

In collaboration with
Oliver Wyman



Nature Positive: Role of the Household and Personal Care Products Sector

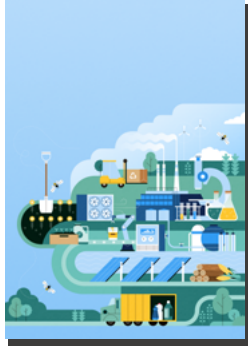
INSIGHT REPORT
SEPTEMBER 2023



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Sector Transitions to Nature Positive
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Nature Positive:
Role of the Chemical
Sector



Nature Positive:
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Contents

Forewords	4
Executive summary	6
1 Introduction	8
1.1 Why nature matters for businesses	10
1.2 The current approach to nature and biodiversity	12
1.3 The road ahead	14
2 Where the sector is today	15
2.1 Sector overview	16
2.2 Progress is promising but needs to accelerate	17
3 Nature-related impacts and dependencies	19
3.1 Double materiality	20
3.2 Water and other resource use	21
3.3 Land-use change	22
3.4 Pollution	23
3.5 Greenhouse gas emissions	24
4 Five priority actions	25
Priority action #1 Improve water stewardship	28
Priority action #2 Source responsibly	30
Priority action #3 Influence customer behaviour on product use and disposal	31
Priority action #4 Support nature conservation and restoration	32
Priority action #5 Expand circularity, product innovation and collaboration	33
5 Get started	36
5.1 Align strategy with organizational maturity	37
5.2 A deeper look at metrics to support decision-making	39
5.3 Map the transition onto business functions	42
6 Conclusion	44
Appendix	45
Contributors	48
Endnotes	51

Forewords



Ulrike Sapiro
Chief Sustainability Officer,
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The consequences of the twin crises of climate change and nature collapse have never been more evident, with temperatures soaring, wildfires raging, food supplies at risk and freshwater supplies dwindling. Household and personal care products play an important role in protecting the health and well-being of individuals, families and communities, but we know that our sector contributes to the drivers of nature loss through land conversion, water extraction, greenhouse gas emissions and pollution. The sector is also heavily dependent on nature, especially when it comes to the raw materials in our products.

Our customers and investors expect us to adopt sustainable practices and develop products that do no harm. They also want us to be transparent and accountable for any nature- and biodiversity-related impacts throughout our supply chains. However, many companies find the issue very complex. They struggle to understand the implications of nature and biodiversity collapse on their business. They find it hard to set meaningful targets and identify tangible actions to stop doing harm or turn towards regeneration.

Best practices and leadership are now emerging as frameworks and guidance for materiality assessments and prioritization become available. Businesses in the household and personal care products sector are making commitments to protect nature, such as reducing emissions and decreasing downstream discharges, waste or toxicity. We are also starting to see sector-wide collaboration to address common barriers or to

scale up solutions and accelerate transformation collectively. But there is far more that can and must be done to keep up with the ambition of the Kunming-Montreal Global Biodiversity Framework.

This report sets out our sector's reliance on and relationship with nature and gives us a clear pathway to reduce our individual business and sector impacts on nature. In the coming years, we must continue to reduce freshwater withdrawal, source responsibly, address plastic pollution and become more circular. This starts by assessing and prioritizing all of the material impacts that our business has on nature, from the supply chain to production, downstream use and end of life.

We need to encourage our consumers to join us on this journey. As a sector that focuses on household and personal care products, we are uniquely placed to help shift consumer behaviour in support of a nature-positive future. Through our products and brands, we can inspire individuals to make informed decisions and opt for greener products, while repurposing and recycling wherever relevant. Between us, we can drive demand for nature-positive innovations.

And we need to act together. Collaboration and cooperation are essential if we are to prevent catastrophic ecosystem collapse. Each of our organizations must prioritize the actions outlined in this report and play our part in shaping an industry that not only fulfils our everyday needs but also secures a flourishing planet for generations to come.



Man does not weave this web of life. He is merely a strand of it. Whatever he does to the web, he does to himself.

Chief Seattle, Indigenous Leader of the Suquamish and Duwamish people



John T. Colas
Partner and Vice-Chairman,
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On 6 July 2023, Earth recorded its hottest day on record, according to the World Meteorological Organization, during what is expected to be the hottest month ever. And 2023 is well on its way to becoming the hottest year. Ocean temperatures are higher than they have ever been in modern times, leading to rising sea levels, more intense storms and faster-than-usual ice loss in the Arctic in June, according to the National Snow & Ice Data Center in the US.

All this heat is taking a toll on people and nature. Thousands of people are dying from prolonged heatwaves, while the loss of habitats and breeding grounds accelerates on land and at sea. The World Economic Forum's *New Nature Economy Report* estimates that more than half the world's gross domestic product (GDP) is moderately or highly dependent on nature and its services, meaning companies and investors cannot afford to delay actions to reverse climate change and prevent nature loss any longer. The world is at a tipping point and only aggressive action can pull it back from unimaginable suffering.

While the 2015 Paris Agreement and the 2022 Kunming-Montreal Global Biodiversity Framework have provided governments and businesses with goals and targets, industries need sectoral guidance on strategic ways forward. This is particularly true when it comes to preventing nature loss, which poses an inherently complex set of issues to tackle.

The World Economic Forum, in collaboration with Oliver Wyman, has spent the past year gathering data and insights through research, expert consultation and industry interviews that have enabled us to prepare the *Sector Transitions to Nature Positive* series of reports. These focus on three sectors: chemicals, household and personal care products, and cement and concrete. This initiative is part of a broader collaborative effort with Business for Nature and the World Business Council for Sustainable Development.

Halting climate change and nature loss are inextricably intertwined. Therefore, corporate and investor action to address these twin challenges must also be complementary and push forward simultaneously. Investing in nature is more than just good risk management. Companies that take bold steps today towards a net-zero, nature-positive business model will undoubtedly enjoy competitive advantages. This will stem from more resilient and sustainable supply chains, a positive public image, innovative green products and greater support from the financial sector.

If we are to stay within safe and just Earth system boundaries and maintain a sustainable planet, there is no time to delay.

Executive summary



Today, the resources humanity is using are equivalent to that of 1.75 Earths.¹ Humans have exceeded seven out of eight globally quantified safe and just Earth system boundaries and risk crossing irreversible tipping points.²

The household and personal care products sector³ is central to daily lives. Its products, from shampoos and beauty products to detergents and disinfectants, have significantly enhanced well-being and living standards by promoting hygiene, convenience and aesthetic appeal in daily routines and environments. The sector generates approximately \$700 billion in annual revenues,⁴ sometimes, however, at the expense of the environment. It is imperative for the household and personal care products sector to take actions to contribute to a nature-positive and net-zero future and to ensure it operates within the Earth's safe and just system boundaries.⁵

The call for the transition to “nature positive” has never been louder. In 2022, 196 parties signed up to the Kunming-Montreal Global Biodiversity Framework (GBF), with the global goal to halt and reverse nature loss by 2030 and full recovery by 2050. A global, legally binding treaty to address plastic pollution will come into force at the end of 2024.⁶ Meanwhile, regulators are moving towards mandatory nature-related disclosures from companies.

The nature-positive transition is synergistic to companies' net-zero commitments. Nature-based solutions can contribute up to 37% of the emissions reductions required by 2030 to keep global temperature increases below 2 degrees Celsius.⁷ Accordingly, companies need solutions to address climate change and nature loss together.

For companies in the household and personal care products sector, this is a unique opportunity to get ahead of regulation, proactively manage nature-related risks, build a sustainable and resilient supply chain and benefit from early commercial opportunities in the transition.

Businesses in the sector have started committing to take action on sustainability issues.⁸ However, while recognizing these efforts, more needs to be done. The sector still contributes to drivers of nature loss, such as land conversion and deforestation from upstream production that uses plant-based feedstocks and raw materials (including palm oil or rapeseed). The manufacturing and downstream use of products consume significant volumes of water, while improper management may lead to plastic pollution on land and in water and oceans.

This document summarizes the sector's key impacts and dependencies⁹ on nature and sets out sector-specific actions that corporate leaders can

start to take now to transform their businesses. The household and personal care products sector has a key role to play in halting and reversing nature loss by 2030 – the mission at the heart of the GBF. Priorities include the following:

1. Improve water stewardship throughout the value chain.

- Reduce water consumption and pollution to protect nature and minimize vulnerability to increasing risks from reduced water availability and quality.
- Key levers to improve the stewardship of both surface water and groundwater include assessing and prioritizing water-related material risks, completing a full water audit, upgrading direct manufacturing operations and recycling wastewater, engaging with customers to reduce downstream water use and pollution, and restoring water basins.

2. Source responsibly and replace feedstocks with sustainable bio-based or other renewable materials with careful evaluation of trade-offs.

- When sourcing, ensure that procurement criteria and supplier assessments address nature-related priorities such as deforestation-free commitments, using certified raw materials and favouring raw materials that are not endangered or overexploited.¹⁰
- Support suppliers and farmers and work with local communities to promote sustainable and regenerative agriculture and other practices that support biodiversity.¹¹
- Greater transparency and traceability will deliver better data on impacts and dependencies, which in turn will help measure each end product's nature footprint.
- Explore shifting to bio-based or other renewable feedstocks to help lower dependence on fossil fuels while reducing ecotoxicity and (potentially) synthetic allergens.¹² An assessment of the overall environmental and social impact of bio-based versus petrochemical feedstocks, along with a balanced approach to net-zero emissions and nature-positive solutions, is needed to address trade-offs.¹³

3. Influence customer behaviour on product use and disposal through educational measures and greater transparency on impacts.

- Step up business-to-business (B2B) and business-to-consumer (B2C) engagement to take advantage of growing consumer interest in nature positive.

- Key levers include providing greater transparency to allow consumers to make informed decisions, producing educational information on the most sustainable use of a product (e.g. volume of water or size of dose required), contributing to public engagements to help shift behaviours and beliefs to reduce unnecessary consumption and downstream pollution, and working with downstream business partners (for companies that are producers in the B2B market).

4. Support nature conservation and restoration through investment in responsible business practices and nature-based solutions.

- Contribute to nature conservation and restoration – including through improved practices along supply chains, directly launching corporate projects, joining global initiatives such as clean-up efforts or innovative nature financing mechanisms such as payment for ecosystem services or nature restoration funds.
- Partnerships on conservation projects with environmental NGOs, governmental agencies and local communities are crucial to put environmental and social safeguards in place and ensure the effectiveness of such initiatives.

5. Expand circularity; create innovative, sustainable products and packaging; and engage in progressive collective action and policy advocacy.

- Incorporate circularity by upgrading manufacturing processes to recycle water and energy, developing innovative packaging designs and refillable products, and facilitating efficient recycling and waste management.
- By increasing investment into the research and development of nature-conscious products, such as waterless formulation or no-rinse products, companies can tap into new markets.
- Leading companies are encouraged to engage with policy-makers in progressive collective action. With ongoing negotiations on a UN treaty on plastic pollution, companies now have the opportunity to influence, pave the way and get ahead of forthcoming regulation.

These priority actions could unlock more than \$60 billion in annual business opportunities by 2030 for companies operating across the sector's value chain, presenting a significant opportunity for the household and personal care products sector in the new nature-positive economy.

1

Introduction

Most of the world's top 500 companies have a climate target – but just 5% have one for biodiversity. Given how dependent the global economy is on nature, the private sector urgently needs to help halt and reverse nature loss this decade.



“ 37% of the emission reductions required by 2030 to keep global temperature increases under 2 degrees Celsius will come from nature-based solutions.

Nature is at a tipping point. Today, the resources humanity uses are equivalent to that of 1.75 Earths.¹⁴ This means that the ecological footprint, a measure that sums up the demands for biologically productive areas like food, timber, fibre, carbon sequestration and infrastructure, exceeds the Earth’s capacity by 75%.¹⁵

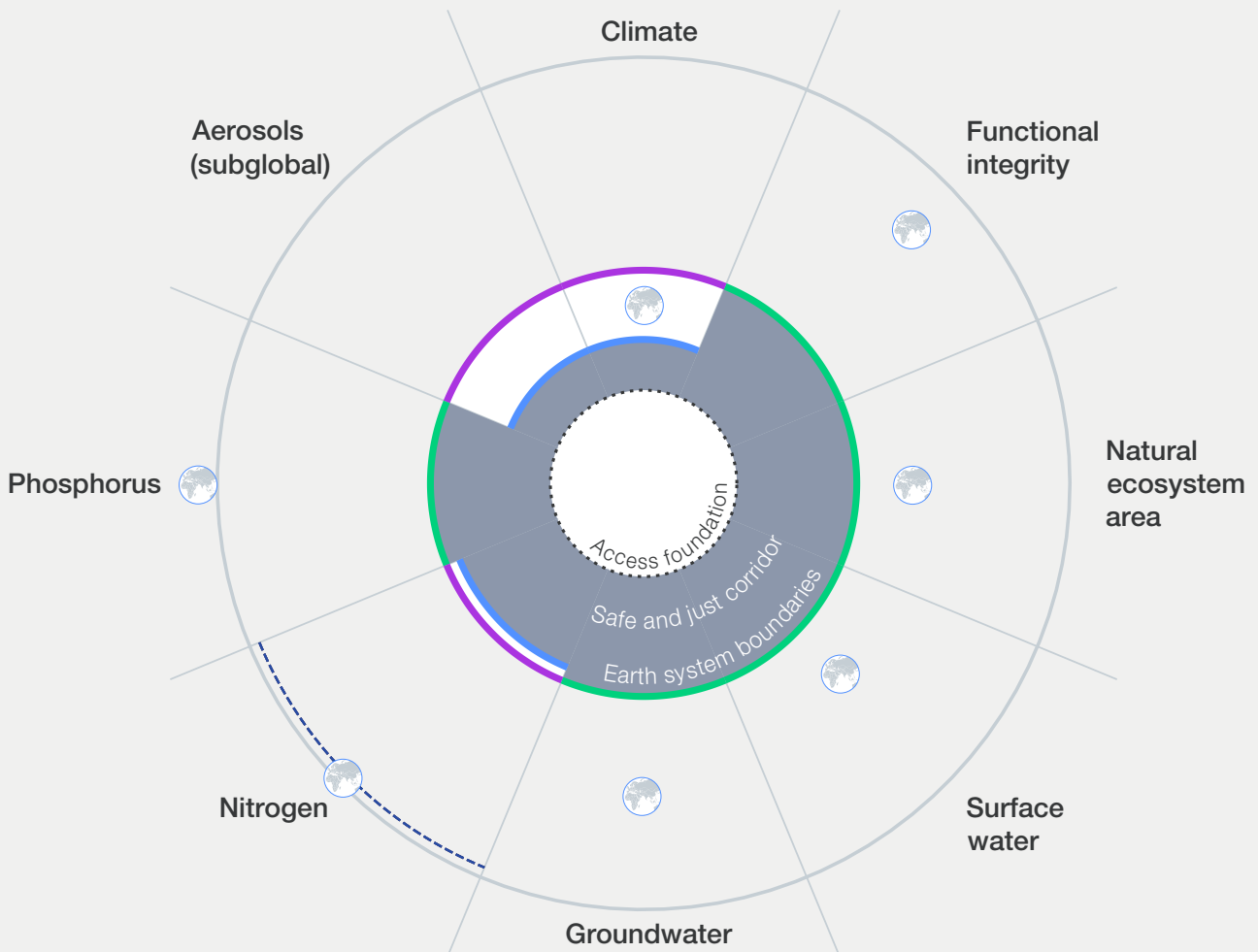
Achieving net-zero emissions and tackling nature loss are two priorities, both for society and business, that are highly interdependent. Climate change is one of the five key drivers of biodiversity loss, according to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).^{16,17} Land-use change, principally agricultural commodity-driven deforestation, contributes 12–20% of global greenhouse gas emissions.¹⁸ At the same time, efforts to tackle climate change cannot succeed without safeguarding nature. It is estimated that 37% of the emission reductions required by 2030 to keep global temperature increases under 2 degrees Celsius will come from nature-based solutions.¹⁹

There is now global agreement that climate, biodiversity, surface water and groundwater are all components of the Earth’s vital systems²⁰ and climate goals cannot be reached without healthy

and resilient nature. Razan Al Mubarak, UN Climate Change High-Level Champion for the United Nations Climate Change Conference (COP28) and Co-Chair of the World Economic Forum Champions for Nature community, acknowledged this in June 2023 when she declared that nature is “not ornamental, but fundamental” in the quest for a net-zero emissions and resilient future.²¹ Standard setters have also begun to recognize the relationship between climate change and nature and are increasingly looking to align efforts, as seen in the linkages between the Science Based Targets initiative (SBTi) Forest, Land and Agriculture (FLAG) targets²² and the targets for land from the Science Based Targets Network (SBTN).²³

In May 2023, the Earth Commission published the first quantification of safe and just Earth system boundaries, developed by more than 40 researchers worldwide.²⁴ The eight boundaries encompass aerosols, biosphere, climate, freshwater and nutrients at global and local levels. Staying within these boundaries will require a transformation of societies and the global economy.²⁵ Seven of them have already been exceeded, including the boundaries for natural ecosystem area, groundwater and surface water (see Figure 1).

FIGURE 1 Safe and just Earth system boundaries



Current global states
 Safe Earth system boundaries
 Just Earth system boundaries
 Cases where safe and just boundaries align

Source: Rockström, J. et al.²⁶

1.1 Why nature matters for businesses

The importance of nature is swiftly rising for businesses in the real economy, as well as for the financial services industry and investors. The evidence for rising nature-related risks is mounting: in the *Global Risks Report 2023* by the World Economic Forum,²⁷ six out of the top ten risks are environment-related. Natural disaster, biodiversity loss and ecosystem collapse, as well as natural resource crises, were identified as the third, fourth and sixth most pressing global risks over the next decade, respectively. In parallel, the calls for rapid

change are getting stronger and more frequent, coming from policy-makers, regulators, investors, companies, consumers and citizens (see Figure 2).

Companies that can get ahead of the risks from nature loss can minimize disruption from incoming policy and regulatory requirements, proactively manage nature-related physical, transition and systemic risks,²⁸ and benefit from early opportunities to move towards nature positive.

FIGURE 2 Key nature-related dynamics impacting businesses²⁹



The Kunming-Montreal Global Biodiversity Framework (GBF)

The agreement of the GBF in December 2022³⁰ set the ambition to halt and reverse biodiversity loss, calling for a collective effort from all sections of society on the four goals and 23 targets by 2030. The GBF charts the path for biodiversity, in the same way the 2015 Paris Agreement did for climate change.

The GBF is expected to influence business action³¹ through policy, regulation and financial incentives, especially Target 15 on mandatory assessment

and disclosure, Target 16 on supportive policies for sustainable consumption choices, reducing overconsumption and waste generation, and Target 18 on eliminating environmentally harmful subsidies and aligning incentives.

Guidance and standards

Many regulators will soon require mandatory nature-related disclosure from companies. For example, the European Sustainability Reporting Standards (ESRS) under the Corporate Sustainability Reporting Directive (CSRD)³² of the European Union (EU) will

“ In the past two years, 140 financial institutions with €19.7 trillion in assets under management, have signed the Finance for Biodiversity Pledge.

require companies in scope to disclose specific metrics for their *impact* on nature and biodiversity, as well as for their *exposure* to nature and biodiversity loss. The EU Taxonomy for Sustainable Activities has already identified activities such as “the protection and restoration of biodiversity and ecosystems” and “the sustainable use and protection of water and marine resources”.³³

Other nations are also introducing similar standards and regulations. For example, companies in India³⁴ are required by law to adequately identify, monitor and manage environmental risks and disclose material information, and must report on direct and indirect impacts on biodiversity in ecologically sensitive areas.

In July 2023, the International Sustainability Standards Board (ISSB) of the International Financial Reporting Standards (IFRS) Foundation published the General Requirements for Disclosure of Sustainability-related Financial Information (IFRS S-1) and the Climate-related Disclosure (IFRS S-2). Soon, ISSB may require companies to provide additional transparency on impacts and risks related to natural ecosystems and the just transition, according to ISSB’s Chair Emmanuel Faber.³⁵ It is expected that ISSB’s standards will be adopted by regulators and made mandatory in some jurisdictions in the near future.

