly, SBTN represents one of the key methodological foundations in the development of ADEME's ACT Biodiversity approach, which aims to produce a strong framework for assessing companies' nature transition plans.



LESSON LEARNED: Why should my company adopt an SBTN approach?

To take into account the real extent of biodiversity and nature issues

What SBTN brings to companies:

- A holistic framework for building a strong, end-to-end biodiversity policy (from measurement to monitoring, reporting and verification, as well as target-setting and action plans) that addresses issues across the company's entire value chain;
- Credibility, with a scientific approach validated by a third party, and a framework comparing various companies' ambitions in their responses to the ecological crisis.

To promote business resilience

For a company that is heavily dependent on natural resources, achieving SBTN targets will make it more resilient, helping to work closely and long term with strategic raw material suppliers, engaging in a mutual transformation that will also make it easier to cope with the ecological hazards to which it will be subject.

For pilot companies, taking into account the current state of the ecosystems in which they operate will ensure they are in a better position to sustain their business in the future.

If a supply basin is experiencing drought, there may already be prefectural decrees restricting the use of water resources. Identifying the priority issue and defining a science-based target will help the company ensure that its supply basin is in good ecological status in the long term, and reflect upon a way to sustainably adapt the company's business to the increasing scarcity of freshwater.

To comply with rapidly expanding requirements

The CSRD, the EUDR and the CSDDD have highlighted the importance for companies and their suppliers to commit to controlling, understanding, disclosing and reducing the impact of their activities. These frameworks also insist on the company's responsibility throughout its value chain. By focusing on traceability and geographical data, SBTN is also encouraging a better understanding of value chains and working closely with suppliers to move towards more sustainable practices. This work is essential to meet the various regulatory requirements.



In addition, companies' commitment to SBTN is now a growing expectation on the part of investors: financial institutions have gradually become more involved in nature issues, which has led them to amplify their commitment strategies on the subject over the last years, in particular by encouraging issuers to invest in the SBTN approach (see the recent initiative by Mirova and Philtrust).

In fact, these incentives and the growing demands of markets and legislation are a reflection of society's expectations of companies in relation to nature (consumers, employees, local residents, citizens, etc.), which are part of a far-reaching drive to make economic players more responsible.

FEEDBACK



Thanks to SBTN, we have been able to strengthen a number of approaches we already had in place regarding various environmental issues, with the use of scientific data, gaining in credibility

In one of Alpro's key water basins, the issue of dwindling freshwater resources had already been identified and actions had already been taken. With SBTN, we were able to identify the volumes of water withdrawn for our agricultural activities upstream of our supply chain more precisely, and compare them with the state of the resource in the withdrawal zone. Although the actions already implemented were heading in the right direction, we were able to strengthen them with the implementation of SBTN, by setting scientific targets and bringing credibility to the actions identified thanks to an internationally recognised framework.



By drawing on concrete, local scientific data, SBTN has made the subject more credible to our stakeholders. It was a powerful argument for getting other players to commit to the target.

Alpro

FEEDBACK



With SBTN, we were able to go further with the environmental actions already carried out

Aware of the issues surrounding climate change, Carrefour has been using the SBTi methodology to set scientific targets for several years. In line with this, and in order to take a more holistic approach to environmental issues, Carrefour has committed to deploying the SBTN methodology in order to integrate a scientific dimension at the heart of its biodiversity policy. By using the strongest methodologies and tools, the aim is to ensure that all actions implemented meet the environmental challenges and bring about a genuine ecological transition.



With SBTN, we were able to add an extra scientific dimension to the work already under way on our priority commodities.

Carrefour

FEEDBACK



The UN Convention on biological diversity provides 2030 global biodiversity targets, but we need guidance on credible, science-based targets specifically for business



There are several factors that drive action on biodiversity in H&M Group. Firstly, the science: WWF's Living Planet report provides a stark reminder every two years that we continue to lose animal populations and unique habitats across the world. And the Stockholm Resilience Centre has led research showing that humankind is exceeding several planetary boundaries. It is clear that biodiversity loss is one of the biggest threats to the future of humankind. Beyond the moral implications, companies like H&M Group are also directly affected. We are very much dependent on nature's resources and face business risk if we don't take action. Imagine if we cannot access natural fibers? What if agricultural production of textile materials cause extinctions? Financial institutions are also incorporating biodiversity in sustainable investment criteria and legislation such as the EU Due Diligence framework and the Corporate Sustainability Disclosure and Reporting Framework require actions from companies.

We need to ensure we are doing enough of what is expected from us and cover all needed areas and elements. The Global Biodiversity Framework provides some context for biodiversity targets but it is hard to translate to business reality and that is why we worked with the Science Based Targets Network as part of the pilot group for the target validation process. This work will inform our own goal setting and help us identify the targets we could set after completing the work internally on the changes required to deliver the targets.

H&M Group



**2. SBTN STEPS 1 AND 2
AND THE IMPORTANCE
OF MEASURING THE
COMPANY'S IMPACTS AND
THE STATE OF NATURE IN
ITS KEY GEOGRAPHIES**

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2. SBTN STEPS 1 AND 2 AND THE IMPORTANCE OF MEASURING THE COMPANY'S IMPACTS AND THE STATE OF NATURE IN ITS KEY GEOGRAPHIES

A. DEFINING THE SCOPE OF ACTION

To begin implementing the SBTN approach, two strategies can be used: rolling out the SBTN approach across all the company's scopes and raw materials, or applying it to a restricted scope with a view to gradual deployment throughout the company.

For instance Alpro, as a Danone brand, has chosen to apply the methodology to all its raw materials, all its products and on a global scope. The pilot is used to stimulate reflection on the "nature" approach at Danone group level, with a view to possibly adopting SBTN on a larger scale.

Carrefour, which has a very wide geographical and raw materials scope, has chosen to work initially in France and for its own brands, with a view to later rolling out to other geographical scopes and possibly other brands.

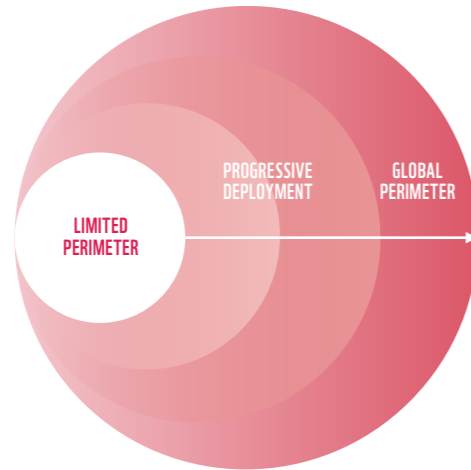


Figure 6: Gradual deployment of the SBTN methodology

B. STEP 1A: CARRYING OUT AN ENVIRONMENTAL MATERIALITY ANALYSIS

The aim of the first SBTN assessment step is to understand and identify the company's main impacts on nature.

Step 1A consists of **materiality analysis**, using SBTN's *Materiality Screening Tool* (MST). After indicating the company's line(s) of business, the tool is used to identify which of the five pressures on biodiversity are likely to be material for the selected line(s) of business, both within the scope of direct operations and upstream. This is a generic analysis step, producing the same results for all companies in the same line of business.

The data used are based on the ENCORE database (Exploring Natural Capital Opportunities, Risks and Exposure), which is a free online tool that helps organisations explore their exposure to nature-related risks and understand their dependencies and impacts on nature.

At this stage, the company should also pay particular attention to **priority raw materials** (HICL: *High Impact Commodity List*²) because of their high potential impact on nature (agricultural, forestry, fishing and mining raw materials, etc.).

FEEDBACK



With the materiality analysis, we were able to consolidate the steps already taken and identify new priority areas

With SBTN's materiality analysis, Carrefour was able to confirm the need to continue their efforts with regard to a number of commodities. These include the commodities most commonly used in its supplies, such as wood and paper, palm oil, Brazilian beef, soya and cocoa, which were already included in the Group's biodiversity policy.

However, with the materiality analysis, Carrefour was able to prioritise emerging issues, particularly with regard to the SBTN list of priority commodities, also called High Impact Commodities. This list includes commodities such as dairy products, meats other than beef (pork, poultry) and coffee.

In order to initiate the work on a manageable scope, Carrefour has chosen to carry out the SBTN pilot on the scale of Carrefour France - Own Brands, on 15 priority commodities.



Although step 1A is relatively quick to implement, it represents an important phase for teams taking up the subject internally to get acquainted with the nature issue and with the SBTN approach.

² <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2024/07/High-Impact-Commodity-List-v1-1.xlsx>

LESSON LEARNED: SBTN step 1A provides an overall view of each company's potential impacts on nature and a first view on which nature impacts need to be prioritised

With the materiality analysis and the list of priority commodities for the sectors in which companies operate, they have access to a global overview of their main impacts on nature.

These results will have to be refined by integrating quantitative data specific to the company on the location of their business, as well as their specific pressures. However, this first stage gives an overall view of the different issues, and helps internal teams get familiar with the subject of nature and the SBTN approach.

Example of SBTN materiality analysis using the ENCORE tool, for the Operations of a company in the agri-food sector:

ISIC Group	Land / Sea use change			Resource exploitation		Climate change	Pollution				Invasives / other	
	Land use and Land use change	Freshwater ecosystem use	Marine ecosystem use	Water use	Other resource use	GHG emissions	Non-GHG air pollutants	Water pollutants	Soil pollutants	Solid waste	Disturbance	Biological alterations
Manufacture dairy products					Out of scope		Out of scope				Out of scope	Out of scope
Manufacture of other food products					Out of scope		Out of scope				Out of scope	Out of scope

Example of SBTN materiality analysis using the ENCORE tool, for the upstream part of the value chain of a company in the agri-food sector:

ISIC Group	Land / Sea use change			Resource exploitation		Climate change	Pollution				Invasives / other	
	Land use and Land use change	Freshwater ecosystem use	Marine ecosystem use	Water use	Other resource use	GHG emissions	Non-GHG air pollutants	Water pollutants	Soil pollutants	Solid waste	Disturbance	Biological alterations
Manufacture dairy products					Out of scope		Out of scope				Out of scope	Out of scope
Manufacture of other food products					Out of scope		Out of scope				Out of scope	Out of scope

“

 The materiality analysis carried out by Bel as part of SBTN confirmed that our dairy business had the biggest impact, and that the projects already implemented by our teams, particularly on regenerative agriculture and agroforestry, were addressing the priority issues (cf. [Bel's Global Sustainable Upstream Dairy Charter](#)). With this step, we were also able to identify the impacts of other businesses, particularly those linked to our fruit sourcing, and it gave us the opportunity to compare our impacts with those of companies in the same sector.
Bel”

LESSON LEARNED: SBTN's materiality analysis, more advanced than the one used in a CSR strategy

The materiality analysis carried out as part of a CSR strategy is often based on the opinions of interviewed experts and stakeholders. A number of issues, particularly those relating to biodiversity, may therefore not be mentioned simply because the right experts are not consulted, meaning they would not be identified by the company. This is the case, for example, with the issue of land use, which is still rarely addressed in the context of companies' "biodiversity" or "nature" policies.

The materiality analysis developed in the SBTN approach ensures that no issues are overlooked, as they are pre-listed using the ENCORE database, which lists the impacts and dependencies on nature for each economic activity, and harmonises approaches between companies.

Here, impact materiality (socio-environmental) predominates over financial materiality.

C. STEP 1B: MEASURING AND ANALYSING THE COMPANY'S ENVIRONMENTAL IMPACTS AND THE STATE OF NATURE

In order to take nature into account in its business, a company needs to know:

- What impact does it have on nature (through the 5 pressures responsible for the erosion of biodiversity)?
- Where does it have impact on nature, i.e. where does its business take place and its value chain reach?
- What is the state of nature in the places that the company and its value chain operates?


All of these elements need to be measured or assessed as part of step 1B, and require a certain amount of data to be mobilised.

UNDERSTANDING PRESSURES

To understand a company's impact on biodiversity, it is necessary to define the scope of the issue in question first.

On the one hand, we have **the company's direct operations**, i.e. all operations managed by the company (factories, production sites, offices, shops, etc.). The aim here is to find out what pressures are associated with the business at each of these sites, and where they are located. For these sites, the company must use direct data to fill in the following indicators: land surface area, water consumption, effluent discharges, quantities of energy consumed, etc.

On the other hand, we have **the upstream** and all the supplies of a company. The starting point when analysing upstream pressures is to list all purchases carried out by the company (goods and services), paying specific attention to the raw materials considered to have the greatest impact on nature and listed by SBTN in the *High Impact Commodity List* (HICL).

 **LESSON LEARNED: Companies already have a great deal of data to help them understand the pressures they exert on nature**

Companies often have a large amount of data at their disposal which can be used for the SBTN analysis.

For instance, when they have carried out carbon audits, a number of data items can be reused: data relating to raw material purchases, data from life cycle analyses, etc.

Other sources also provide valuable information: reports drawn up for other standards or disclosure frameworks (voluntary: progress report, CDP, Ecovadis; regulatory: French DPEF, CSRD), certifications already used by the company (FSC, RSPO, RTRS, MSC, RAF, BCI), etc.

For direct operations, companies can rely on environmental management system data, on environmental inventory data or, naturally, on consumption data (water, energy...) etc.

 **FEEDBACK**



The challenges of data

In the SBTN piloting process H&M Group could draw on years of traceability work and supplier engagement data for water use and water pollution variables to assess and prioritize tier 1, 2 and 3 suppliers.

For raw material production processes (agriculture and forestry) H&M Group could draw on existing data that is available (at National or sub-national level) from previous collaborations and partnerships with partners such as Textile Exchange, Lenzing, BKB (an agricultural intermediary) and the Better Cotton initiative. These platforms allowed for the attribution of raw material volumes to geographical areas.

However, the SBTN guidelines highlights the need for companies to obtain and track data that in many instances has not been done at a location specific level all the way up the value chain to raw material production. Industry research on pressure factors such as that done by the International Cotton Advisory Committee was critical to obtain such data at a country and crop specific level. Life cycle assessments previously conducted on GHG

and water footprints were informative but did not provide the sourcing location specific information required for SBTN target setting. The most challenging information to obtain are factors that attribute land use and land use change to specific commodities used in the textile sector.

Going through this process delivered two primary learnings in the case of H&M Group. Firstly, it is clearly necessary to continue improving traceability and to understand a broader range of pressures related to biodiversity loss. Secondly, some data are sometimes sufficient for a company to do a reasonable prioritization and to understand where it needs to focus specific engagement efforts. A balance needs to be struck between the cost of improving baseline assessments and starting to take action as soon as a clear picture emerges.



H&M Group's work on piloting the SBTN guidance provides further examples of the importance of engaging the supply chain and collective action with other companies in the same industry. To obtain data on the origin countries for wood used to produce man-made cellulosic fibre, H&M Group had to engage the fibre producers for their sourcing information. Similarly, a more detailed assessment of the wool production footprint and impact was possible because one key supplier - a large agricultural company - could provide the latest production data for the South African context. Kering and H&M Group sustainability experts exchanged ideas and possible data sources to openly discuss the best possible data available for pressure factors and impacts of materials.

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The impacts on biodiversity associated with these purchases will be measured using direct pressure data, if the company has them, or by modelling them (via Life Cycle Analyses (LCA) or by using databases such as Exiobase).

LESSON LEARNED: To calculate the impact of upstream supply chains, most companies use modelled pressure data

When it comes to pressures upstream in value chains, the company rarely has direct data. First-tier suppliers sometimes have part of these data, which may be available and already collected through reporting frameworks such as CDP and Ecovadis. But when it comes to long or complex supply chains, pressure data modelling processes are often required (LCA results or Exiobase).

Another significant item in the SBTN analysis is determining the geographical areas in which the company's upstream activities take place, particularly the production areas of key raw materials. To achieve this, either the company has carried out traceability work and knows the precise origin of its supplies, or it relies on modelling. An example of modelling that can be done is if sourcing of a commodity is only known to country level. In such a case a company can investigate where in the country the production of that commodity occurs and assume that their own sourcing will reflect the national production distribution of that commodity.

The more direct the data, the stronger and the most relevant the SBTN analysis will be for setting targets.

FEEDBACK



Understanding the impact of our business with dedicated analyses

For several years now, Hermès has been refining its knowledge of its value chains through sector mapping and specific life cycle analyses for a number of strategic commodities. For more than 38 strategic commodities, the Group has carried out a detailed analysis of their geographical origins (at least at country level), at each stage in their supply chains (breeding, slaughtering, tanning, finishing, sewing), combined with an analysis of the main risks. LCAs were also carried out on many materials, like for example 40 different types of leather and 14 different fashion materials, in order to measure the main impacts linked to their life cycle more precisely.

All these data could be used as input data for SBTN step 1B to analyse the impact of the company's business on nature.

THE IMPORTANCE OF TRACEABILITY IN THE SBTN APPROACH

Companies are often limited when it comes to knowing exactly where their purchases come from. This is because their knowledge of their supply chains is often limited to identifying tier 1 or in some cases tier 2 suppliers, and rarely goes as far as identifying the plots of land where the raw materials were produced or extracted.

However, **SBTN requires knowledge of traceability up to at least sub-national level for at least 67%** (in terms of expenditure or volume) of raw materials, as well as for other goods and services used by the company. If direct traceability is not possible to such a disaggregated level national traceability complimented by sub-national modelled locations is also considered acceptable.

This knowledge is **required for a better understanding of the state of nature** in the areas where the company sources its supplies. The aim is to help transform supply chains, by acting in the most relevant areas and on the most relevant pressures to ensure that ecosystems function properly.

To address this issue, companies need to develop traceability.

While this approach may seem demanding, it is fundamental in order to fully understand and adequately manage nature-related issues. This is also why all credible frameworks relating to nature, whether they are voluntary or binding, are also moving towards a gradual increase in traceability requirements. Furthermore, improved traceability means that a company is better able to understand and manage risks to its own supply chain.

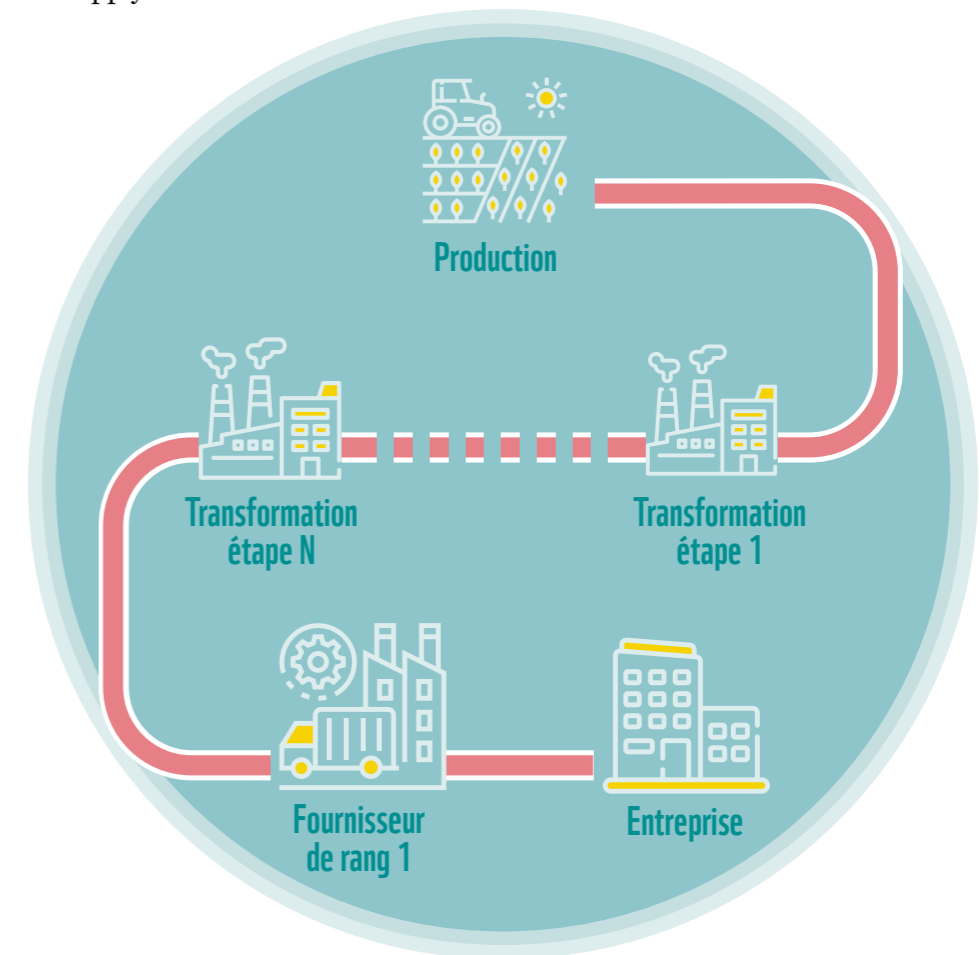


Figure 7: The importance of traceability all along the value chain



LESSON LEARNED: The implementation of the first step of SBTN highlights the importance of developing detailed traceability for one's sensitive raw materials

A number of regulatory texts have recently emphasised the responsibility of companies throughout their supply chains. The EUDR requires companies importing raw materials with a high risk of deforestation (beef (and leather), cocoa, coffee, palm oil, soy, timber (and derivatives), rubber) to be able to justify their origin and prove that they do not come from deforested land. Similarly, the CSDDD establishes corporate responsibility for any human rights or environmental breaches all along its value chains.

As part of the SBTN approach, the first target is to reach the threshold of 67% of purchasing volumes associated with a sufficient level of traceability (sub-national level), which will then be followed by specific targets depending on the local context.

If the company does not reach 67%, it must put in place an action plan to improve its level of traceability, while initiating action and setting targets on the scope for which it has a sufficient level of knowledge.



FEEDBACK



Improving traceability

One of the key steps to understanding the environmental challenges (particularly biodiversity) of strategic commodities is to improve traceability.

In order to respond to the first SBTN steps, Carrefour carried out a major sector analysis for 13 commodities, in order to improve information granularity, **throughout its value chain**: beef, coffee, palm oil, soya, dairy products, maize, rice, cotton, pork, nuts, poultry, eggs and cocoa.

For Carrefour, this was done by identifying key stakeholders and understanding the issues at stake for each of the players holding information on these 13 commodities. Several departments were involved: purchasing, quality, industry, production, etc. A great deal of collaboration and mobilisation was required to bring them together towards the same goal: understanding the environmental impact of the targeted commodity and acting together to avoid or reduce this impact on a local scale.

The quality of the data collected varied according to the level of maturity of the supply chains, and it was sometimes necessary to mobilise secondary, and therefore less precise data (for example: generic public database, extrapolation of information via LCA tools, etc.) while defining a **strategy to improve** this knowledge in order for Carrefour to subsequently refine its results.

UNDERSTANDING INTERACTIONS WITH NATURE

One of the specific features of the SBTN method is that it places **great emphasis on data relating to the state of nature**. The method is based on cross-referencing company-specific pressure data (e.g. water consumption in a factory) with data describing the state of nature, according to a number of analytical grids (e.g. the level of water stress in the drainage basin on which the factory is located, or the level of biodiversity in the same drainage basin).

Indeed, the impact of a company's business in a given area will not be the same if nature is in a good overall ecological status or if its status is already degraded.

Applying the SBTN methodology in step 1B therefore requires the company's pressure data to be cross-referenced with two other types of indicators specific to the state of nature:

- **Indicators of the state of nature linked to each of the pressures considered:** they summarise the state of nature features that are most directly linked to each pressure assessed. For example: water consumption is cross-referenced with a level of water stress; nitrogen (N) and phosphorus (P) pollution linked to the production of an agricultural raw material is cross-referenced with N and P concentrations in the soil, etc.;
- **Indicators of the state of nature linked to two dimensions:** ecosystems and species (the genetic dimension is so far out of scope). They highlight the risks posed by the company's business to local biodiversity, based on a number of criteria: the risk of extinction of species present, the loss of ecosystem integrity, the loss of ecosystem connectivity, reduced human quality of life due to the loss of ecosystem services, the degradation or destruction of areas important for biodiversity (High Conservation Value, etc.).



SBTN provides a list of a number of tools which can be used to assess the state of nature (SBTN Toolbox)³.

Since there is no single indicator or tool providing a consolidated view of these various factors, it is advisable to use several tools in parallel (STAR, BRF, BII, EII, etc.). Using a wide range of indicators and tools provides a representative picture of the state of nature at a given location.

Etat de la nature associé à une pression							Etat de la biodiversité en général
Pressions	Changement d'usage des milieux terrestres, aquatiques et marins		Sur-exploitation des ressources	Changement climatique	Pollution		
	Occupation des sols (ha)	Transformation des sols (ha)	Consommation d'eau (m³)	Emissions de GES (tCO _{2eq})	Pollution de l'air (tonnes N _{eq})	Ecotoxicité aquatique (t1,4-DB _{eq})	
Activités directes	Indicateur MSA (Mean Species Abundance) - GLOBIO4	Indicateur Global Forest Watch	Indicateur SBTN SoN for Water Availability	NA*	NA*	Indicateur SBTN SoN for Water Pollution	Echelle spécifique Indicateur STAR-t
Achats					Indicateur Air Quality de Verisk		

*NA = Not assessed : pression non couverte par la présente version de la méthodologie SBTn. Le Changement Climatique est évalué au moyen de la méthodologie SBTi.