Companies are encouraged to start collecting data and build internal capacity according to voluntary disclosure frameworks to get ahead of the curve. For example, the Taskforce on Nature-related Financial Disclosures (TNFD) has been engaging companies over the past year and has developed guidance for companies to assess and disclose their impacts, dependencies, risks and opportunities associated with nature.³⁶

Financial institutions and investors

Existing and prospective investors and other financial institutions are also taking actions on nature. In the past two years, 140 financial institutions with €19.7 trillion in assets under

management have signed the Finance for Biodiversity Pledge.³⁷ Institutional investors are convening through the Nature Action 100 programme to engage with companies and policy-makers on nature.³⁸

Financial institutions can play an important role in the nature-positive transition, by regularly screening and assessing investor portfolios for biodiversity risks, engaging with high-risk investees and mobilizing internal and external stakeholders (especially clients), developing investment policies and strategies, and sharing lessons and engaging in relevant initiatives such as TNFD and the Science Based Targets Network (SBTN).³⁹

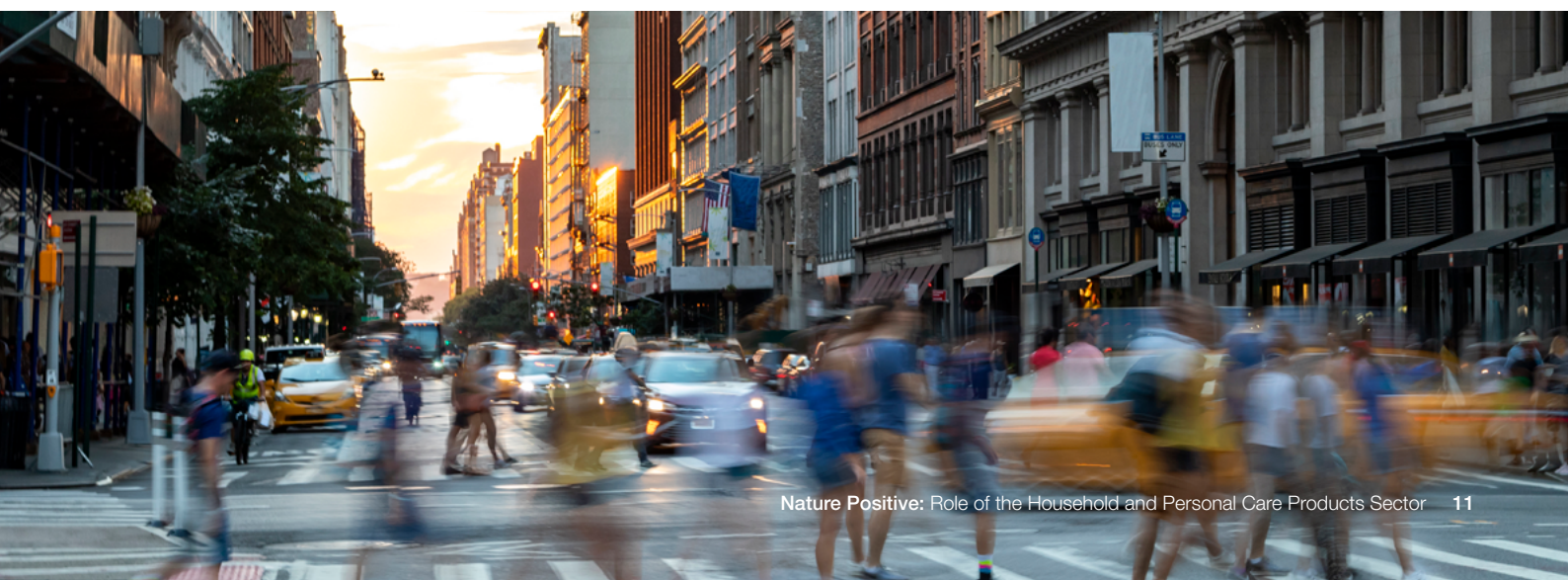
Consumers and employees

Similarly, wider society and other stakeholders, such as employees and consumers, are raising their expectations for corporate action to protect nature and biodiversity.

In the Union for Ethical BioTrade’s 2022 Biodiversity Barometer,⁴⁰ loss of biodiversity was the second most urgent environmental concern for consumers after climate change. In countries such as Brazil and China, the concern comes out on top, with 54% of consumers wanting information on a product’s impact on biodiversity. A survey by Simon-Kucher & Partners in 2021 showed that 85% of consumers have made changes to their purchasing behaviour in the past five years to become more sustainable.⁴¹ Similarly, a survey conducted by Nielsen in 2018 indicated that over 81% of consumers worldwide feel strongly that companies should help improve the environment.⁴²

Additionally, employees are elevating their expectations regarding their employers’ commitment to protecting nature and biodiversity. For example, a global survey by Deloitte in 2022⁴³ found that protecting the environment remains a top priority for Gen Zs and millennials. They want to see their employers prioritize visible actions that enable employees to get directly involved, while 64% of Gen Zs said they would pay more to purchase an environmentally sustainable product.

“ 64% of Gen Zs say they would pay more to purchase an environmentally sustainable product.



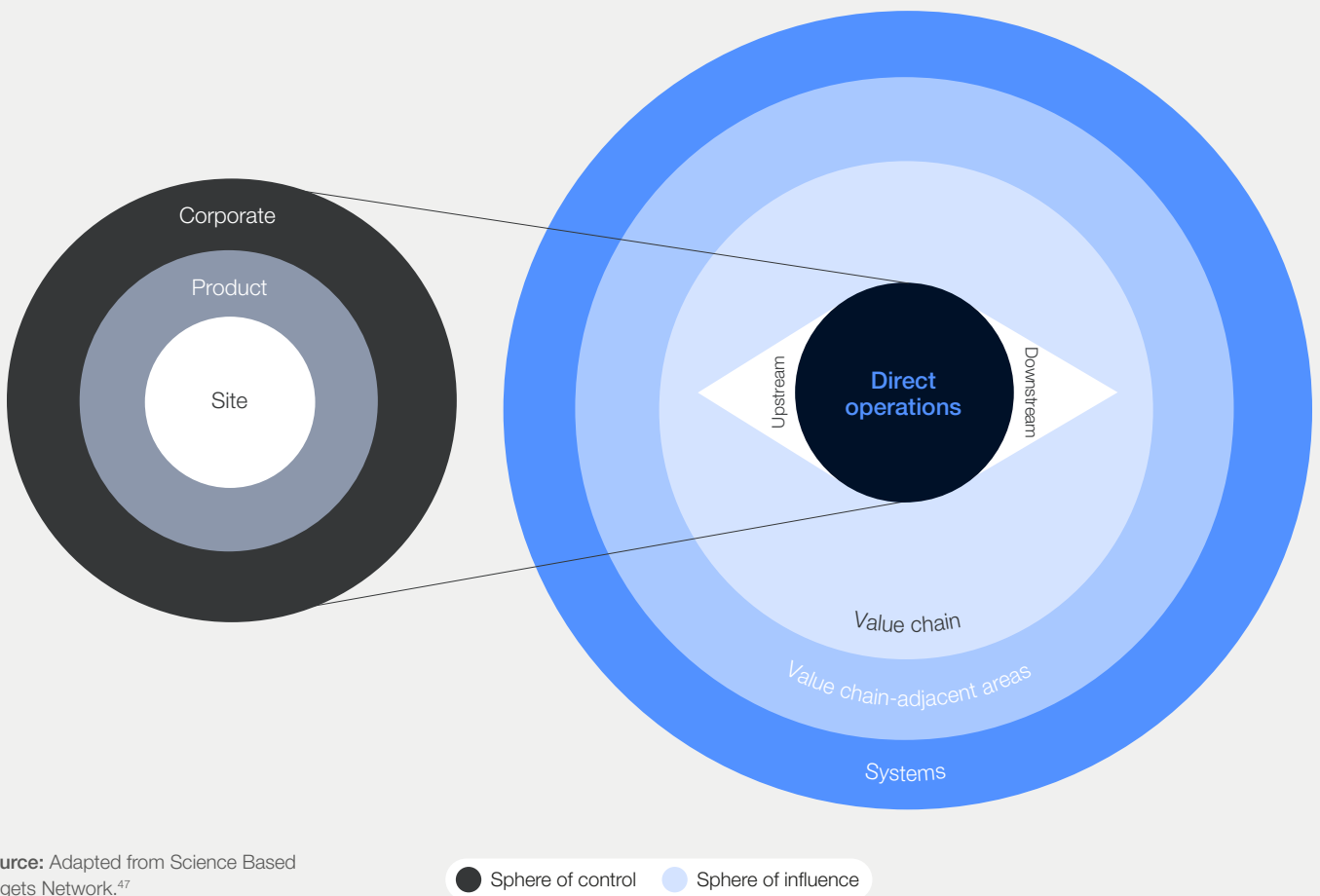
1.2 The current approach to nature and biodiversity

“ While 83% of Fortune Global 500 companies have climate change targets, only 25% have freshwater consumption targets and just 5% have targets for biodiversity loss.

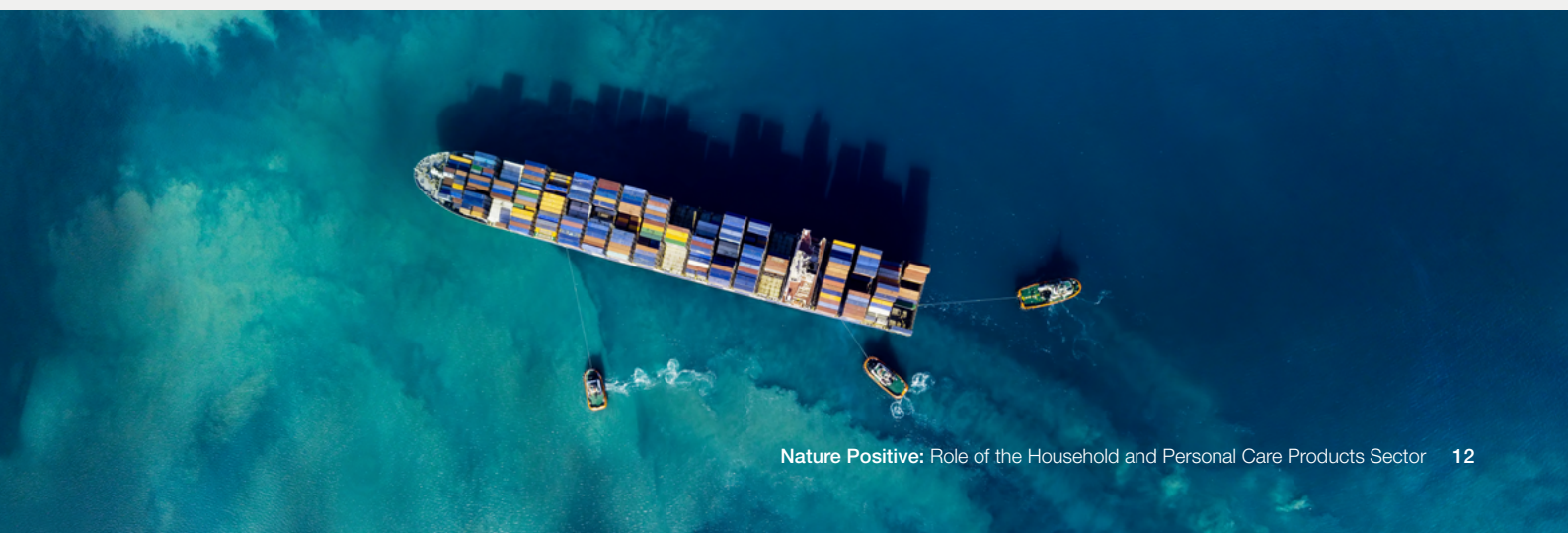
Despite the increased momentum on nature over recent years, not enough is being done. While 83% of Fortune Global 500 companies have climate change targets, only 25% have freshwater consumption targets and just 5% have targets for biodiversity loss.⁴⁴ Only 5% of companies have assessed their impacts on nature, with less than 1% understanding their dependencies.⁴⁵

According to Business for Nature, “nature positive” represents a “global goal to halt and reverse nature loss by 2030 with a view of full recovery by 2050.”⁴⁶ Individual companies, financial institutions and investors can contribute to this shared goal by adopting nature-positive strategies across their spheres of control and influence, including at sites of high-biodiversity importance, in their direct operations as well as across their value chains (see Figure 3).

FIGURE 3 Spheres of control and influence



Source: Adapted from Science Based Targets Network.⁴⁷



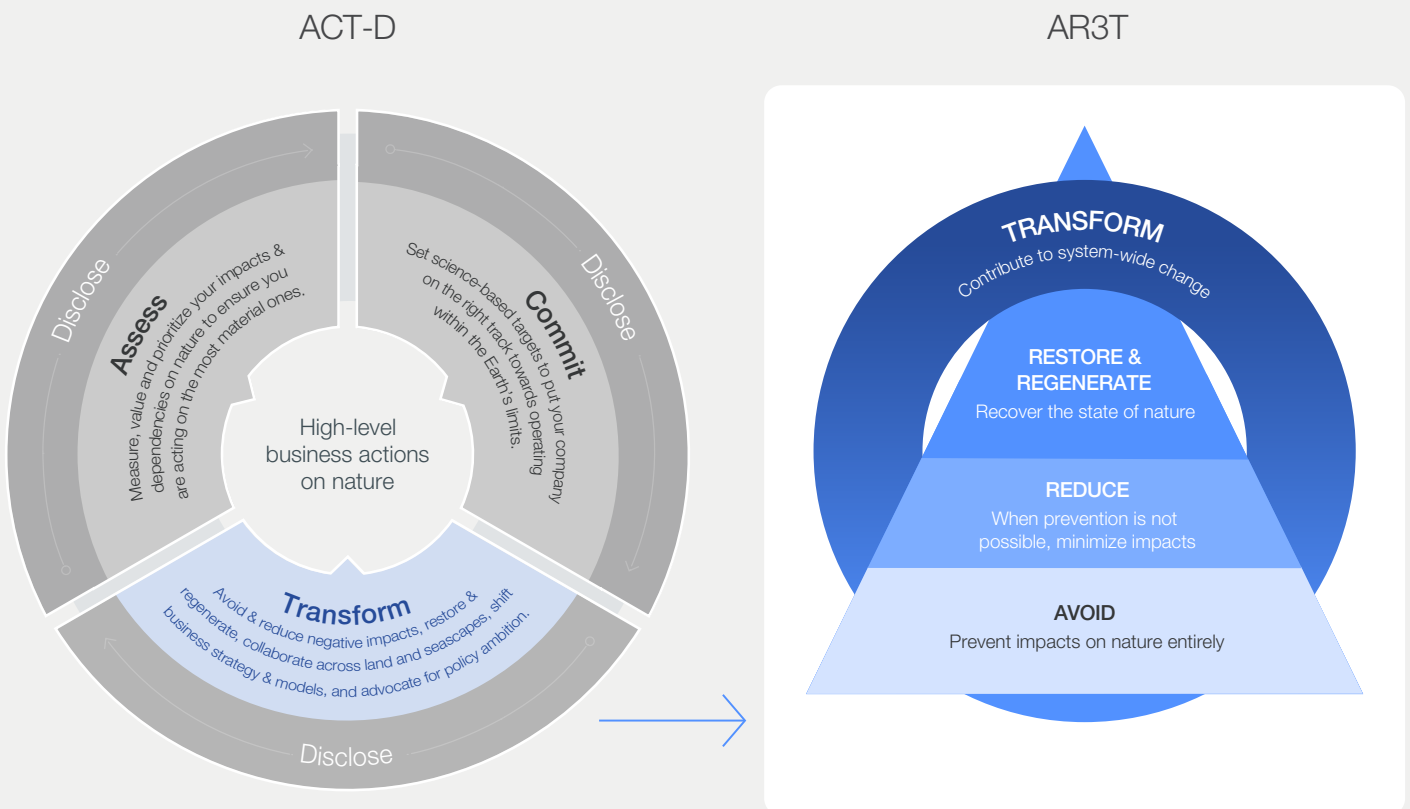
Nature is inherently complex and hence cannot be measured with a single metric or methodology. IPBES and SBTN define nature as “all non-human living entities and their interaction with other living or non-living physical entities and processes”.⁴⁸ TNFD defines nature as encompassing four realms – land, ocean, freshwater and atmosphere – with biodiversity being “an essential characteristic of nature that enables ecosystem assets to be productive, resilient and able to adapt to change.”⁴⁹

Nature is also location-specific and not replaceable or fungible, making well-conceived actions all the

more urgent. For instance, a tonne of CO₂ has the same impact on the atmosphere regardless of where it is, but the ecological value of a tree in the Amazon rainforest is not the same as that of a tree in the boreal forests.⁵⁰

This report builds on the ACT-D high-level business actions developed by the global coalition Business for Nature: Assess, Commit, Transform and Disclose,⁵¹ and the AR3T (Avoid, Reduce, Restore & Regenerate, Transform) mitigation hierarchy developed by the SBTN⁵² (see Figure 4).

FIGURE 4 ACT-D high-level business actions on nature and AR3T framework



Source: Business for Nature and Science Based Targets Network.⁵³

As per the **ACT-D framework**, businesses can and should act now to:

- **Assess:** Measure, value and prioritize your impacts and dependencies on nature to ensure you are acting on the most material ones.
- **Commit:** Set science-based targets to put your company on the right track towards operating within the Earth's limits.
- **Transform:** Avoid and reduce negative impacts,

restore and regenerate, collaborate across land and seascapes, shift business strategy and models, and advocate for policy ambition.

- **Disclose** material nature-related information across all three high-level actions above.⁵⁴

This report focuses on the Transform element of the ACT-D framework and outlines concrete sector-specific actions that companies are encouraged to take to contribute to the transition to nature positive.

It is important that these priority actions also follow the SBTN's **AR3T framework**, which encourages businesses to:

- **Avoid** and **Reduce** the pressures on nature loss, which would otherwise continue to grow

- **Restore** and **Regenerate** so that the state of nature can recover

- **Transform** underlying systems, at multiple levels, to address the drivers of nature loss⁵⁵



1.3 The road ahead

Climate action has already laid a lot of the groundwork for nature and biodiversity action, but companies and financial institutions should now mobilize on a much shorter timeline and with greater urgency.

The World Economic Forum, along with Business for Nature and the World Business Council For Sustainable Development (WBCSD), is building out sectoral knowledge to support companies to prioritize their actions to contribute to nature positive. As nature impacts and dependencies differ significantly across real economy sectors, it is important to provide tailored, sector-specific analyses and guidance for companies to understand their relationship with nature and take actions. A repertoire of executive summaries of all sectoral guidance can be found on the Business for Nature website.⁵⁶

The World Economic Forum, in partnership with Oliver Wyman, has conducted in-depth analyses of three sectors: chemicals, cement and concrete,

and household and personal care products. This report identifies and makes a business case for sector-specific priority actions for the household and personal care products sector.

Business and finance do not operate in a silo. They need to take shared accountability and collaborate with many stakeholders – including governments, employees and citizens – towards the collective goal of a net-zero, nature-positive and socially equitable economy. With this in mind, the priority actions presented in this guidance are not designed to provide a complete and comprehensive pathway to reach the nature-positive goal, but will contribute to progress towards that goal. Transitioning from current systems to a new economic model necessitates a rethinking of many existing processes. However, it is crucial that this transformation does not exacerbate inequalities across different regions and socio-economic groups.

② Where the sector is today

As the sector comes under growing scrutiny for its impacts on nature, companies need to transform business models and publicly report material nature-related information.



2.1 Sector overview

“Palm oil, a common ingredient in cosmetics and detergents, accounted for 7% of all global deforestation from 2000 to 2018.

The household and personal care products sector is central to daily lives. Its products are being consumed by virtually all individuals worldwide and have significant intrinsic value, contributing to well-being and standards of living. Consumer goods companies have played an important role in enabling societies to advance.

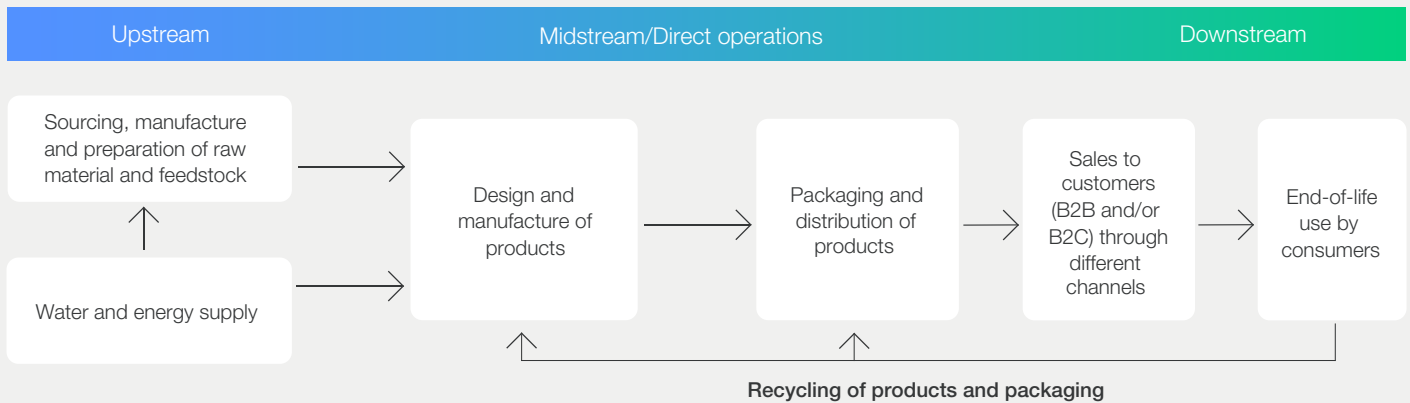
However, the sector’s activities sometime come at the expense of the environment.⁵⁷ For example, the cosmetics industry alone produces around 120 billion packaging units annually,⁵⁸ while palm oil, a common ingredient in cosmetics and detergents,⁵⁹ accounted for 7% of all global deforestation from 2000 to 2018.⁶⁰ Therefore the sector is critical in the transition to a nature-positive and net-zero economy, not least because of its direct interface with and influence by individual consumer behaviour.

BOX 1 Definition of the household and personal care products sector

The scope of this report is defined by the Sustainability Accounting Standards Board (SASB)’s Sustainable Industry Classification System (SICS) standard for “Consumer Goods – Household & Personal Products”,⁶¹ which comprises companies that “manufacture a wide range of goods for personal and commercial

consumption, including cosmetics, household and industrial cleaning supplies, soaps and detergents, sanitary paper products, household batteries, razors and kitchen utensils”. While the products differ, they share similar manufacturing processes and feedstocks, and therefore share commonalities in impacts and dependencies.

FIGURE 5 Simplified value chain of the household and personal care products sector



Sector in numbers

\$700 bn | annual revenues

22% | of global plastic waste evades waste management and goes into uncontrolled environments

Sector accounts for

120 bn | packaging units produced annually for cosmetic products

50% | of packaged supermarket products contain palm oil or derivatives

The sector is coming under increasing scrutiny for its value chain impacts on water, land and ocean, especially potential land conversion and deforestation, as well as plastic pollution. For example, the EU has agreed to introduce a new regulation on forest-risk commodities⁶³ which will require companies to shift to deforestation-free supply chains for commodities such as palm oil. Political will to address the plastic waste crisis at

global and national levels is also mounting, as seen in ongoing negotiations to develop a legally binding agreement to address plastic pollution.⁶⁴

This presents a unique opportunity for the sector to address its nature impacts, strengthen its supply chain resilience, and get ahead of forthcoming regulation to build a unique competitive advantage.

2.2 Progress is promising but needs to accelerate

Companies in the sector are already acknowledging their nature footprint and committing to take actions. Below is a selection of corporate commitments:

- Henkel⁶⁵ seeks to achieve more than a 30% share of recycled plastic for all packaging of its consumer goods and to implement circular water use at key manufacturing sites by 2030
- Natura⁶⁶ aims to support the preservation of the Amazon rainforest from 1.8 million to 3 million hectares by 2030
- By 2025, Arbonne⁶⁷ intends to divert over 90% of waste, reduce water consumption by 20% and energy consumption by 20% compared to 2019 figures
- B2B business Firmenich has published a statement specifically on biodiversity calling out five key material topics: supply chain, metrics, innovation, products and enabling environment⁶⁸

- Unilever⁶⁹ has committed to protecting and regenerating 1.5 million hectares of land, forests and oceans by 2030
- L'Oréal⁷⁰ is working towards having a positive impact on biodiversity in 100% of its industrial sites and buildings by 2030
- L'Occitane⁷¹ has partnered with Kering to launch a climate fund for nature to mobilize resources to protect and restore nature

In recent years, the sector has transitioned towards offering “nature-based” products, with 74% of beauty and personal care companies⁷² having planned to launch “plant-based” products in 2020. The shift towards bio-based feedstock has stimulated discussions on trade-offs on land-use competition and safeguards on nature, biodiversity and local community livelihoods to be put in place.

Meanwhile, the non-profit association Union for Ethical Biotrading (UEBT) focuses on the ethical sourcing of ingredients and is further investigating the relationship between beauty products and biodiversity.

While recognizing these efforts, more needs to be done. Corporate leaders should start now to Assess, Commit, Transform and Disclose – as per Business for Nature’s ACT-D framework – in a more systematic way. As noted in the Introduction, companies need to: measure, value and prioritize their nature-related impacts and dependencies across their value chains to ensure they act on the

most material ones; set transparent, time-bound, specific, science-based targets when material; take actions to transform their businesses; and track performance to publicly report material nature-related information. For more information on tools and guidance available for the ACT-D set of high-level actions, see Table 1.

TABLE 1 Selected tools and guidance available for ACT-D high-level actions

<p>Assess</p>	<p>Consult the Locate-Evaluate-Assess-Prepare (LEAP) approach from the Taskforce on Nature-related Financial Disclosures (TNFD).⁷³</p> <p>Follow the technical guidance to assess and prioritize from the Science Based Targets Network (SBTN).⁷⁴</p> <p>Follow the technical guidance to set science-based targets for freshwater and land from SBTN.⁷⁵</p>
<p>Commit</p>	<p>For companies in land-intensive sectors, refer to Science Based Targets initiative (SBTi) Forest, Land and Agriculture Guidance (FLAG) to set science-based targets that include land-based emissions reductions and removals.⁷⁶</p> <p>Use Business for Nature’s commitment list to locate relevant commitments and connect corporate efforts to collective global action.⁷⁷</p>
<p>Transform</p>	<p>Take inspiration from the World Economic Forum’s Sector Transitions to Nature Positive series of reports;⁷⁸ invest resources and commit management to deliver against clear targets.⁷⁹</p>
<p>Disclose</p>	<p>Consult the final recommendations from TNFD for nature-related risk management and disclosures, published in September 2023.</p>

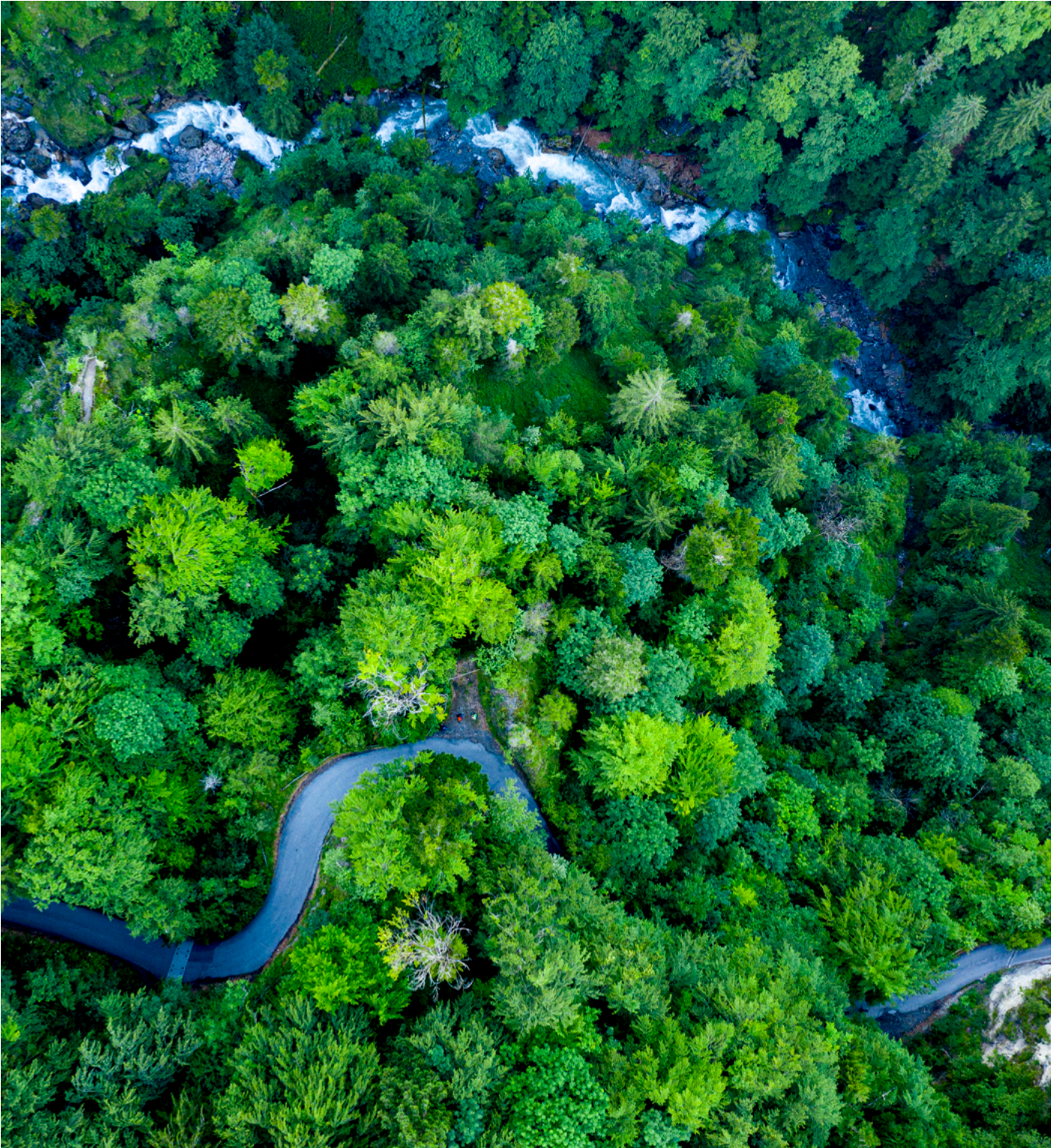
Note: This table is non-exhaustive. For more tools and guidance, see [High-level Business Actions on Nature](#).



3

Nature-related impacts and dependencies

Without corrective action, nature-related risks will escalate, threatening profitability for a sector highly dependent on nature.

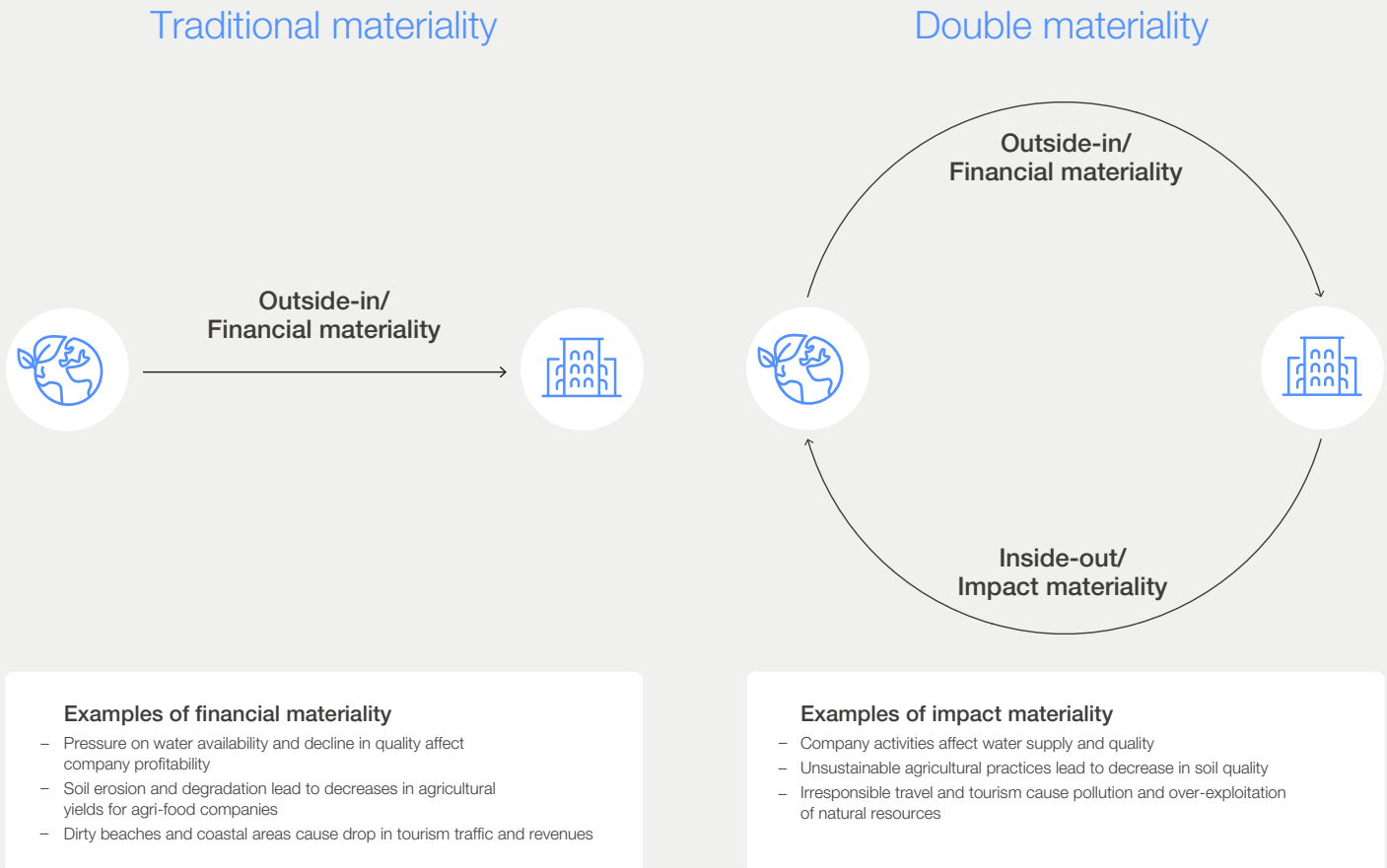


3.1 Double materiality

The principle of “double materiality”, a concept at the heart of the EU’s new CSRD, defines a company’s impact on the environment and its dependencies on it as highly interdependent (see Figure 7). In other words, the economic activities of businesses have impacts on both environment and

society (known as impact materiality or inside-out), while concurrently, businesses also encounter risks (and opportunities) arising from their dependencies on the environment and society (known as financial materiality or outside-in).

FIGURE 7 Double materiality



Source: World Economic Forum.⁸⁰





Household and personal care products interact with nature through the production of their ingredients (feedstock and raw materials sourced from nature and agriculture), direct manufacture and downstream use. As with many other industries, this sector is dependent on a number of environmental assets and ecosystem services to function and grow – freshwater, in particular, is a critical resource.

In addition, the household and personal care products sector relies on commodities such as palm oil, rapeseed oil and natural ingredients, including plant extracts. For example, Firmenich, a multinational manufacturer of flavours, fragrances and active cosmetic ingredients, relies on more than

430 different species from around the world.⁸¹ The sector is also highly dependent on land to cultivate and collect crops and plants used for feedstocks.

These dependencies strengthen the business case for investing in protecting and restoring nature to build a resilient supply chain and ensure the long-term viability of the business model. Paradoxically, however, the sector continues to contribute to drivers of nature loss. Its impact on nature is driven by water and other resource use, land-use change and pollution – particularly plastics. Over 90% of the impact of the consumer goods sector on nature comes from its supply chains,⁸² so manufacturers have an important role to play in their procurement and product design.

FIGURE 8 | Top four drivers of nature loss in the value chain of the household and personal care products sector

	Upstream	Midstream/ Direct operations	Downstream
 Water use and other resource use	✓	✓	✓
 Land-use change	✓		
 Pollution	✓	✓	✓
 Greenhouse gas emissions	✓	✓	✓

Note: See methodology in the [Appendix](#).

BOX 2

Conduct company-specific assessment of impacts and dependencies

The analysis on impact and dependencies presented in Chapter 3 is a sector-average analysis for companies in the household and personal products sector, but company-specific impacts and dependencies will vary according to their specific activities, supply chains and operational locations.

Companies will need to conduct assessments to locate their interface with nature and evaluate their dependencies and impacts using company-specific operational and supply chain information. TNFD’s LEAP approach,⁸³ as well as the SBTN’s Step 1 (screen and assess) and Step 2 (prioritize)⁸⁴ are useful frameworks to guide companies through their own assessment.

3.2 Water and other resource use

“ In 2020, consumer companies reported that the potential financial impact of water risks came to \$196 billion.

The sector withdraws and consumes huge volumes of water across its entire value chain. In particular, water is used in the upstream production and processing of feedstocks and the extraction of raw materials. For example, bottled shampoo is around 80% water.⁸⁵ Large volumes are required in midstream manufacturing activities to process and dilute waste streams. Water is also used as an ingredient for products and in their downstream use. As a result, the personal care and household products sector has a CDP Water Watch impact rating of “critical” (highest category).⁸⁶

Used water is often returned at a lower quality than it was extracted, for example polluted with chemicals or solid particulates (e.g. plastics), at a

higher temperature or with a changed pH value. This contributes to the long-term deterioration of water quality.

The reduction in availability and quality of freshwater has severe impacts on nature and also puts the operations of companies in the sector at risk. In 2020, companies across the consumer staples sectors (consisting of food, beverages and agriculture as well as personal care and household products) reported to US environmental non-profit CDP that the potential financial impact of water risks came to \$196 billion. The cost of addressing those risks is estimated at just \$11 billion by the same companies.⁸⁷

Both regulators and companies are taking initiatives, recognizing that changes at a sector-wide and global scale are necessary to alleviate water stress. In March 2023, the UN Water Conference concluded with a strong response to the global water crisis, with water technology companies committing \$11 billion in research and development to invest in innovative water solutions.⁸⁸

Apart from water, household and personal care products manufacturers also use a variety of renewable and non-renewable natural resources as

inputs that are sourced upstream. Petrochemical feedstocks including petroleum jelly and mineral oils, bio-based feedstocks such as palm oil, and natural raw materials like plant extracts and plant oils are all key ingredients of many products. Moreover, fossil fuels are used to produce plastic packaging. The extraction and processing of natural resources poses a threat to both land and marine ecosystems, often leading to the destruction of habitats. The harvesting of plants might have a direct impact on the biodiversity of flora, depending on the ecological sustainability of sourcing practices.



3.3 Land-use change

The upstream production of renewable and non-renewable feedstock and raw materials required for the household and personal care products sector may lead to land conversion, deforestation and soil degradation, due to drilling, quarrying, mining and agricultural activities. For example, the production of palm oil and rapeseed, widely used ingredients in household and personal care products, has been linked to widespread deforestation, driving habitat and biodiversity loss and removing natural carbon sinks. The conversion of land to palm oil cultivation alone caused an average 629,000 hectares of deforestation each year from 2000 to 2018, accounting for 7% of all global deforestation and 29% of deforestation in Asia over the period, according to the UN's Food and Agriculture Organization (FAO).⁸⁹

The extraction of fossil fuels and other depletable natural resources can also result in substantial disruption of land, leading to the destruction of ecosystems and habitats and ultimately driving biodiversity loss.

As the sector transitions towards offering more nature-based products, it will be dependent on larger areas of land to cultivate the crops and plants used for feedstocks. If there are no safeguards in place, this shift could contribute to further land

stress, with competition for land on the rise due to growing demand for feed, food, fibre, other natural ingredients and fuel in the global economy. Companies need to consider carefully the holistic environmental footprint across their entire supply chains when using bio-based feedstocks.

The sector's dependence on land availability and quality highlights the risk to companies arising from the loss of those natural assets. The sector's increased use of plants and renewable natural resources assumes that maintenance services, such as pollination, soil quality regulation and other services, are available and consistent for the production of natural ingredients. This dependency puts the sector at risk as ecosystem assets and services are threatened and depleted.

Governments' awareness of the importance of land quality is increasing, as are their safeguarding actions. For example, the EU's regulation on land use, land use change and forestry (LULUCF),⁹⁰ adopted in 2018, requires any deforestation to be compensated by an equivalent afforestation effort or by improving sustainable management of existing forests. The EU soil strategy for 2030⁹¹ will also be a key mechanism to ensure action to protect the quality of land.

“ The shift to more nature-based products could contribute to further land stress if no safeguards are in place.



3.4 Pollution

“ The EU has banned the use of 1,300 chemicals in cosmetics, for various reasons, including damage to the environment.

While the sector is taking actions to manage waste, it continues to pollute air, soil, water and ocean, particularly in jurisdictions where regulatory standards and enforcement are weak, and where there is a lack of waste infrastructure.

Pollution happens at all stages of the value chain. The sector's upstream feedstock production and midstream manufacturing activities often cause pollution of the atmosphere, land and water with harmful or toxic chemicals (e.g. surfactants), solid particulate matter (e.g. microplastics) and excess nutrients, disrupting natural ecosystems.⁹² The manufacturing process also generates by-products and waste.

Pollution is of particular concern in the downstream use and end-of-life phases. Many household and personal care products are designed to be used with water and disposed of in waste streams. As a result, substances detrimental to the environment enter waterways and the ocean. For example, oxybenzone,⁹³ a chemical used in sun creams to slow the absorption of UVA and UVB rays, is toxic to coral reefs and other marine life. Small particulate matter (e.g. microplastics) and solids (e.g. wipes, face masks, nappies and packaging) are major sources of pollution and harmful to land and aquatic species.