Figure 8: Examples of indicators of the state of nature linked to the various pressures (Source: I Care by Bearing Point, for the Hermès study, Steps 1&2)



³ <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/SBTN-Step-1-Toolbox-v1-2023.xlsx>

The WWF Risk Filter Suite can be used to extract values to assess the state of nature. A comprehensive description of the process is available at [WWF Biodiversity Risk Filter - Data & Methods](#) and the indicators can be cross-mapped to the SBTN State of Nature indicators as follows in the Figure below:

SBTN Pressure-sensitive State of Nature Indicators (SoNp)					SBTN Biodiversity State of Nature Indicators (SONb) (Maximum value across all the indicators below used)							
Terrestrial ecosystem land use change (Max value of two indicators)		Terrestrial ecosystem land use	Water use	Fresh-water pollution	Soil pollution	Species endemism		Ecosystem integrity/condition and Ecosystem Connectivity		Delineated Areas of Importance for Biodiversity		
WWF BRF S.1 Land, Freshwater and Sea Use Change	WWF BRF 5.2 Tree Cover Loss	WWF BRF 2.4 Ecosystem Condition	SBTN Water Scarcity Tool	SBTN Water Quality Tool	WWF BRF 5.4 Pollution	WWF BRF 6.5 Range Rarity	WWF WRF B 10_1 Freshwater endemism	WWF BRF 6.4 Ecosystem Condition	WWF WRF B10_2 Freshwater Biodiversity Richness	WWF BRF 6.1 Protected/Conserved Areas	WWF BRF 6.2 Key Biodiversity Areas	WWF BRF 6.3 Other Important Delineated Areas

Figure 9: The WWF Risk Filter Suite can be used to inform on various State of Nature data in SBTN

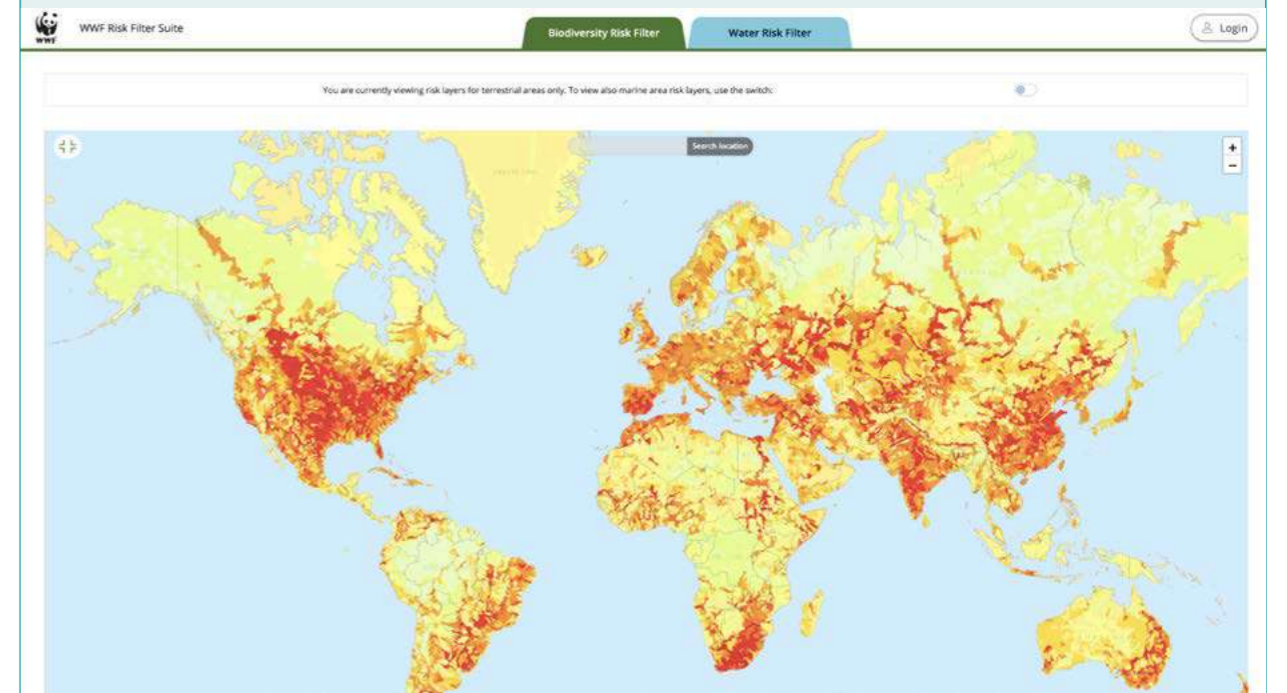


Figure 10: Map representing ecosystems conditions (Source: WWF Biodiversity Risk Filter)

FEEDBACK

Although the method is the same for all companies, the tools used may differ to suit individual context

SBTN provides lists of tools which can be used by companies to implement the various steps (assessment of pressures and the state of nature).

Each company (and the consultants who work with them) may select the most relevant tools which are best suited to their context.

It may also be useful to use several indicators in parallel, particularly on the subject of the state of nature in relation to biodiversity, since no single tool offers a complete view of the subject. By combining the BII indicator with the STAR indicator, for example, it is possible to have both a vision in terms of species and in terms of ecosystem integrity, in order to be more precise about local issues. When using multiple indicators it is recommended to prioritise based on the maximum value indicator rather than averaging out across indicators.



CROSS-ANALYSING PRESSURE AND STATE OF NATURE DATA

By cross-referencing pressure data and data on the state of nature, the sites on which to act and set targets as a priority in step 3 can be classified, for each site of operation or supply area.

For instance, a company buying maize from Brittany will need to collect data on the water consumption required to grow the volumes of maize purchased in Brittany. At the same time, data on the state of nature in relation to this pressure (water consumption) shall be collected, i.e. data relating to water stress in the specific drainage basin in Brittany.

This shall be repeated for all raw materials (or direct operations sites) / areas at stake for the company. It is used by the company to identify a **list of sites** where nature is **at stake**, in connection with its business, and where action should be taken as a priority.

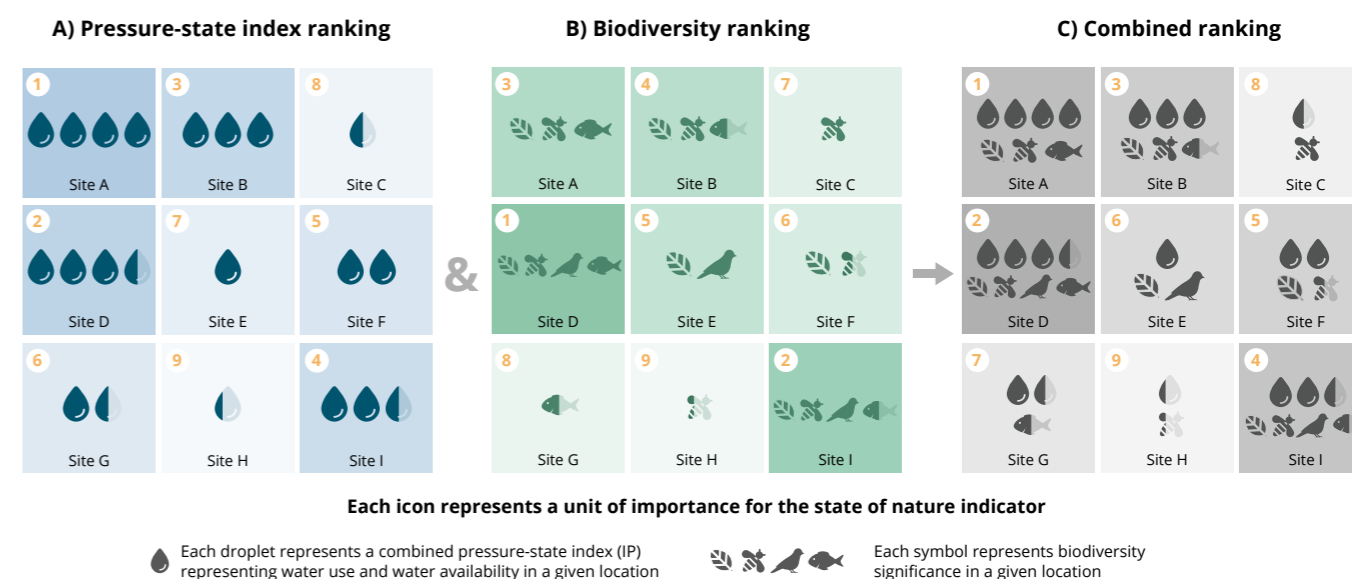


Figure 10: Combination of classification by pressure and by state of nature (Source: Science-Based Targets Network)

LESSON LEARNED: Pressure analysis has helped us have a better understanding of the company's key raw materials

Pilot companies carried out extensive work in terms of traceability and collection of pressure and state of nature data, helping them to have a greater understanding of the issues associated with the company's key raw materials.

Although companies are usually aware of the raw materials with the greatest impact on nature, it is not uncommon for them to have no precise knowledge of the specific impacts caused by the supplies associated with their value chain. The work carried out by companies as part of the SBTN approach has helped them increase their knowledge of supply areas (more precisely than on the scale of a country), of nature's specific features in these areas and the impact of their business on these areas.



By studying fresh milk production upstream, Bel was able to refine its knowledge of the impact of animal feed

Thanks to its proximity and long-term commitment to farmers, and with the involvement of various Bel teams (particularly the purchasing teams), Bel was able to mobilise a large amount of data for the materiality analysis. However, the task was harder for some parts of the value chain, particularly dairy cow feed, which involves several tiers of suppliers.

Bel chose to develop a model to refine its understanding of animal feed in its upstream dairy business, in order to determine the impacts associated with that part of the value chain, which are substantial.

To do this, we had to get information on:

- The types of feed used for dairy cows, and the quantity of feed consumed to produce one litre of milk;
- Different diets depending on the country of production. Bel relied in particular on the expertise of its “Sustainable Upstream Dairy” teams and on tools developed by the company;

This study filled in the gap in data relating to the upstream dairy sector and helped determine the impacts of fresh milk production, as well as the state of nature in animal feed production areas.



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D. STEP 2: INTERPRETING AND PRIORITISING

In step 2, the company is going to interpret the results of step 1 (the list of priority sites) in order to validate the lists of raw materials and sites on which to take priority action, in particular by setting targets (step 3).

The list of priority businesses/sites **needs to be contextualised with regard to other company issues** including its capacity for action, power of influence, risks, the business development vision for a site or commodity, the reality of the relationship with a supplier, etc.

Although this does not directly influence environmental prioritisation, it can help make strategic short-term trade-offs and identify areas where the company can address and tackle several issues at the same time (water and deforestation, for example).



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3. SETTING SCIENCE-BASED TARGETS

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3. SETTING SCIENCE-BASED TARGETS

The third step in the SBTN methodology is setting science-based targets that are relevant to nature and the company. This is at the **heart of SBTN methodology and what makes it specific**, compared with other frameworks which are less prescriptive in terms of target setting.

The aim is to achieve good ecological status of ecosystems. The starting point is therefore the identification of ecological thresholds, based on best available science, which will allow to define the effort required by the company. SBTN has developed methodologies for freshwater⁴ and terrestrial ecosystems⁵ and the company can progress in each of these areas simultaneously. A methodology for oceans is forthcoming.

Some targets refer to the company's overall scope (reducing the land footprint, for example), but most of them are local and specific to a geography (a landscape or a drainage basin) or to a given commodity (for the no conversion of natural ecosystems target).

A. FRESHWATER: A GLOBAL CHALLENGE WITH REQUIRING LOCAL ACTION

WHY?

The issue of freshwater resources – being consumption or pollution – is one that companies are usually already facing.

Freshwater can be a source of risk. Many companies have already had their water use restricted (by prefectural order, for example) or have experienced supply disruptions for agricultural raw materials whose yields have fallen drastically following drought or flooding episodes.



FEEDBACK



The relevance of addressing the freshwater issue for companies

During the summer of 2022, the Alsace region experienced a series of heat waves with prolonged periods of water stress, impacting the quality of soya beans produced in the region.

This event, which took place in one of Alpro's key supply regions, recalled how urgent and important it was to protect this drainage basin.

⁴ <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2024/07/Technical-Guidance-2024-Step3-Freshwater-v1-1.pdf>

⁵ <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2024/07/Technical-Guidance-2024-Step3-Land-v1.pdf>



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From a quality point of view, the issue of freshwater also involves pollution phenomena. Currently the SBTN methodology focusses on nitrogen and phosphorus pollution. As part of the **pilots carried out**, companies worked on identifying **targets for a direct operations site** (e.g. a factory) **and for an upstream site** (most often associated with an agricultural commodity, therefore requiring supplier commitment). During the pilots, they were able to test the SBTN Water approach on a limited scope, before potentially deploying the methodology more widely on a larger number of sites and commodities.

Nitrogen and phosphorus are naturally occurring in water and soil, and are essential for the growth of all living organisms, including aquatic life. However, in large concentrations, these nutrients result in fast and excessive growth of organisms such as algae and cyanobacteria. As these organisms eventually die, the decomposition of their biomass depletes the oxygen dissolved in water systems, leading to the asphyxiation of other aquatic life.

FOR WHOM?

Companies for which freshwater emerges as a material issue at the end of steps 1 and 2.



WHAT IS A SCIENCE-BASED TARGET FOR FRESHWATER ECOSYSTEMS?

Once the priority drainage basins have been identified in step 2, the company must define **an ecological threshold to be achieved for a given pressure**, i.e. the maximum pressure authorised to maintain a desired natural state (in terms of both quantity and quality).

In terms of **water quantity**, the target to be defined is the maximum volume of water that can be abstracted from the drainage basin for all local human activities, in order to maintain an acceptable level of water to ensure the proper functioning of the local ecosystem.

Figure 11 illustrates the process used to define the water consumption reduction target:

- identifying the minimum flow rate of water that must be guaranteed to allow the local ecosystem to function properly: this is the ecological threshold, or ecological flow;
- identifying current consumption levels in relation to this water resource (reference values);
- determining the reduction of water consumption target, by comparing current consumption with the ecological threshold.

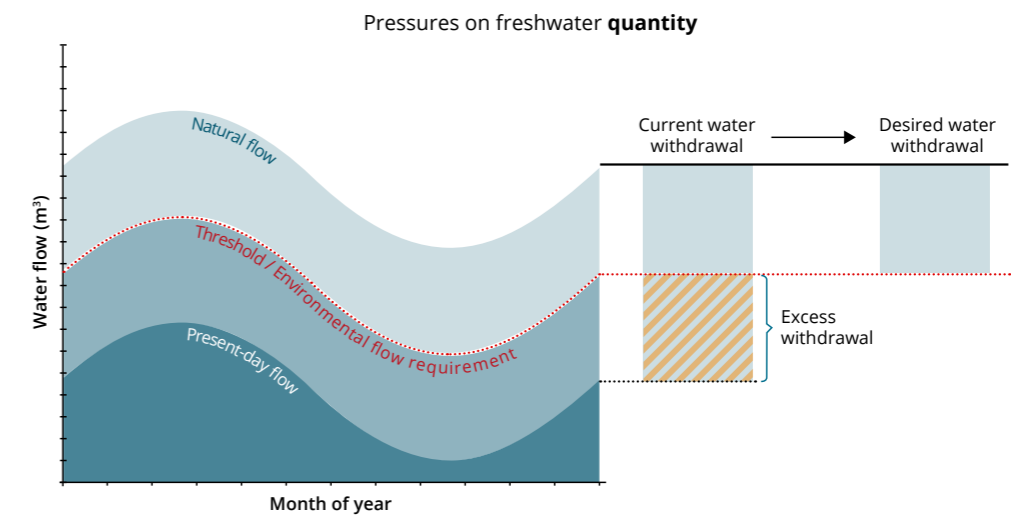


Figure 11: Illustration of the process used to define the water consumption reduction target (Source: Science Based Target Network)

At present, the method used by SBTN to allocate efforts to reduce water consumption places the same percentage of reduction on each of the region's stakeholders, irrespective of the weight of each user's business. However, collective action on the scale of drainage basins could eventually lead to a more relevant allocation of efforts.

For **water quality**, the good ecological status target defines the maximum quantity of pollutants that the company or its suppliers can discharge while maintaining acceptable freshwater quality for other users, aquatic species and the functioning of ecosystems.

For each drainage basin, companies should, as far as possible, **identify local ecological thresholds, defined using scientific data and methods, and then validated by local stakeholders.**



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FEEDBACK



Setting targets for water

1. Drainage basin selection

Alpro chose to work in a key supply and production drainage basin. This basin was one of the 10 most strategic drainage basins for Alpro because of:

- The water quantity and quality issues identified in step 1B;
- The strategic importance of this basin in terms of supply volumes;
- Well-established relationships with soya suppliers and local pilot projects for regenerative farming practices;
- Suppliers' commitment, in line with the Danone Impact Journey and the ambition to include 30% of key ingredients in transition to regenerative agriculture by 2030.

2. Stakeholder consultation and identification of local water data

A number of interviews were conducted with local stakeholders with knowledge of the drainage basin: Water Agency, local NGOs, Chamber of Agriculture, soya suppliers, etc.

The aim was to determine the existence (or absence) of local data and models relating to water resources in the drainage basin.

3. Collection of scientific data to determine the threshold for good ecological status

Stakeholders helped identify a range of documents and data, some of which were scientifically established, which helped determine the following elements:

- Water management plans currently focus on water quality factors. There are no data on water availability or abstraction;
- In January 2024, however, the Water Agencies published a water abstraction reduction target (-10% consumption for industrials, 0% for farmers), underlining the new need to reduce pressure on water quantities;
- Water quality monitoring campaigns in various parts of the basin show that the quality thresholds recommended by the *EU Water Framework Directive* have been exceeded, particularly for phosphorus and herbicides, although not for nitrogen;
- An agreement, set up by the Water Agency and already committing a number of Alpro soya suppliers, was signed, incorporating a current target of a 50% reduction in pesticides by 2027.

4. Calculating reference values

Alpro had to calculate the pressures exerted by the company's business on local water resources (both in terms of quantity and quality, for its direct operations and for soya bean cultivation): current factory consumption, volumes of water used for soya bean cultivation, concentrations of nitrogen and phosphorus discharged by the factory, use of inputs for soya bean cultivation, etc.

5. Determining the SBTN target

In the absence of local models to determine science-based targets for the drainage basin, Alpro chose to base itself on the Water Agency-defined target, which reflects the national Water Plan target, i.e. a reduction of around 10% in water consumption by industries and a stabilisation of agricultural consumption by 2030.

After co-building and stakeholder consultation, Alpro identified a target of a 10% reduction in water consumption for the industrial site and for its suppliers

Alpro also chose to work on the target of a 50% reduction in herbicides, and to integrate this into its regenerative agriculture strategy for Alsatian soya.

NB : These two targets are 'directions' identified through the SBTN pilot, but are not official targets yet. Alpro's approach to soya was a test and learn approach, aimed at understanding how to determine scientific targets to enrich the regenerative agriculture criteria of a local supply strategy, with targets specific to the local context.

6. Involvement of the various players

In order to ensure the commitment of the various stakeholders in the area (particularly the people in charge of the factory and the farmers), Alpro conducted a series of workshops aimed at sharing the understanding and ambition of the SBTN approach. These workshops focused on :

1. Assessing risks
2. Determining the desired results
3. Identifying the practices that will help achieve these targets (optimising industrial infrastructures, agro-ecology, regenerative agriculture, etc.) and singling out the support required to take action.
4. Monitoring and assessing progress

FEEDBACK



Understanding the water footprint of a production site

To define its water quality and quantity targets in one of its French factories, Bel used a local approach based on Water Agency-defined values. In terms of water quality, the target focused solely on phosphorus, as the most limiting nutrient in terms of the good status of ecosystems, since nitrogen was not identified as being relevant in the drainage basin.

The local reference was calculated based on data from river stations communicated by each European Union member state as part of the Water Framework Directive (WFD).

The target to be achieved was taken from the Decree of 27 July 2018 relating to assessment methods and criteria for the ecological status, chemical status and surface water potential, i.e. 0.05 mg/L, required to achieve «good» to «very good» status.



LESSON LEARNED: Local data that is not always science-based to set a freshwater target

When there are no local models to link the desired state of nature with the pressure exerted by the company, it is possible to identify targets that are not scientific, but rather administrative. They are set so as to respond to a given issue, without necessarily being based on a good ecological status ambition for a specific drainage basin (it may be a political target, such as the 50% reduction in the use of crop protection products).

Although these are not science-based targets as defined by SBTN, they can offer a temporary alternative for getting the ecosystem moving on water issues, based on existing targets.

Companies can also contribute to identifying science-based targets, by collaborating with scientists for instance.



While waiting for a local model to be defined for the Alsace drainage basin on the subject of water quantity, we chose, in consultation with local stakeholders, to use the Water Agency-validated target, which is more ambitious than the overall SBTN model, thus engaging our suppliers and upstream farmers on water consumption reduction practices for soya bean cultivation, setting in motion a dynamic on the subject of water sobriety.

Alpro



LESSON LEARNED: Linking the definition of freshwater targets to company-developed agro-ecology programmes

Freshwater issues in upstream agriculture are directly linked to irrigation practices (water consumption) and the use of inputs, whether fertilisers or pesticides, or other pollutants (which will be included in the future version of the freshwater methodology), as well as agricultural soil management practices, with these practices helping to improve the water cycle, whether through reduced tillage, the development of plant cover and ecological infrastructures, which increase soil infiltrability, thus improving rainfall efficiency, or the choice and number of crops (low-input or nitrogen-fixing crops).



FEEDBACK



Connecting SBTN to regenerative agriculture programmes

Alpro contributes to the Danone Impact Journey ambition to have 30% of key ingredients in transition to regenerative agriculture by 2030.

The SAI (Sustainable Agriculture Initiative) framework is used as a reference to define what «regenerative agriculture» is and how projects will be monitored.

	OUTCOMES	KPIs	SAI <small>in progress</small>
WATER <small>Mandatory if water risk</small>	• Optimise water holding capacity	• m ³ water holding capacity / m ³ soil	
	• Optimise water use	• Blue water withdrawal per unit of prod	
SOIL	• Maximise Soil Organic Carbon content	• Soil Organic Carbon (SOC) par area	
	• Maximise soil cover	• % of soil cover, spatial and temporal	
	• Maximise fertilizer use efficiency	• Nitrogen application per unit of prod	
	• Maximise pesticide use efficiency	• EiQ per unit of production	
BIODIVERSITY	• Protect on-farm habitat	• % natural or restored habitat	
	• Enhance crop (and livestock) diversity	• Total # of species cultivated	
CLIMATE	• Minimise greenhouse gas emissions	• MTCO _{2eq} per unit of production	
	• Minimise air pollution	• Particle concentration (µg per m ³ of air)	

Figure 12: Alpro targets and indicators as part of their regenerative agriculture programme (Source : [Regen Ag Framework \(saiplatform.org\)](https://saiplatform.org))

The SAI framework includes actions linked to water use, with the “blue water withdrawal per unit of production” indicator and the “water retention capacity in m³ / m³ of soil” indicator.

As part of SBTN’s pilot project on soya in Alsace, it was decided to link SBTN’s ‘water quantity’ targets to the deployment programme of the regenerative agriculture approach on soya in Alsace, so that the key water indicators within the SAI framework (blue water withdrawal per unit of production) could be linked to a performance target identified through the SBTN approach (10% reduction in water consumption by 2030).

Similarly, for water quality, actions to optimise the use of pesticides associated with the SAI indicator “EiQ per unit of production” could be linked to the performance target of “50% reduction in the use of herbicides”, identified through the SBTN approach.

Thus SBTN targets strengthen and lend credibility to regenerative agriculture approaches, linking them with science-based targets specific to the local context, which can make these programmes easier to accept and conversely, make ambitious SBTN targets easier to accept.



Setting water targets in the supply chain

H&M Group has been working on more responsible water use in their supply chain and engaging other companies on this issue for more than a decade. Efforts have focused on countries with intense textile production ([China](#), Bangladesh, and Turkey), identifying models to improve water management in industrial parks and addressing water risks in supplier factories. Another focus is also put on collective action and influencing governance on the ground. The company has been a leader in setting contextual freshwater targets based on the risks faced by particular water basins in their manufacturing supply chain. H&M Group both uses and has contributed in the development of the [WWF Water Risk Filter](#).

The SBTN freshwater guidelines represent the next step in water target setting for tier 1 and 2 textile manufacturing locations based on local scientific models for water quantity and quality (with a first focus on nitrogen and phosphorus pollution). The SBTN prioritization approach demonstrated to H&M Group that more action is needed on freshwater impacts related to agricultural production of raw materials.

Piloting the SBTN guidelines have led to the insight that in some instances there simply is not sufficient local scientific data available to quickly set targets.

To overcome the lack of local data in many river basins, companies and other stakeholders will have to work together to support local freshwater assessments before we can set credible targets in these critical places.

H&M Group’s experience in testing the guidelines also highlighted that for the textile industry, the current narrow focus on nitrogen and phosphorus as the main indicators of freshwater quality is limiting. N&P are clearly important and need to be addressed, but while further guidance is being developed (new release expected in 2025) companies need to continue to act on other pollutants and indicators of river system health.