Regulation is emerging to prevent the use of harmful chemicals in consumer goods, while the formulation of cosmetics, in particular, is receiving greater scrutiny. Examples include the bans by the UK and US governments on microbeads in rinse-off cosmetics,^{94,95} or Hawaii's ban on dangerous chemicals in sunscreens.⁹⁶ The EU has a growing list of banned chemicals: in cosmetics, for example, the bloc has banned 1,300 chemicals⁹⁷ for various

reasons, including damage to the environment. This has increased pressure on cosmetics manufacturers to create cleaner product formulations.

Of all forms of pollution, plastic waste is one of the most visible. It is estimated that 12% of all plastic waste comes from the consumer goods sector.⁹⁸ Globally, only 9% of plastic is currently recycled each year, with almost 22% evading waste management and going into uncontrolled environments, including burning in open pits or disposal in terrestrial or aquatic environments.⁹⁹ Plastic has been found in the guts of more than 90% of the world's sea birds¹⁰⁰ and in March 2022 scientists found microplastics in human blood.¹⁰¹

Political will to address the plastic pollution crisis at global and national levels is mounting. The UN-led negotiation process on plastic waste provides a tangible avenue for change, offering member states a platform and a mechanism to advocate for their individual needs in relation to plastic pollution. Upon its culmination at the end of 2024, a global, legally binding treaty will come into force. The changing regulatory environment with, hopefully, a level-playing field could encourage good practice and penalize bad. At the same time, new business models and innovations to address plastic pollution, such as refill businesses or alternative packaging, are rapidly emerging and present commercial opportunities. Addressing plastic pollution could have a major positive impact: for example, reusing only 10-20% of plastic products could prevent the equivalent of nearly 50% of marine plastic pollution every year.¹⁰²

Progressive consumer goods companies have the opportunity to pave the way and get ahead of forthcoming regulation – a unique opportunity to create a competitive advantage.

3.5 Greenhouse gas emissions

“ Plastic production alone generates 3.4% of GHG emissions globally, higher than aviation’s carbon footprint.

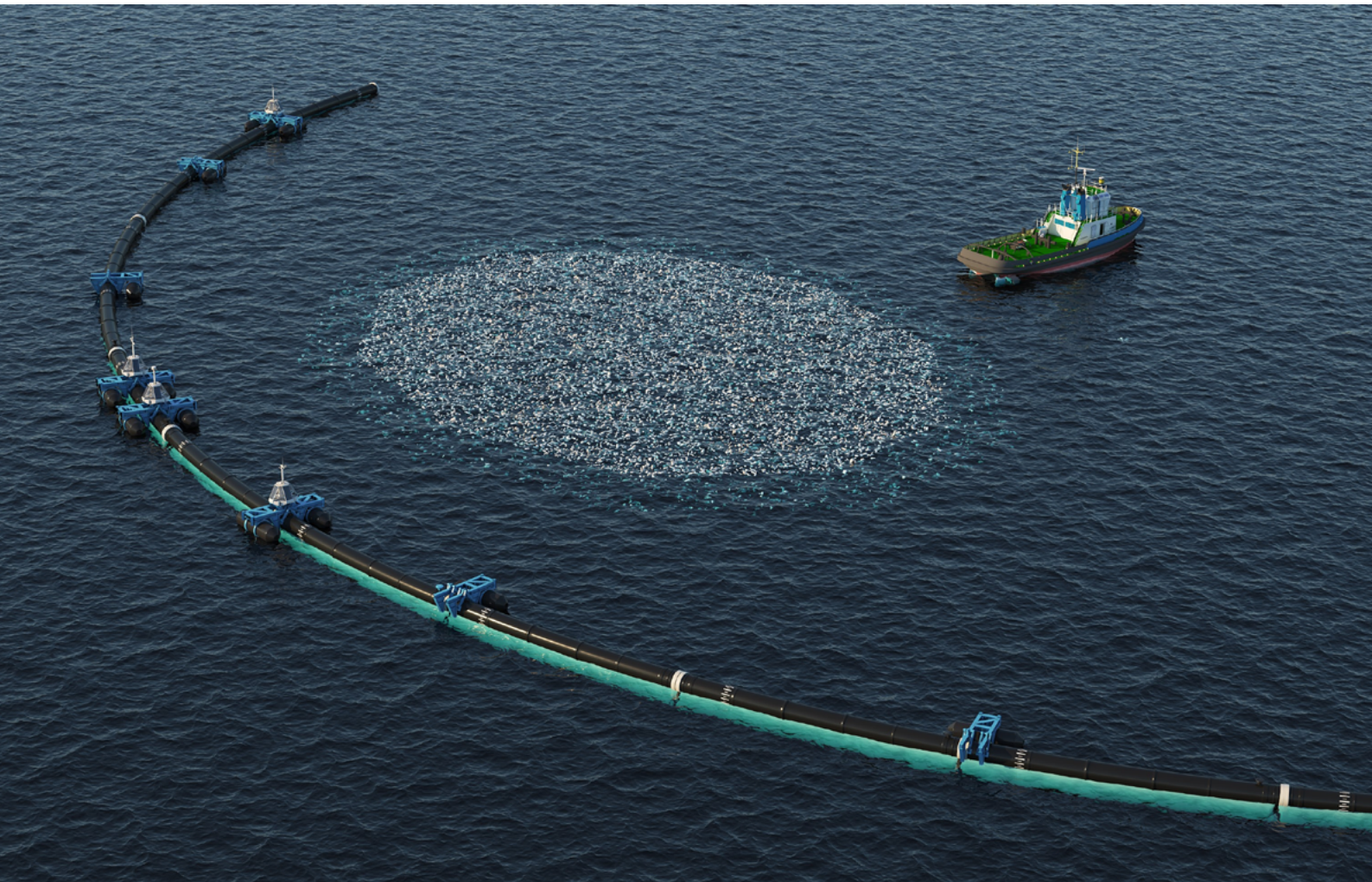
The sector contributes to greenhouse gas (GHG) emissions across its value chain, with Scope 3 emissions¹⁰³ accounting for around 80% of total emissions intensity in the consumer staples sector.¹⁰⁴ However, the extent of the sector’s emissions can vary depending on factors such as the specific products, production methods and company practices.

In the upstream supply chain, the production of personal care and household products often involves resource extraction, manufacturing, transportation and packaging, all of which can generate GHG emissions. For example, the extraction of raw materials, such as petroleum for plastics or palm oil for soaps, can have carbon-intensive processes. Plastic production alone generates 3.4% of GHG emissions globally,¹⁰⁵ higher than aviation’s carbon footprint (approximately 2% of GHG emissions).¹⁰⁶

Manufacturing in the sector also releases GHG emissions, although relatively lower than emissions in the upstream or downstream phases. For example, GHG emissions can arise from chemical reactions, heating, cooling and packaging, as well as from the operation of office buildings, warehouses and distribution centres.

Downstream use is another important source of the sector’s emissions. Unilever reports that two-thirds of its emissions occur “when they leave the shelves and go home with our consumers”.¹⁰⁷ This includes, for example, having a hot shower or doing the laundry. Last but not least, packaging materials, particularly plastics, can contribute to GHG emissions throughout their life cycle, from production to disposal.

The sector is already taking actions to tackle its emissions, engaging in both climate mitigation and adaptation. The Consumer Goods Forum proposes three low-carbon solutions: energy efficiency and conservation; production and financing of renewable energy; and switching fuel and technology.¹⁰⁸ For companies in the household and personal care products sector, a crucial approach to avoid Scope 3 emissions is to commit to a deforestation- and conversion-free supply chain and transition towards being forest-positive.¹⁰⁹ The SBTi’s FLAG guidance¹¹⁰ serves as a valuable resource to reference in achieving this goal. At the same time, climate change adaptation is key to avoiding supply chain disruption and economic losses, as well as pivotal to protecting and strengthening community and ecosystem resilience via nature-based solutions.¹¹¹



4

Five priority actions

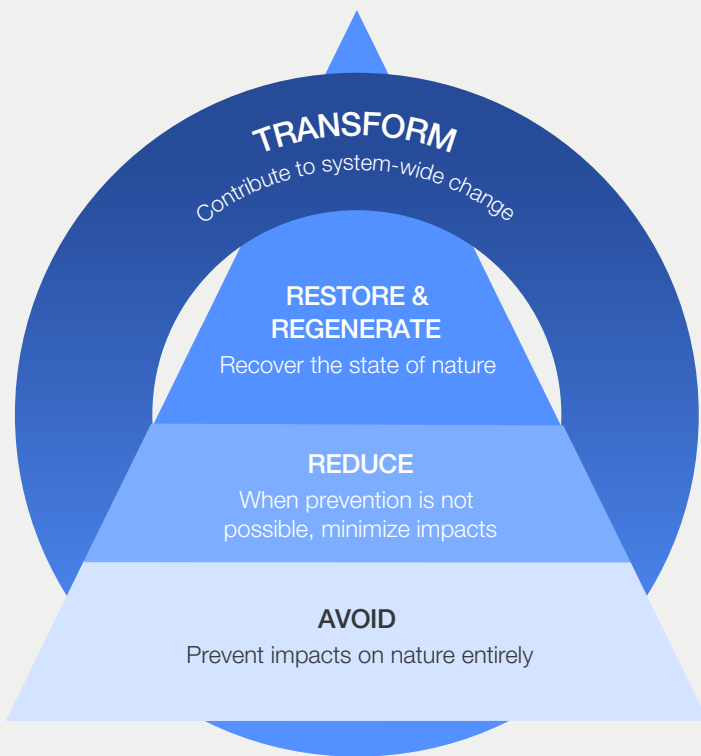
By prioritizing water stewardship, responsible sourcing, behavioural change, nature conservation and circularity, the sector can unlock \$62 billion per year of additional value by 2030.



There are five priority actions for the household and personal care products sector to take (see Figure 9). Companies can contribute to a nature-positive future by prioritizing actions to: 1) improve water stewardship, 2) source responsibly, 3) influence customer behaviour on product use and disposal, 4) support nature conservation and restoration, and 5) expand circularity, product innovation and collaboration.

Given how much of the sector's impacts are upstream and downstream, these priority actions require companies to actively engage with suppliers, retailers, customers and consumers and industry peers to transform their value chains. While most of these actions are already being employed or gradually rolled out by businesses, this report calls for accelerated efforts in the household and personal care products sector.

FIGURE 9 Five priority actions for household and personal care products sector



Priority Action 1

Improve water stewardship throughout the value chain

Priority Action 2

Source responsibly and replace feedstocks with sustainable bio-based or other renewable materials with careful evaluation of trade-offs

Priority Action 3

Influence customer behaviour on product use and disposal through educational measures and greater transparency and traceability

Priority Action 4

Support nature conservation and restoration through investment in responsible business practices and nature-based solutions

Priority Action 5

Expand circularity; create innovative, sustainable products and packaging; and engage in progressive collective action and policy advocacy

“ Undertaking the five priority actions for this sector could unlock \$62 billion of annual cost savings and revenue upside by 2030.

The transition to a nature-positive business model presents vast opportunities for companies in this sector. The Forum's *Future of Nature and Business* report estimated that a full nature-positive transition in the global economy could create \$10.1 trillion of annual business opportunities by 2030.¹¹²

Out of this amount, estimates show that undertaking the priority actions for the household

and personal products sector could unlock approximately \$62 billion of annual cost savings and revenue upside by 2030 for businesses operating across the sector's value chain. In particular, embracing circularity and transforming its business model present significant business opportunities (see Figure 10).

BOX 3 | Opportunity sizing methodology to arrive at the \$62 billion figure

The Forum's *Future of Nature and Business* report, published in 2020, identifies about 60 major business opportunities in the nature-positive economy and estimates their respective market sizes (defined as concentrated shifts in profit pools that generate specific opportunities for business). The sizing reflects the annual opportunity in 2030, based on estimated savings (e.g. value of land saved through restoration) or revenue upside (e.g. new market potential for new products). For each opportunity, the incremental size of the opportunity in a nature-positive versus a business-as-usual scenario is measured. The opportunities selected are based on existing, commercialized technologies.¹¹³

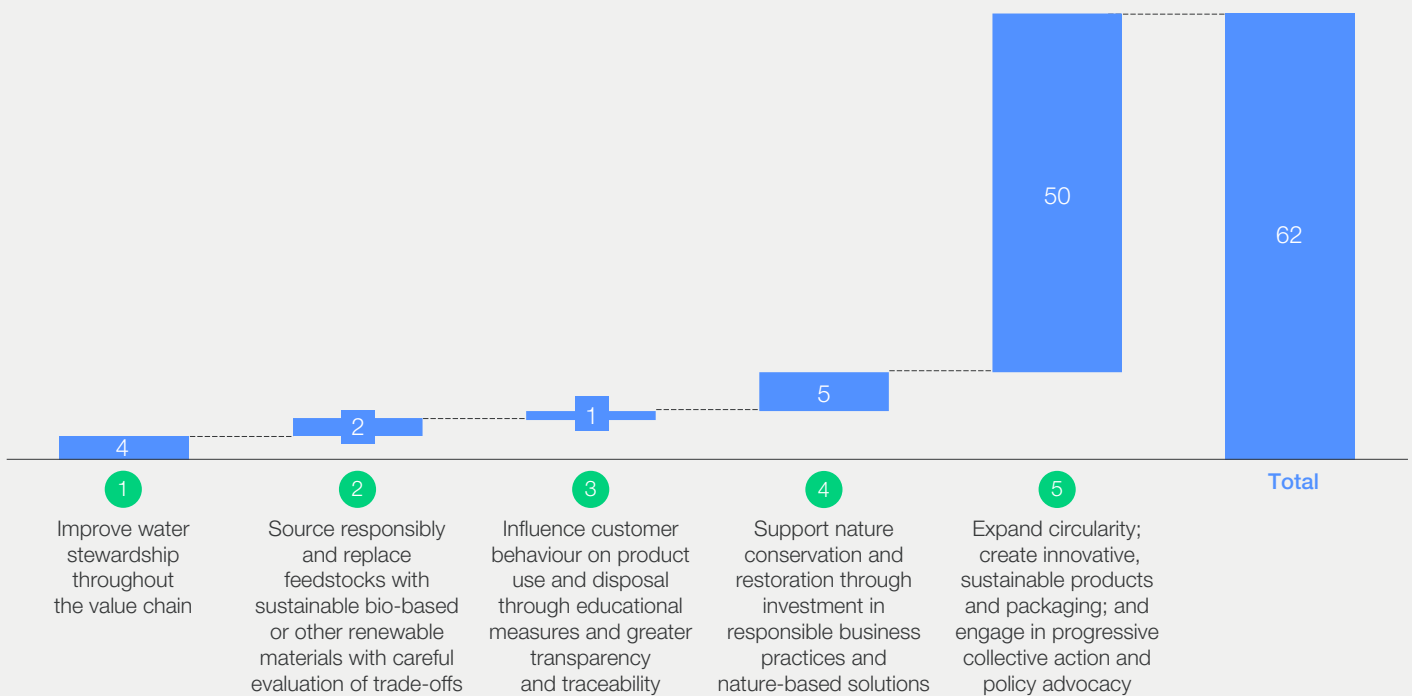
Identifying the business opportunity potential of the priority actions for the household and personal care products sector followed a two-step approach. First, relevant opportunities were selected from the *Future of Nature and Business* report and mapped to the priority actions identified in this report. Second, the

market potential for the household and personal care products sector was estimated across each selected opportunity, using the global GDP share of this sector along its value chain as an adjustment factor.¹¹⁴

This sizing approach may not cover the entire set of business opportunities that present themselves for the household and personal care products sector. For example, the market potential of new technologies under development was not considered in the original 2020 report and is therefore not covered in this report. Similarly, the 2020 report did not aspire to exhaustively cover all present opportunities. For example, it did not assess cost savings related to energy-efficiency improvement in manufacturing that could generate billions of additional annual opportunities for the household and personal care products sector by 2030.¹¹⁵

Further information on the methodology can be found in the Appendix.

FIGURE 10 | Business opportunities for the household and personal care products sector, by 2030 (\$ billion)



Taking these five priority actions both in company operations and in the wider value chain will help companies in the sector to avoid or mitigate the four drivers of biodiversity loss across the four nature realms. These actions will also contribute

to the targets of the Kunming-Montreal Global Biodiversity Framework, which aims to halt and reverse biodiversity loss to achieve the global goal of nature positive (see Figure 11).

For each action, companies should also determine the baseline, set measurable and time-bound targets and report against progress regularly to

increase their accountability (see [Chapter 5: Get started](#) for more details).

FIGURE 11 Mapping of five priority actions to GBF framework

	Selected targets from the Kunming-Montreal Global Biodiversity Framework (non-exhaustive)						
	#2: Restore degraded ecosystems	#3: Protect/ conserve lands, inland water & ocean	#7: Reduce pollution	#8: Minimize impact of climate change	#10: Sustainable management of agriculture, aquaculture and forestry	#15: Sustainable business, production and supply chains	#16: Eliminate unsustainable consumption
1 Improve water stewardship throughout the value chain		Direct contribution	Direct contribution			Indirect contribution	Indirect contribution
2 Source responsibly and replace feedstocks with sustainable bio-based or other renewable materials with careful evaluation of trade-offs			Indirect contribution		Indirect contribution	Direct contribution	Direct contribution
3 Influence customer behaviour on product use and disposal through educational measures and greater transparency and traceability	Direct contribution	Direct contribution			Indirect contribution		Direct contribution
4 Support nature conservation and restoration through investment in responsible business practices and nature-based solutions	Direct contribution	Direct contribution		Indirect contribution	Direct contribution		
5 Expand circularity; create innovative, sustainable products and packaging; and engage in progressive collective action and policy advocacy	Indirect contribution	Indirect contribution	Direct contribution	Indirect contribution	Direct contribution	Direct contribution	Indirect contribution

Priority Action **1**

Improve water stewardship

Reducing water consumption and pollution will protect nature and minimize the vulnerability of the sector to increasing risks from reduced water availability and quality. With climate change likely to exacerbate water stress worldwide,¹¹⁶ corporate leaders are already prioritizing water management in their transition efforts to nature positive. For example, L'Oréal¹¹⁷ recently pledged to test all

formulas for their impact on aquatic systems by 2030 and Proctor and Gamble launched a water-positive strategy in 2022.¹¹⁸

Technologies and methods to better manage freshwater withdrawal and wastewater treatment are readily available and are already being rolled out by companies in the sector.

“ With climate change likely to exacerbate water stress worldwide, corporate leaders are already prioritizing water management.

Useful tools to help companies identify, assess, prioritize and take action on water-related material risks include:

- Aqueduct from the World Resources Institute (WRI)¹¹⁹

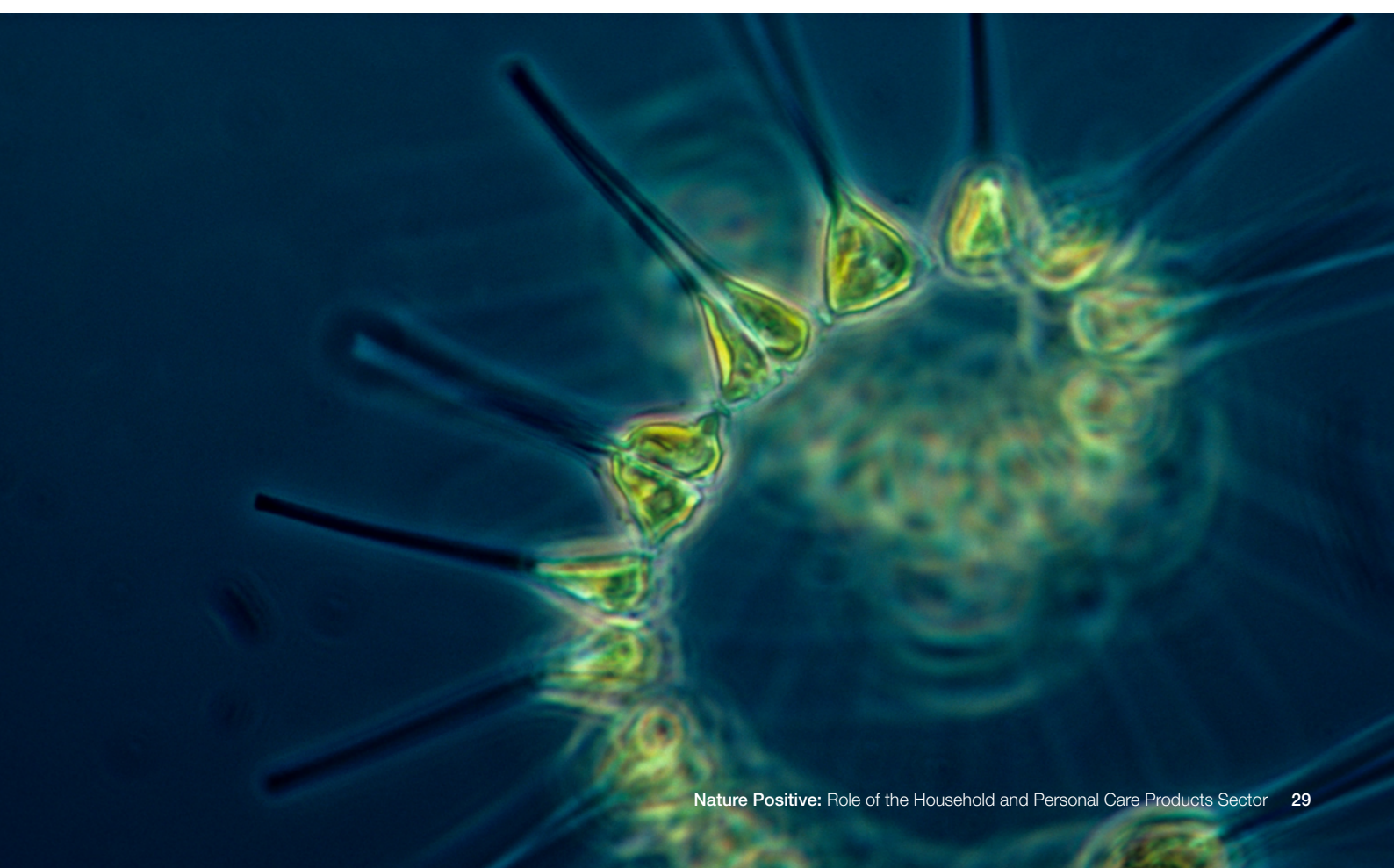
- WWF's Water Risk Filter¹²⁰
- Technical guidance on freshwater published by SBTN¹²¹

Across the value chain, companies can continue to reduce water consumption and pollution by the following actions:

- Complete a full water audit across operations and supply chains, and prioritize water basins to ensure the business is not contributing to local water stress and pollution
- Upgrade direct manufacturing operations to reduce reliance on water, such as switching to air-cooled instead of water-cooled processes or investing in updating or replacing water-using equipment to ensure maximum efficiency¹²²
- Employ water-processing technology and systems to maximize water recovery and recycling, leveraging the latest technology¹²³
- Partner with communities to support their local water management, by engaging in integrated river basin management¹²⁴
- Include water usage criteria in procurements with farming suppliers to encourage them to minimize their freshwater consumption

- Educate customers in best product usage to minimize excessive downstream water use (see also priority action #3)
- Redesign packaging solutions for reuse or refill to minimize product disposal in nature (see also priority action #5)
- Develop product formulas that are less dependent on ingredients that require high volumes of water in their upstream sourcing (see also priority action #5)
- Develop innovative products that require less water when in use and cause less pollution to water systems when they are disposed of, such as avoiding high concentrations of bleach¹²⁵ (see also priority action #5)

Effective water management will enable companies to operate longer in geographies that are experiencing water stress, while protecting companies from forced downtime due to drought, water scarcity measures (e.g. water markets)¹²⁶ or other causes leading to a lack of water supply.



Source responsibly

Screening supply chain risks

Producers of household and personal care products source raw materials and feedstocks from many other sectors to manufacture their products, such as the oil and gas, chemical, agricultural products,

pulp and paper, and forestry products sectors. Manufacturers can signal their nature-positive intent across the supply chain by incorporating nature-related considerations (e.g. deforestation-free, biodiversity-friendly farming, favouring non-endangered, non-overexploited raw materials) into procurement criteria and supplier assessments.

BOX 5

Compliance and certification standards for responsible sourcing

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)¹²⁷
- Access and Benefit Sharing (ABS)¹²⁸
- Union for Ethical BioTrade (UEBT) sourcing with respect certificate¹²⁹
- Roundtable on Sustainable Palm Oil (RSPO)¹³⁰
- NDPE (No Deforestation, No Peat, No Exploitation) commitment¹³¹

Actions can include the following:

- Integrate holistic analysis of impacts, dependencies, risks and opportunities into all procurement decisions; conduct supplier maturity assessments and develop a supplier scoreboard.
- Require compliance and certification against recognized standards or organizations when making sourcing decisions (see Box 5)
- Upgrade data gathering efforts by:
 - Using validated open-source geospatial forest-risk commodity data from the Forest Data Partnership,¹³² an initiative focused on the global monitoring of commodity-driven deforestation, forest degradation and restoration efforts, to ensure deforestation by upstream suppliers is minimized.
 - Leveraging technology, such as radio frequency identification (RFID) technology, blockchain, satellite monitoring and digital passports,¹³³ to develop full traceability and transparency of materials and ingredients.
- Facilitate and encourage whistle-blowers to inform on any suppliers that are not upholding mandatory biodiversity requirements: for instance, Unilever's Palm Oil Grievance Tracker¹³⁴ documents complaints about alleged breaches of Unilever's palm oil policies.
- Support suppliers and farmers and work with local communities to promote regenerative agriculture and other biodiversity-supportive practices.

Achieving sustainability along the supply chain is no quick fix and gradual steps should be taken to reduce dependency on unsustainable practices. See Box 6 for useful resources to help companies screen supply chain risks and remediate adverse impacts on nature.

BOX 6

Resources to screen supply chain risks

- Integrated Biodiversity Assessment Tool (IBAT)¹³⁵
- WWF Biodiversity Risk Filter¹³⁶
- Consumer Goods Forum commodity roadmaps¹³⁷
- Tropical Forest Alliance's Agriculture Sector Roadmap to 1.5°C¹³⁸
- SBTi's FLAG guidance¹³⁹
- SBTN's High Impact Commodity List¹⁴⁰

“ As demands for improved transparency and traceability increase, companies will have to make further efforts to measure each product’s full nature footprint.

Technology and partnerships are pivotal. For example, Procter and Gamble is using digital watermarks embedded within packaging to allow downstream recyclers to dispose of their products with accurate plastic sorting in automated processes.¹⁴¹ Unilever joined forces with USAID, NASA, FAO, WRI and Google to launch the Forest Data Partnership, a shared data ecosystem to monitor deforestation and restore nature.¹⁴²

As demands for improved transparency and traceability increase, companies will have to make further efforts to measure each product’s full nature footprint. They will need to open and maintain information corridors with suppliers and customers and there will need to be full data collection and sharing regarding all interactions with nature to support clear decision-making and effective disclosures.

Sustainable sourcing of alternative feedstocks

Household and personal care product companies are highly dependent on natural resources to manufacture their products. Substituting fossil feedstocks with sustainable bio-based or other renewable materials can help reduce a company’s negative impacts on nature, reducing its contribution to nature loss due to GHG emissions and pollution. A report by CDP on fast-moving consumer goods companies in 2019 found that six out of seven household and personal care products

companies are actively innovating to replace petrochemicals in their formulations with natural, biodegradable ingredients.¹⁴³

Bio-based alternatives can be derived from plants, animals, microbes, enzymes, insects and organic crops (including non-timber forest products).^{144,145} However, when sourcing bio-based feedstocks, companies should take into consideration other demands on land use such as feed, food, fibre, other natural ingredients and fuel. In addition, bio-based feedstocks may have unintended consequences on nature and biodiversity due to monoculture plantations as well as on local communities. Therefore, an assessment of the impact or footprint of bio-based products is needed to assess trade-offs. The Organisation for Economic Co-operation and Development (OECD) recommends¹⁴⁶ that frameworks assessing the sustainability of bio-based products consider their environmental (including biodiversity), economic and social impacts throughout their whole life cycle.

Companies are also encouraged to use approaches such as regenerative farming, second-generation feedstocks and recycling technologies to minimize any adverse impacts from shifting to bio-based feedstocks. The Sustainable Supply Chain Initiative¹⁴⁷ of the Consumer Goods Forum provides guidance for companies on how to take action. The Renewable Carbon Initiative¹⁴⁸ is another coalition to support and speed up the transition from fossil carbon to renewable carbon for all organic chemicals and materials.

Priority Action

3

Influence customer behaviour on product use and disposal

Customer engagement has the potential to transform the sector’s downstream impacts and dependencies on nature by minimizing needless consumption, mitigating pollution and, ultimately, guiding consumer demand towards behaviours that are in harmony with the planet.

Consumers are increasingly concerned about the footprint associated with their purchasing and consumption habits. Research shows that they prefer products with lower environmental impacts. For example, sales of coffee rose by almost 10% when carrying a Fair-Trade label, as compared to a generic label.¹⁴⁹ The UEBT Biodiversity Barometer 2022 shows that the biodiversity crisis has become an urgent issue of concern for consumers with, for example, 54% of those surveyed saying it was very important to them to have information on a product’s impact on biodiversity listed on the packaging.¹⁵⁰ Consumers are also demanding increased supply chain transparency, with one in five consumers not knowing how to check a product’s sustainability credentials, but 88% wanting help from brands to live more sustainably.¹⁵¹

Companies in the household and personal care products sector, whether B2B or B2C, can engage with both direct customers and end-consumers to help inform their decisions and take action, for example by the following actions.

Embrace standards and transparency

- Disclose on nature and biodiversity footprints (e.g. water consumption, pollution, land use)
- Engage in programmes such as the EcoBeautyScore¹⁵² to provide a comparable metric for consumers to use in decision-making
- Sign up to recognized standards bodies to achieve Eco BioTrade¹⁵³ and FairTrade¹⁵⁴ labels

“ 54% of consumers say it’s very important to have information on a product’s impact on biodiversity listed on the packaging.

Invest in education and awareness

- Inform the end-consumer on the best use of products to minimize environmental impact (e.g. optimum temperatures, volumes of water, number of uses, size of dose) and encourage the correct disposal of products and packaging
- Inform B2B customers through webinars, presentations, newsletters or regular updates about the company's sustainability initiatives
- Collaborate with B2B customers on sustainability projects and work together to develop new technologies or processes, invest in refillable or new packing solutions (see priority action #5)

While educational campaigns are crucial for spreading awareness and promoting behaviour change, there are several reasons why they might not always work as effectively as intended, such as message overload, behavioural inertia, scepticism and mistrust due to greenwashing concerns. For example, Unilever noted in their Climate Transition Action Plan (CTAP) that their ability to impact consumer's behaviour is limited.¹⁵⁵ Therefore, educational campaigns will need to take these factors into account and use a combination of strategies, such as the "five levers for change" proposed by Unilever: make it understood, easy, desirable, rewarding and a habit.¹⁵⁶

Priority
Action

4

Support nature conservation and restoration

Active engagement from companies in conserving and restoring nature within and beyond value chains is a vital step in the sector's contribution to nature positive. Conservation prevents ongoing degradation, while restoration attempts to reverse previous degradation.¹⁵⁷ With an estimated 60% of services provided by nature already degraded or used unsustainably,¹⁵⁸ conservation alone is insufficient and restoration efforts should be employed.

Technologies, initiatives and research to help support the conservation and restoration of nature are readily available and, in some cases, have already been adopted by companies in the sector.

Promoting nature-based solutions and working with local communities

Many companies promote and invest in credible and effective nature-based solutions through place-based conservation and restoration or through landscape and jurisdictional approaches.¹⁵⁹ Companies can invest within or beyond their value chains while working with local communities to safeguard their livelihoods.

For example:

- Natura & Co – through fair trade and working with more than 2,000 families in the Amazon – is able to preserve 18,000 square kilometres of Brazil's Amazon forest.¹⁶⁰

- Reforestation efforts in Italian forests have been supported by the cosmetic brand Fresh, in collaboration with Save the Truffle and the Union for Ethical BioTrade. Fresh is redirecting certain profits to regenerate the ecosystem required to grow white truffles by removing invasive species and planting endemic trees.¹⁶¹
- In the Sahel, companies like Nexira are developing value chains for products from endemic species – such as gum arabica and baobab – to enhance local livelihoods while creating incentives for long-term conservation and restoration.¹⁶²
- As early as 2010, Unilever introduced the sustainable agriculture code (SAC) – complemented by its regenerative agriculture principles introduced in 2021 – to further strengthen its efforts to nourish soil, capture carbon and restore and regenerate the land.¹⁶³
- A key success factor for many companies is to establish a traceable supply chain. For example, Henkel and Solidaridad have joined forces since 2018 to support sustainable palm oil production in Colombia through an integrated supply chain with the participation of processors, processing mills and more than 500 smallholder farmers.¹⁶⁴
- Other coalitions, such as the 1t.org corporate alliance,¹⁶⁵ support companies to take actions beyond their value chain on forest conservation, restoration and reforestation with ecologically and socially responsible approaches.

“ Scientists estimate that 60% of services provided by nature are already degraded or used unsustainably.

Clean-up initiatives

Companies can also support global or local clean-up initiatives in rivers and oceans as another way to restore ecosystem services. For example:

- REN Clean Skincare partnered with the Surfrider Foundation to help clean up beaches and oceans.¹⁶⁶
- Bower Collective, a refillable household and personal care brand, partnered with CleanHub to support Green Worms Waste Management project, which collects non-recyclable household waste to be processed in energy recovery plants.¹⁶⁷
- Henkel entered a partnership with social enterprise Plastics Bank to support the collection of ocean-bound plastic and empower collection communities to thrive.¹⁶⁸

Innovative finance

According to a 2020 report on the global biodiversity funding gap, spending on biodiversity conservation is estimated at between \$124 and \$143 billion per year, against a total estimated biodiversity protection need of between \$722 and \$967 billion per year. This leaves a biodiversity financing gap of at least \$600 billion per year.¹⁶⁹ Given public sector organizations alone are unlikely to foot this bill, the private sector has a key role to play in helping bridge the gap by investing in a nature-positive transition.

Target 19 of the Kunming-Montreal Global Biodiversity Framework proposes a number of innovative ways to mobilize resources from both the public and private sectors. For example, companies could consider investing in payment for ecosystem services, green or blue bonds, voluntary biodiversity certificates or credit markets, and nature restoration funds. Through careful assessment of the advantages and disadvantages of available products, companies can contribute to meaningful biodiversity conservation that is aligned with their internal values and targets.¹⁷⁰

Priority
Action

5

Expand circularity, product innovation and collaboration

Manufacturers of household and personal care products need to start taking transformative action by adopting circular business models and creating more innovative product portfolios and manufacturing approaches to offer more planet-compatible products, as well as advocating for global and national policy changes. Such transformations can have profound implications for the upstream sourcing, direct production and downstream distribution activities of companies.

For example, the adoption of circular approaches will lead to a reset of supply chains, while the successful roll-out of a more nature-conscious offering will depend on substantial R&D spending to develop new products and packaging, changes to established manufacturing processes and consumer engagement to capture new markets.

Accordingly, transformative action will require companies in this sector to redefine their business strategies and undertake significant investment. These changes may carry a considerable degree of risk and a successful transformation can only occur if businesses manage to harness broad buy-in from all relevant stakeholders, including investors. Nevertheless, taking action today will enable manufacturers of household and personal care products to future-proof their business model by providing access to compelling business opportunities in the new nature-positive economy.

Circularity

Circular models – moving away from conventional, linear take/make/waste approaches – can reduce the input of virgin materials across the supply chain, making the production of outputs more efficient and significantly lowering upstream dependence on natural resources as well as downstream impacts on nature through pollution. It is estimated that circular solutions including reuse and recycling could reduce 50% of plastic pollution by 2040, making this action the most impactful of all options.¹⁷¹ For household and personal care product companies to unlock these opportunities, they can build circularity into their value chains by, for example:

- Designing packaging solutions that can operate within refill/reuse systems.
- Prioritizing the utilization of recycled content over virgin material in both packaging and products. Where elimination or reuse is not possible, design products that can be recycled through existing supply chains.
- Recycling manufacturing by-products and waste products internally or by reformulating and selling waste – this has been shown to deliver profits of nearly \$200 per tonne of plastic collected for recycling.¹⁷²

“Circular solutions including reuse and recycling could reduce 50% of plastic pollution by 2040.”

- Recycling “end-of-life” materials for other purposes; for example, sludge waste can now be recirculated to form bioplastics.¹⁷³
- Ensuring the collection and proper disposal of product packaging that cannot be reused or recycled, including by financing infrastructure and collection in end-markets.

Adopting circular approaches is already high on the agenda for many consumer goods companies. For example, Colgate Palmolive, Henkel, L’Oréal and Unilever have all targeted between 25% and 30% of recycled content by 2025.¹⁷⁴

Innovative packaging

Consumer demand for cleaner and greener products and a new model for packaging products (through increased use of refillables and reusables) is also increasing the pressure on consumer goods companies to act. Respondents to UEBT’s Biodiversity Barometer 2022¹⁷⁵ said that reducing plastic waste and making packaging 100% recycled or biodegradable are the second and third most important actions that companies can take to address biodiversity. It is estimated that the equivalent of half of annual plastic waste reaching the ocean could be prevented by reusing just 10-20% of plastic packaging.¹⁷⁶

Businesses can design new packaging solutions and reduce plastic waste through, for example, the following actions:

- Roll out new reusable or refillable solutions for their own products to minimize single-use waste. This will require developing comprehensive infrastructure to make these solutions easily accessible and cost-effective for consumers. Collaborative efforts and alignment within the industry, as well as with downstream product distributors, are essential to establish and maintain this infrastructure.
- Develop reverse logistics such as recycling and take-back programmes where consumers can return used packaging for recycling or reuse.

- Expand into the broader innovative packaging market and, with demand for new packaging solutions on the rise among fast-moving consumer goods companies, commit to 100% recyclability, reusability and composability of packaging by 2025.¹⁷⁷
- Explore the switch to bio-based plastic, compostable, recyclable and carbon-neutral packaging solutions for their own products, with careful safeguards (for more details, see WWF’s position on bio-based plastic and biodegradable plastic¹⁷⁸).

In particular, refillable and reusable solutions present a growing opportunity for household and personal care products companies to transform their businesses. Algramo, a refill innovator based in Chile, has rolled out refillable packaging models in Chile, the US and United Kingdom and partners with multinationals including Nestlé, Unilever, Walmart and Lidl.¹⁷⁹ TerraCycle’s Loop platform has validated consumer demand for reuse and is currently live in France, Japan and the US, partnering with major retailers such as Carrefour, Aeon and Walmart and 200+ consumer brands.¹⁸⁰ Consumer interest is growing, with sales of refillable prestige beauty products in the United Kingdom increasing by 47% between January and July 2022¹⁸¹ and 94% of consumers¹⁸² expressing that they are more likely to invest in refills if availability is not a barrier.

Investor interest in sustainable packaging is growing. For example, the dedicated Emerald Technology Ventures fund for sustainable packaging¹⁸³ is funding packaging start-ups at all stages of the packaging life cycle, and the European Investment Bank (EIB) and PackBenefit have signed a €13 million¹⁸⁴ venture debt agreement to finance a new production plant. While initially focused on food, Nestlé has invested €5 million¹⁸⁵ into an Italian venture capital fund aimed at accelerating research to facilitate the introduction of innovative packaging solutions. Investments into R&D have paid off, with Henkel producing the first carbon-negative packaging hot melt adhesive. The Plastic Waste initiative of the Consumer Goods Forum¹⁸⁶ provides further guidance for companies on how to take action.

“ The equivalent of half of annual plastic waste reaching the ocean could be prevented by reusing just 10-20% of plastic packaging.

BOX 7

Refill stations in Indonesia cut plastic waste and retail prices

According to the Indonesian Ministry of Environment and Forestry, the national waste total for 2021 is projected to rise to 68.5 million tonnes. Alarmingly, the proportion of plastic waste within this total has surged from 11% in 2010 to 17% in 2021, equivalent to approximately 11.6 million tonnes.