On the freshwater side, past relationships with factories meant that data on tier 1 and 2 water use and pollution was already available. The application of the SBTN methodology reinforced the importance of the Meghna River in Bangladesh for the H&M Group supply chain. Here, existing relationships with factories and other stakeholders such as the [Alliance for Water Stewardship](#) were critical for outreach in Step 3 to test the freshwater targets. In this instance it emerged clearly that the basin-specific local models are not ready and that H&M Group can only set science based targets for this basin if there is a multi-stakeholder collaborative effort to generate the necessary data.

H&M Group



WHO SHOULD BE INVOLVED?

Given that freshwater is a very local issue, discussions should be held with local stakeholders to identify the various water needs within a drainage basin. A map of the key players can then be drawn up to have a greater understanding of who they are and how they interact, so as to mobilise them more effectively in the future.

Profiles of local external stakeholders	Name of the external local stakeholder
Cooperatives / Producer Associations	
Government agencies	<ul style="list-style-type: none"> Chamber of Agriculture
Government agencies - Water agencies	<ul style="list-style-type: none"> Water agency - Territorial Department Direction Régionale de l’Environnement, de l’Aménagement et du Logement (DREAL) - Bidepartmental unit SAGE (Water Development and Management Plan)
NGOs	<ul style="list-style-type: none"> WWF Pour une Agriculture Du Vivant (For a Living Agriculture)
Private entities	<ul style="list-style-type: none"> Interprofessional Grouping SAUR SYNDICAT MIXTE
Research structure	<ul style="list-style-type: none"> INRAE PIREN Institut de l’élevage (Livestock Farming Institute)

Figure 13: Stakeholder mapping produced by a number of companies as part of the consultation process with local water stakeholders

If we take France as an example, several types of stakeholders need to be mobilised in a drainage basin: the DREAL, the Water Agency, advising organisations for the SAGE (Water Development and Management Plan) and SDAGE (Master Plan for Water Development and Management), farmers or their representatives (chambers of agriculture, agricultural cooperatives), water-using industries, etc.

These various stakeholders will be **consulted** with a view to identifying whether there are, in the drainage basin, any pressure and state of nature indicators, threshold values representative of the desired state of nature, and local models showing resource evolution.

If all this data and information exists and has been scientifically determined, the company can use it to define its target. If this is not the case, the general model recommended by SBTN should be used until a more accurate local model is available.

 **LESSON LEARNED: Consulting stakeholders to define science-based objectives requires time and education to the topic**

Most of the pilot companies are faced with the need to educate their stakeholders about SBTN. While the various stakeholders may be familiar with the SBTi approach, they are rarely familiar with the SBTN framework, which is more recent. A phase is required for them to get acquainted with the topic before we can obtain their commitment, and to access local data when they exist. This consultation step is essential in order to involve the various stakeholders, identify the issues and existing programmes, so as to co-build a target and make it easier to adopt the project and identify actions to achieve the target.

“



It was necessary to collaborate with industries, suppliers, local authorities and NGOs to identify the models best suited to the drainage basin. Discussions with the water agencies took time, but in the end we were able to identify relevant data. This consultation process was also useful to start engaging the stakeholders with whom we will need to discuss in order to find common solutions at regional level.

Bel

“



SBTN is strengthening an existing local commitment, since the Water Agency already had an agreement with committed suppliers. The support of a manufacturer was seen as an opportunity for the Water Agency to strengthen the commitment of farmers and cooperatives towards a common target.

Alpro

The SBTN approach requires companies to set targets for all their activities generating pressure on nature, including those further upstream in their value chain. Therefore, the company needs to **work closely with its suppliers, right up to the farmers who produce agricultural raw materials**, since they are the ones responsible for implementing the changes needed to achieve the targets.

The role of the company is to initiate, set the ambition and support the transition, by providing a number of resources (tools, technical support, involvement of partners, financial aid, etc.). It should encourage a co-building approach, particularly when it comes to identifying the solutions to implement to achieve the targets.

It is also likely that other manufacturers are present in the area covered by an SBTN target, or involved in the same sector, or in the crop rotation of the same farm. Involving them in a common approach could be interesting, so that the ambition defined by the scientific approach of the SBTN methodology can be achieved collectively, and to build a viable economic model for transition.

Joining forces with collective initiatives is one of the keys to success. If these multi-stakeholder initiatives do not exist yet, the company can choose to initiate the process itself, and involve other players (whether public or private) as the project develops. But it is recommended to reach out to organisations with the relevant local expertise to fulfil a coordination function for the development of new landscape initiatives.

B. TERRESTRIAL ECOSYSTEMS: GLOBAL CHALLENGES THAT REQUIRE COMPANIES TO QUESTION THEIR BUSINESS IN DEPTH

The SBTN methodology defines three main targets which must be met by companies in terms of terrestrial ecosystems:

1. no conversion of natural ecosystems,
2. reduction of the company's land footprint
3. undertaking of landscape initiatives.

The first two targets should be determined for the company's overall business, while the third should be defined for the priority landscapes in which it operates.

These three targets are complementary and can be linked to freshwater targets, through the landscape commitment, to maximise the impact of the actions carried out.

They meet IPBES findings, which have evidenced that land use change, which leads to the destruction of ecosystems, is the leading cause of biodiversity loss (IPBES, 2019).

The setting of science-based targets for terrestrial ecosystems applies to all companies which have shown, in steps 1 and 2, that they significantly contribute to the main terrestrial pressures on nature, as a result of their direct operations or supply chain.



1. NO CONVERSION OF NATURAL ECOSYSTEMS

CONTEXT

Ecosystems are essential to planetary and human health, as they provide numerous services in terms of supply (water, food, raw materials), regulation (water cycle, carbon cycle, etc.) and culture. They are also the habitat and source of food for numerous animal and plant species. They are refuges for these species and should be protected as such and in their own right.

Yet according to the Food and Agriculture Organization of the United Nations, humans have converted between one third and half of habitable land for agricultural and livestock production, compromising the ecosystem services on which we depend and leading to mass extinction (according to WWF's Living Planet Index, between 1970 and 2018, the average size of wild vertebrate populations declined by 69%⁶).

Deforestation and land degradation cost up to 6,300 billion dollars a year due to their impact on the productivity of forests and agriculture (Sutton et al., 2016)⁷.

The conversion and degradation of forest land have received particular attention through dedicated initiatives and private sector commitments to halt deforestation (the Accountability Framework initiative, the New York Declaration on Forests, CDP Forests, etc.).

On the other hand, non-forest natural ecosystems have received less attention, even though they are just as crucially important. They face conversion rates as high as or higher than those of forests (Sayre et al., 2020)⁸. Efforts to prevent forest conversion must therefore be extended to include the conversion of other natural ecosystems.

This objective echoes several targets set out in the Kunming-Montreal Global Biodiversity Framework, including Target 1 on Spatial Planning to reduce the loss of areas of high biodiversity value to “close to zero” by 2030.

WHY?

With this no conversion of natural ecosystems target, SBTN aims to halt the loss of biodiversity associated with the leading cause of biodiversity erosion, namely the destruction of ecosystems caused by land use change, particularly in the agricultural sector.

The setting of a no conversion target aims to **avoid the total loss of a natural ecosystem to another land use, as well as any profound change in the composition, structure and functioning of that ecosystem**. This is a broader issue than just forest ecosystems. All other natural terrestrial ecosystems are also included (grasslands, savannahs, etc.).

⁶ WWF, 2022. Living Planet Report: <https://www.wwf.fr/rapport-planete-vivante>

⁷ Sutton, P.C., S. Anderson, R. Costanza, and I. Kubiszewski. 2016. “The Ecological Economics of Land Degradation: Impacts on Ecosystem Service Values.” *Ecological Economics* 129: 182–192.

⁸ Sayre R., Karagulle D., Frye C., Boucher T. Wolff N.H., Breyer S., Wright D., Martin M., Butler K., Van Graafeiland K., Touval J., Sotomayor L., McGowan J., Game E.T., Possingham H., 2020. “An assessment of the representation of ecosystems in global protected areas using new maps of World Climate Regions and World Ecosystems.” *Global Ecology and Conservation*, Volume 21 <https://www.sciencedirect.com/science/article/pii/S2351989419307231>

These ecosystems were mapped using the Natural Lands Map tool developed by SBTN, which identifies the different types of natural ecosystems precisely, at a scale of 30 m x 30 m⁹.

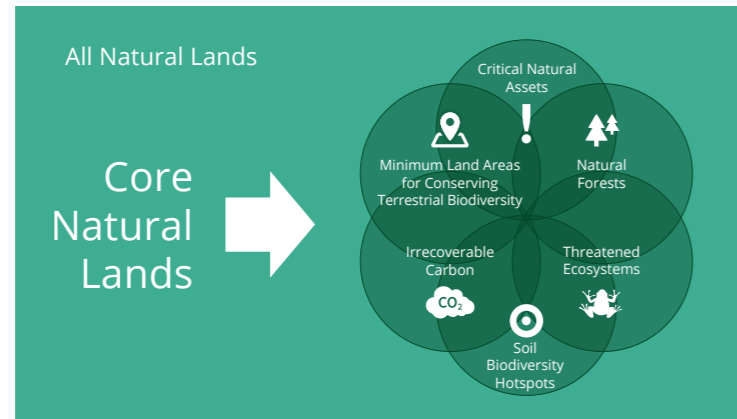


Figure 14: Specific features of a key natural ecosystem (Source: Science-Based Target Network)

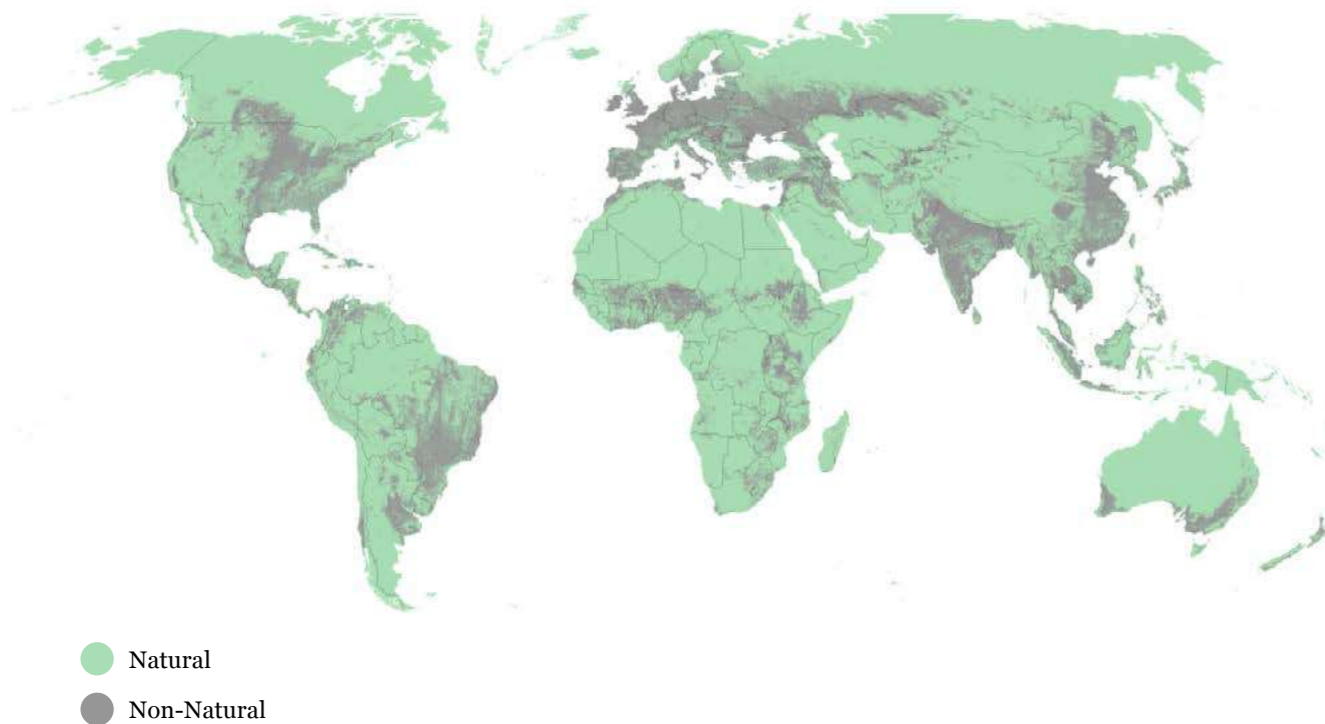


Figure 15: The SBTN map of natural ecosystems (Source: Science-Based Target Network)

⁹ <https://wri-datalab.earthengine.app/view/sbtn-natural-lands>

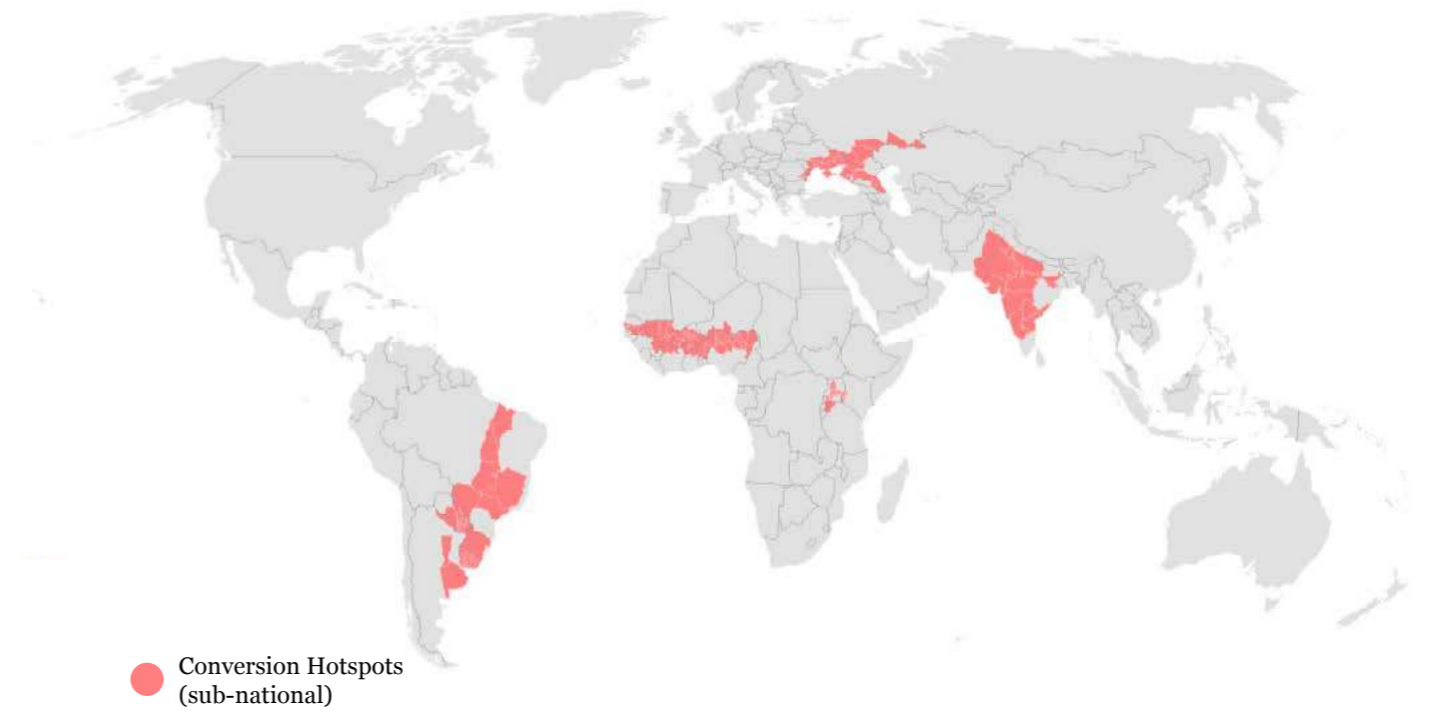


Figure 16: Map representing natural ecosystems conversion hotspots (Source: Science-Based Target Network)

FOR WHOM?

This applies to companies sourcing raw materials that often result in the conversion of natural ecosystems (as listed in Appendix 1A of the methodological guide to setting targets for terrestrial ecosystems and in the table below).

Soft commodities (with target dates aligned with EUDR and other standards)	Source
Cattle	Multiple sources
Cocoa	Multiple sources
Coffee	Hoang, 2021
Oil palm	Multiple sources
Rubber	Multiple sources
Soybeans	Multiple sources
Timber / wood fiber	Multiple sources
Avocados	Dryad, 2020
Banana	Meyfroidt, 2014, Jayathilake, 2021
Beans	Phalan, 2013
Buckwheat	Plowprint, 2022
Camelina	Plowprint, 2022
Canola	Plowprint, 2022
Cassava	Phalan, 2013, Jayathilake, 2021, Pendrill, 2022
Charcoal, commercial	Jayathilake, 2021
Coconut	Dryad, 2020, Jayathilake, 2021
Cotton	Dryad, 2020

Figure 17: Commodities with the highest risk of conversion of natural ecosystems (Source: Science-Based Target for Nature). Full list available in the appendix



LESSON LEARNED: No conversion of natural ecosystems is still a fairly new issue for companies beyond forests

Although most pilot companies have already committed to no deforestation for a number of raw materials, the no conversion of natural ecosystems is still a relatively new issue, even though the *Accountability Framework initiative* has been working on the topic for several years and has been encouraging companies to commit to the no conversion of natural ecosystems (forests, grasslands, steppes, savannahs, etc.).

Therefore, companies committing to no conversion will need to take into account a wider scope than for the deforestation free work they may have done in the past.

Furthermore, most of the companies defining zero deforestation policies deal with a limited number of raw materials, those identified as being most at risk of affecting forests: palm oil, soybeans, cattle timber...

For the pilot, SBTN had listed 13 raw materials and 2 activities (animal feed and biofuels) most at risk of leading to the conversion of natural ecosystems at global level, as well as 36 raw materials and 3 activities at regional level. The scope to be taken into account is therefore potentially wider than that covered by existing corporate deforestation policies.

In the new version of the methodology published in July 2024, 7 raw materials (the same as those covered by the EUDR) require a commitment to 0 conversion by 2025. 32 raw materials and 5 activities require commitments by 2027 or 2030, depending on their position in the supply chain.

This no conversion target means that companies have to cover raw materials which may represent relatively small volumes, requiring more work in terms of data collection and analysis, action plan development, and supplier commitment.

Even if this may seem a substantial effort, it emerged from the pilots that a number of analyses of conversion risk on low-volume raw materials (not covered by zero-deforestation commitments and programmes) had shown there was sometimes a real risk of conversion. It is therefore often relevant to define an action plan.

- **Cross-reference this conversion map with a map of natural ecosystems** to identify areas requiring immediate action to prevent their conversion;

- **Set targets** specific to geography and raw materials.

In some cases, it is not possible to access the exact GPS locations of production/extraction sites. In that case the company has other options:

- Providing SBTN with proof of the **use of certifications guaranteeing the no conversion** of ecosystems (which include chain of custody certification at a Segregation or Identity preserved level). At this stage, SBTN has not issued any list specifying what certifications are deemed sufficiently credible and strong yet. This will be included in future versions of the methodological guide, in the interim companies should critically evaluate the certifications they make use of to determine if no-conversion is addressed sufficiently; using certifications is only one additional tool companies may use, which should not replace the work to be done on traceability.

- **Guaranteeing the commodity originates from an area with a very low risk of conversion** of natural ecosystems (on a jurisdictional or landscape scale).

Whenever possible, land use change should be assessed at production unit level (farms, plantations, mines, etc.). When this is not possible, it should be assessed on the scale of a wider supply area (supply basin, production landscape or sub-national jurisdiction).

Companies should support actors in their transition within at risk areas

In order to deliver on no-conversion targets companies may be tempted to completely stop sourcing from countries or landscapes that have been identified to be particularly at risk of land-conversion due to particular commodities. However, this is likely to mean that companies with strong sustainability criteria are just replaced by less scrupulous competitors. It is highly recommended that companies that identify particular landscape-commodity combinations that represent a risk of land conversion should continue to engage and work with producers in those areas. By providing a market for sustainable, zero conversion commodities in these markets companies can contribute to reducing the drivers for land conversion in these areas much more than if they withdrew completely.



WHAT IS A SCIENCE-BASED TARGET FOR THE NO CONVERSION OF NATURAL ECOSYSTEMS ISSUE?

In order to define the target, one needs to:

- **Know the geographical locations** of the production/extraction units of high-impact raw materials (with their GPS coordinates), by deploying a major traceability project;
- **Estimate the areas of conversion** of natural ecosystems that have occurred after the reference year (2020), via satellite verification;

LESSON LEARNED: Traceability, the key to defining and monitoring the no conversion of natural ecosystems issue

At present, the lack of traceability is a major obstacle for companies committing to a no conversion target in the short term.

It is often difficult for companies to go back beyond the tier 2 supplier and find out about their suppliers' practices, even more so in the case of highly processed or embedded raw materials.

However, traceability is the main proof requested by SBTN to guarantee the no conversion of natural ecosystems, in particular through verification by satellite imagery of the areas where commodities are produced or extracted. However, many companies have opted for certification.

The acceptance of certifications schemes by SBTN as part of the no conversion commitment will depend on the ability of these schemes to demonstrate undisputable evidence of no-deforestation and no conversion, via a chain of control system. To date, SBTN is not able to evaluate or approve such schemes. As a consequence, companies who may want to use certifications as proof of no conversion will have to demonstrate to SBTN that the certifications they use guaranty no conversion.

WWF encourages companies to set ambitious targets without waiting for perfect traceability to be achieved, based on the best currently available data and using certifications. Companies should then work on improving traceability in parallel.

WHO SHOULD BE INVOLVED?

To meet the no conversion of natural ecosystems target, the companies' purchasing teams will be the first that need to be mobilised. This is to identify suppliers of raw materials with a high risk.

Following this, companies will need to mobilise their suppliers in order to understand how well they know their supply chain, how far they can go in terms of traceability and guaranty of no-conversion.

The bodies managing the certification systems may also be contacted to find out more about authorised and prohibited practices when it comes to conversion of natural ecosystems. WWF also encourages companies to engage with the certification standards to improve their criteria and validation of on-the ground impact.

2. REDUCING THE LAND FOOTPRINT

CONTEXT

In its special report on the impacts of global warming of 1.5°C (2018), the IPCC recommends, as part of the SSP1 scenario in line with sustainable development targets, a reduction in agricultural production areas of 500 million hectares by 2050 (i.e. 10.6% of cultivated land). By freeing up this land, it can be regenerated and restored, thereby helping to re-establish the ecological functions essential to its good ecological status. Despite this reduction in agricultural land, there is plenty of evidence to show that it will be possible to provide affordable and nutritious food to a growing world population^{10 11 12 13 14 15}.

This land footprint reduction target echoes a number of targets set out in the Kunming-Montreal Global Biodiversity Framework, including Target 2, which aims to ensure that by 2030 at least 30% of degraded areas are effectively restored, Target 3 which aims to protect at least 30% of land and sea by 2030, and Target 10 on Sustainable management of all areas.

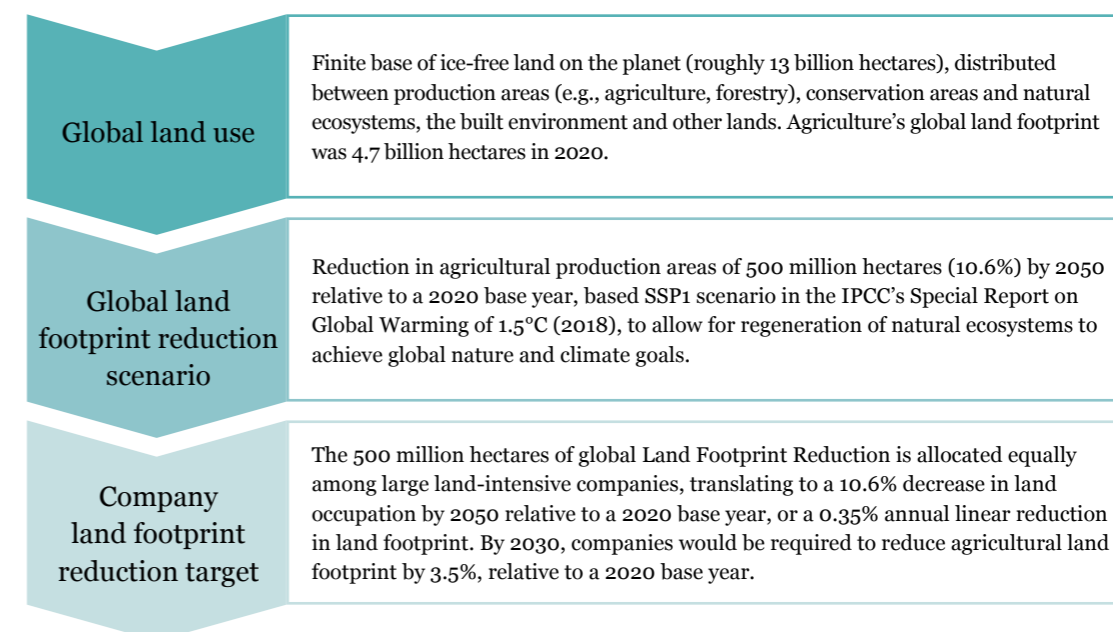


Figure 18: Illustration of the SBTN method for absolute land footprint reduction (Source: Science-Based Target Network)

¹⁰ Griscom, B.W., et al, 2017. Natural climate solutions. Earth, atmospheric and planetary sciences, 144 (44), 11645-11650 : <https://www.pnas.org/doi/abs/10.1073/pnas.1710465114>

¹¹ IPCC, 2019. Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments. <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/>

¹² World Resources Institute, 2018. Creating a sustainable food future. A menu of solutions to feed nearly 10 billion people by 2050. https://research.wri.org/sites/default/files/2019-07/creating-sustainable-food-future_2_5.pdf

¹³ The Food and Land Use Coalition, 2019. Growing Better: Ten critical transitions to transform food and land use. <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/FOLU-GrowingBetter-GlobalReport.pdf>

¹⁴ Roe, S., et al., 2021. Land-based measures to mitigate climate change: Potential and feasibility by country. Global Change Biology, Volume 27, Issue 23, p.6025-6058 : <https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.15873>

¹⁵ Leclère, D., et al, 2020. Bending the curve of terrestrial biodiversity needs an integrated strategy. Nature, 585, 551-556 : <https://www.nature.com/articles/s41586-020-2705-y>

WHY?