In December 2021, Unilever teamed up with the start-up QYOS to introduce two refill stations in Jakarta, Indonesia, offering home care products

like Rinso and Sunlight. QYOS is a digital-based company founded in 2020 that has collaborated with Unilever and Nestlé Indonesia to set up 11 automatic refill stations in the country. Customers can simply bring a used bottle to these stations and replenish it with their preferred product. Initial responses have been encouraging: this method cuts down on plastic waste and customers enjoy up to 20% savings compared to retail prices at local stores.^{187,188,189}

Product portfolio innovation

Manufacturers can also focus on developing nature-conscious products. These reduce both upstream and downstream impacts, due to fewer input resources required, less water consumed and less pollution generated in the use phase. Examples of such products may include:

- Customizable products to optimize the use of chemicals and materials and reduce downstream waste
- Waterless and concentrated formulations (solid or powdered) to minimize water use in manufacturing and reduce shipping loads
- “Naked products”, free from packaging, such as shampoo and conditioner sold in solid bar form rather than in plastic bottles
- No-rinse products to reduce water consumption and pollution

In particular, demand has increased for solutions that reduce downstream consumer impact by, for example, reducing the number of washes or volume of water required, or increasing the number of uses per product with improved reusability or multifunctional design of goods. Innovation has grown significantly from incumbent consumer goods companies and new market entrants. For example, Saathi, a start-up that primarily operates in Africa and Asia, sells biodegradable sanitary pads that are made with banana production surpluses.¹⁹⁰ Re-fresh Global, another start-up, recycles clothing into new raw materials, also used in household products.¹⁹¹

Beyond rethinking their product offering, manufacturers can also innovate the ways they produce, investing in biotechnological processes to produce safe and effective active ingredients and packaging via low-cost and contamination-free methods.¹⁹² Bio-based manufacturing offers significant potential for companies to reduce their impact and realize new business opportunities. Research shows that as much as 60% of the physical inputs to the global economy could, in principle, be produced biologically.¹⁹³

Cross-sector collaboration drives progressive action

More importantly, relevant coalitions and platforms offer companies the opportunity to share lessons learned and best practices, connect with and influence industry peers, engage with policy-makers and advocate progressive regulatory changes. For example:

- **Global Plastic Action Partnership (GPAP):**¹⁹⁴ An impartial, multi-stakeholder platform at the World Economic Forum dedicated to translating commitments to reduce plastic pollution and waste into concrete action. GPAP aims to shape a more sustainable and inclusive world through the eradication of plastic pollution, supporting both government and industry alike.
- **Business Coalition for a Global Plastics Treaty:**¹⁹⁵ A multistakeholder platform convened by the Ellen MacArthur Foundation and the WWF. The coalition gathers leading companies (including consumer goods companies such as Henkel, 3M and Unilever) and financial institutions that support the introduction of a UN treaty to end plastic pollution.
- **The Consumer Goods Forum:**¹⁹⁶ A coalition with members from some 400 retailers, manufacturers, service providers and other stakeholders across 70 countries in pursuit of business practices for efficiency and positive change.
- **The Consumers Beyond Waste initiative:**¹⁹⁷ A multistakeholder initiative facilitated by the World Economic Forum to bring together key stakeholders dedicated to enabling consumers to access scalable, innovative consumption models that are not only desirable and affordable but also present a more sustainable option compared to single-use models.
- **EcoBeauty Consortium:**¹⁹⁸ A progressive coalition of about 70 cosmetics industry stakeholders. The consortium is working on an “EcoBeautyScore” to provide consumers with clear, transparent and comparable environmental impact information about products.
- **International Association for Soaps, Detergents and Maintenance Products (A.I.S.E.):**¹⁹⁹ An organization that gathers producers of household products and advocates for progressive action in the sector, including circular solutions and resource efficiency. The association was a leader in piloting the Product Environmental Footprint (PEF) method.

5

Get started

The twin imperatives of addressing climate change and nature loss are highly interdependent. Companies should complement their net-zero plans by setting a credible nature strategy.



While many companies in the household and personal care products sector have already embarked on the nature journey and embraced the five priority actions, achieving transformative business model changes and making genuine contributions towards a nature-positive world by 2030 demands significant time and resource investments from companies.

The journey to deliver net-zero emissions and tackle nature loss are two business concerns that are highly interdependent: climate change is a main driver of biodiversity loss and efforts to tackle climate change cannot succeed without safeguarding nature. Therefore, the nature-positive transition is synergistic to companies' net-zero commitments and should be integrated into their climate transition plans.

Guidance is emerging on both transition planning for net zero and ways to adapt those plans to integrate nature and biodiversity. Several institutions are working on such guidance, for example:

- **UK Transition Plan Taskforce (TPT)** created a new working group focused on nature in early 2023.²⁰⁰
- **Glasgow Financial Alliance for Net Zero (GFANZ)** has published a best practice framework for net-zero transition planning.²⁰¹ The framework has five themes or components: 1) Foundations, 2) Implementation strategy, 3) Engagement strategy, 4) Metrics and targets and 5) Governance.
- **WWF** has produced a step-by-step framework²⁰² to support the integration of nature into climate-related transition planning, building on the GFANZ framework. This framework starts by ensuring that climate-tackling actions do not come at the detriment of nature, emphasizes the importance of enhancing the co-benefits of natural climate solutions and seeks to align net-zero transition plans with nature-positive goals.



5.1 | Align strategy with organizational maturity

An assessment of a company's organizational readiness and maturity can help it identify the most suitable guidance and tools to drive action and understand its performance on the nature-positive journey. Table 2 details recommended actions to

deliver a nature-positive strategy mapped to an organization's level of readiness and maturity. These actions are broadly organized in line with GFANZ's five themes or components of net-zero transition planning mentioned above.

TABLE 2 | Mapping the components of a nature-positive strategy against organizational maturity

Organizational maturity Component of a nature-positive strategy	Starting and developing	Advanced and leading
Summary	Identify nature-related issues Set a high-level ambition and/or targets for nature Present stand-alone actions on nature	Integrate nature into strategy and governance Assess impacts and dependencies for all potentially relevant realms Set measurable and science-based targets for nature Implement strategic action, redefine industry business models and mobilize the whole value chain
Foundations	Employ sectoral averages for high-level screening to discern priority effects on nature Use secondary data for materiality assessments to gauge priority impacts and nature dependencies, considering factors like environmental pollution Use tools and guidance such as ENCORE , SBTN's initial guidance for business and materiality screening tool , Aqueduct from WRI, TNFD's upcoming Getting started guidance, WWF's biodiversity risk filter and water risk filter , UNEP-FI's report on high-risk sectors and the Integrated Biodiversity Assessment Tool (IBAT)	Refine materiality assessment by measuring impacts and dependencies on nature using primary operations data and environmental indicators, and undertake an in-depth analysis of significant risks and opportunities, understanding their influence on financial statements Maintain a comprehensive grasp of organizational resilience with an actionable plan for managing nature risks and opportunities Perform thorough valuations of all priority areas, considering trade-offs, using value chain data and recognizing the mutual benefits for business and society Use tools and guidance such as ENCORE , SBTN's Step 1 – Assess , Step 2 – Prioritize and TNFD's LEAP approach , Aqueduct from WRI, WWF's biodiversity risk filter and water risk filter , UNEP-FI's report on high-risk sectors and the Integrated Biodiversity Assessment Tool (IBAT)
Implementation strategy and engagement strategy	Develop sustainable procurement policies with suppliers that have nature-focused elements Prioritize actions to avoid and reduce negative impacts in the company's direct operations and upstream supply chain Implement initial traceability for primary suppliers Be aware of National Biodiversity Strategies and Action Plans (NBSAPs) and recognize the interdependence of nature and climate in advocacy efforts	Adopt a circular strategy and embrace regenerative principles by linking capital to nature-positive outcomes and by involving all stakeholders, including employees, clients and customers Establish advanced traceability for key materials and ensure supplier alignment; expand traceability throughout product life cycle; foster innovative supplier collaborations Engage actively in NBSAPs, champion nature-positive outcomes and advocate for integrated reforms benefiting nature, climate and society
Metrics and targets	Set nature-positive goals on a timeline using the SMART approach Validate commitments using third-party stakeholders	Detail and report on targets for nature-related risks and opportunities based on TNFD's management and disclosure framework Prepare for science-based targets on land and freshwater by using SBTN's Step 3: Measuring Baselines & Target Setting
Governance	Assign a management member for nature-based risks, ideally overseeing both climate and nature Incorporate nature into environmental risk management, especially within enterprise risk management (ERM), environmental, social and governance (ESG) and sustainability teams Train governance roles on the connection between nature and wider ESG risks	Ensure board or senior management ownership of nature actions Tie performance on nature and climate to leadership incentives Set up governance structures for managing, reporting and overseeing nature-based risks and actions on nature across the organization, including informing relevant board-level committees

5.2 A deeper look at metrics to support decision-making

Companies need to track and publicly report on their actions against relevant metrics to strengthen their credibility and ensure they deliver an effective transition. This section takes a deeper look at the metrics and indicators available.

TNFD's LEAP approach

A good place to start is with the *Additional draft guidance for corporates on science-based targets for nature*, published jointly by TNFD and SBTN.¹⁸⁷ TNFD differentiates between assessment metrics and disclosure metrics along the four phases of the LEAP approach (see Figure 12).²⁰⁴

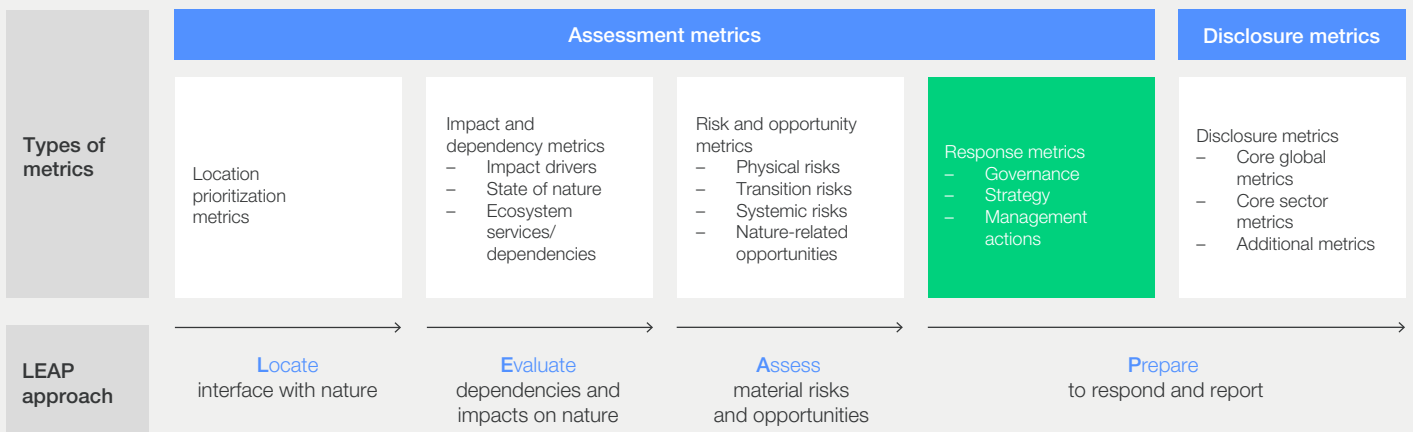
- Locate interface with nature
- Evaluate dependencies and impacts
- Assess material risks and opportunities
- Prepare to respond and report

TNFD's definition of assessment metrics includes "response metrics", which are what this chapter focuses on. These cover the internal reporting on an organization's actions, policies, commitments, plans and targets to manage nature-related dependencies, impacts, risks and opportunities – in both direct operations and the value chain.²⁰⁵

Differentiating between input and output indicators

There are a number of dimensions to indicators and metrics. They should be both qualitative and quantitative. They should also measure inputs and processes and – importantly – outputs and outcomes as well (see Table 3).

FIGURE 12 Types of metrics in TNFD's LEAP approach



Source: Adapted from TNFD's approach to metrics.²⁰⁶





TABLE 3 | Input and output indicators and examples

Indicator type	Example
Input and process indicators	Resources and activities that are deployed by a business in service of a certain priority action, e.g.: <ul style="list-style-type: none"> – Investment in water management systems – Numbers of staff in the nature or sustainability team
Output and outcome indicators	Tangible results stemming from undertaking a priority action, e.g.: <ul style="list-style-type: none"> – Commitment to no conversion of natural ecosystems – % reusable, recyclable or compostable plastic packaging – % of raw material certified by commodity-specific certifications in the supply chain (that are identified as critical suppliers based on materiality assessment and volume)

Companies should define a set of indicators and metrics according to the mitigation hierarchy (Avoid & Reduce, Restore & Regenerate, Transform) to assess their activities and the impacts achieved.²⁰⁷ Table 4 lists a number of sample indicators and metrics, aligned with the mitigation hierarchy, that can help business leaders as they start to develop their approaches for monitoring and measuring priority actions.

These sample indicators and metrics are a non-exhaustive set of indicative ideas. They can be applied at organization, product, service line and location levels. For more details, refer to TNFD’s guidance on response metrics.²⁰⁸

TABLE 4 | Sample indicators and metrics aligned with the mitigation hierarchy

Mitigation hierarchy	Priority action	Indicative sample indicator/metric (non-exhaustive)
Avoid & Reduce	Reduce water consumption and pollution across the value chain	<p>% of sites certified by ISO 14001*</p> <p>Performance against commitment to reduce water withdrawal and reduce water quality pressure**</p> <p>% of affected stakeholders meaningfully engaged on water-related issues*</p>
	Deforestation-free supply chain	Performance against commitment to no deforestation and conversion**
	Reduce GHG emissions	% value chain emission reduction according to SBTi FLAG guidance
	Source responsibly	Indirect supplier engagement approaches used, such as supply mapping tools, supplier questionnaires, onsite meetings, audits, training and capacity-building
Restore & Regenerate	Sustainable bio-based or other renewable materials & feedstocks	<p>% of bio-based feedstock used to produce a given unit of output</p> <p>% of raw material certified by commodity-specific certifications in the supply chain (that are identified as critical suppliers based on materiality assessment and volume)</p>
	Restoration	<p>Performance against commitment for biodiversity net gain</p> <p>% of affected stakeholders meaningfully engaged in area*</p> <p>Investment and extent of restoration of negatively impacted ecosystems*</p>
	Customer education	<p>Budget dedicated to customer education campaigns</p> <p>Number of consumers that campaigns reach</p>
Transform	Innovative packaging solutions	% virgin plastic reduction; or % reusable, recyclable or compostable plastic packaging
	Circularity	<p>Circular material use rate*</p> <p>Number of knowledge products/research projects in circularity*</p> <p>Extent to which customers/suppliers are engaged in circular economy topics*</p>
	Business model change	<p>Investment in nature-related product/service lines/technology*</p> <p>Number of sector-wide or multistakeholder initiatives supported*</p>

* Aligned with TNFD v0.4 examples of response metrics

** Aligned with SBTN interim targets

5.3 | Map the transition onto business functions

Mapping the nature-positive transition onto distinct company functions requires a holistic approach to ensure that every division synchronizes its strategies with nature-positive aspirations.

TABLE 5 | **Mapping strategies and actions by business function**²⁰⁹

Business function	Potential strategies and actions required for a nature-positive transition
Sustainability	<p>Develop the nature-positive strategy for the business (together with the strategy function)</p> <p>Obtain a holistic understanding of impacts and dependencies of the firm's operations and products</p> <p>Collaborate with other functions to drive the wider transition of the business</p> <p>Drive nature conservation and restoration initiatives</p> <p>Promote collective sector-wide positive action, such as sustainable raw material sourcing or collaboration on bio-based or recyclable material research</p> <p>Monitor sustainable sourcing practices and raw material certification</p> <p>Support and enable collaborations with NGOs as well as industry initiatives</p>
Finance and risk management	<p>Financial management</p> <p>Revise capital planning assumptions for nature-positive related business cases (e.g. pay-off periods for investments may increase versus traditional capital expenditures)</p> <p>Consider impacts of nature-positive transition on balance sheet (e.g. high-polluting assets might have to be written off prematurely or written down on an accelerated timeline)</p> <p>Investments</p> <p>Increase capital spending on projects enabling the nature-positive transition of the business (e.g. retrofitting plants, supporting other nature-based solutions)</p> <ul style="list-style-type: none"> – In particular, allocate funding to improve water stewardship measures, including water audits, wastewater recycling and water basin restoration <p>Allocate budget for innovation spending, such as for circular innovations and research into bio-based or recycled material for feedstocks</p> <ul style="list-style-type: none"> – Plan for the financial implications of incorporating circularity and sustainable product development <p>Commit to investments in nature conservation, restoration and nature-based solutions in collaboration with NGOs and local communities</p> <p>Financing</p> <p>Consider that the cost of capital for high-polluting operations could increase</p> <p>Consider that availability of capital may become contingent on credible nature-positive strategies</p> <p>Leverage new sources of funding, such as green bonds and sustainability loans, nature-focused impact funds, blended financing and partnership with NGOs</p> <p>Risk management and disclosure</p> <p>Consider that new nature-related risks may emerge that need to be managed (see TNFD framework), for example:</p> <ul style="list-style-type: none"> – Physical and supply chain risks, such as decreased water availability or quality in the supply chain – Transition risks including demand shifts, regulatory risks and reputational risks <p>Prepare required nature-related disclosures for audited statements for CSRD (and potentially under forthcoming requirements of the IFRS Foundation's ISSB)</p>

Business function	Potential strategies and actions required for a nature-positive transition
Research and development (R&D)	<p>Invest in research for new nature-positive products and production techniques</p> <p>Introduce new metrics to track the effect of R&D spending related to the nature-positive transition of the business, in addition to financial returns from R&D spending</p>
Operations (own)	<p>Identify relevant indicators and establish applicable metrics as well as define the respective target ambition and baseline for each and subsequently report publicly on progress made</p> <p>Enhance efficiency of production processes (e.g. improved water management, including water recycling systems and close-loop systems in manufacturing; digitalization and automation in manufacturing processes; energy efficiency measures)</p> <p>Track water impacts (including usage and recycling)</p> <p>Engage in conservation and restoration initiatives</p>
Operations (supply chain management)	<p>Identify relevant indicators, establish applicable metrics, define the respective target ambition and baseline for each and subsequently report publicly on progress made</p> <p>Collaborate with suppliers for sustainable sourcing and improved traceability</p> <p>Support suppliers (where possible) in taking nature-positive actions for their own operations</p>
Human resources	<p>Upskill workforce on nature and biodiversity topics (where relevant)</p> <p>Hire relevant external expertise (e.g. additional human resources might be required to prepare for upcoming nature-related reporting and disclosure requirements)</p>
Sales and marketing	<p>Promote products that have minimal impacts on nature and biodiversity and offer eco-friendly solutions</p> <p>Provide disclosure on impacts and dependencies of products, especially as customers may expect more information on nature footprint, which requires transparent and traceable supply chains</p> <p>Develop a holistic understanding of customer segments and willingness to pay for greener products</p>
Investor relations	<p>Disclose nature-positive initiatives and their impact on company performance (e.g. company commitments to water stewardship, sustainable sourcing and circular economy practices)</p> <p>Highlight contributions to global frameworks like the Kunming-Montreal Global Biodiversity Framework</p> <p>Manage investor engagement on nature topics</p>
Public affairs	<p>Advocate nature-positive action in the public space</p> <p>Collaborate with policy-makers, regulators and other standard-setters to develop effective, progressive policies, regulations and standards supporting the transition of the sector (e.g. the UN's global plastics treaty)</p>

6

Conclusion

As the world stands at a pivotal ecological juncture, facing the intertwined crises of climate change and nature loss, the clarion call for the household and personal care sector is unequivocal: **Lead the change.**

The household and personal care products sector, so integral to the daily lives of people around the globe, has to grapple with a significant environmental footprint – from resource-intensive production upstream to a heavy burden of packaging and wasteful downstream consumption.

International agreements, such as the Kunming-Montreal Global Biodiversity Framework and the UN's forthcoming treaty on plastic pollution, are corralling a global consensus on the urgency to tackle nature loss. Jurisdictions are tightening regulations to ensure more nature-friendly practices.

The sector stands at a fork in the road. But only one route offers the chance of a long-term future in harmony with the planet.

Making the right choices need not cost the Earth. Companies that take a lead in sustainable decisions will improve the likelihood of business resilience and long-term value creation. Top priorities are easier to list than they are to execute: improve water stewardship, source and replace feedstocks responsibly, embrace circularity and sustainable packaging.

Nature-based solutions can address both climate change and nature loss, but companies should integrate their net-zero and nature-positive journeys so that climate action does not come at the expense of nature. Educating consumers and nudging them towards more sustainable product use and disposal is paramount. Harnessing the power of partnerships, be they with NGOs, governments or local communities, can boost corporate efforts to support nature conservation and restoration.

With pressing concerns such as runaway deforestation and uncontrolled plastic pollution of soils and seas, there is an urgent need for more robust, transformative corporate action. Now is the time for the sector to go beyond responding and complying – to champion a transformative, nature-positive trajectory.

Appendix

Definitions of nature positive

BOX 5 Existing definitions of nature positive

Guidance provider	Guidance description
Business for Nature	How business and finance can contribute to a nature positive future now
European Commission	European Business & Biodiversity Platform
Independent scientists	A Nature-Positive World: The Global Goal for Nature
International Union for Conservation of Nature (IUCN)	Towards an IUCN nature-positive approach: a working paper (under consultation)
Science Based Targets Network (SBTN)	SBTN Interim Targets "Nature-positive" – an opportunity to get it right
World Business Council for Sustainable Development (WBCSD)	What does nature-positive mean for business?

Consumer goods sector boundaries

Consumer goods is a sector in the [Sustainable Industry Classification System \(SICS\)](#). The sector is made up of seven industries, including apparel, accessories and footwear, household and personal products, and building products and furnishings (a full list can be found on the [SICS industry list](#)).

The definition of the consumer goods sector was narrowed to allow for an in-depth investigation into impacts and dependencies specific to the manufacturing processes and materials used.

Household and personal care products were selected as the focus of the consumer goods sector due to their high impacts and dependencies, as well as the World Economic Forum's expertise in and relationships with this sector.