Economic activities require large areas to produce their goods and services, particularly those based on agricultural or forestry supply chains. These should contribute to the land use reduction target of around 10% by 2050.

FOR WHOM?

This issue **mainly applies to agricultural companies and companies with an agricultural component upstream.**

At present, the SBTN methodology focuses solely on agricultural land (cropland and pasture), since this is the world's main land use and there is solid evidence to demonstrate the scale of the reductions required in agriculture. The adaptability of the methodology to other land-using sectors will be explored by SBTN in a future version.

In order to make sure that smaller companies producing products with a lower land footprint intensity are able to continue their business, the SBTN methodology only requires this target to be set for companies exceeding a certain number of full-time equivalent (FTE) employees or hectares of land footprint.



LESSON LEARNED: Reducing land footprint is a new issue for companies, and one that raises strategic questions about business models

The SBTN methodology is one of the few approaches to recognise the need to reduce land use, particularly agricultural land, so that humanity can continue to live on a planet with favourable living conditions.

The questions it raises are therefore largely new to companies. They lead to strategic discussions on the major business changes to be made, like for example :

- the product mix evolution : reorienting towards products or ingredients with a smaller land footprint, and a smaller environmental footprint in general, particularly plant-based products rather than animal products
- review of sourcing strategies, to integrate criteria on agro-ecological practices
- strategic discussions on the compatibility between growth trajectories and the reduction of companies' ecological footprint, particularly in terms of land use as well as waste reduction and circularity.

WHAT IS A SCIENCE-BASED TARGET FOR THE LAND FOOTPRINT REDUCTION ISSUE?

In order to define the target, a company needs to:

- **Determine its current land footprint** in terms of agricultural land (cultivated land and grassland), using mainly modelled data (based on quantities purchased, supply areas and typical yields in these areas/raw materials);

- **Determine its reduction approach:** absolute reduction approach (companies reducing their absolute land footprint at a linear rate of 0.35% per year compared with the reference year) or intensity reduction approach (companies reducing their footprint per kg of agricultural materials produced at a linear rate of 1% per year compared with the reference year);
- **Set a land footprint reduction target** for 2030.

The choice between the two approaches (in absolute or in intensity) depends on the company's specific features. Although absolute reductions are easier to calculate and communicate, they can be less fair for small producers. In contrast, the intensity reduction approach can be more complex to calculate.

Please refer to Annex 2 in Science Based Targets Network (2024) [Step 3 « Measure, Set, & Disclose: Land » \(Version 1.0\)](#) for a more comprehensive discussion of this issue.

When setting this target, it must be borne in mind that it **must not encourage unsustainable agricultural intensification** (over-use of fertilisers or chemical inputs that degrade water resources, deplete soils, emit greenhouse gases and compromise productivity and long-term resilience), nor encourage companies to simply shift their supplies from low-yield areas to higher-yield areas (with the social impacts that this entails).

Indeed, global models indicate that a reduction in the land footprint of agricultural land on a global scale is possible by combining **several levers**:

- Changes in diets (healthier, more sustainable and less land-intensive, in particular by reducing the proportion of animal products),
- Productivity gains where there are yield gaps, by implementing agroecological practices (and not by moving towards industrial production)
- A reduction in food loss and waste,
- A more circular use of natural resources.

These levers must therefore be implemented to reduce the pressure on nature and guarantee food security.

WHAT DOES THIS MEAN FOR COMPANIES?

Reducing one's land footprint can have a number of major implications for companies:

- **Rethink the products marketed and ingredients used:**

One way of reducing a company's overall land footprint is to take into account the footprint of the various ingredients used or products manufactured, and to reorientate its offer towards ingredients/products with a smaller footprint. Some types of agricultural production require more land than others. This is particularly true of livestock production, which requires large areas of land, especially for growing the cereals used to feed herds.

For example, a retailer may choose to reduce its meat product offering in favour of a plant-based offering, thereby significantly reducing its land footprint. Similarly, for crops, some have a much smaller land footprint than others and should be favoured in recipes.



FEEDBACK

**Confirming the relevance of priority topics
The example of Bel: Shifting the supply mix towards
a balanced dairy/non-dairy portfolio**

Supporting the ecological transition of the agricultural model towards regenerative farming practices, and encouraging a diet with more fruit and plant-based foods, are two of the main levers for reducing Bel's environmental footprint, both in terms of carbon emissions and biodiversity. This is why Bel has been committed to upstream agriculture for many years (cf. The Upstream Dairy Charter co-signed with the WWF in 2018) and aims to balance its product portfolio between dairy and non-dairy products over time. Fruit products and plant-based products have a smaller land and carbon footprint.

The Group has been working towards this for several years, with the acquisition of MOM in 2016, which specialises in fruit compotes, followed by All In Foods in 2020, a start-up developing a wide range of plant-based alternatives to cheese (plant-based slices, plant-based spreads, etc.). Nurishh®, the Group's first 100% plant-based brand, was launched in 2021 and positions Bel as a key plant-based player. The Group is also expanding its offer through its core brands (Boursin, Babybel and La Vache qui Rit) with new plant-based alternatives launched in 2022 and 2023.

Bel is therefore helping to engage and guide consumers in the dietary transition by offering alternative products under well-known brands that appeal to a wide audience.

The SBTN approach has confirmed the relevance of this farm-to-plate strategy, which encourages the implementation of regenerative farming practices and the rebalancing of the product portfolio.

Initial results have shown the group is moving in the right direction. However, there are still some significant methodological issues, such as the fact that the SBTN model does not take into account or value regenerative agricultural practices, even though they provide genuine ecosystem benefits. After such positive feedback, the Group is awaiting new updated versions of the methodology.



Figure 20: Illustration of one of Bel's plant-based products (Source: Bel)

Type of crops	Average land footprint (sqm/kg)
Soya, conventional, Austria	3,34
Oats, conventional, France	3,05
Coconut, conventional, Thailand	1,5
Cashew nuts, conventional, Vietnam	8,06
Rice, conventional, Myanmar	2,63
Rice, conventional, Cambodia	1,04
Milk (average), France	43,2*
Milk, extensive, France	79,2*
Milk, cull cows, France	16*

Figure 19: Table of average land footprints for a number of crops (Source: FAOSTAT, 2020 data / * FAOSTAT, Agreste and Réseaux d'élevage INOSYS, treated by I-Care)

Questioning the development trajectories of the company's business:

Calculating the land footprint and the trajectory to follow by 2030, or 2050, requires working on scenarios/trajectories combining the forecast evolution in the company's business (projected business) and offer evolution (product mix). These scenarios often highlight the fact that an increase in production volumes in a «business as usual» model is not compatible with a land footprint reduction as recommended by IPCC scientists. Substantial changes are required, in terms of product offerings, types of ingredients, farming practices, and also in terms of product volume growth trajectories.

Supporting agroecological and organic farming models:

One of the risks when defining the land footprint reduction target is encouraging unsustainable agricultural intensification, in order to produce more on the same surface area. However, taking into account the company's other material issues (SBTN target on water, SBTN target on landscape approaches) requires studying all components of nature and supporting practices that are favourable to the preservation of biodiversity.



Regenerative and Recycled materials and the SBTN land footprint reduction

All materials have an impact on climate, nature and people throughout their lifecycle – from production, through the use stage and to the end of life. To reduce impacts on climate and nature, H&M Group aims that 100% of the materials it uses should be either recycled or sustainably sourced by 2030. This includes targets for 30% recycled materials by 2025 and an ambition to reach 50% recycled materials by 2030 while also scaling up regeneratively produced virgin materials.

For the land footprint target, H&M Group is working in different directions:

- Sustainable sourcing and moving towards regenerative agriculture practices helps to reduce the impact on the land that will still be used to produce virgin raw materials for H&M Group’s products.
- Increased use of recycled materials reduces the total amount of land required *per product*
- Further steps in business efficiency such as ensuring improved alignment of production and demand and thereby contributing to reducing overall resource use.

The company is also conducting further work to capture and understand how increase of circular business models can contribute to the SBTN targets.

The H&M Group experience shows that, for the land footprint reduction target, SBTN recognizes the positive impact of using more recycled materials. However further development of the SBTN methodology would be useful to incentivize more regeneratively produced commodities with a lower impact on land. This would help not only consider surfaces used, but also practices and the state of biodiversity on land.

WHO SHOULD BE INVOLVED?

To meet this land footprint reduction target, the main teams to mobilise will be the company’s internal teams. This target leads to strategic reflections resulting in decisions that will have to be taken at the highest level in the company.

That is why a narrative based on a set of scenarios combining various approaches (modification of products and ingredients, implementation of agroecological practices and integration into the business strategy) will need to be built with several teams, including CSR, Purchasing, Marketing, etc.

3. LANDSCAPE APPROACH PROJECTS

CONTEXT

The continued degradation of ecosystems has been highlighted by the IPBES. This, among other things, has already led to reduced agricultural productivity over 23% of the earth’s surface, and harvests are likely to fall by between 235 and 577 billion dollars every year due to the disappearance of pollinators.

However, according to the IPBES, we can preserve, restore and use nature sustainably, while achieving other societal targets on a global scale by making urgent and concerted efforts to bring about far-reaching changes.

The urgent need to tackle the collapse of biodiversity and land degradation means that we need to develop collective action at landscape level (whether this is an ecological or administrative area).

WHY?

According to the *Accountability Framework Initiative (AFi)*, the causes of the conversion of natural ecosystems and human rights violations often lie outside the activities or influence of a single company. As a result, implementing effective and sustainable solutions often requires companies to work beyond the boundaries of their own operations or supplies. It involves working with governments, local communities and other companies operating in the same area. Collaboration can take place in the landscapes or jurisdictions where the companies operate and source their supplies.

The aim here, among other things, is to develop regeneration and restoration actions to restore the good ecological status of land surfaces, in line with the company’s business, and in different geographies:

- Areas identified as priorities in the SBTN analysis in steps 1 and 2, based on land use or pollution issues;
- Areas associated with conversion-risk raw materials;
- Areas that have been freed up thanks to the land footprint reduction target.

Therefore, this target complements the two previous SBTN targets (no conversion and land footprint reduction), and can be connected to freshwater targets (for example by developing a landscape initiative in a priority drainage basin, in conjunction with water management improvement targets), as well as climate targets (FLAG in particular).

By committing on the scale of a landscape, companies can take **action in collaboration with local stakeholders** to regenerate exploited land, restore degraded ecosystems and transform the way they operate or source in these landscapes. Landscape and jurisdictional approaches help companies manage the risks and impacts of their production that are beyond their control. These local initiatives bring stakeholders together to work towards common environmental, social and economic targets in a specific region (AFi).

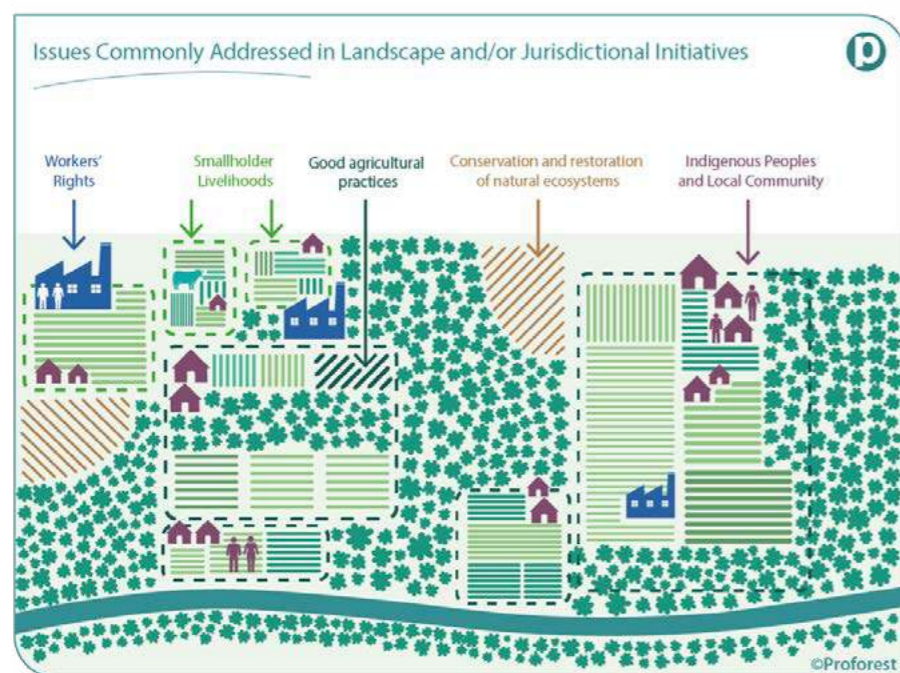


Figure 21: Issues commonly addressed in landscape initiatives (Source: Proforest)

Companies' commitment on the scale of a landscape **will focus on landscapes linked to their direct operations or supply chains**, by building on existing landscape initiatives or developing new ones.

By getting involved on this scale, **companies and other stakeholders can implement a variety of actions** to achieve environmental and social results (protection of a number of ecosystems and species, reforestation, transformation of agricultural practices, pressure reduction, improvement of living conditions and population employment, etc.).

The following guidelines defined by SBTN will evolve in order to have a more precise definition of the criteria for a strong landscape approach and the types of involvement expected from companies.

FOR WHOM?

This issue must be taken into account by all companies with a significant impact on terrestrial ecosystems. The landscape initiative target requires a commitment to a landscape initiative covering 10% of the land area over which the company has an impact (based on the results of step 2) or two landscape initiatives, regardless of size, in materially relevant landscapes.

Companies already involved in landscape approach projects must demonstrate the materiality and quality of the initiatives they have committed to. In addition to the submission of an existing project to SBTN, companies will need to really speed up their ambition regarding their involvement in the landscape initiative.

WHAT IS A SCIENCE-BASED TARGET FOR THE LANDSCAPE INITIATIVE?

Landscape approach projects must meet the following requirements:

- Resolve critical sustainability issues in the landscape;
- Have impact beyond individual supply chains;
- Include support for multi-stakeholder landscape coordination processes;
- Be integrated into collective action plans, ensuring complementarity with other businesses and interventions in the landscape;
- Contribute to wider change, helping to create the right conditions for achieving agreed landscape targets.

With these projects, companies must be able to **commit to a substantial improvement** in ecological and social conditions on the scale of a landscape (reducing pressures, restoring or regenerating nature, transforming socio-economic systems to fight the factors causing degradation and loss of nature, etc.).

To define landscape approach projects, companies must:

- **Define the targets to be addressed:** companies required to define a freshwater or climate target can include these issues in their landscape initiatives (if the landscape in question is relevant to the company's priority issues);
- **Select an existing landscape project** or one that could be developed as such;
- **Define the baseline** ecological and social conditions for the project;
- **Design and develop the project**, specifying in particular: its scope, the ways in which local multi-stakeholder groups will be involved (in defining targets, implementing and monitoring), its targets, actions and the investments to be deployed, as well as the reporting procedures.

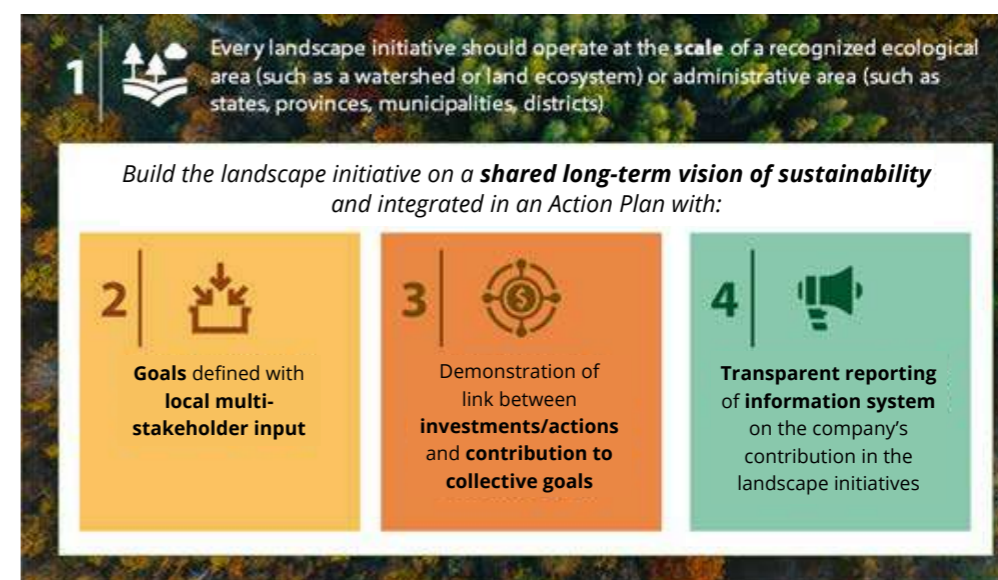


Figure 22: The main criteria for a landscape initiative (Source: SBTN, adapted from CDP)

FEEDBACK



Landscape initiative in Spain

Spain is Alpro’s main source of almonds. Danone, through its subsidiary Alpro, has decided to make a financial contribution to a landscaping project in the Altiplano, a major almond production area in Spain. The aim of the project is to support farmers in the implementation of agro-ecological practices to fight desertification in the region.

The development of regenerative agriculture should, among other things, reduce the risks of erosion, increase soil fertility and help restore the water cycle. On that last point, dedicated infrastructure will be put in place (terraces, infiltration ditches, etc.). Areas dedicated to biodiversity will also be created.

Thanks to Alpro’s involvement in the project, it will be possible to draw technical lessons from the regenerative farming practices put in place for almond production, with a view to rolling out these practices on a larger scale with other Alpro suppliers.

FEEDBACK



Involvement in two landscape initiatives in South Africa and India

SBTN step 2a requires companies to produce a first ranking of priority landscapes.

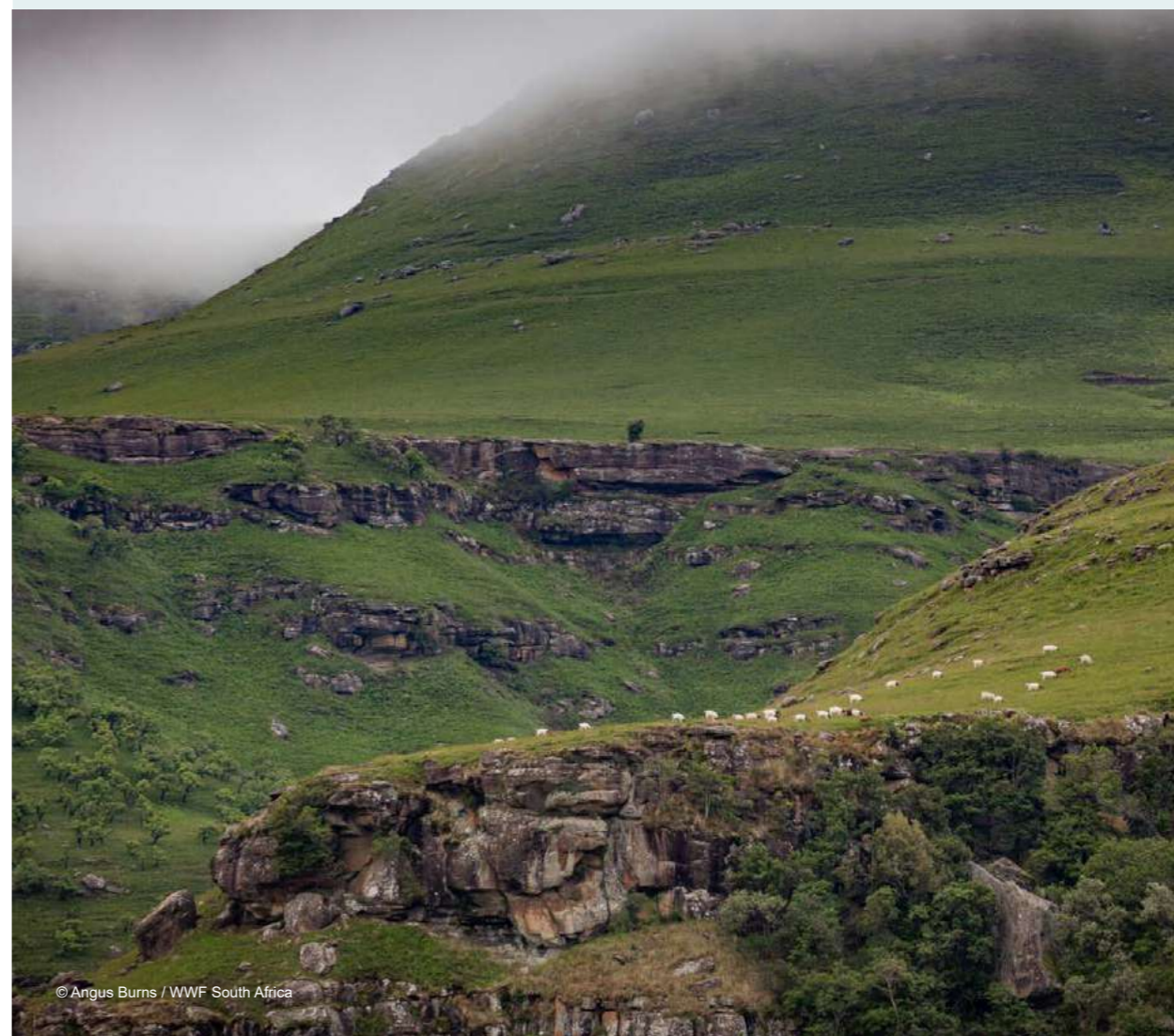
In the case of H&M Group there is a longstanding partnership with WWF which includes landscape level work. The two organizations had previously worked together to identify mutual priority landscapes in India and South Africa connected to H&M Group sourcing areas.

For this reason the H&M Group submission for land target 3 for the SBTN pilot consisted of a cotton related project in Central India, largely in Madhya Pradesh, and a wool related project in the Eastern Cape in South Africa. These were considered justified as some of the cotton from Madhya Pradesh (11th most important landscape based on SBTN assessment) is processed across the border in Maharashtra (top-most important landscape based on SBTN assessment). Wool sourced from the Eastern Cape in South Africa ranked 4th according to the H&M Group SBTN assessment.

The landscape initiative for wool production using regenerative agriculture in South Africa

In 2021, WWF and the H&M Group launched a partnership project for regenerative wool production in South Africa’s Drakensberg grasslands.

The partnership project contributes to an overall vision aimed at increasing regenerative wool production at landscape level in the South African grassland biome, so as to improve biodiversity and social development in this critical landscape. It aims to help secure the strategic water source area of the Drakensberg Eastern Cape, protect biodiversity corridors and contribute to the viability of the new Grasslands National Park in South Africa. H&M Group wants to work with commercial and community sheep farmers to achieve resource-efficient and climate-resilient farming, regenerative grazing and natural habitat restoration, for a more sustainable wool.



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Metric Category	Metric
Ecological	Coverage (in % out of total area in the landscape) of protected areas and other effective conservation measures (OECMs)
	Total area (ha) "under restoration" in the landscape, specifically invasive plant clearing
	Biodiversity risk assessment including dependencies and impacts using WWF's Biodiversity Risk Filter
	Soil carbon content
Social	Number of stakeholder groups involved
	Type of governance implemented in the landscape initiative
Well-being	Percentage (%) of population living below the local poverty line
	Number of farmers realizing additional benefits and more secure income streams

Figure 23: Key indicators for the landscape initiative in South Africa

For further information:

<https://www.wwf.se/english/hm-partnership-results/biodiversity/story-regenerative-wool-production-in-eastern-cape-drakensberg-grasslands/>

The landscape initiative for cotton production using regenerative agriculture in India

Satpuda Pench is a landscape in central India with some of the largest remaining tracts of forest in India. These forests, combined with low-intensity agricultural areas, form an interconnected landscape that allows animals to move between protected areas via



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wildlife corridors. This area is home to indigenous peoples and other local communities, as well as unique cultures, agriculture and livelihood systems. Cotton production is an important part of the economy, as India is one of the world's largest cotton producers and cotton is the main cash crop for most farmers.

To help protect this important area, the partnership project between WWF and H&M Group is helping small cotton farmers adopt regenerative farming practices to improve on-farm biodiversity, support healthy ecosystems and produce more sustainable cotton, reducing the impact of the clothes we wear. The project also aims to improve soil health, increase agricultural productivity, reduce input costs, improve farmers' livelihoods and help maintain vital wildlife corridors. The approach is called REEVA - regenerative, ecologically and economically viable agriculture.