Consistent with the SICS description, the household and personal care products industry manufactures cosmetics, household and industrial cleaning supplies, soaps and detergents, sanitary paper products, household batteries, razors and kitchen utensils.

Impact and dependency analysis

The assessment of impacts and dependencies is mainly based on ENCORE and the SBTN sector materiality tool (only covers upstream and direct operation) – high and very high materiality.

Other sources include: CDP Water Watch, WWF Water and Biodiversity Risk Filters, extensive desk research, academic reviews, company-specific insights and assessments, analysis by Oliver Wyman and Oliver Wyman 3D Carbon Accounting, analysis by the World Economic Forum and industry expert interviews.

Opportunity sizing

A detailed overview of the opportunity sizing conducted for the Forum's *Future of Nature and Business* report, published in 2020, can be found in its methodology note.²¹⁰

In the absence of a reliable data point, the global direct, indirect and induced GDP impact of the household and personal care products sector has

been estimated using the average of the sector's (or closest equivalent set of companies) share of GDP in the United States²¹¹ and the United Kingdom.²¹²

This report identifies nature-positive business opportunities for the household and personal care products sector, based on the *Future of Nature and Business* report as relevant (see Figure A1).

We have expanded the opportunity data set of the *Future of Nature and Business* report to include an additional opportunity on circular solutions in the

wider consumer goods sector, entitled "Circular economy – Global Fast Moving Consumer Goods (FMCG)". This has been done to provide a more accurate view of the opportunities in the household and personal care products sector and allow for comparability with the sector transition reports on the chemical sector and the cement and concrete sector, given that the *Future of Nature and Business* report includes opportunities on the circular potential for chemicals and construction/building materials companies.



FIGURE A1 | Nature-positive business opportunities for the household and personal care products sector

Priority action	Business opportunity from <i>Future of Nature and Business</i> report	Original size in <i>Future of Nature and Business</i> report (\$ billion)	Adjustment factor to size share of household and personal care products sector	Opportunity size for household and personal care products sector (\$ billion)	
1 Improve water stewardship throughout the value chain	 Micro-irrigation	90	Global direct, indirect and induced GDP impact of household and personal care products sector: 1.16%	1.04	
	 Wastewater reuse	50		0.58	
	 Natural systems for water supply	140		1.62	
2 Source responsibly and replace feedstocks with sustainable bio-based or other renewable materials with careful evaluation of trade-offs	 Technology in large-scale farms	195		2.26	
	 Agroforestry	20		0.23	
3 Influence customer behaviour on product use and disposal through educational measures and greater transparency and traceability	 Technology in smallholder farms	110			1.28
4 Support nature conservation and restoration through investment in responsible business practices and nature-based solutions	 Natural climate solutions	85		0.90	
	 Restoring degraded land	75		0.80	
	 Waste management	305		3.54	
5 Expand circularity; create innovative, sustainable products and packaging; and engage in progressive collective action and policy advocacy	 Bio-innovation	125		1.45	
	 Non-timber forest products	65		0.75	
	 Reducing packaging waste	70		0.81	
	 Resource recovery	225		2.61	
	<i>Additional opportunity: circular economy – global fast-moving consumer goods (FMCG)*</i>	700		Share of household and personal care products market of total FMCG market: 6.3%**	44.08

* The annual full value of circular opportunities for FMCG could be as much as \$700 billion.²¹³

** The size of the global FMCG market was approximately \$11.33 trillion in 2022, while the size of the household and personal care products sector as a segment of the wider FMCG market was approximately \$713 billion in 2022.²¹⁴

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Endnotes

1. Global Footprint Network, Measure what you treasure, 2023, <https://www.footprintnetwork.org/>.
2. Rockström et al., Safe and just Earth system boundaries, Nature 619, 102-111, 31 May 2023, <https://www.nature.com/articles/s41586-023-06083-8>.
3. The sector comprises companies that manufacture a wide range of goods for personal and commercial consumption, including cosmetics, household and industrial cleaning supplies, soaps and detergents, sanitary paper products, household batteries, razors and kitchen utensils.
4. Oliver Wyman research and analysis, sourced from Euromonitor's database of 2022 revenues in sub-industries in the household and personal care products sector. Euromonitor: <https://www.euromonitor.com>.
5. Rockström et al., Safe and just Earth system boundaries, Nature 619, 102-111, 31 May 2023, <https://www.nature.com/articles/s41586-023-06083-8>.
6. United Nations, Climate Action, Nations agree to end plastic pollution, <https://www.un.org/en/climatechange/nations-agree-end-plastic-pollution>.
7. The Nature Conservancy, Nature's Make or Break Potential for Climate Change, 15 October 2017, https://www.nature.org/en-us/what-we-do/our-insights/perspectives/natures-make-or-break-potential-for-climate-change/?src=social-multiple.site_globsol.cam_ncs.link_initiative.d_oct2017.info_ncs3.
8. For example: P&G, L'Oréal, Unilever, L'Occitane, Firmenich, Henkel, Natura.
9. Analysis mainly based on ENCORE tool as well as water risk filter and other desktop research. Source: ENCORE, Exploring Natural Capital Opportunities, Risks and Exposure, <https://encore.naturalcapital.finance/en>.
10. Refer to:
 - Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention Text, 30 April 1983, <https://cites.org/eng/disc/text.php>.
 - Williams C. and Christopher Lyal, ABS compliance in seven steps: guidance for organizations collecting, transferring, holding or using Genetic Resources, 2017, https://nagoyaprotocol.myspecies.info/sites/nagoyaprotocol.myspecies.info/files/Williams%20%26%20Lyal%20%202017_Seven%20Steps%20to%20ABS%20Compliance.pdf.
 - Union for Ethical BioTrade (UEBT), UEBT Certifications, <https://uebt.org/certification-1>.
 - Roundtable on Sustainable Palm Oil (RSPO), RSPO Certification, <https://rspo.org/as-an-organization/certification/>.
 - The sustainable palm oil choice, No Deforestation, Peat, and Exploitation, NDPE Commitment, <https://www.sustainablepalmoilchoice.eu/ndpe-commitment/>.
11. World Business Council for Sustainable Development, OP2B's Framework for Regenerative Agriculture, 1 September 2021, <https://www.wbcsd.org/Projects/OP2B/Resources/OP2B-s-Framework-for-Regenerative-Agriculture>.
12. Goyal, Nishu and Frankline Jerold, Biocosmetics: technological advances and future outlook, Environmental Science and Pollution Research, 25 November 2021, <https://link.springer.com/article/10.1007/s11356-021-17567-3>.
13. Organisation for Economic Co-operation and Development (OECD), Recommendation of the Council on Assessing the Sustainability of Bio-Based Products, 2022, <https://legalinstruments.oecd.org/public/doc/283/283.en.pdf>.
14. Global Footprint Network, Measure what you treasure, 2023, <https://www.footprintnetwork.org/>.
15. Global Footprint Network, <https://www.footprintnetwork.org/>.
16. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), Models of drivers of biodiversity and ecosystem change, <https://www.ipbes.net/models-drivers-biodiversity-ecosystem-change>.
17. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), IPBES-IPCC Co-sponsored Workshop: Biodiversity and Climate Change – Scientific outcome, 2021, https://www.ipbes.net/sites/default/files/2021-06/2021_IPCC-IPBES_scientific_outcome_20210612.pdf.
18. London School of Economics and Political Science and Grantham Research Institute on Climate Change and the Environment, What is the role of deforestation in climate change and how can 'Reducing Emissions from Deforestation and Degradation' (REDD+) help?, 10 February 2023, <https://www.lse.ac.uk/granthaminstitute/explainers/whats-redd-and-will-it-help-tackle-climate-change/#:~:text=Land%20use%20change%2C%20principally%20deforestation,of%20global%20greenhouse%20gas%20emissions>.
19. The Nature Conservancy, Nature's Make or Break Potential for Climate Change, 15 October 2017, https://www.nature.org/en-us/what-we-do/our-insights/perspectives/natures-make-or-break-potential-for-climate-change/?src=social-multiple.site_globsol.cam_ncs.link_initiative.d_oct2017.info_ncs3.
20. Global Commons Alliance, Safe and Just Earth System Boundaries published in Nature, 31 May 2023, <https://globalcommonsalliance.org/news/earth-commission/safe-and-just-earth-system-boundaries-published-in-nature/>.
21. United Nations Framework Convention on Climate Change (UNFCCC), H.E Razan Al Mubarak: Nature is not ornamental, but fundamental. LCAW opens with focus on nature and policy engagement, 27 June 2023, <https://climatechampions.unfccc.int/h-e-razan-al-mubarak-nature-is-not-ornamental-but-fundamental-lcaw-opens-with-focus-on-nature-and-policy-engagement/>.

22. Science Based Targets initiative (SBTi), Forest, Land and Agriculture (FLAG): Key requirements of the SBTi FLAG Guidance, <https://sciencebasedtargets.org/sectors/forest-land-and-agriculture#:~:text=Key%20requirements%20of%20the%20SBTi%20FLAG%20Guidance&text=Set%20long%2Dterm%20FLAG%20science.term%20FLAG%20-science%2Dbased%20targets.>
23. Science Based Targets Network (SBTN), Public consultation for the first land science-based targets, [https://sciencebasedtargetsnetwork.org/resources/public-consultation-for-the-first-land-science-based-targets/.](https://sciencebasedtargetsnetwork.org/resources/public-consultation-for-the-first-land-science-based-targets/)
24. Earth Commission, A just world on a safe planet: First study quantifying Earth System Boundaries live, 31 May 2023, [https://earthcommission.org/news/publications/just-world-safe-planet/.](https://earthcommission.org/news/publications/just-world-safe-planet/)
25. Rockström et al., Safe and just Earth system boundaries, Nature 619, 102-111, 31 May 2023, [https://www.nature.com/articles/s41586-023-06083-8.](https://www.nature.com/articles/s41586-023-06083-8)
26. Rockström et al., Safe and just Earth system boundaries, Nature 619, 102-111, 31 May 2023, [https://www.nature.com/articles/s41586-023-06083-8.](https://www.nature.com/articles/s41586-023-06083-8)
27. World Economic Forum, Global Risks Report 2023, 2023, [https://www.weforum.org/reports/global-risks-report-2023/.](https://www.weforum.org/reports/global-risks-report-2023/)
28. Taskforce on Nature-related Financial Disclosures (TNFD), TNFD Nature-Related Risk & Opportunity Management and Disclosure Framework, v0.4 Beta Release, Glossary of Key Terms, 2023, [https://framework.tnfd.global/appendix/glossary-of-key-terms/.](https://framework.tnfd.global/appendix/glossary-of-key-terms/)
29. Sources for Figure 2, as per captions in the figure:
 - 1) Global Biodiversity Framework
Convention on Biological Diversity, Kunming-Montreal Global Biodiversity Framework, 2022, [https://www.cbd.int/gbfi/.](https://www.cbd.int/gbfi/)
Business for Nature, A wake-up call for business: Target 15 commits governments to require nature-related disclosure from large companies and financial institutions, 2023, [https://static1.squarespace.com/static/5d777de8109c315fd22faf3a/t/63dbb7b33e5dfe3f115b2b88/1675343797338/Target+15+longer+reaction+FINAL.pdf.](https://static1.squarespace.com/static/5d777de8109c315fd22faf3a/t/63dbb7b33e5dfe3f115b2b88/1675343797338/Target+15+longer+reaction+FINAL.pdf)
 - 2) Guidance and standards
Taskforce on Nature-related Financial Disclosures (TNFD), [https://tnfd.global/.](https://tnfd.global/)
International Sustainability Standards Board (ISSB): Binnie, I., Global sustainability rules body steps up focus on biodiversity, Reuters, 14 December 2022, [https://www.reuters.com/business/environment/global-sustainability-rules-body-steps-up-focus-biodiversity-2022-12-14/.](https://www.reuters.com/business/environment/global-sustainability-rules-body-steps-up-focus-biodiversity-2022-12-14/)
EU Sustainability Reporting Standards (ESRS), [https://www.efrag.org/lab3.](https://www.efrag.org/lab3)
Science Based Targets Network (SBTN), The first science-based targets for nature, [https://sciencebasedtargetsnetwork.org/how-it-works/the-first-science-based-targets-for-nature/.](https://sciencebasedtargetsnetwork.org/how-it-works/the-first-science-based-targets-for-nature/)
 - 3) Financial institutions and investors
Nature Action 100, [https://www.natureaction100.org/.](https://www.natureaction100.org/)
Finance for Biodiversity Pledge, [https://www.financeforbiodiversity.org/.](https://www.financeforbiodiversity.org/)
 - 4) Customers and employees
Union for Ethical BioTrade (UEBT), Biodiversity Barometer, [http://www.biodiversitybarometer.org/.](http://www.biodiversitybarometer.org/)
30. United Nations Environment Programme, Convention on Biological Diversity, Kunming-Montreal Global biodiversity framework, Draft decision submitted by the President, 2022, [https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf.](https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf)
31. World Economic Forum, The Post-2020 Global Biodiversity Framework and What it Means for Business, 2022, [https://www.weforum.org/whitepapers/the-post-2020-global-biodiversity-framework-and-what-it-means-for-business.](https://www.weforum.org/whitepapers/the-post-2020-global-biodiversity-framework-and-what-it-means-for-business)
32. European Financial Reporting Advisory Group (EFRAG), Public consultation on the first set of Draft ESRS, [https://www.efrag.org/lab3.](https://www.efrag.org/lab3)
33. European Commission, EU taxonomy for sustainable activities, [https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en.](https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en)
34. Ramos J. and Sedilekova, Z., Biodiversity Risk: Legal Implications for Companies and their Directors, Commonwealth Climate and Law Initiative (CCLI), 2023, [https://commonwealthclimatelaw.org/wp-content/uploads/2022/12/CCLI_Biodiversity_risk_paper_2022.pdf.](https://commonwealthclimatelaw.org/wp-content/uploads/2022/12/CCLI_Biodiversity_risk_paper_2022.pdf)
35. Segal, M., ISSB to Add Biodiversity, Just Transition Disclosures to Climate Reporting Standard, ESG today, 15 December 2022, [https://www.esgtoday.com/issb-to-add-biodiversity-just-transition-disclosures-to-climate-reporting-standard/.](https://www.esgtoday.com/issb-to-add-biodiversity-just-transition-disclosures-to-climate-reporting-standard/)
36. Taskforce on Nature-related Financial Disclosures (TNFD), TNFD Nature-Related Risk & Opportunity Management and Disclosure Framework, v0.4 Beta Release, 2023, [https://framework.tnfd.global/.](https://framework.tnfd.global/)
37. Finance for Biodiversity Foundation, [https://www.financeforbiodiversity.org/.](https://www.financeforbiodiversity.org/)
38. Finance for Biodiversity Foundation, Global investors developing new collaborative engagement initiative to drive nature action, 11 April 2022, [https://www.financeforbiodiversity.org/global-investors-developing-new-collaborative-engagement-initiative-to-drive-nature-action/.](https://www.financeforbiodiversity.org/global-investors-developing-new-collaborative-engagement-initiative-to-drive-nature-action/)

39. Sources:
- United Nations Environment Programme, Stepping Up on Biodiversity: What the Kunming-Montreal Global Biodiversity Framework means for Responsible Investors, Nairobi, 2023, <https://www.unepfi.org/industries/investment/stepping-up-on-biodiversity/>.
- UN Environment Programme Finance Initiative, Banking On Nature: What The Kunming-Montreal Global Biodiversity Framework Means for Responsible Banks, Geneva, 2023, <https://www.unepfi.org/wordpress/wp-content/uploads/2023/01/21-Banking-on-nature.pdf>.
40. Union for Ethical BioTrade (UEBT), Biodiversity Barometer: The Biodiversity Reckoning, 2022, <https://static1.squarespace.com/static/577e0feae4fcb502316dc547/t/6409db549975dd4b6aa32da1/1678367585952/UEBT+Biodiversity+Barometer+2022.pdf>.
41. Simon Kucher, Recent study reveals more than a third of global consumers are willing to pay more for sustainability as demand grows for environmentally-friendly alternatives, 25 October 2021, <https://www.simon-kucher.com/en/who-we-are/newsroom/recent-study-reveals-more-third-global-consumers-are-willing-pay-more>.
42. NIQ, Global consumers seek companies that care about environmental issues, 2018, <https://nielseniq.com/global/en/insights/analysis/2018/global-consumers-seek-companies-that-care-about-environmental-issues/>.
43. Deloitte, The Deloitte Global 2022 Gen Z and Millennial Survey: Striving for balance, advocating for change, 2022, <https://www2.deloitte.com/content/dam/Deloitte/at/Documents/human-capital/at-gen-z-millennial-survey-2022.pdf>.
44. McKinsey Sustainability, Where the world's largest companies stand on nature, 13 September 2022, <https://www.mckinsey.com/capabilities/sustainability/our-insights/where-the-worlds-largest-companies-stand-on-nature>.
45. World Benchmarking Alliance, Nature is a blind spot for major companies despite its importance for their operations and people, 5 December 2022, <https://www.worldbenchmarkingalliance.org/news/nature-benchmark-press-release-2022/>.
46. Business for Nature et al., How business and finance can contribute to a nature positive future now, October 2022, https://static1.squarespace.com/static/5d777de8109c315fd22faf3a/t/634d83b8e5d4747f24935a8c/1666024380378/Nature+Positive+Discussion+Paper_Final.pdf.
47. Science Based Targets Network, Science-Based Targets for Nature: Initial Guidance for Business, 2020, <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2020/09/SBTN-initial-guidance-for-business.pdf>.
48. Sources:
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 4 May 2019, <https://zenodo.org/record/6417333>.
- Science Based Targets Network, SBTN Glossary of Terms, 2023, https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/SBTN-Steps-1-3-Glossary_2023.docx-1.pdf.
49. Taskforce on Nature-related Financial Disclosures (TNFD), TNFD Nature-Related Risk & Opportunity Management and Disclosure Framework, v0.4 Beta Release, Definitions of Nature, 2023, <https://framework.tnfd.global/concepts-and-definitions/definitions-of-nature/>.
50. World Economic Forum et al., Measuring Nature-positive Outcomes from Business Actions, 2022, https://www3.weforum.org/docs/WEF_Measuring_Nature_positive_Outcomes_from_Business_Actions_2022.pdf.
51. Business for Nature, High-level Business Actions on Nature, <https://www.businessfornature.org/high-level-business-actions-on-nature>. These actions have been developed in collaboration with leading organizations. They build on existing action frameworks and guidance, including the Natural Capital Protocol, the Science Based Targets Network Initial Guidance for Business, World Business Council for Sustainable Development (WBCSD) building blocks on what nature positive means to business, Business for Nature steps to become nature positive and the Taskforce on Nature-related Financial Disclosures (TNFD) Framework (currently in beta version).
52. Science Based Targets Network (SBTN), Science-Based Targets for Nature, Step 4. Act, <https://sciencebasedtargetsnetwork.org/how-it-works/act/>.
53. Sources:
- Business for Nature, High-level Business Actions on Nature, <https://www.businessfornature.org/high-level-business-actions-on-nature>.
- Science Based Targets Network (SBTN), Science-Based Targets for Nature, Step 4. Act, <https://sciencebasedtargetsnetwork.org/how-it-works/act/>.
54. Business for Nature, High-level Business Actions on Nature, <https://www.businessfornature.org/high-level-business-actions-on-nature>.
55. Science Based Targets Network (SBTN), Science-Based Targets for Nature, Step 4. Act, <https://sciencebasedtargetsnetwork.org/how-it-works/act/>.
56. Business for Nature, Sector actions for nature, <https://www.businessfornature.org/sector-actions>.
57. Oliver Wyman research and analysis, sourced from Euromonitor's database of 2022 revenues in sub-industries in the household and personal care products sector. Euromonitor: <https://www.euromonitor.com>.
58. Bloomberg, There's an Ugly Side to the Makeup Aisle, and It's Killing the Planet, 5 June 2019, <https://www.bloomberg.com/news/articles/2019-06-05/the-ugly-side-of-the-makeup-aisle-is-made-out-of-plastic-waste?leadSource=verify%20wall>.