For further information:

<https://www.wwf.se/english/hm-partnership-results/biodiversity/story-regenerative-agriculture-india/>

WHO SHOULD BE INVOLVED?

Landscape approach projects require the involvement of a large number of stakeholders.

First and foremost, **local communities** must imperatively be consulted, from the project's very beginning and all along its development and life. Their opinions and proposals for solutions to achieve good ecological status must absolutely be taken into account.

Then, **conservation experts** will be able to give an opinion on the current state of ecosystems in relation to the various issues being addressed as part of the project, the good status to be achieved, and the ecosystem trajectory as a result of the various actions suggested.

Then we have the **many potential contributors to the project** with whom to collaborate. They are the key players in the territory, either through their potential impact on ecosystems (economic business, subsistence, etc.), or through their interactions with ecosystems (as is the case for local communities).

Economic players include company **suppliers** and **farmers**. They will need to be made aware of the environmental issues specific to their territory, they can report on favourable actions that have already been put in place and will need to be supported to ensure practices are changed to achieve good ecological status for the ecosystems in question.

In addition, other clients of the suppliers will need to be mobilised to ensure their requests are consistent and costs can be shared, in order to maximise the impact of actions.

Finally, a number of players may have a good capacity for commitment or for structuring projects, including local authorities, local public and technical players (who can, among other things, support suppliers and farmers in changing their practices...).



SHARING ON SBTN PILOT IN THE CONSTRUCTION SECTOR

INTERVIEW WITH RENATA POLLINI

Head of Sustainable Construction & Nature for Holcim group

Can you say a few words about Holcim?

Holcim is a global leader in innovative and sustainable building solutions. Driven by our purpose to build progress for people and the planet, our 63,448 employees are on a mission to decarbonize building, while improving living standards for all. Holcim's approach to sustainability is oriented around four key pillars: climate, circularity, nature and people.

Why have you engaged in SBTN? What is your ambition for nature?

Holcim is continuously looking for robust frameworks that can contribute to its nature strategy and targets. The company was one of the few selected to pilot the TNFD back in 2022 and provide feedback on behalf of its sector. Furthermore, the climate team in Holcim has already been engaged in SBTi, with 1.5°C validated targets for scope 1, 2 and 3, so it was an obvious choice to follow the path of SBTN for nature.

Further, Holcim strongly believes in setting scientific, measurable targets for nature, as shown through our partnership with IUCN to build the Biodiversity Indicator and Reporting System (BIRS) which is embedded in our nature targets for 2030.

In 2021, Holcim was in the 1% of companies with science based and measurable biodiversity targets in the top 500 companies of the Forbes 2000 list. The opportunity to set more science-driven targets based on robust methodologies made engaging with SBTN an evident choice in our efforts to be sustainability leaders in the construction sector.

Was SBTN endorsed by top management?

Engaging with SBTN was endorsed by the CEO and CSO of Holcim and continues to be of high interest to Holcim top management.

What was the governance of the project?

For the pilot, two employees worked on SBTN full time in order to deliver targets for validation. Holcim did hire consultants though their support was focused on helping the team interpret SBTN rules and decide on factors such as which biodiversity indicators to focus on for the State of Nature evaluation. The nature team provided feedback on the SBTN pilot process to the Executive Committee and Board of Holcim when relevant.

What are the learning and challenges of deploying SBTN within the construction sector?

Most of the impacts in the mining industry are concentrated in the direct operation (DO) sites: Holcim has over 800 quarries and some of those cover large areas (around 300 ha on average). As an extractive business, the impacts on quarry lands is inevitable, however the data collection and control of the sites are well within Holcim's means.

On the contrary, Holcim's upstream supply chain (USC) is composed of many small and medium locally based companies, making data gathering a challenge that Holcim is working to improve.

With this situation, we are strict on setting ambitious targets around our DOs as a start, considering our most material impacts lie within our direct operations. And we have already launched a project to improve traceability of suppliers.

At the moment though, SBTN requires companies to set targets for both DOs and upstream suppliers, which was a limitation for us as part of the pilot phase. We hope SBTN will allow companies in our sector to decouple DOs and USCs, as in our case, DOs already account for a significant amount of impacts on nature and efforts to reduce these impacts can already take place with existing data.

What is your experience in deploying SBTN step 3 on water?

Holcim worked on setting a freshwater (FW) quantity target for direct operations and FW quantity & quality targets for upstream activities. Holcim was able to validate a FW quantity target for one DO site, following the pilot requirements.

For the quality target, currently SBTN methodology is focused on Nitrogen and Phosphorus¹⁵, which are two pollutants not relevant for our DO (N&P are mostly relevant for the agricultural sector). We are waiting for the update of the freshwater guidance, with the integration of other pollutants, like metals, total suspended solids and pH, to set targets on water quality for our direct operation sites.

During the pilot phase, we had two main challenges:

1. Stakeholder consultation for finding local hydrologic models and/or validating global models is time and resource consuming, and it proved not feasible to complete this exercise for multiple basins due to the lack of available models.
2. Target setting without primary data from our upstream activities (i.e. location and water pressures) has proven difficult. As we had gaps in the supplier data, we tested the SBTN methodology using modeled data at country level for target setting; however, the attempt to use country level data led to misidentification of a priority basin.

¹⁵ The next release of freshwater science-based targets will include additional pollutants

What is your experience in deploying SBTN step 3 on land?

Holcim worked on setting SBTN Land targets. However, Target 1 (No Conversion) is not manageable for Holcim as an extractive industry and Target 2 (land footprint) is not applicable according to SBTN criterias:

- No conversion target: per our Quarry and Biodiversity Directive, Holcim commits not to open new sites or explorations within protected areas declared under World Heritage, International Union for the Conservation of Nature I and III. As part of our Nature Policy, we also assess the biodiversity importance of each of our extraction sites and we apply the mitigation hierarchy in our activities. But as an extractive industry, we found that a global "no conversion target" was hardly applicable for our sector.
- Land footprint reduction: mining did not fall under the list of industries that should set a land footprint target.
- Holcim did submit two Landscape approaches to SBTN, but as it stands this target can only be validated if a company has also set a 'no conversion' target, so our landscape targets were not validated by SBTN.

Can you tell us more about the landscape projects submitted to SBTN?

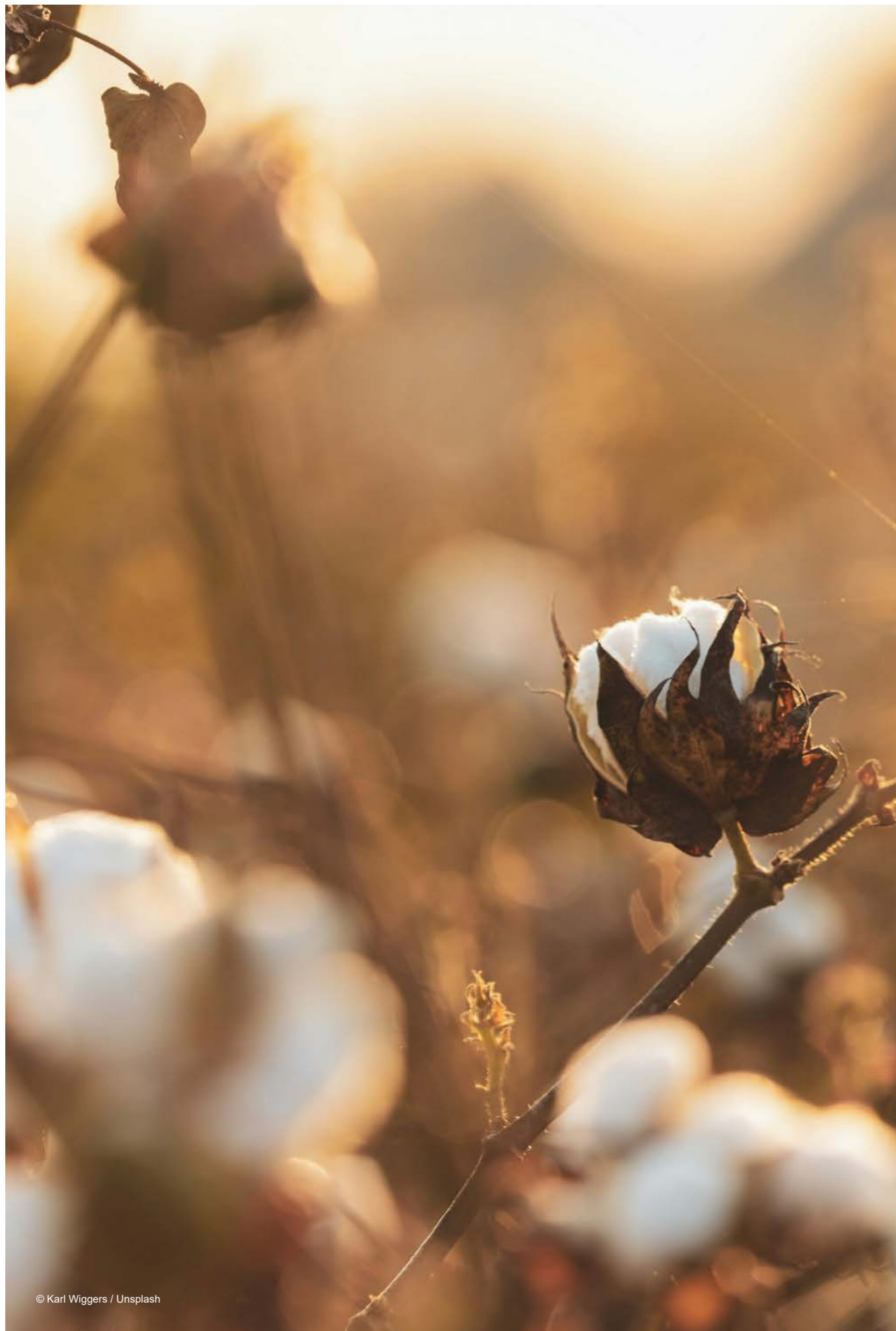
In Spain, the landscape project submitted consists of the restoration and rehabilitation of one of Holcim's DO sites (total surface of the property is 939 hectares) which has previously been disturbed by extractive operations.

In Canada, our landscape initiative aims to conduct rehabilitation, restoration, education work and to re-establish the natural landscape of the Oak Ridges Moraine. It targets biodiversity protection with a goal of supporting natural ecological principles and regeneration of woodland habitat, and corridor linkages between the forests. For both initiatives, Holcim has involved at least three local stakeholder groups both at local and at national levels.

What would be your feedback to other companies in your sector, and to SBTN?

Moving forward, Holcim expects that the publication of a sector guidance would greatly improve the process of SBTN and allow Holcim to set more industry-relevant targets to be validated. Further, Holcim hopes SBTN will allow a scaling effort from companies, setting targets first on its DOs as it continues its efforts to gather upstream data. Finally, Holcim also suggested that local hydrological models should be provided by SBTN and their academic partners to help with the feasibility of following SBTN. Ideally SBTN would select the most stressed and polluted basins in the world (first prioritization level) and provide a verified local model that companies can use.

Nevertheless, implementing SBTN allowed us to identify our priority sites and to pinpoint where we had gaps in our data in our own operations and our upstream. Further, the pilot provided the opportunity to learn from and alongside many companies across different sectors which is always an enriching experience. We are grateful to the piloting team at SBTN for all their hard work and look forward to upcoming guidance releases.



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SHARING: KERING'S PARTICIPATION IN THE SBTN PILOT PURSUING A NATURE-POSITIVE JOURNEY

Company Overview

Kering is a global Luxury group that manages the development of a collection of renowned Houses in Fashion, Leather Goods and Jewelry: Gucci, Saint Laurent, Bottega Veneta, Balenciaga, Alexander McQueen, Brioni, Boucheron, Pomellato, Dodo, Qeelin, Ginori 1735, as well as Kering Eyewear and Kering Beauté. By placing creativity at the heart of its strategy, Kering enables its Houses to set new limits in terms of their creative expression while crafting tomorrow's Luxury in a sustainable and responsible way.

Kering's Engagement with SBTN

Aligned with its long-time commitment to sustainability and environmental stewardship, Kering has been an active member of the Science-Based Targets Network (SBTN) Corporate Engagement Programme since its inception in 2020. It was important to participate to both provide input into and adopt the best-available guidance on what companies should do to stay within Planetary Boundaries and meet societal needs. Kering's involvement with SBTN also aligns seamlessly with its Biodiversity Strategy, which Kering launched in 2020 with the aim of achieving a net positive impact on biodiversity by 2025. Kering incorporated SBTN's initial recommendations into this strategy and actively participated in methodology development feedback rounds. Participating in SBTN's pilot to implement Version 1 of the guidance, released in 2023, was a natural progression in Kering's journey. This step allowed the Group to deepen its engagement with SBTN, adopt the methods fully, and support the development of SBTN's target validation process.

Leveraging Existing Tools and Data for Steps 1 (Assess) and 2 (Interpret & Prioritize)

Kering's Environmental Profit and Loss (EP&L) account has been instrumental in shaping work on the upstream portion of the Group's value chain related to raw material production and primary processing, as part of the Group's participation in the SBTN pilot in 2023 and 2024.

The annual EP&L measures environmental impacts across the Group's entire value chain, from raw materials to the consumer use and end-of-life phases of its House's products. By using life cycle assessment data applied to Kering's sourcing data, the EP&L quantifies impacts on land use, water use, water and air pollution, greenhouse gas emissions, and waste. This enables deeper visibility of material areas of environmental impact across its value chain and, consequently, impact management.

For the SBTN pilot, Kering leveraged the Group's EP&L results to assess upstream pressures on nature, contextualising them with pressure-sensitive state of nature data (e.g., "water scarcity" for the "water use" pressure) and state of biodiversity data to prioritise locations for target setting. This data foundation enabled Kering to align with SBTN's scientific criteria and effectively identify priority locations for reduction and conservation efforts.

State of nature data was used from publicly available sources including SBTN's unified water risk assessment tool as well as various indicators from WWF's Biodiversity Risk Filter.

Freshwater Targets

Through the pilot, Kering has set its first SBTN Freshwater targets, focusing initially on the Arno basin in Tuscany, where most of the Group's tanneries and supplier tanneries are located. These activities have significant potential to impact water withdrawals and quality. In alignment with SBTN's guidance, Kering's goal is to reduce water use in this top-priority basin by 21% by 2030, following the state of nature data (according to SBTN's Global Model) and going beyond the Group's own withdrawals. This target applies to both the Group's direct operations and its suppliers, enhancing Kering's collaborative efforts to reduce environmental impact.

Kering is preparing to set similar targets for other material basins, as part of its strengthened water strategy which will be unveiled in the coming months.

Setting freshwater quality targets has presented challenges due to SBTN's current emphasis on Nitrogen and Phosphorus pollution alone, coupled with limited hydro-basin level data on nutrient pollution. Kering is actively exploring ways to enhance data availability and is continuing its water pollution reduction efforts, which already include other relevant pollutants beyond nutrients, notably through the Group's collaboration with the Zero Discharge of Hazardous Chemicals initiative and adherence to its standards.

Land Targets

In the pilot, Kering has worked towards the adoption of all 3 categories of targets covered in SBTN's Land methods:

- **Deforestation and Conversion:** SBTN has offered an opportunity to strengthen Kering's existing Deforestation- and Conversion-Free commitments, which had been last updated in June 2023, notably to include more detailed land use change assessments associated with the Group's sourcing of leather.

- **Land Footprint Reduction:** To achieve the Group's land footprint reduction target of 3% by 2030, which goes beyond SBTN's requirements (0.35% per year), Kering will continue to increase the use of recycled materials, regenerative agriculture materials and sustainable innovative materials. Kering has also been leveraging improved forecasting and inventory management, while scaling circular business models overall, to achieve a general reduction across all pressures on nature (including greenhouse gas emissions).
- **Landscape Engagement:** Kering's landscape engagement targets aim to substantially improve ecological and social conditions in sourcing landscapes by 2030. Kering has been leveraging existing initiatives such as the projects the Group has been supporting since 2021 in the Regenerative Fund for Nature, developed in collaboration with Conservation International. These initiatives focus on promoting regenerative practices and enhancing biodiversity in critical sourcing regions under the Group's biodiversity strategy targets. Landscape engagement targets validated by SBTN are the Good Growth Company's Mongolia Regenerative Cashmere Project (342,000 ha), Olive Leaf's GRASS project, focused on sheep wool and leather in South Africa (300,000 ha), as well as the Organic Cotton Accelerator's Regenerative Cotton Project (53,500 ha) in India.

The Main Challenge: Traceability for Better Pressure Data

Traceability is one of the fashion sector's main challenges and, similarly, one of the main challenges Kering faced in its SBTN journey was data collection across its long, complex, and diverse global supply chains. These supply chains also involve numerous artisanal suppliers and small-scale operations, with many tiers of suppliers separating Kering's Houses from raw material producers. This opacity is further enhanced by suppliers in fashion's supply chain traditionally not sharing information on raw material producers. This complexity and issues of visibility underscore the importance of the traceability efforts Kering has been dedicated to over the past fifteen years. It also highlights the need to accelerate this journey, further enhancing the Group's supplier engagement and traceability programs.

Conclusion

Participating in the SBTN pilot has been rewarding for Kering, however the level of complexities may prove challenging to brands that are not further along in their traceability efforts. In the immediate, the substantial work Kering dedicated to the pilot enhances the Group's Biodiversity Strategy and enables the setting of ambitious, science-based targets. By leveraging Kering's existing EP&L data and improving traceability, the Group continues to make significant steps forward in its nature-positive journey. Kering looks forward to continuing its journey with SBTN and contributing to a sustainable future for the luxury sector and for the fashion industry more broadly.



4. TOWARDS THE DEFINITION OF ACTION PLANS

TOWARDS THE DEFINITION OF ACTION PLANS

Although step 4 of the SBTN methodology is not due to be published until 2025, pilot companies are already working on defining their action plans to achieve the targets they have submitted to SBTN.

Step 4 is chiefly based on the **AR³T framework (Avoid, Reduce, Restore, Regenerate and Transform)**, which is used to:

- Avoid and reduce pressure on nature;
- Regenerate and restore nature, in order for natural ecosystems to return to a good ecological status;
- Transform economic models, at several levels, to fight the factors leading to the loss of nature.



Companies' action plans must include the following elements:

- **What the company is going to do** (prioritising actions and setting out a timetable for implementation);
- **How it will finance** its activities to achieve its targets and monitor its progress;
- **How it will interact with local stakeholders** when implementing and monitoring its progress;
- **How it will monitor the achievement of its targets and report back to SBTN** (KPIs and reporting).

Action plans should be linked to existing initiatives and programmes within the companies. They will reinforce their strength and credibility.

Dedicated policies can be drawn up for new issues identified by SBTN (water, no conversion of natural ecosystems, strategic raw materials, etc.).

Developing traceability could also be the subject of a dedicated action plan, as it is a critical element in ensuring the company is able to identify its impacts and monitor the results of implemented actions.

Drawing up action plans will require the involvement of the various players involved in implementing the solutions (suppliers in particular, as well as buyers and managers of direct operations sites), **as well as the decision-makers within the company** (CSR managers, finance department, purchasing managers, etc.). An important part of the action plan will be establishing budgets to deliver on the actions identified, in conjunction with the construction of transition plans as might be requested by some of the European standards associated with the CSRD, the ESRS. In particular, this transition plan will have to include the way in which impacts, risks and opportunities linked to biodiversity have been identified and assessed, the targets set and actions to be implemented, as well as the potential financial effects.



LESSON LEARNED: An action plan to prove the feasibility of achieving the commitments made and make it easier to convince internal stakeholders

Pilot companies have shown it was easier to define and validate targets in step 3 when they came with a narrative containing information about their feasibility and the resources required to achieve them.

The SBTN methodology is ambitious, and convincing people in-house requires visibility on the targets as well as on their feasibility. The action plans and associated elements in terms of timetable, budget, partners to be mobilised, etc. are therefore key. This is all the more true for issues that are relatively new to companies, such as land footprint reduction, and that require a major effort to project into the future.



5. GOVERNANCE, CHALLENGES AND SUCCESS FACTORS

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A. THE IMPORTANCE OF GOVERNANCE

To ensure the success of an SBTN approach, it is essential to consider from the outset how to involve stakeholders, both internal and external. Thanks to the SBTN approach, companies can develop a genuine strategy for nature, which implies strong leadership and support from management.

Various internal teams will need to be mobilised (buyers, operations, research, finance), and involving them in the project from the outset will ensure ownership and commitment, which are key success factors.

B. MOBILISING IN-HOUSE TEAMS

It is recommended to set up a multi-department project team whenever possible. The diversity of players will make it easier to manage the project, particularly to access and verify data, and to access a number of key external stakeholders, in particular suppliers.

Here are examples of teams to be mobilised:

- **The CSR team** is the first to be mobilised, and will often be the one liaising with all internal and external stakeholders and developing the SBTN strategy;
- Support from the Executive Committee and top management is key, in order to commit the company to the SBTN approach, and to mobilise the various internal stakeholders with the right level of sponsorship
- **The Purchasing and Quality teams** have a certain amount of key data and knowledge, particularly on raw materials, supplier relations and a number of business issues. Therefore they are key to the SBTN approach's success;
- **The Operations team** manages the CSR data for the company's direct operations sites, as well as a number of environmental projects that may be directly linked to SBTN targets (reducing water consumption, for example).

The more teams are mobilised, the easier it will be to complete the SBTN process. The members of the various teams will be effective relays within their own teams to seek information and get approval.

In addition, submitting proposals to the Executive Committee that have already been reviewed by several teams helps to validate the SBTN strategy.



LESSON LEARNED: A great deal of educational work will need to be carried out internally

The SBTN approach is relatively complex, and requires a certain amount of time for non-expert teams to become acquainted with it. Including key stakeholders from different departments on the SBTN project steering committee not only gets them involved, to gain access to data and key stakeholders, and to anticipate a roll-out that will require their participation, but also gives them the time to get acquainted with the project and the approach, closely following the various steps of the roll-out.

Because SBTN helps to comply with other regulations such as the EUDR, or answer part of the CSRD requirements, it is easier to involve internal stakeholders.



FEEDBACK



An inclusive steering committee, fostering success

At the start of step 3 of the SBTN pilot project, Alpro set up a project steering committee involving members of the CSR team, buyers from the key categories involved in the pilot, experts (particularly in regenerative agriculture) and representatives from direct operations (production sites involved in the pilot).

By being involved, all members of the committee became familiar with the SBTN approach and could play a direct role in the pilot.

In particular, buyers played a key role, helping to engage suppliers of commodities affected by the freshwater issue. Among other things, they helped organise a two-day workshop with suppliers to identify potential solutions for achieving water targets, in line with the transition to regenerative agriculture ambitions.

C. MOBILISING SUPPLIERS

Suppliers are unavoidable players in defining and implementing the SBTN approach. They are the ones who **hold a certain amount of key information** for a better understanding

of the pressures exerted by the company and its value chain on nature and to define coherent targets for a given area (feasibility, implementation methods, etc.).

However, **it can be hard to mobilise them**, depending on the specific context of each company: quality and proximity of the relationship, negotiation periods, other requirements already set by the company, etc.



LESSON LEARNED: The difficulty of involving suppliers in the SBTN approach

For pilot companies, having access to suppliers is an important success factor. Let's use the example of a company for which pig farming in Brittany was one of its top 3 priorities in terms of water quality. Access to the pork cooperative is essential in order to:

- Collect a number of key data: details of the number of farms making up the upstream agricultural sector and their location; water consumption of these farms; pollution (water, soil) linked to pig farming; type of feed supplied to the animals, etc. All these data are essential for defining a reference value, which will make it possible to establish an SBTN target for water;
- Identify possible courses of action, in order to involve suppliers and farmers in a change of practices: these solutions must necessarily be co-built if they are to be credible.

The buyer's role in initiating the conversation with the supplier is central. To ensure support, he must have a clear mandate to work on the SBTN project, and the project must be consistent with other objectives.

Thus, ensuring the commitment of top management, and setting up an SBTN project steering committee involving the various stakeholders, and in particular buyers of priority raw materials, will ensure easier access to suppliers.

One of SBTN crucial points is that suppliers will probably have to change some of their practices, particularly in agriculture, if the targets set by the company are to be achieved (towards organic farming, agroecology and regenerative agriculture).

And to achieve this, **support will be needed**. The guidelines issued by SBTN do not recommend changing supply basins to other less risky, more productive basins, because of the social risks this would entail for producers in the areas concerned. This support will require human and financial resources. These can be shared between the various players in the area as part of landscape approach projects.

D. MOBILISING EXTERNAL STAKEHOLDERS

It is just as essential to mobilise external stakeholders to implement the SBTN approach.

They may act as experts to support companies throughout the application of the methodology (NGOs, experts), or may be essential in identifying models and scientific data to establish targets (water agencies, for example).

In fact, stakeholder consultation is a central approach of the SBTN method.

But as with internal stakeholders, there is a major challenge in terms of education to the SBTN methodology. And several pilot companies have experienced difficulties in accessing a number of external stakeholders (no response to emails, difficulties in finding the right contact, etc.). Companies will therefore need time, resources (and patience!) to implement the approach.



E. A FEW ESTIMATES FOR COMPANIES WISHING TO APPLY THE SBTN APPROACH

HUMAN RESOURCES

The deployment of an SBTN project requires in-house management by a project manager, who will necessarily be heavily involved.



LESSON LEARNED: The SBTN approach requires a high level of involvement

At Alpro, the project was steered by the sustainable development manager, who devoted up to 30% of her time to the project, with a very strong focus on coordination and facilitation between the various stakeholders. She played a key role in ensuring data consistency, making the link with the Group's various projects, and promoting the approach internally.

At Bel, the project was managed by a Sustainability Manager, who played a significant role in the internal and external coordination of teams: communication and popularisation, identification of experts required for data collection, liaison between the consulting firm, WWF teams and internal teams.

Carrefour, Bel, Alpro and H&M Group were also supported by WWF teams in their role as methodology guarantors, providing expertise on water and terrestrial ecosystems and identifying solutions for the action plans.



By mobilising the various stakeholders around the SBTN test methodology, we were able to increase team expertise, particularly in the many departments involved: the purchasing, environment and quality teams, the site manager, as well as the other external stakeholders involved in the approach, particularly with regard to water targets, which are defined in consultation with local stakeholders. This approach has helped build a collective, collaborative dynamic, which is crucial for the future given the eminently collective nature of the subject.

Bel

Most of the time spent is spent on: managing the work carried out by service providers (for the various steps of pressure and state of nature analysis, issue prioritising and target definition), collecting data from other teams in the company, consulting with stakeholders, and co-building targets and action plans.

GETTING SUPPORT

Most companies chose to work with consultants to deploy the SBTN approach.

A number of consulting firms are part of SBTN's Corporate Engagement Programme and have acquired a certain expertise in SBTN methodologies. It was important to have their support, particularly during the steps requiring extensive data manipulation (pressure data, cartographic analyses) and the use of the many tools associated with the methodology (MST, ENCORE, EXIOBASE, Risk Filter Suite, MSA, BII, Aqueduct, Natural Lands Map, etc.).

In addition, WWF partner companies received support from WWF experts, for the general deployment of the SBTN methodology, as well as to access freshwater, food and agriculture experts, to help companies build a strong SBTN project, and to start working on action plans in order to meet SBTN targets.

STEPS DURATION

SBTN deployment times vary according to the company size and complexity, the availability of data and the involvement of internal and external stakeholders. However, a few estimates can be given based on the pilot companies' experience:

- Deployment of steps 1 & 2: around 6 months;
- Step 3 Freshwater on a direct operating site: around 6 months;
- Step 3 Freshwater on an upstream site: around 6 months (different sites can be done in parallel);
- Step 3 Terrestrial ecosystems (no conversion and land footprint): around 6 to 9 months;
- Step 3 Terrestrial ecosystems (landscape initiative): the time to establish a landscape or jurisdictional initiative can be relatively long if the company is creating the project from scratch. It probably takes at least a year to identify and define a project involving several local stakeholders, and even longer to implement it. It is quicker to build on an existing initiative.

Once the various steps have been submitted to SBTN, one also needs to consider the time taken for SBTN to validate the various submission documents and the back-and-forth between the SBTN validation teams and the project team (consultant / SBTN project manager on the company side).

F. BARRIERS AND LEVERS RELATED TO THE IMPLEMENTATION OF THE SBTN APPROACH

Implementing the SBTN framework raises a number of challenges, which can be of several kinds:

- **It can be difficult to collect sufficiently fine-grained data** to be able to use them and get relevant results: this is particularly the case for supply traceability, which needs to be as detailed as possible. However, it is quite possible to start the process by targeting commodities or sites for which data are accessible and reliable, and to refine the data in parallel on priority sites or commodities, gradually widening the scope of action in order to gradually scale up;
- **Iterative development of SBTN methodological guides:** SBTN methodological guides are due to be developed over the coming years. For instance, the step 3 guide on oceans will be published in 2025. In addition, the methodological guides on Water and Terrestrial Ecosystems are V1,



and regular updates are to be expected. Nevertheless, these developments in no way prevent us from getting to grips with the guides and laying the foundations for an SBTN approach at company level. The new versions will flesh out and complete a number of requests (for example, by covering more pollutants in the step 3 guide on Freshwater), but will not call into question the overall approach. So SBTN projects at this stage are «no regret actions» for companies;

- **The financial investment required to implement the approach:** the approach requires an initial investment, which includes the costs of deploying the SBTN project (consultancy fees if the company chooses to be supported by a consultancy firm);
- **The complexity of implementing the method:** SBTN requires a large amount of data to be mobilised, and a wide range of topics to be addressed (water, terrestrial ecosystems, biodiversity), over a wide range of activities (direct operations and upstream), on a scale that is both global (o conversion) and more local (priority drainage basins). However, this complexity also contributes to having such a strong approach, ensuring the company takes into account all its material issues for nature, and acts accordingly.

However, a number of success factors can help to overcome some of these barriers:

- **Positioning the issue at the right level within the company:** implementing an ambitious science-based Nature policy must be the responsibility of senior management and the board of directors;
- **Setting the right level of ambition:** companies need to rise to the challenge of tackling the biodiversity loss crisis. They must have a clear ambition to bring their economic business within planetary boundaries, by setting science-based targets combined with credible transition plans;
- **Connecting the subject to other existing programmes in the company:** SBTN projects do not require companies to start from scratch on Nature subjects. A number of programmes are already in place within companies, on reducing water consumption, responsible purchasing policies (certifications for example), traceability efforts, landscape initiatives, agro-ecology programmes... Connecting SBTN to these initiatives will increase impact and scale, and make it easier to engage people internally;
- **Making the link with business strategy:** a number of SBTN targets call into question companies' major strategic orientations, in particular the compatibility of certain growth prospects with land footprint reduction targets and water consumption reduction in some regions. It is essential to link SBTN targets to a reflection on the major changes to be made to the business model; this means working on the consistency between the global strategy of the company and its nature strategy.
- **Involving the entire ecosystem:** SBTN targets are deployed on a systemic scale for the company (supply chains, territory). Therefore the company will need to engage its ecosystem (suppliers, local stakeholders), and put in place integrated approaches (integrating environmental criteria into specifications, into purchasing policies, etc.) in order to build a coherent, business-integrated approach to its nature transition plan;
- **Investing in traceability:** nature subjects are mainly local subjects. In many cases, it will be required to build long-term relationships with suppliers, which should be as close as possible to the production areas, in order to transform practices. The CSDDD also highlights the responsibility of companies throughout their entire value chain.



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CONCLUSION

The deployment of SBTN stages 1, 2 and 3 by companies in the pilot group contributing to this publication has highlighted the many benefits of this methodological framework.

Firstly, on a strategic level, their feedback has shown that the SBTN framework systematically accelerates the consideration of nature within organisations, and leads to ambitious environmental policies being structured, based on scientific foundations.

In addition, most of the pilot companies contributing to this publication are already involved in a wide range of nature-friendly initiatives, including programmes to improve the traceability of key commodities, forestry policies with no deforestation commitments, initiatives to improve water management on direct operating sites or in drainage basins at risk. All these programmes have laid solid foundations on which to base the deployment of SBTN methodologies.

However, the SBTN framework helps to go further on a number of issues, and to specify the levels of requirements to be achieved: focusing on High Impact Commodities, extending no conversion policies to all natural ecosystems, prioritising drainage basins at risk, help structure a rigorous approach, in order to achieve good ecological status levels in the priority geographies where companies operate, thus increasing economic business resilience.

The SBTN approach also helps us respond optimally to a number of major legislative frameworks, such as the European Regulation on Deforestation and Forest Degradation (EUDR) and the new Corporate Sustainability Reporting Directive (CSRD). For example, by committing to SBTN, companies will comply – at least partially – with around 65% of CSRD biodiversity standard requirements (ESRS E4 Biodiversity and Ecosystems). See Appendix 1 for more details.

However, implementing the SBTN framework does not come without a number of challenges: potential difficulties in collecting new data, developing detailed traceability for high-impact commodities, accessing reliable scientific information, dealing with complex methodologies, etc. But these challenges are neither insurmountable nor surprising: organisations are complex systems, and biodiversity and the structure of living organisms are even more complex. Managing the interrelationships between companies and nature, with the aim of achieving good ecological status of ecosystems, can only be achieved by confronting this complexity.

SBTN is an ambitious method used to take action in line with the inherent challenges of the multiple dimensions of nature, while preparing companies to deal with present and future environmental disturbances. By gradually rolling out the methodologies, starting with pilot phases followed by large-scale deployment, the players can get acquainted with the complex issues involved, make the link with business challenges and involve the entire company ecosystem in an approach to transform itself. While this may not be the easiest route to take, it is nonetheless proving to be both essential and exciting, with a fundamental perspective for the private sector: that of building resilient business models that are compatible with the proper functioning of ecosystems and guarantee sustainable economic activity.

APPENDIX

APPENDIX 1 - CONNECTIONS BETWEEN ESRs E4 (CSRD) AND SBTN

DISCLAIMER: This document should be read in the context of the latest versions of the documents shared by EFRAG (May 2024) and the latest versions of the SBTN guidance (July 2024).

Several considerations need to be taken into account:

- **Value chain scope:** as the SBTN scope does not - at this stage - take into account the downstream part of a company's value chain in its analysis, even direct correspondences do not satisfy the full requirements when it is necessary to report on downstream activities.
- **Double materiality:** it should be kept in mind that the focus is on impact materiality in the SBTN methodology. An addition relating to risk analysis is possible through step 2c, but cannot be considered as developed as the first.
- **Use:** some disclosures refer to elements that may be optional within the SBTN guidance (e.g. use of a specific indicator on ecosystem connectivity). If the company wishes to use the SBTN methodology to respond to specific disclosures, it must therefore ensure that the process is carried out by selecting the most appropriate indicators.

Legend of colours used	
	EFRAG section
	SBTN section
	Direct correspondence
	Partial correspondence
	No correspondence

Acronyms	
EFRAG	European Financial Reporting Advisory Group
SBTN	Science Based Targets Network
DR	Disclosure Requirement
V	Voluntary
TG	Technical Guidance
SBM	Strategy and Business Model
IRO	Impact, risk and opportunity management
MDR	Minimum disclosure requirements
AR	Application requirements

Resources used	
STEP 1	Technical Guidance - STEP 1: ASSESS (V1.1)
STEP 2	Technical Guidance - STEP 2: PRIORITIZE (V1.1)
STEP 3	Technical Guidance - STEP 3: SET TARGETS FRESHWATER (V1.1)
STEP 3	Technical Guidance - STEP 3: SET TARGETS LAND (V1.0)
STEP 3	Setting Target for Ocean - Overview
STEP 4	ACT - Overview
STEP 5	TRACK - Overview
Stakeholder Engagement	Stakeholder Engagement Guidance (V.0.1)
FAQs	Common questions on SBTN
Initial Guidance	SBT for Nature - Initial Guidance for Business

DR	Para-graph	Link	Data Type	"May (Voluntary)" [V]	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
Strategy Disclosure Requirement (DR) related to ESRs 2 SEM-3 Material impacts, risks and opportunities and their interaction with strategy and business model							
E4.SBM-3	16 a	List of material sites in own operation	narrative		STEP 1 - ASSESS	For direct company operations, the following data is required: • Estimates of pressures for locations within the company organizational boundary at a subnational level • Secondary estimates of SoN values per location. Input from companies: List of all directly owned or operated sites, location, and the activity or product/commodity involved; locations of main off-site activities and the activity involved.	Technical Guidance (TG) STEP 1, p. 22
E4.SBM-3	16 a i	Disclosure of activities negatively affecting biodiversity sensitive areas	narrative		STEP 1 - ASSESS	Companies must use at least two biodiversity SoN indicators (a species and an ecosystem indicator) in the analysis to accompany pressure and pressure-sensitive SoN data. The approach provides companies with information of the magnitude of each pressure generated by the company, and the health of nature, in each location.	Technical Guidance (TG) STEP 1, p. 66
E4.SBM-3	16 a ii	Disclosure of list of material sites in own operations based on results of identification and assessment of actual and potential impacts on biodiversity and ecosystems	narrative		STEP 1 - ASSESS	To understand the contextual significance of a company's pressure footprint, spatial state of nature (SoN) indicators are required. Pressures of the same magnitude occurring in different geographic locations will have different significance, depending on factors such as the sensitivity of the local ecosystems to additional changes, presence of threatened species...	Technical Guidance (TG) STEP 1, p. 62
E4.SBM-3	16 a iii	Disclosure of biodiversity-sensitive areas impacted	narrative		STEP 1 - ASSESS	In addition to the above information: companies must provide pressure data at a minimum of subnational scale for direct operations. This will enable the local stakeholders to be identified and involved (in step 3, a finer level of granularity may be needed to operationalise the target).	Technical Guidance (TG) STEP 1, p. 49
E4.SBM-3	16 b	Material negative impacts with regards to land degradation, desertification or soil sealing have been identified	semi-narrative		STEP 1. ASSESS STEP 3. SET TARGETS	For land ecosystems, here are the indicators that need to be taken into account: • Land use and Land use change: Ecosystem extent / Ecosystem intactness/integrity • Soil pollution: Nutrient pollution levels in soil (N&P) Note: The aim of the various Land targets is also to tackle all forms of conversion of ecosystems, including the fight against desertification.	Technical Guidance (TG) STEP 1, p. 63 Technical Guidance (TG) STEP 3 LAND, p. 46
E4.SBM-3	16 c	Own operations affect threatened species	semi-narrative		STEP 1 - ASSESS	Companies that extract (in their direct operations) any IUCN red-listed species, or any CITES trade-regulated species must indicate species names, status, volumes or quantities, and extraction locations. Companies should use a species risk and extinction indicator, such as the global Species Threat Abatement and Restoration (STAR) metric to capture where the company's pressures affect biodiversity (species).	Technical Guidance (TG) STEP 1, p. 51 and 64
E4-IRO-1	17 a	Disclosure of whether and how actual and potential impacts on biodiversity and ecosystems at own site locations, and in value chain, have been identified and assessed	narrative		STEP 1 - ASSESS	For direct company operations, the following data is required: • Estimates of pressures for locations within the company organizational boundary at a subnational level. • Secondary estimates of SoN values per location. Input from companies: List of all directly owned or operated sites, location, and the activity or product/commodity involved; locations of main off-site activities and the activity involved. For upstream activities: • List of all goods procured from upstream suppliers (Tier 1). • List of high-impact commodities, noting the commodities form i.e., raw or transformed/processed form, in the company's sourcing and upstream activities • List of threatened species according to the IUCN and listed species according to the CITES Appendices I, II, and III in the company's sourcing, noting the respective appendix. • Estimated volume on high-impact commodities for each pressure and other production inputs procured from upstream suppliers. • Estimated or modeled locations for each activity, associated with the highest-impact activity, for each relevant pressure. • Estimates of SoN values per location, at least to country level Input from companies: List of production inputs procurement paired with known or expected sourcing location at least at sub-national scale and volume on each category.	Technical Guidance (TG) STEP 1, p. 22-23
Impact, risk and opportunity management Disclosure Requirement (DR) related to ESRs 2 IRO-1 - Description of processes to identify and assess material biodiversity and ecosystem-related impacts, risks, dependencies and opportunities							

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-IRO-1	17 b	Disclosure of whether and how dependencies on biodiversity and ecosystems and their services have been identified and assessed at own site locations and in value chain.	narrative		STEP 1 - ASSESS	Companies may use additional SoN indicators to account for the dependencies of companies on ecosystem services. This approach emphasizes the importance of ecosystem services critical for business operations through the protection and enhancement of economically relevant aspects of biodiversity, often referred to as "natural capital".	Technical Guidance (TG) STEP 1. p. 64
E4-IRO-1	17 c	Disclosure of whether and how transition and physical risks and opportunities related to biodiversity and ecosystems have been identified and assessed.	narrative		STEP 2 - PRIORITIZE	Additional prioritisation approaches are proposed in the SBTN guidance, but are not mandatory. This includes taking into account elements relating to the company's risks: regulatory, reputational, etc.	Technical Guidance (TG) STEP 2. p. 54-55
E4-IRO-1	17 d	Disclosure of whether and how systemic risks have been considered (biodiversity and ecosystems)	narrative		STEP 2 - PRIORITIZE	Additional prioritisation approaches are proposed in the SBTN guidance, but are not mandatory. This includes taking into account elements relating to the company's risks: regulatory, reputational, etc.	Technical Guidance (TG) STEP 2. p. 54-55
E4-IRO-1	17 e	Disclosure of whether and how consultations with affected communities on sustainability assessments of shared biological resources and ecosystems have been conducted.	narrative		"STEP 2. PRIORITIZE STEP 3. SET TARGETS Stakeholder Engagement Guidance vo.1"	Companies must identify the local stakeholders that are particularly critical to engage within each location in the target boundary, rights of Indigenous Peoples and other marginalized communities, and existing stakeholder relationships. Within the various STEP 3 methods, the stakeholder consultation and engagement phases are also a key element in the development of the company's strategy. There is also dedicated guidance on this subject (in beta version) to help understand the interactions between stakeholder engagement and the various SBTN steps: see. Stakeholder Engagement Guidance	Technical Guidance (TG) STEP 2. p. 50-51 Technical Guidance (TG) STEP 3. Land & Freshwater
E4-IRO-1	17 e i	Disclosure of whether and how specific sites, raw materials production or sourcing with negative or potential negative impacts on affected communities	narrative		STEP 2. PRIORITIZE Stakeholder Engagement Guidance vo.1	Companies purchasing raw commodities are required to obtain data at least at subnational locations using modeling approaches or direct observation, and then refine and identify their sourcing at the subnational resolution for target setting in Step 3.	Technical Guidance (TG) STEP 2. p. 29
E4-IRO-1	17 e ii	Disclosure of whether and how communities were involved in materiality assessment.	narrative		STEP 1. ASSESS Stakeholder Engagement Guidance vo.1	The SBTN prism is ecosystem-centred and although this can be achieved, the aim is not to analyze the impact on communities but on Nature (even though they are intrinsically linked)	Stakeholder Engagement Guidance (beta) p. 7
E4-IRO-1	17 e iii	Disclosure of whether and how negative impacts on priority ecosystem services of relevance to affected communities may be avoided.	narrative				
E4-IRO-1	17 e iii	Disclosure of plans to minimise unavoidable negative impacts and implement mitigation measures that aim to maintain value and functionality of priority services.	narrative	V			
E4-IRO-1	18	Disclosure of whether and how the business model(s) has been verified using range of biodiversity and ecosystems scenarios, or other scenarios with modelling of biodiversity and ecosystems related consequences, with different possible pathways	narrative	V		Note: While forecast are not yet included in the SBTN methods, companies may also which to consider scenarios such as those used by the IPCC to evaluate which locations are likely to experience significant environmental stress under different time periods to better understand risk of loss for critical ecosystem services.	Technical Guidance (TG) STEP 2. p. 53
E4-IRO-1	18 a	Disclosure of why considered scenarios were taken into consideration.	narrative	V			
E4-IRO-1	18 b	Disclosure of how considered scenarios are updated according to evolving conditions and emerging trends.	narrative	V			
E4-IRO-1	18 c	Scenarios are informed by expectations in authoritative intergovernmental instruments and by scientific consensus	semi-narrative	V			

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-IRO-1	19 a	Undertaking has sites located in or near biodiversity-sensitive areas	semi-narrative		STEP 1 - ASSESS	Companies must use at least two biodiversity SoN indicators (a species and an ecosystem indicator) in the analysis to accompany pressure and pressure-sensitive SoN data. The approach provides companies with information of the magnitude of each pressure generated by the company, and the health of nature, in each location.	Technical Guidance (TG) STEP 1. p. 66
E4-IRO-1	19 a	Activities related to sites located in or near biodiversity-sensitive areas negatively affect these areas by leading to deterioration of natural habitats and habitats of species and to disturbance of species for which protected area has been designated	semi-narrative		STEP 1 - ASSESS	Companies must use at least two biodiversity SoN indicators (a species and an ecosystem indicator) in the analysis to accompany pressure and pressure-sensitive SoN data. The approach provides companies with information of the magnitude of each pressure generated by the company, and the health of nature, in each location.	Technical Guidance (TG) STEP 1. p. 67
E4-IRO-1	19 b	It has been concluded that it is necessary to implement biodiversity mitigation measures	semi-narrative		STEP 4 - ACT	In SBTN's Initial Guidance for Business (2020), SBTN introduced the Action Framework (AR3T). The AR3T framework was developed on the basis of the mitigation hierarchy, set out in the International Financial Corporation's Performance Standard 6.	STEP 4 - ACT (online)



Strategy | Disclosure Requirement E4-1 – Transition plan and consideration of biodiversity and ecosystems in strategy and business model

E4-1	13 a	Disclosure of resilience of current business model(s) and strategy to biodiversity and ecosystems-related physical, transition and systemic risks and opportunities.	narrative		STEP 2 - PRIORITIZE	Additional prioritisation approaches are proposed in the SBTN guidance, but are not mandatory. This includes taking into account elements relating to the company's risks: regulatory, reputational, etc.	Technical Guidance (TG) STEP 2. p. 54-55
E4-1	13 b	Disclosure of scope of resilience analysis along own operations and related upstream and downstream value chain.	narrative		STEP 2 - PRIORITIZE	Additional prioritisation approaches are proposed in the SBTN guidance, but are not mandatory. This includes taking into account elements relating to the company's risks: regulatory, reputational, etc.	Technical Guidance (TG) STEP 2. p. 54-55
E4-1	13 c	Disclosure of key assumptions made (biodiversity and ecosystems).	narrative		SBTN Methodology	The purpose of SBTN guidance is to empower companies to deploy a clear, analytical approach, tested and vetted by scientific experts, for assessing and addressing their environmental impacts. SBTN is, by design, more detailed and prescriptive than other frameworks in the sustainability space, providing thorough step-by-step guidance at each stage of the process. This prescriptive process requires greater transparency in the assumptions made and associated justifications throughout the submission.	By experience. This can also be seen in the SBTN submission forms
E4-1	13 d	Disclosure of time horizons used for analysis (biodiversity and ecosystems).	narrative		STEP 1 - ASSESS	Companies must reassess their environmental impacts every five years in line with current SBTN guidance and the best available science, tools, and data. This reassessment must reflect any relevant changes in their business operations.	Technical Guidance (TG) STEP 1. p. 16
E4-1	13 e	Disclosure of results of resilience analysis (biodiversity and ecosystems).	narrative		STEP 5 - TRACK	Once SBTN has an established MRV system in place, we will begin to formalize requirements about corporate reporting (e.g. to SBTN or other parties), as well as share results of progress gleaned through monitoring (e.g. through satellite) and through verification (e.g. through third-party actors engaged by companies to assess their progress).	STEP 5 - TRACK (online)
E4-1	13 f	Disclosure of involvement of stakeholders (biodiversity and ecosystems).	narrative		SBTN Methodology	The SBTN five step process for setting science-based targets for nature has some parallels to the human rights due diligence process, albeit for nature, by starting with assessment of impacts and dependencies (Step 1) prioritizing locations for action (Step 2), setting and disclosing targets (Step 3), taking action to achieve those targets (Step 4), and monitoring, reporting and verifying progress towards their achievement (Step 5). This parallel creates an opportunity to fully integrate stakeholder engagement into each of the five steps to help ensure that science-based targets for nature also support respect for human rights and create beneficial outcomes for humans and nature.	Stakeholder Engagement Guidance (beta) p. 7
E4-1	15	Disclosure of transition plan to improve and achieve alignment of its business model and strategy	narrative	V	SBTN Methodology	Note: The SBTN guidance do not therefore refer directly to a 'transition plan'. However, the operationalisation and interconnection of all the steps is about transforming the company's business model in order to reintegrate the company within global limits. Setting SBTs for nature is fundamentally transformative because it requires businesses to understand their impact on the world through a societal materiality perspective. Companies setting SBTs for nature must commit to improving the landscapes and seascapes in which they operate, not just their own welfare, they must commit to investing in the future, not just the short term. By taking a societal perspective, companies open the door to internal transformation (e.g., of their business model and decision-making processes) and to external transformation (e.g., of the systems in which they are embedded).	SBTN - Initial Guidance for Business p. 9

DR	Paragraph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-1	AR 1 a	Explanation of how strategy and business model will be adjusted to improve and ultimately achieve alignment with relevant local, national and global public policy goals	narrative	V	STEP 4 - ACT	Alignment with public policy is a top priority for SBTN as we strive to develop methods that contribute to societal goals. As the issues driving the loss of nature are location-specific and operate at different temporal and spatial scales, policy alignment needs to be addressed on a case-by-case basis. For direct company operations , the following data is required: <ul style="list-style-type: none"> Estimates of pressures for locations within the company organizational boundary at a subnational level. Secondary estimates of SoN values per location. Input from companies: List of all directly owned or operated sites, location, and the activity or product/commodity involved; locations of main off-site activities and the activity involved. For upstream activities: <ul style="list-style-type: none"> List of all goods procured from upstream suppliers (Tier 1). List of high-impact commodities, noting the commodities form i.e., raw or transformed/processed form, in the company's sourcing and upstream activities. List of threatened species according to the IUCN and listed species according to the CITES Appendices I, II, and III in the company's sourcing, noting the respective appendix. Estimated volume on high-impact commodities for each pressure and other production inputs procured from upstream suppliers. Estimated or modeled locations for each activity, associated with the highest-impact activity, for each relevant pressure. Estimates of SoN values per location, at least to country level Input from companies: List of production inputs procurement paired with known or expected sourcing/location at least at sub-national scale and volume on each category. It's necessary to identify how targets align with corporate strategy and (if existing) climate/nature agendas	Resources FAQ (online)
E4-1	AR 1 b	Include information about its own operations and explain how it is responding to material impacts in its related value chain	narrative	V	STEP 1 - ASSESS	<ul style="list-style-type: none"> List of all goods procured from upstream suppliers (Tier 1). List of high-impact commodities, noting the commodities form i.e., raw or transformed/processed form, in the company's sourcing and upstream activities. List of threatened species according to the IUCN and listed species according to the CITES Appendices I, II, and III in the company's sourcing, noting the respective appendix. Estimated volume on high-impact commodities for each pressure and other production inputs procured from upstream suppliers. Estimated or modeled locations for each activity, associated with the highest-impact activity, for each relevant pressure. Estimates of SoN values per location, at least to country level Input from companies: List of production inputs procurement paired with known or expected sourcing/location at least at sub-national scale and volume on each category.	Technical Guidance (TG) STEP 1, p. 22-23
E4-1	AR 1 c	Explanation of how b strategy interacts with transition plan	narrative	V	STEP 4 - ACT	It's necessary to identify how targets align with corporate strategy and (if existing) climate/nature agendas	SBTN - Corporate Action Plan (confidential)
E4-1	AR 1 d	Disclosure of contribution to impact drivers and possible mitigation actions following mitigation hierarchy and main path-dependencies and locked-in assets and resources that are associated with biodiversity and ecosystems change	narrative	V	STEP 4 - ACT	Step 4 (ACT) SBTN is based on the AR3T mechanism. AR3T, because it covers actions to avoid future impacts, reduce current impacts, regenerate and restore ecosystems, and transform the systems in which companies are embedded. The AR3T Action Framework is built on the mitigation hierarchy set out in the International Financial Corporation's (IFC) Performance Standard 6.	STEP 4 - ACT (online)
E4-1	AR 1 e	Explanation and quantification of investments and funding supporting the implementation of its transition plan	narrative	V	STEP 4 - ACT	One of the levers demonstrating the company's determination to achieve its SBT objectives is linked to financing. Socialize targets with executive leadership and provide a signed commitment of financial support for target period (disclosure of amounts is not required, but desirable)	SBTN - Corporate Action Plan (confidential)
E4-1	AR 1 f	Disclosure of objectives or plans for aligning economic activities (revenues, CapEx)	narrative	V			
E4-1	AR 1 g	Biodiversity offsets are part of transition plan	narrative	V			
E4-1	AR 1 h	Information about how process of implementing and updating transition plan is managed	narrative	V	STEP 5 - TRACK	Progress made toward the target should be reported publicly, including: 1) actions taken to meet target, by location ; 2) progress from baseline performance and "on track" assessment ; 3) adaptive management actions in case of "not on track", built on a clear narrative ; 4) limitations of targets and/or data collection processes ; 5) explanations of any changes to targets, indicators and monitoring plans	Initial Guidance - STEP 5 'TRACK' (p.55)
E4-1	AR 1 i	Indication of metrics and related tools used to measure progress that are integrated in measurement approach (biodiversity and ecosystems)	narrative	V	STEP 5 - TRACK	Progress made toward the target should be reported publicly, including: 1) actions taken to meet target, by location ; 2) progress from baseline performance and "on track" assessment ; 3) adaptive management actions in case of "not on track", built on a clear narrative ; 4) limitations of targets and/or data collection processes ; 5) explanations of any changes to targets, indicators and monitoring plans	Initial Guidance - STEP 5 'TRACK' (p.55)
E4-1	AR 1 j	Administrative, management and supervisory bodies have approved transition plan	narrative	V			
E4-1	AR 1 k	Indication of current challenges and limitations to draft plan in relation to areas of significant impact and actions company is taking to address them (biodiversity and ecosystems)	narrative	V	STEP 4 - ACT	For each prioritized levers, the company will have to conduct a high-level risk assessment, identifying main challenges and how to address it.	SBTN - Corporate Action Plan (confidential)



DR	Paragraph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
Impact, risk and opportunity management Disclosure Requirement E4-2 – Policies related to biodiversity and ecosystems							
E4-2	22	Policies to manage material impacts, risks, dependencies and opportunities related to biodiversity and ecosystems [see ESRS 2 - MDR-P]	MDR-P		STEP 4 - ACT	The objective, through the definition of an action plan to respond to SBTs, is to highlight the following elements: 1) Prioritization of actions (of the company's ecological materiality and, to a lesser extent, its financial materiality) ; 2) Interaction with local stakeholder ; 3) Resourcing and achieving targets ; 4) Key KPIs and reporting	SBTN - Corporate Action Plan (confidential)
E4-2	23 a	Disclosure on whether and how biodiversity and ecosystems-related policies relate to matters reported in E4 AR4	narrative		STEP 1 - ASSESS	Companies are required to screen their activities against eight pressure categories: land use and land use change; freshwater ecosystem use and change; marine ecosystem use and change; water use; other resource use; GHG emissions; water pollution; and soil pollution. Companies that have validated (or have submitted for validation) SBT targets may forgo screening of GHG emissions.	Technical Guidance (TG) STEP 1, p. 37
E4-2	23 b	Explanation of whether and how biodiversity and ecosystems-related policy relates to material biodiversity and ecosystems-related impacts	narrative		STEP 1 - ASSESS	SBTN's methods and guidance are intended to empower companies to deploy a clear, analytical approach, tested and vetted by scientific experts and end-users, for assessing and addressing their environmental impacts.	Technical Guidance (TG) STEP 1, p. 6
E4-2	23 c	Explanation of whether and how biodiversity and ecosystems-related policy relates to material dependencies and material physical and transition risks and opportunities	narrative		STEP 2 - PRIORITIZE	Additional prioritisation approaches are proposed in the SBTN guidance, but are not mandatory. This includes taking into account elements relating to the company's risks: regulatory, reputational, etc.	Technical Guidance (TG) STEP 2, p. 54-56
E4-2	23 d	Explanation of whether and how biodiversity and ecosystems-related policy supports traceability of products, components and raw materials with significant actual or potential impacts on biodiversity and ecosystems along value chain	narrative		STEP 2 - PRIORITIZE	Companies must move volumes from target boundary B to A, consistent with the requirements of each target setting method. Companies must have a plan to increase transparency and traceability to enable place-based target setting in Step 3.	Technical Guidance (TG) STEP 2, p. 16 and 28
E4-2	23 e	Explanation of whether and how biodiversity and ecosystems-related policy addresses production, sourcing or consumption from ecosystems that are managed to maintain or enhance conditions for biodiversity	narrative				
E4-2	23 f	Explanation of whether and how biodiversity and ecosystems-related policy addresses social consequences of biodiversity and ecosystems-related impacts	narrative		SBTN Methodology	The SBTN five step process for setting science-based targets for nature has some parallels to the human rights due diligence process, albeit for nature, by starting with assessment of impacts and dependencies (Step 1) prioritizing locations for action (Step 2), setting and disclosing targets (Step 3), taking action to achieve those targets (Step 4), and monitoring, reporting and verifying progress towards their achievement (Step 5). This parallel creates an opportunity to fully integrate stakeholder engagement into each of the five steps to help ensure that science-based targets for nature also support respect for human rights and create beneficial outcomes for humans and nature.	Stakeholder Engagement Guidance (beta) p. 7
E4-2	AR 12	Disclosure of how policy refers to production, sourcing or consumption of raw materials	narrative	V	STEP 1 - ASSESS	For all production inputs in their upstream value chain segment, companies must assess each of their material pressure categories for: <ul style="list-style-type: none"> The location of the most impactful value chain stage (e.g., production, processing, extraction of high-impact commodity volumes), or The location of any production or transformation value chain stage of all other components volumes (e.g., the most recent value chain stage or the most impactful value chain stage) For example, raw materials should be associated with a primary production activity in ISIC4 Categories A or B and intermediate and final goods with a manufacturing activity in ISIC4 Category C. Refer to the first land target and the specific passage on upstream operations: UPSTREAM (SOURCING FROM PRODUCERS FOR FIRST POINT OF AGGREGATION) [Company name] will source 100% of volumes of commodities (Annex 1a: conversion-driving commodities) from areas known to be conversion-free from 2020.* UPSTREAM (SOURCING FROM COMPANIES DOWNSTREAM OF THE FIRST POINT OF AGGREGATION) [Company name] will source 100% of volumes of commodities (Annex 1a: conversion-driving commodities) from areas known to be conversion-free from 2020.* * Or other earlier cutoff dates (e.g., regional or sectoral cutoff dates).	Technical Guidance (TG) STEP 1, p. 48 and 53
E4-2	AR 12 a	Disclosure of how policy refers to policies limiting procurement from suppliers that cannot demonstrate that they are not contributing to significant conversion of protected areas or key biodiversity areas	narrative	V	STEP 3 - SET TARGETS		Technical Guidance (TG) STEP 3, Land p. 58

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-2	AR 12 b	Disclosure of how policy refers to recognised standards or third-party certifications overseen by regulators.	narrative	V	STEP 3 - SET TARGETS	About the no-conversion of natural ecosystems: Traceability may be facilitated by internal company systems, business-to-business disclosure by suppliers, third-party certification programs, or other methods for attaching information about origins to product volumes. Note: To date it is not possible for SBTN to evaluate and approve any of the variety of certification schemes that may or may not provide such assurance. As such, companies wishing to use certifications as proof of no conversion (including deforestation free) must submit this evidence to SBTN as part of the target validation process.	Technical Guidance (TG) STEP 3, Land p. 35 and 51
E4-2	AR 12 c	Disclosure of how policy addresses raw materials originating from ecosystems that have been managed to maintain or enhance conditions for biodiversity, as demonstrated by regular monitoring and reporting of biodiversity status and gains or losses	narrative	V			
E4-2	AR 16	Disclosure of how the policy enables to a), b), c) and d)	narrative	V	STEP 4 - ACT	The AR3T framework was developed on the basis of the mitigation hierarchy, set out in the International Financial Corporation's Performance Standard 6. It is a general framework for company action: • Avoid and Reduce pressures on nature loss. • Regenerate and Restore so that nature can recover. • Transform underlying systems in which companies are embedded to address the drivers of nature loss.	STEP 4 - ACT (online)
E4-2	AR 17 a	Third-party standard of conduct used in policy is objective and achievable based on scientific approach to identifying issues and realistic in assessing how these issues can be addressed under variety of practical circumstances	semi-narrative	V			
E4-2	AR 17 b	Third-party standard of conduct used in policy is developed or maintained through process of ongoing consultation with relevant stakeholders with balanced input from all relevant stakeholder groups with no group holding undue authority or veto power over content	semi-narrative	V			
E4-2	AR 17 c	Third-party standard of conduct used in policy encourages step-wise approach and continuous improvement in standard and its application of better management practices and requires establishment of meaningful targets and specific milestones to indicate progress against principles and criteria over time	semi-narrative	V			
E4-2	AR 17 d	Third-party standard of conduct used in policy is verifiable through independent certifying or verifying bodies, which have defined and rigorous assessment procedures that avoid conflicts of interest and are compliant with ISO guidance on accreditation and verification procedures or Article 5(2) of Regulation (EC) No.765/2008	semi-narrative	V			
E4-2	AR 17 e	Third-party standard of conduct used in policy conforms to ISEAL Code of Good Practice	semi-narrative	V			
E4-2	24 a	Biodiversity and ecosystem protection policy covering operational sites owned, leased, managed in or near protected area or biodiversity-sensitive area outside protected areas has been adopted	semi-narrative		STEP 1. ASSESS STEP 3. SET TARGETS STEP 4. ACT	Partially in terms of scope (segmentation between leased sites, directly managed sites, etc. is not required within SBTN). The methodology does, however, make it possible to capture the impacts of the company from the point of view of the sensitivity of the environments and species, and therefore the targets and actions that will be put in place subsequently to - at least - reduce these impacts. See in particular criteria requirements 22 and 23.	Technical Guidance (TG) STEP 3, Land p. 75 Technical Guidance (TG) STEP 1, p. 66

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-2	24 b	Sustainable land or agriculture practices or policies have been adopted	semi-narrative		STEP 3. SET TARGETS STEP 4. ACT	<i>The policies put in place by the company to achieve the targets will be covered in step 4.</i> This is the aim of the Land Guidance. The three land targets work together to: 1) avoid the loss of nature in land systems by addressing land conversion and the main driver of biodiversity loss in land.; 2) reduce the production pressure of large agricultural areas whose expansion and ongoing impact has far exceeded the resilient capacity of the natural ecosystems on which these human systems rely.; 3) Cast company actions into landscape contexts that will improve the ecological and social conditions of the landscapes in which companies operate and/or from whence they source. <i>The policies put in place by the company to achieve the targets will be covered in step 4.</i> In 2025, SBTN will release Step 3 Ocean (V1.0) containing an initial suite of three targets: • The Avoid and Reduce Overexploitation target covers wild fisheries, helping companies avoid reliance on commodities derived from overexploited stocks and engage in seascapes and jurisdictions to improve fishery conditions and reduce overfishing. • The Protect Marine Ecosystems target covers wild fisheries and aquaculture, helping companies avoid and reduce impacts on structural habitats in marine and transitional environments. • The Protect ETP Species from Fishing Impacts target covers wild fisheries to address impacts to endangered, threatened, and protected (ETP) marine wildlife from wild capture fishing. It will likely form a foundation for future target guidance addressing impacts on all marine wildlife from a broader range of ocean industries.	Technical Guidance (TG) STEP 3, Land p. 7
E4-2	24 c	Sustainable oceans or seas practices or policies have been adopted	semi-narrative		STEP 3. SET TARGETS STEP 4. ACT	<i>The policies put in place by the company to achieve the targets will be covered in step 4.</i> The No Conversion of Natural Ecosystems target is consistent with existing zero deforestation commitments set within the soft commodity supply chains of companies and consistent with the Accountability Framework initiative (AFI) guidance.	STEP 3 - Ocean Targets (online) Technical Guidance (TG) STEP 3, Land p. 28
E4-2	24 d	Policies to address deforestation have been adopted	semi-narrative		STEP 3. SET TARGETS STEP 4. ACT		
	62	Disclosures to be reported in case the undertaking has not adopted policies					



Impact, risk and opportunity management | Disclosure Requirement E4-3 – Actions and resources related to biodiversity and ecosystems

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-3	27	Actions and resources in relation to biodiversity and ecosystems (see ESRS 2 - MDR-A)	MDR-A		STEP 3. SET TARGETS STEP 4. ACT	<i>The information required through SBTN will not enable companies to respond to all of this DR, particularly those relating to risks and opportunities.</i> It includes a number of elements that are compatible with the requirements of the SBTN methodology, such as: - The definition of an action plan and its contribution to the objectives; - The need to disclose the scope included in the analysis the company's value chain and the stakeholders consulted; - A timeline for achieving the objectives and the associated action plan. - Specify actions to remedy the company's existing impacts With regard to the company's investment plans, Step 4 guidance is currently being drafted (publication 2025), but this will be an important element in ensuring the robustness of the company's plan. The AR3T framework was developed on the basis of the mitigation hierarchy, set out in the International Financial Corporation's Performance Standard 6. It is a general framework for company action: • Avoid and Reduce pressures on nature loss. • Regenerate and Restore so that nature can recover. • Transform underlying systems in which companies are embedded to address the drivers of nature loss.	Overview of SBTN methodology (online)
E4-3	28 a	Disclosure on how the mitigation hierarchy has been applied with regard to biodiversity and ecosystem actions	narrative	V	STEP 4 - ACT		STEP 4 - ACT (online)
E4-3	28 b	Biodiversity offsets were used in action plan	semi-narrative				
E4-3	28 b i	Disclosure of aim of biodiversity offset and key performance indicators used	narrative				
E4-3	28 b ii	Financing effects (direct and indirect costs) of biodiversity offsets	Monetary				

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN guidance, resource library or experience)
E4-3	AR 18 a	Explanation of relationship of significant Capex and Opex required to implement actions taken or planned to relevant line items or notes in the financial statements	narrative	V		Note: It is likely that the next guidance step 4 'ACT' will include some form of investment plan to be disclosed to SBTN to ensure the credibility of the company's approach. This is what we have already seen in the 'Corporate Action Plan' sub-step of the pilot companies, but we can be sure of the form it will take at this stage (official publication expected in 2025).	SBTN - Corporate Action Plan (confidential)
E4-3	AR 18 b	Explanation of relationship of significant Capex and Opex required to implement actions taken or planned to key performance indicators required under Commission Delegated Regulation (EU) 2021/2178	narrative	V			
E4-3	AR 18 c	Explanation of relationship of significant Capex and Opex required to implement actions taken or planned to Capex plan required under Commission Delegated Regulation (EU) 2021/2178	narrative	V			
E4-3	28 b iii	Description of biodiversity offsets	narrative				
E4-3	28 c	Description of whether and how local and indigenous knowledge and nature-based solutions have been incorporated into biodiversity and ecosystems-related action	narrative		STEP 3- SET TARGETS STEP 4- ACT Stakeholder Engagement Guidance (beta)	Pending the publication of SBTN stage 4 (2025), the integration of elements such as Nature-Based solutions cannot be guaranteed with complete certainty, hence the partial connection here. However, the inclusion of stakeholders such as local populations and indigenous knowledge is an integral part of the SBTN process. The SBTN five step process for setting science-based targets for nature has some parallels to the human rights due diligence process, albeit for nature, by starting with assessment of impacts and dependencies (Step 1) prioritizing locations for action (Step 2), setting and disclosing targets (Step 3), taking action to achieve those targets (Step 4), and monitoring, reporting and verifying progress towards their achievement (Step 5). This parallel creates an opportunity to fully integrate stakeholder engagement into each of the five steps to help ensure that science-based targets for nature also support respect for human rights and create beneficial outcomes for humans and nature.	Stakeholder Engagement Guidance (beta) p. 7
E4-3	AR 20 a	Disclosure of key stakeholders involved and how they are involved, key stakeholders negatively or positively impacted by action and how they are impacted	narrative	V	STEP 3- SET TARGETS STEP 4- ACT Stakeholder Engagement Guidance (beta)	Comprehensive mapping and understanding tenure rights and customary authority systems are key components to stakeholder engagement with science-based target-setting. The process for conducting this stakeholder mapping can vary by company and by location but should be a means to visualize relationships with stakeholders. This can take the form of a simple graph or matrix or be represented as a complex social network of stakeholders.	Stakeholder Engagement Guidance (beta) p. 13-14
E4-3	AR 20 b	Explanation of need for appropriate consultations and need to respect decisions of affected communities	narrative	V	STEP 3- SET TARGETS STEP 4- ACT Stakeholder Engagement Guidance (beta)	Target decision-making processes must be documented and include a verified stakeholder grievance mechanism prior to target implementation. It is important that the company has internal systems for integrating the views of affected stakeholders into decision-making at management level, ensures that commitments or agreements are formally recorded and integrated into systems to ensure they are implemented, with accountability for action and consequences for inaction and keeps affected stakeholders informed of progress, changes or delays in the implementation of commitments or agreements, and explains any reasons for changes or delays.	Stakeholder Engagement Guidance (beta) p. 26-26
E4-3	AR 20 c	Description of whether key action may induce significant negative sustainability impacts (biodiversity and ecosystems)	narrative	V			
E4-3	AR 20 d	Explanation of whether the key action is intended to be a one-time initiative or systematic practice	narrative	V			
E4-3	AR 20 e	Key action plan is carried out only by undertaking (individual action) using its resources (biodiversity and ecosystems)	semi-narrative	V	STEP 4- ACT	The objective, through the definition of an action plan to respond to SBTs, is to highlight the following elements: 1) Prioritization of actions (of the company's ecological materiality and, to a lesser extent, its financial materiality) ; 2) Interaction with local stakeholder ; 3) Resourcing and achieving targets ; 4) Key KPIs and reporting	SBTN - Corporate Action Plan (confidential)

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN guidance, resource library or experience)
E4-3	AR 20 e	Key action plan is part of wider action plan (collective action), of which undertaking is member (biodiversity and ecosystems)	semi-narrative	V	STEP 3- SET TARGETS STEP 4- ACT	Within the different SBTN steps the methodologies encourage a move towards collective initiative, this is in particular the aim of one of the 'Land' targets: Landscape engagement which explicitly mentions it: 'The current Landscape Engagement target uses existing landscape initiatives as a vehicle to guide the implementation of corporate actions that must be deployed collectively'; but also recommended within the Freshwater guidance: 'It is important to note that collective action for water stewardship is strongly advised as a means to engage proactively in partnerships and landscape-level initiatives'.	Technical Guidance (TG) STEP 3- Land p. 74 Technical Guidance (TG) STEP 3- Freshwater p. 76
E4-3	AR 20 f	Description of how it contributes to systemwide change, notably to alter the drivers of biodiversity and ecosystem change	narrative	V	STEP 4- ACT	This is the objective through step 4 of SBTN (publication planned for 2025) to bring companies towards a transformation of their activity to make them compatible with the thresholds of good ecological status defined scientifically. One of the transversal actions is called "Transform" and refers to this scale of change: Transform underlying systems in which companies are embedded to address the drivers of nature loss.	STEP 4 - ACT (online)
E4-4	62	Disclosures to be reported if the undertaking has not adopted actions					



Metrics and targets | Disclosure Requirement E4-4 – Targets related to biodiversity and ecosystems

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN guidance, resource library or experience)
E4-4	31	Tracking effectiveness of policies and actions through targets [see ESRS 2 MDR-T]	MDR-T		STEP 3- SET TARGETS STEP 4- ACT Stakeholder Engagement Guidance (beta)	<i>The information required through SBTN will not enable companies to respond to all of this DR, particularly those relating to risks and opportunities.</i> Science-based targets are defined as measurable, actionable, and time-bound objectives, based on the best available science, that allow actors to align with Earth's limits and societal sustainability goals. Let us add to this that the approach is intended to be collective by integrating multiple stakeholders (internal and external) in order to take into account local knowledge and considerations. Several of these aspects then make it possible to respond to the multiple pieces of information relating to this DR. General: For methods developed by SBTN, the determination of individual contributions within the context of a societal goal (e.g., water flows that meet environmental needs) is referred to as allocation Freshwater: Referencing basin-specific conditions is therefore required to determine the threshold values representing the desired state of nature, to define the relationship between the pressures and the desired state of nature, and ultimately to set Freshwater SBTs. Land: SBTN Land Hub will provide spatially explicit, place-based thresholds for what nature needs in different places.	SBTN methodology (online) Technical Guidance (TG) STEP 3- Freshwater p. 15 Technical Guidance (TG) STEP 3- Land p. 74
E4-4	32 a	Ecological threshold and allocation of impacts to undertaking were applied when setting target (biodiversity and ecosystems)	semi-narrative		STEP 3- SET TARGETS	Land : SBTN Land Hub will provide spatially explicit, place-based thresholds for what nature needs in different places. The determination of baselines and ecological thresholds is specific to each objective. Freshwater : Setting targets for freshwater requires three components and one of them is 'A threshold value representing the desired state of nature.' Companies must document the identification of any existing local thresholds/targets / the identification of a scientific model/approach / the provision/sharing of local models, thresholds, and/or data. (if relevant local stakeholders are identified)	Technical Guidance (TG) STEP 3- Freshwater p. 15 Technical Guidance (TG) STEP 3- Land p. 74
E4-4	32 a i	Disclosure of ecological threshold identified and methodology used to identify threshold (biodiversity and ecosystems)	narrative		STEP 3- SET TARGETS	When SBTs targets are published, they are specific to the company. We are talking here about objectives based on science and specific to the local context in which the company (and its entire value chain) operates. The thresholds are then specific to the activity and the pressure exerted by the company on the different components of Nature (for the moment: freshwater and land ecosystems).	Technical Guidance (TG) STEP 3- Land p. 74 Technical Guidance (TG) STEP 3- Freshwater p. 16
E4-4	32 a ii	Disclosure of how entity-specific threshold was determined (biodiversity and ecosystems)	narrative		STEP 3- SET TARGETS	Freshwater: For this target-setting method, the allocation approach called "equal contraction of efforts" is used. This approach assumes that all water users in the basin will reduce their withdrawals/nutrient load by the same percentage.	Technical Guidance (TG) STEP 3- Land p. 55 and 62 Technical Guidance (TG) STEP 3- Freshwater p. 51
E4-4	32 a iii	Disclosure of how responsibility for respecting identified ecological threshold is allocated (biodiversity and ecosystems)	narrative		STEP 3- SET TARGETS	Land: <ul style="list-style-type: none">• LTI No Conversion – The method and data sources used to allocate LUC and associated emissions to products within a sourcing area must be clearly disclosed ;• LTI2 Land Footprint Reduction - There are two allocation methods for setting a Land Footprint Reduction target: the absolute reduction approach and the intensity reduction approach• LTI3 Landscape Engagement - The allocation is determined here with regard to the collective approach/project	Technical Guidance (TG) STEP 3- Land p. 55 and 62 Technical Guidance (TG) STEP 3- Freshwater p. 51
E4-4	32 b	Target is informed by relevant aspect of EU Biodiversity Strategy for 2030	semi-narrative				

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-4	32 c	Disclosure of how the targets relate to the biodiversity and ecosystem impacts, dependencies, risks and opportunities identified in relation to own operations and upstream and downstream value chain	narrative		SBTN Methodology	Partially. The SBTN methodology focuses specifically on the materiality of impact (Dependencies and impacts) and on the particular scope of the company's direct operation and its upstream value chain. Coverage of downstream value chain impacts is out of scope for SBTN's current method release.	SBTN methodology (online)
E4-4	32 d	Disclosure of the geographical scope of the targets	narrative		STEP 2. PRIORITIZE STEP 3. SET TARGETS	Determining the location is a prerequisite for setting the targets in step 3 and is determined in step 2A and the definition of the target boundaries. As a reminder, by target boundary we mean: the spatial extent of companies' pressure footprints managed through science-based targets. The target boundaries must be defined for each pressure and value chain component as well as the activities and goods that will be addressed by science-based targets over time.	Technical Guidance (TG) STEP 2. p. 28-29
E4-4	32 e	Biodiversity offsets were used in setting target	semi-narrative			"Note: SBTN is not moving towards the inclusion of any form of biodiversity offsetting to reduce a company's impacts. The only existing reference is currently in the Land guidance, which specifies that this criterion is excluded from the analyses: "These Land targets internalize the outcomes of the IPC P56 guidance with a notable exception on biodiversity offsets, which are not permitted."	For the quote, please refer to Technical Guidance (TG) STEP 3. Land p. 30
E4-4	32 f	Layer in mitigation hierarchy to which target can be allocated (biodiversity and ecosystems)	semi-narrative		STEP 3. SET TARGETS STEP 4. ACT	The various SBTN steps are interconnected . This means that the action plans (step 4) to meet the targets (step 3) are correlated at the different levels of the mitigation hierarchy .	STEP 4 - ACT (online)
E4-4	AR 22	The target addresses shortcomings related to the Substantial Contribution criteria	semi-narrative	V			
	81	Disclosures to be reported if the undertaking has not adopted targets					



Metrics and targets | Disclosure Requirement E4-5 – Impact metrics related to biodiversity and ecosystems change

E4-5	35	Number of sites owned, leased or managed in or near protected areas or key biodiversity areas that undertaking is negatively affecting	Integer		STEP 1 - ASSESS	For the SBTN validation process, companies must be able to demonstrate that they have estimated material pressures and economics activities, for all site owned or operated by the corporate. Coupling the pressures of the company (and its value chain) with the state of nature makes it possible to identify high-risk areas for biodiversity in which the company is involved. The subnational scale required highlights the presence of biodiversity hotspots. The correspondence remains partial because "leased" sites may be outside the scope of the analysis of the company within SBTN depending on the approach selected.	Technical Guidance (TG) STEP 1. p. 52
E4-5	35	Area of sites owned, leased or managed in or near protected areas or key biodiversity areas that undertaking is negatively affecting	Area		STEP 1 - ASSESS	This is not a mandatory indicator, but companies can determine areas of biodiversity importance based on aggregate biodiversity metrics and may also reflect relevant conservation and management measures.	Technical Guidance (TG) STEP 1. p. 64-65
E4-5	36	Disclosure of land-use based on Life Cycle Assessment	narrative	V	STEP 1 - ASSESS	Companies are encouraged to model these sourcing locations using information from suppliers (solicited through questionnaires) or global datasets reflecting typical sourcing profiles for certain commodities. For upstream activities, data gaps on likely sourcing locations can also be addressed by modeling data using environmentally extended input-output (EIO) tables or life cycle impact inventories. Note: Land-use and land-use change are pressures that the company is required to analyse.	Technical Guidance (TG) STEP 1. p. 52
E4-5	38	Disclosure of metrics considered relevant (land-use change, freshwater-use change and/or sea-use change)	narrative		STEP 1 - ASSESS	Companies must assess all pressure categories that were defined as material for each direct operations and upstream value chain activity and within the current scope of SBTN target-setting methods. Publication of the metrics used must be completely transparent. Companies completing their value chain assessment may wish to select methods and tools that allow them to estimate their pressure contributions in the metrics and indicators specified by SBTN.	Technical Guidance (TG) STEP 1. p. 53-55

DR	Para-graph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN (guidance, resource library or experience)
E4-5	38 a	Disclosure of conversion over time of land cover	narrative	V	STEP 3. SET TARGETS	To set a No Conversion of Natural Ecosystems target, companies need to collect data on: <ul style="list-style-type: none"> • Location and delineated area of production units of conversion-driving commodities that they own or manage; • Operational site areas (e.g., farms, mines, retail locations, infrastructure, and construction sites) that they own or manage; • Geographic origin and volumes of conversion-driving commodities in their supply chains at the production unit level or subnational sourcing area level • For producers, site owners, site operators, and companies sourcing raw conversion-driving commodities from producers or from first point of aggregation: the amount of natural ecosystem conversion that occurred after the company's cutoff date on sites it owns or manages, on production units known to be in its supply chains, or in sourcing areas from which it sources commodity volumes. 	Technical Guidance (TG) STEP 3. Land p. 34-35
E4-5	38 b	Disclosure of changes over time in management of ecosystem	narrative	V	STEP 1 - ASSESS	"SBTN is an iterative process that makes it possible to monitor changes in the company's environmental impact over time, in the light of the materiality analysis carried out (step 1) and the scientific targets set (step 3). A multitude of environmental pressure indicators and metrics can be used to analyse, monitor and understand the changes taking place at ecosystem level."	Technical Guidance (TG) STEP 1. p. 54-55
E4-5	38 c	Disclosure of changes in spatial configuration of landscape	narrative	V	STEP 1. ASSESS STEP 3. SET TARGETS	Yes, for land ecosystems, because the targets need to be monitored at a geographical level that allows changes in the ecosystem to be tracked over time (see the non-conversion target, for example). More generally, this is possible via SBTN but not compulsory, as it depends closely on the choice of biodiversity metric selected by the company. To be able to respond to this disclosure, the company should therefore follow the SBTN recommendations and include two indicators in its analysis: Ecological corridors and Migratory corridors.	Technical Guidance (TG) STEP 1. p. 65
E4-5	38 d	Disclosure of changes in ecosystem structural connectivity	narrative	V	STEP 1. ASSESS	This is possible via SBTN but not mandatory as it depends closely on the choice of biodiversity metric selected by the company.	Technical Guidance (TG) STEP 1. p. 65
E4-5	38 e	Disclosure of functional connectivity	narrative	V	STEP 1. ASSESS	This is possible via SBTN but not mandatory as it depends closely on the choice of biodiversity metric selected by the company.	Technical Guidance (TG) STEP 1. p. 65
E4-5	AR 34 a	Total use of land area	Area	V		Note: In the context of the SBTN Land submission, it is mandatory to provide the land occupation footprint area of the company (no indication of strict compliance with EMAS guidance, so no correspondence).	
E4-5	AR 34 b	Total sealed area	Area	V			
E4-5	AR 34 c	Nature-oriented area on site	Area	V			
E4-5	AR 34 d	Nature-oriented area off site	Area	V			
E4-5	39	Disclosure of how pathways of introduction and spread of invasive alien species and risks posed by invasive alien species are managed	narrative	V	STEP 1. ASSESS	Characterisation of the "Invasive alien species and others" pressure is recommended as part of the SBTN approach, but is not mandatory as it may be difficult to quantify given the current state of science. If the company wishes to disclose this information, SBTN allows it, but the indicators and metrics are still being developed.	Technical Guidance (TG) STEP 1. p. 54-55 and 76-79
E4-5	AR 32	Number of invasive alien species	Integer	V	STEP 1. ASSESS	Characterisation of the "Invasive alien species and others" pressure is recommended as part of the SBTN approach, but is not mandatory as it may be difficult to quantify given the current state of science. If the company wishes to disclose this information, SBTN allows it, but the indicators and metrics are still being developed.	Technical Guidance (TG) STEP 1. p. 54-55 and 76-79
E4-5	AR 32	Area covered by invasive alien species	Area	V	STEP 1. ASSESS	Characterisation of the "Invasive alien species and others" pressure is recommended as part of the SBTN approach, but is not mandatory as it may be difficult to quantify given the current state of science. If the company wishes to disclose this information, SBTN allows it, but the indicators and metrics are still being developed.	Technical Guidance (TG) STEP 1. p. 54-55 and 76-79
E4-5	40	Disclosure of metrics considered relevant (state of species)	narrative	V	STEP 1. ASSESS	Companies are required to use a biodiversity state of nature indicator in this analysis to accompany pressure and pressure-sensitive state of nature data. In addition, where companies use ecosystem condition/integrity indices to represent pressure-sensitive state of nature a complementary species-level indicator of biodiversity is required.	Technical Guidance (TG) STEP 1. p. 64-65
E4-5	40 a	Disclosure of paragraph in another environment-related standard in which metric is referred to	narrative	V	STEP 1. ASSESS		

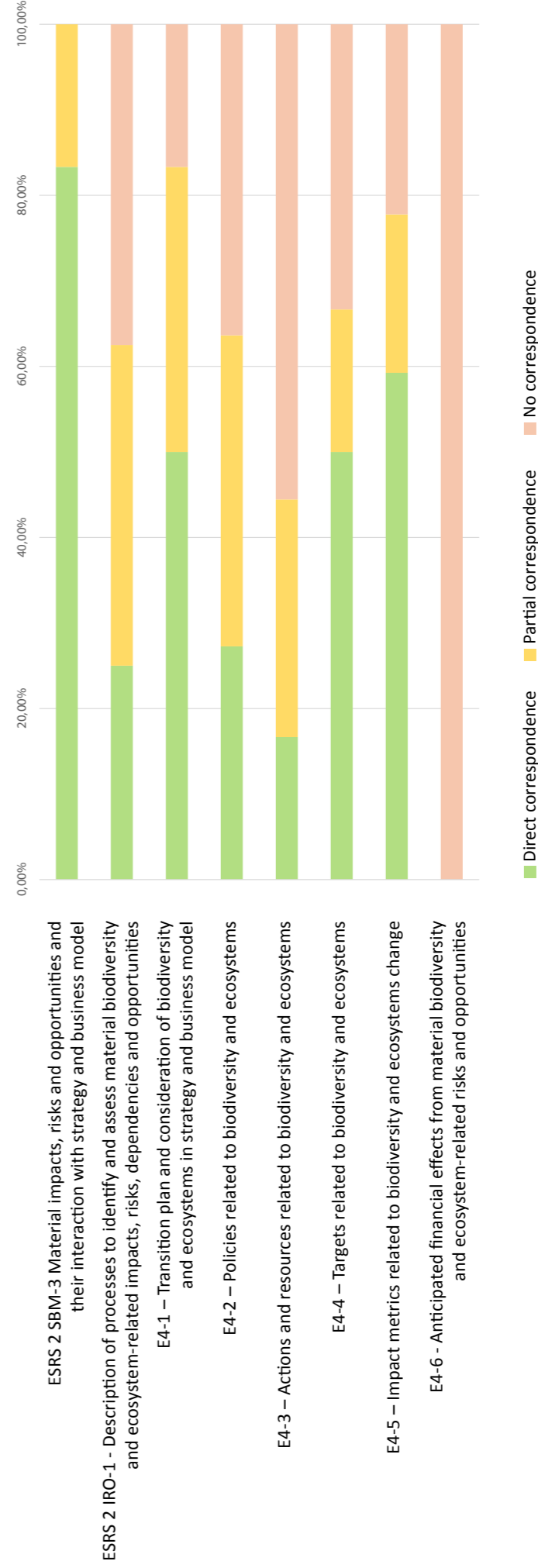
DR	Paragraph	Link	Data Type	"May (Voluntary)" V	SBTN Link	Further details	Reference in SBTN guidance, resource library or experience)
E4-5	40 b	Disclosure of population size, range within specific ecosystems and extinction risk	narrative	V	STEP 1. ASSESS	Companies must complement the pressure-sensitive SoN indicators with biodiversity SoN indicators. In some cases, the recommended SoNP indicators may already incorporate measures of biodiversity at the ecosystem scale. To complement these and summarize biodiversity at a more granular scale, companies should use a species risk and extinction indicator.	Technical Guidance (TG) STEP 1, p. 16 and 64
E4-5	40 c	Disclosure of changes in number of individuals of species within specific area	narrative	V	STEP 1. ASSESS	Can be included in the SBTN analysis, but depends closely on the choice of indicator selected by the company: companies must complement the pressure-sensitive SoN indicators with biodiversity SoN indicators.	Technical Guidance (TG) STEP 1, p. 64-65
E4-5	40 d	Information about species at global extinction risk	narrative	V	STEP 1. ASSESS	Can be included in the SBTN analysis, but depends closely on the choice of indicator selected by the company: companies must complement the pressure-sensitive SoN indicators with biodiversity SoN indicators.	Technical Guidance (TG) STEP 1, p. 64-65
E4-5	40 d i	Disclosure of threat status of species and how activities or pressures may affect threat status	narrative	V	STEP 1. ASSESS	Companies that source IUCN threatened species (species that are classified as vulnerable: VU; endangered: EN; or critically endangered: CR), or CITES listed species must include these in their scope of assessment. When compiling their data, companies should prepare to submit the species' names, quantities, and sourcing location for their representative year.	Technical Guidance (TG) STEP 1, p. 52
E4-5	40 d ii	Disclosure of change in relevant habitat for threatened species as proxy for impact on local population's extinction risk	narrative	V	STEP 1. ASSESS	Can be included in the SBTN analysis, but depends closely on the choice of indicator selected by the company: companies must complement the pressure-sensitive SoN indicators with biodiversity SoN indicators.	Technical Guidance (TG) STEP 1, p. 64-65
E4-5	41 a	Disclosure of ecosystem area coverage	narrative	V	STEP 1. ASSESS	Can be included in the SBTN analysis, but depends closely on the choice of indicator selected by the company: companies must complement the pressure-sensitive SoN indicators with biodiversity SoN indicators. In the context of LT 1 (No Conversion), it is important to assess the evolution of conversion on ecosystems and therefore to know directly or indirectly (through modelling) its contribution to the ecosystem conversion of ecoregions.	Technical Guidance (TG) STEP 1, p. 54-55 and 63-65
E4-5	41 b i	Disclosure of quality of ecosystems relative to pre-determined reference state	narrative	V			
E4-5	41 b ii	Disclosure of multiple species within ecosystem	narrative	V	STEP 1. ASSESS	Can be included in the SBTN analysis, but depends closely on the choice of indicator selected by the company: companies must complement the pressure-sensitive SoN indicators with biodiversity SoN indicators.	Technical Guidance (TG) STEP 1, p. 64-65
E4-5	41 b iii	Disclosure of structural components of ecosystem condition	narrative	V	STEP 1. ASSESS	Can be included in the SBTN analysis, but depends closely on the choice of indicator selected by the company: companies must complement the pressure-sensitive SoN indicators with biodiversity SoN indicators.	Technical Guidance (TG) STEP 1, p. 64-65



Metrics and targets | Disclose Requirement E4-6 - Anticipated financial effects from material biodiversity and ecosystem-related risks and opportunities

E4-6	45 a	Disclosure of quantitative information about anticipated financial effects of material risks and opportunities arising from biodiversity- and ecosystem-related impacts and dependencies	Monetary			Note: SBTN focuses on environmental and societal materiality; financial aspects are not at the heart of the SBTN methodology. In Step 2c, however, additional considerations inform a holistic corporate target setting strategy that integrates the environmental and social materiality lens used in a majority of the SBTN target setting methodology, with a deeper consideration of localized social dimensions and financial materiality.	Technical Guidance (TG) STEP 2, p. 48-49
E4-6	45 a	Disclosure of qualitative information about anticipated financial effects of material risks and opportunities arising from biodiversity- and ecosystem-related impacts and dependencies	narrative				
E4-6	45 b	Description of effects considered, related impacts and dependencies (biodiversity and ecosystems)	narrative				
E4-6	45 c	Disclosure of critical assumptions used in estimates of financial effects of material risks and opportunities arising from biodiversity- and ecosystem-related impacts and dependencies	narrative				
E4-6	AR 39	Description of related products and services at risk (biodiversity and ecosystems) over the short-, medium- and long-term	narrative	V			
E4-6	AR 39	Explanation of how financial amounts are estimated and critical assumptions made (biodiversity and ecosystems)	narrative/monetary	V			

Alignment analysis SBTN/ESRS E4 (%)



APPENDIX 2 - LIST OF CONVERSION-DRIVING OF NATURAL ECOSYSTEMS COMMODITIES

List¹⁵ of conversion-driving commodities with earlier target dates

Soft commodities (with target dates aligned with EUDR and other standards)	Source
Cattle	Multiple sources
Cocoa	Multiple sources
Coffee	Hoang, 2021 ¹⁶
Oil palm	Multiple sources
Rubber	Multiple sources
Soybeans	Multiple sources
Timber / wood fiber	Multiple sources

Additional conversion-driving commodities

Soft commodities	Source
Avocados	Dryad, 2020 ¹⁷
Banana	Meyfroidt, 2014 ¹⁸ , Jayathilake, 2021 ¹⁹
Beans	Phalan, 2013 ²⁰
Buckwheat	Plowprint, 2022 ²¹
Camelina	Plowprint, 2022 ²²
Canola	Plowprint, 2022 ²³
Cassava	Phalan, 2013 ²⁴ , Jayathilake, 2021 ²⁵ , Pendrill, 2022 ²⁶
Charcoal, commercial	Jayathilake, 2021 ²⁷
Coconut	Dryad, 2020 ²⁸ , Jayathilake, 2021 ²⁹
Cotton	Dryad, 2020 ³⁰

¹⁵ <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2024/07/Technical-Guidance-2024-Step3-Land-v1.pdf>

¹⁶ Hoang, N. T., & K. Kanemoto. (2021). Mapping the deforestation footprint of nations reveals growing threat to tropical forests. *Nature Ecology & Evolution*, 5, 845–853.

¹⁷ Quantis, Dryad model for deforestation based on FAO production and crop expansion data. Accessed 2020 as part of project for WWF contract identifying the deforestation-driving commodities for Project Gigaton.

¹⁸ Meyfroidt, P. et al. (2014). Multiple pathways of commodity crop expansion in tropical forest landscapes. *Environmental Research Letters*, 9, 074012.

¹⁹ Jayathilake, H. Manjari, et al. (2021). Drivers of deforestation and degradation for 28 tropical conservation landscapes. *Ambio*, 50, 215–228.

²⁰ Phalan, B. et al. (2013). Crop expansion and conservation priorities in tropical countries. *PLoS ONE*, 8(1), e51759. doi:10.1371/journal.pone.0051759.

²¹ WWF. (2022). PlowPrint Report.

²² WWF. (2022). PlowPrint Report.

²³ WWF. (2022). PlowPrint Report.

²⁴ Phalan, B. et al. (2013). Crop expansion and conservation priorities in tropical countries. *PLoS ONE*, 8(1), e51759. doi:10.1371/journal.pone.0051759.

²⁵ Jayathilake, H. Manjari, et al. (2021). Drivers of deforestation and degradation for 28 tropical conservation landscapes. *Ambio*, 50, 215–228.

²⁶ Pendrill, F. et al. (2022). Disentangling the numbers behind agriculture-driven tropical deforestation. *Science*, 377, abm9267.

²⁷ Jayathilake, H. Manjari, et al. (2021). Drivers of deforestation and degradation for 28 tropical conservation landscapes. *Ambio*, 50, 215–228.

²⁸ Quantis, Dryad model for deforestation based on FAO production and crop expansion data. Accessed 2020 as part of project for WWF contract identifying the deforestation-driving commodities for Project Gigaton.

²⁹ Jayathilake, H. Manjari, et al. (2021). Drivers of deforestation and degradation for 28 tropical conservation landscapes. *Ambio*, 50, 215–228.

³⁰ Quantis, Dryad model for deforestation based on FAO production and crop expansion data. Accessed 2020 as part of project for WWF contract identifying the deforestation-driving commodities for Project Gigaton.

Soft commodities	Source
Cowpeas	Phalan, 2013 ³¹
Grapes	Plowprint, 2022 ³²
Groundnut	Phalan, 2013 ³³
Maize	Multiple source
Millet	Phalan, 2013 ³⁴
Mustard	Plowprint, 2022 ³⁵
Onions	Plowprint, 2022 ³⁶
Pineapple	Meyfroidt, 2014 ³⁷
Potato	Plowprint, 2022 ³⁸
Radishes	Plowprint, 2022 ³⁹
Rice	Multiple source
Rye	Plowprint, 2022 ⁴⁰
Safflower	Plowprint, 2022 ⁴¹
Sorghum	Phalan, 2013 ⁴²
Speltz	Plowprint, 2022 ⁴³
Sugarcane	Phalan, 2013 ⁴⁴ ; Dryad, 2020 ⁴⁵
Sugar beets	Plowprint, 2022 ⁴⁶ ; Dryad, 2020 ⁴⁷
Triticale	Plowprint, 2022 ⁴⁸
Vetch	Plowprint, 2022 ⁴⁹
Wheat	Multiple sources

³¹ Phalan, B. et al. (2013). Crop expansion and conservation priorities in tropical countries. *PLoS ONE*, 8(1), e51759. doi:10.1371/journal.pone.0051759.

³² WWF. (2022). PlowPrint Report.

³³ Phalan, B. et al. (2013). Crop expansion and conservation priorities in tropical countries. *PLoS ONE*, 8(1), e51759. doi:10.1371/journal.pone.0051759.

³⁴ Phalan, B. et al. (2013). Crop expansion and conservation priorities in tropical countries. *PLoS ONE*, 8(1), e51759. doi:10.1371/journal.pone.0051759.

³⁵ WWF. (2022). PlowPrint Report.

³⁶ WWF. (2022). PlowPrint Report.

³⁷ Meyfroidt, P. et al. (2014). Multiple pathways of commodity crop expansion in tropical forest landscapes. *Environmental Research Letters*, 9, 074012.

³⁸ WWF. (2022). PlowPrint Report.

³⁹ WWF. (2022). PlowPrint Report.

⁴⁰ WWF. (2022). PlowPrint Report.

⁴¹ WWF. (2022). PlowPrint Report.

⁴² Phalan, B. et al. (2013). Crop expansion and conservation priorities in tropical countries. *PLoS ONE*, 8(1), e51759. doi:10.1371/journal.pone.0051759.

⁴³ WWF. (2022). PlowPrint Report.

⁴⁴ Phalan, B. et al. (2013). Crop expansion and conservation priorities in tropical countries. *PLoS ONE*, 8(1), e51759. doi:10.1371/journal.pone.0051759.

⁴⁵ Quantis, Dryad model for deforestation based on FAO production and crop expansion data. Accessed 2020 as part of project for WWF contract identifying the deforestation-driving commodities for Project Gigaton.

⁴⁶ WWF. (2022). PlowPrint Report.

⁴⁷ Quantis, Dryad model for deforestation based on FAO production and crop expansion data. Accessed 2020 as part of project for WWF contract identifying the deforestation-driving commodities for Project Gigaton.

⁴⁸ WWF. (2022). PlowPrint Report.

⁴⁹ WWF. (2022). PlowPrint Report.

Hard commodities	Source
Bauxite	Luckeneder, 2021 ⁵⁰
Coal, surface mining	Yu, 2018 ⁵¹
Copper	Luckeneder, 2021 ⁵²
Gold	Luckeneder, 2021 ⁵³
Iron	Luckeneder, 2021 ⁵⁴
Lead	Luckeneder, 2021 ⁵⁵
Manganese	Luckeneder, 2021 ⁵⁶
Nickel	Luckeneder, 2021 ⁵⁷
Palladium	SBTN HICL, 2022 ⁵⁸
Platinum	SBTN HICL, 2022 ⁵⁹
Silver	Luckeneder, 2021 ⁶⁰
Zinc	Luckeneder, 2021 ⁶¹

Activities/applications	Source
Biofuels (ethanol, solid biomass, etc.)	Multiple sources
Feed for animal protein—cattle, pork, chicken, aquaculture, etc.	Multiple sources
Urban/settlement and infrastructure development	Jayathilake, 2021 ⁶²
Hydroelectric dam development	WWF, Deforestation Fronts, 2021 ⁶³
Oil and gas exploration	Jayathilake, 2021 ⁶⁴

⁵⁰ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁵¹ Yu, L. et al. (2018). Monitoring surface mining belts using multiple remote sensing datasets: A global perspective. *Ore Geology Reviews*, 101, 675–687.

⁵² Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁵³ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁵⁴ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁵⁵ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁵⁶ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁵⁷ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁵⁸ McCraine, S. et al. (2022). SBTN High Impact Commodity List, draft form. Excel file shared via email.

⁵⁹ McCraine, S. et al. (2022). SBTN High Impact Commodity List, draft form. Excel file shared via email.

⁶⁰ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁶¹ Luckeneder, S. et al. (2021). Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change*, 69, 102303.

⁶² Jayathilake, H. Manjari, et al. (2021). Drivers of deforestation and degradation for 28 tropical conservation landscapes. *Ambio*, 50, 215–228.

⁶³ WWF. Pacheco, P. et al. (2021). *Deforestation fronts: Drivers and responses in a changing world*. WWF, Gland, Switzerland.

⁶⁴ Jayathilake, H. Manjari, et al. (2021). Drivers of deforestation and degradation for 28 tropical conservation landscapes. *Ambio*, 50, 215–228.

RETHINKING COMPANIES' ACTIVITIES TO ALIGN THEM WITH PLANETARY BOUNDARIES, BY SETTING AMBITIOUS, SCIENCE-BASED ENVIRONMENTAL TARGETS



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