59. WWF, Palm Oil – Overview, <https://www.worldwildlife.org/industries/palm-oil#:~:text=It%20is%20also%20used%20in,is%20a%20very%20productive%20crop>.
60. Food and Agriculture Organization of the United Nations (FAO), Global deforestation slowing but tropical rainforests remain under threat, key FAO report shows, 3 May 2022, <https://www.fao.org/newsroom/detail/global-deforestation-slowing-but-rainforests-under-threat-fao-report-shows-030522/en>.
61. SASB Standards, Sustainable Industry Classification System® (SICS), <https://sasb.org/standards/download/>.
62. Sources:
 Oliver Wyman research and analysis, sourced from Euromonitor's database of 2022 revenues in sub-industries in the household and personal care products sector. Euromonitor: <https://www.euromonitor.com>.
 Plastics: Organisation for Economic Co-operation and Development (OECD), Plastic Pollution is growing relentlessly as waste management and recycling fall short, says OECD, 22 February 2022, <https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm>.
 Packing units: Niven-Phillips, L., How green is your lipstick: beauty brands and the fight against plastic waste, The Guardian, 17 April 2019, <https://www.theguardian.com/fashion/2019/apr/17/how-green-lipstick-beauty-brands-reduce-plastic-waste-makeup-packaging-recycled-lush-garnier>.
 Palm oil: WWF, Imported Deforestation: Understanding Switzerland's Overseas Footprint for Forest-risk Commodities, December 2020, https://www.wwf.ch/sites/default/files/doc-2020-12/WWF_Risky_business_eng_1.pdf.
63. European Commission, Green Deal: EU agrees law to fight global deforestation and forest degradation driven by EU production and consumption, 6 December 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7444.
64. UN Environment Programme, Historic day in the campaign to beat plastic pollution: Nations commit to develop a legally binding agreement, 2 March 2022, <https://www.unep.org/news-and-stories/press-release/historic-day-campaign-beat-plastic-pollution-nations-commit-develop>.
65. Henkel, Sustainability Report 2022, <https://www.henkel.com/resource/blob/1804850/56551a2284bd7d2c9838410b8395a5dd/data/2022-sustainability-report.pdf>.
66. Sandler, E., Natura & Co. sets ambitious sustainability goals, Glossy, 16 June 2020, <https://www.glossy.co/beauty/natura-co-sets-ambitious-sustainability-goals/>.
67. Sternberg, C., Sustainable Beauty: The Beauty Industry's Role in Mitigating Climate Change, Beauty Packaging, 8 December 2021, https://www.beautypackaging.com/contents/view_online-exclusives/2021-08-12/sustainable-beauty-the-beauty-industrys-role-in-mitigating-climate-change/.
68. Firmenich, Biodiversity Public Statement, July 2022, https://www.firmenich.com/sites/default/files/Firmenich_Public_Statement_on_Biodiversity_2022.pdf#view=fitV.
69. Unilever, Climate action: Strategy and goals, 2023, <https://www.unilever.com/planet-and-society/climate-action/strategy-and-goals/>.
70. L'Oréal, Respecting Biodiversity, Achievements 2022, <https://www.loreal.com/en/commitments-and-responsibilities-for-the-planet/respecting-biodiversity/>.
71. Kering, Kering and L'OCCITANE Group join forces to finance nature protection at scale with the Climate Fund for Nature, 12 December 2022, <https://www.kering.com/en/news/kering-and-loccitane-group-join-forces-to-finance-nature-protection-at-scale-with-the-climate-fund-for-nature>.
72. Cosmetics Design Europe, Sustainability efforts find new life in plant-based personal care, 3 October 2022, <https://www.cosmeticsdesign-europe.com/Headlines/Promotional-Features/Sustainability-efforts-find-new-life-in-plant-based-personal-care>.
73. Taskforce on Nature-related Financial Disclosures (TNFD), LEAP – the risk and opportunity assessment approach, <https://framework.tnfd.global/leap-the-risk-and-opportunity-assessment-approach/>.
74. Science Based Targets Network, Step 1. Assess: <https://sciencebasedtargetsnetwork.org/how-it-works/assess/> and Step 2. Prioritize: <https://sciencebasedtargetsnetwork.org/how-it-works/prioritize/>.
75. Science Based Targets Network, Technical Guidance 2023, Step 3: Measure, Set & Disclose – Freshwater, <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/Technical-Guidance-2023-Step3-Freshwater-v1.pdf> and Land: <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/Technical-Guidance-2023-Step3-Land-v0.3.pdf>.
76. Science Based Targets initiative (SBTi), Forest, Land and Agriculture (FLAG) Guidance, <https://sciencebasedtargets.org/sectors/forest-land-and-agriculture>.
77. Business for Nature, Businesses commitments for nature, <https://www.businessfornature.org/commit>.
78. World Economic Forum, Sector Transitions to Nature Positive series of reports, September 2023, <https://www.weforum.org/reports/industry-transitions-to-nature-positive-report-series>.
79. Business for Nature, Sector actions for nature, <https://www.businessfornature.org/sector-actions>.
80. Definition of double materiality sourced from: Deloitte, Double Materiality: 5 challenging key aspects to consider, April 2023, https://www2.deloitte.com/content/dam/Deloitte/de/Documents/risk/Deloitte_Sustainability_Double_Materiality.pdf.
81. Firmenich, Pathways to Positive: ESG Report 2022, <https://www.firmenich.com/sites/default/files/ESGReportFY22.pdf#view=fitV>.

82. McKinsey & Company, Starting at the source: Sustainability in supply chains, 2016, <https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Starting%20at%20the%20source%20sustainability%20in%20the%20supply%20chain/Starting-at-the-source-Sustainability-in-supply-chains.pdf>.
83. The TNFD LEAP approach is an integrated assessment process for nature-related risk and opportunity management for businesses. It consists of four steps: (1) Locate your interface with nature; (2) Evaluate your dependencies and impacts; (3) Assess your risks and opportunities; and (4) Prepare to respond to nature-related risks and opportunities and report. Source: <https://framework.tnfd.global/leap-the-risk-and-opportunity-assessment-approach/>.
84. Science Based Targets Network, Technical Guidance for Step 1: Assess and Step 2: Prioritize, Draft for Public Comment, September 2022, <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2022/09/Technical-Guidance-for-Step-1-Assess-and-Step-2-Prioritize.pdf>.
85. HiBAR, How much water are you buying with bottled shampoo?, 29 December 2022, <https://hellohibar.com/blogs/news/how-much-water-are-you-buying-with-bottled-shampoo>.
86. CDP, Water Watch – CDP Water Impact Index highlights the business activities with the greatest impact on water, 2023, <https://www.cdp.net/en/investor/water-watch-cdp-water-impact-index>.
87. Barclays, Calculating the true cost of water for the Consumer Staples sector, 20 July 2021, <https://www.cib.barclays/our-insights/3-point-perspective/calculating-the-true-cost-of-water-for-the-consumer-staples-sector.html>.
88. United Nations, Press Release: Historic UN conference marks watershed moment to tackle global water crisis and ensure water-secure future, 24 March 2023, <https://www.un.org/sustainabledevelopment/blog/2023/03/press-release-historic-un-conference-marks-watershed-moment-to-tackle-global-water-crisis-and-ensure-water-secure-future/>.
89. Food and Agriculture Organization of the United Nations (FAO), FRA 2020 Remote Sensing Survey, FAO Forestry Paper 186, <https://www.fao.org/3/cb9970en/cb9970en.pdf>.
90. European Commission, Regulation on land use, land use change and forestry in 2030 climate and energy framework adopted, 14 May 2018, https://climate.ec.europa.eu/news-your-voice/news/regulation-land-use-land-use-change-and-forestry-2030-climate-and-energy-framework-adopted-2018-05-14_en#:~:text=Regulation%20on%20land%20use%2C%20land%20use%20change%20and,the%20atmosphere%20in%20the%20period%202021%20to%202030.
91. European Commission, Soil strategy for 2030, https://environment.ec.europa.eu/topics/soil-and-land/soil-strategy_en#:~:text=The%20EU%20soil%20strategy%20for,with%20concrete%20actions%20by%202030.
92. Juliano, C. and G.A. Magrini, Cosmetic Ingredients as Emerging Pollutants of Environmental and Health Concern: A Mini-Review, MDPI, 5 April 2017, <https://www.mdpi.com/2079-9284/4/2/11>.
93. State of Hawaii, S.B. No. 2571, A Bill for an Act: Relating to Water Pollution, 2018, https://www.capitol.hawaii.gov/sessions/session2018/bills/SB2571_.htm.
94. UK Government, Department for Environment, Food & Rural Affairs, World leading microbeads ban comes into force, 19 June 2018, <https://www.gov.uk/government/news/world-leading-microbeads-ban-comes-into-force>.
95. US Food & Drug Administration, The Microbead-Free Waters Act: FAQs, 25 February 2022, <https://www.fda.gov/cosmetics/cosmetics-laws-regulations/microbead-free-waters-act-faqs#:~:text=The%20Microbead%2DFree%20Waters%20Act%20of%202015%20prohibits%20the%20manufacturing,%20drugs%2C%20such%20as%20toothpastes>.
96. Center for Biological Diversity, Hawai'i Senate Bill Bans Harmful Sunscreen Chemicals, 9 March 2021, <https://biologicaldiversity.org/w/news/press-releases/hawaii-senate-bill-bans-harmful-sunscreen-chemicals-2021-03-09/>.
97. Milman, O., US cosmetics are full of chemicals banned by Europe – why?, The Guardian, 22 May 2019, <https://www.theguardian.com/us-news/2019/may/22/chemicals-in-cosmetics-us-restricted-eu>.
98. Organisation for Economic Co-operation and Development (OECD), Plastic Pollution is growing relentlessly as waste management and recycling fall short, says OECD, 22 February 2022, <https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm>.
99. Organisation for Economic Co-operation and Development (OECD), OECD Global Plastics Outlook database 2019, https://www.oecd-ilibrary.org/environment/data/global-plastic-outlook_c0821f81-en.
100. GrrlScientist, Five Ways That Plastics Harm The Environment (And One Way They May Help), Forbes, 23 April 2018, <https://www.forbes.com/sites/grrlscientist/2018/04/23/five-ways-that-plastics-harm-the-environment-and-one-way-they-may-help/?sh=3f5b786567a0>.
101. Jones, C., Yes, microplastics have been found in human blood, Newswise, 25 March 2022, <https://www.newswise.com/factcheck/yes-microplastics-have-been-found-in-human-blood#:~:text=Microplastics%20found%20in%20human%20blood%20for%20the%20first%20time&text=Scientists%20from%20Vrije%20Universiteit%20Amsterdam,small%20sample%20of%20people%20tested>.
102. World Economic Forum, Consumers Beyond Waste: An initiative of the World Economic Forum's Future of Consumption Platform, Briefing Paper, September 2021, https://www3.weforum.org/docs/WEF_CP_Consumers_Beyond_Waste_2021.pdf.
103. Scope 3 emissions refer to indirect greenhouse gas (GHG) emissions that occur throughout a company's value chain but are outside the direct control of the organization. These emissions are generated as a result of activities associated with the company's products, services or operations, including activities of suppliers, customers and other stakeholders.

104. Emissions intensity is calculated as metric tons of CO₂ equivalent divided by million dollars of revenue. Consumer staples sector includes both agri-sector and household products. Source: Man Institute, What Investors Need to Know About Scope 1, 2 and 3 Emissions, November 2022, <https://www.man.com/maninstitute/what-investors-know-about-scope-emissions>.
105. Organisation for Economic Co-operation and Development (OECD), Plastic Pollution is growing relentlessly as waste management and recycling fall short, says OECD, 22 February 2022, <https://www.oecd.org/environment/plastic-pollution-is-growing-relentlessly-as-waste-management-and-recycling-fall-short.htm>.
106. International Civil Aviation Organization (ICAO), Aircraft Engine Emissions, <https://www.icao.int/environmental-protection/Pages/aircraft-engine-emissions.aspx>.
107. Unilever, Reducing emissions from the use of our products, <https://www.unilever.com/planet-and-society/climate-action/reducing-emissions-from-the-use-of-our-products/>.
108. The Consumer Goods Forum, Low Carbon Solutions for A Sustainable Consumer Goods Sector, December 2017, <https://www.theconsumergoodsforum.com/wp-content/uploads/2017/12/low-carbon-solutions-sustainable-consumer-goods.pdf>.
109. The Consumer Goods Forum's Forest Positive Coalition of Action, 2022 Annual Report: Driving Transformational Change Throughout the Value Chain, September 2022, <https://www.theconsumergoodsforum.com/wp-content/uploads/2022/09/2022-CGF-FPC-Annual-Report.pdf>.
110. Science Based Targets initiative (SBTi), Forest, Land and Agriculture Science Based Target-Setting Guidance, <https://sciencebasedtargets.org/resources/files/SBTiFLAGGuidance.pdf>.
111. PwC, Accelerating Business Action on Climate Change Adaptation, <https://www.pwc.com/gx/en/services/sustainability/publications/critical-business-actions-for-climate-change-adaptation.html>.
112. World Economic Forum, New Nature Economy Report II: The Future of Nature And Business, 2020, https://www3.weforum.org/docs/WEF_The_Future_Of_Nature_And_Business_2020.pdf.
113. Alpha Beta, Identifying Biodiversity Threats and Sizing Business Opportunities: Methodological Note to the New Nature Economy Report II: The Future of Nature and Business, 15 July 2020, https://accesspartnership.com/wp-content/uploads/2023/01/200715-nner-ii-methodology-note_final.pdf.
114. To cover the role of the sector along its value chain, the authors of this study have used the approximated direct, indirect and induced GDP impact of the sector's core operations as a share of global GDP as an adjustment factor. Based on market research and expert interviews, the authors of this study have estimated a share of about 1.2%.
115. Roland Berger, Energy efficiency services: a key market in the European industrial landscape, 13 February 2019, <https://www.rolandberger.com/en/Insights/Publications/Energy-efficiency-services-a-key-market-in-the-European-industrial-landscape.html>.
116. Klobucista, C. and K. Robinson, Water Stress: A Global Problem That's Getting Worse, Council on Foreign Relations, 3 April 2023, <https://www.cfr.org/background/water-stress-global-problem-thats-getting-worse>.
117. L'Oréal, Managing Water Sustainably, Achievements 2022, <https://www.loreal.com/en/commitments-and-responsibilities/for-the-planet/managing-water-sustainably/>.
118. P&G Strategy Toward a Water Positive Future, June 2022, https://downloads.ctfassets.net/oggad6svuzkv/2pmR9YkuuD1ndq7UwG1Aop/87ca786ca3f1f2a8566d28755140296e/06.09.22_IOH_WaterGoals_WaterPositiveFutureStrategy.pdf.
119. World Resources Institute, Aqueduct, <https://www.wri.org/aqueduct>.
120. WWF, Water Risk Filter, <https://riskfilter.org/water/explore/introduction>.
121. Science Based Targets Network, Technical Guidance 2023, Step 3: Measure, Set & Disclose – Freshwater, <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/Technical-Guidance-2023-Step3-Freshwater-v1.pdf>.
122. ReAgent, How a Chemical Manufacturing Facility Can Become More Eco-Friendly, 11 August 2021, https://www.reagent.co.uk/blog/how-a-chemical-manufacturing-facility-can-become-more-eco-friendly/#6_conserve_water.
123. World Economic Forum, Uplink, Indra Water (Inphlox Water Systems Pvt. Ltd.), Decentralized treatment of wastewater using electricity for reuse, <https://uplink.weforum.org/uplink/s/uplink-contribution/a012o00001pUWbillionAAG/Decentralized%20treatment%20of%20wastewater%20using%20electricity%20for%20reuse%E2%9C%AA>.
124. See for example: Muhar, Susanne, Jan Sendzimir, Mathias Jungwirth and Severin Hohensinner, Restoration in Integrated River Basin Management, Riverine Ecosystem Management, pp273-299, 9 May 2018, https://link.springer.com/chapter/10.1007/978-3-319-73250-3_15.
125. See for example: Parveen, Naseeba, Shamik Chowdhury and Sudha Goel, Environmental impacts of the widespread use of chlorine-based disinfectants during the COVID-19 pandemic, Environmental science and pollution research international, 29 January 2022, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8799444/>.
126. Australian Government, Department of Climate Change, Energy, the Environment and Water, Australian water markets, <https://www.dcceew.gov.au/water/policy/markets>.
127. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention Text, 30 April 1983, <https://cites.org/eng/disc/text.php>.

128. Williams C. and Christopher Lyal, ABS compliance in seven steps: guidance for organizations collecting, transferring, holding or using Genetic Resources, 2017, https://nagoyaprotocol.myspecies.info/sites/nagoyaprotocol.myspecies.info/files/Williams%20%26%20Lyal%2C%202017_Seven%20Steps%20to%20ABS%20Compliance.pdf.
129. Union for Ethical BioTrade (UEBT), UEBT Certifications, <https://uebt.org/certification-1>.
130. Roundtable on Sustainable Palm Oil (RSPO), RSPO Certification, <https://rspo.org/as-an-organization/certification/>.
131. The sustainable palm oil choice, No Deforestation, Peat, and Exploitation, NDPE Commitment, <https://www.sustainablepalmoilchoice.eu/ndpe-commitment/>.
132. Forest Data Partnership, A Collective Approach for Ending Deforestation and Accelerating Restoration, <https://www.forestdatapartnership.org/>.
133. World Economic Forum and Platform for Accelerating the Circular Economy (PACE), Harnessing the Fourth Industrial Revolution for the Circular Economy: Consumer Electronics and Plastics Packaging, January 2019, https://www3.weforum.org/docs/WEF_Harnessing_4IR_Circular_Economy_report_2018.pdf.
134. Unilever, Unilever's Palm Oil Grievance Tracker, April 2023, <https://www.unilever.com/files/73ee99fa-70a6-49e2-a253-75f55438a5ff/unilever-palm-oil-grievance-tracker.pdf>.
135. Integrated Biodiversity Assessment Tool (IBAT), <https://www.ibat-alliance.org/>.
136. WWF, Biodiversity Risk Filter, <https://riskfilter.org/biodiversity/home>.
137. The Consumer Goods Forum, Commodity Roadmaps: Transforming how we do business, <https://www.theconsumergoodsforum.com/environmental-sustainability/forest-positive/key-projects/commodity-specific-roadmaps-and-reporting/>.
138. Tropical Forest Alliance, Agriculture Sector Roadmap to 1.5°C: Reducing Emissions from Land Use Change, https://www.tropicalforestalliance.org/assets/Agriculture-Sector-Roadmap-January-2023_compressed-compressed.pdf.
139. Science Based Targets initiative (SBTi), Forest, Land and Agriculture Science Based Target-Setting Guidance, <https://sciencebasedtargets.org/resources/files/SBTiFLAGGuidance.pdf>.
140. Science Based Targets Network, High Impact Commodity List v1 (Used in Step 1a of the SBTN methodologies), May 2023, <https://sciencebasedtargetsnetwork.org/wp-content/uploads/2023/05/SBTN-High-Impact-Commodity-List-v1.xlsx>.
141. Dominguez, L., P&G Launching Supply Chain Platform for Retail Partners, Dives Into Digital Innovation and Data Strategies, Consumer Goods Technology, 28 February 2023, <https://consumergoods.com/pg-launching-supply-chain-platform-retail-partners-dives-digital-innovation-and-data-strategies>.
142. Unilever, Working together to protect nature, 29 November 2021, <https://www.unilever.com/news/news-search/2021/working-together-to-protect-nature/>.
143. CDP, Fast Moving Consumers: Which Consumer Goods companies are ready for the low-carbon transition? Executive Summary, February 2019, https://cdn.cdp.net/cdp-production/cms/reports/documents/000/004/150/original/CDP_Consumer_Goods_2019_Exec_summary.pdf?1551891654.
144. Center for International Forestry Research (CIFOR), Forests and non-timber forest products, <https://www.cifor.org/Publications/Corporate/FactSheet/ntfp.htm>.
145. Goyal, Nishu and Frankline Jerold, Biocosmetics: technological advances and future outlook, Environmental Science and Pollution Research, 25 November 2021, <https://link.springer.com/article/10.1007/s11356-021-17567-3>.
146. Organisation for Economic Co-operation and Development (OECD), Recommendation of the Council on Assessing the Sustainability of Bio-Based Products, 2022, <https://legalinstruments.oecd.org/public/doc/283/283.en.pdf>.
147. The Consumer Goods Forum, Sustainable Supply Chain Initiative: Building trust in sustainability standards worldwide, <https://www.theconsumergoodsforum.com/social-sustainability/sustainable-supply-chain-initiative/>.
148. Renewable Carbon Initiative, <https://renewable-carbon-initiative.com/>.
149. Hainmueller, J. et al., Consumer Demand for the Fair Trade Label: Evidence from a Multi-Store Field Experiment, Harvard Business School, February 2014, https://www.hbs.edu/faculty/Shared%20Documents/conferences/2014-launching-the-star-lab/FT_final_2_20.pdf.
150. Sources:
 - Union for Ethical BioTrade (UEBT), Biodiversity Barometer, <http://www.biodiversitybarometer.org/>.
 - Union for Ethical BioTrade (UEBT), Biodiversity Barometer: The Biodiversity Reckoning, 2022, <https://static1.squarespace.com/static/577e0feae4cb502316dc547/t/6409db549975dd4b6aa32da1/1678367585952/UEBT+Biodiversity+Barometer+2022.pdf>.
151. Baker, J., Hey Beauty, It's Time To Lift The Lid On Ingredients And Impact, Forbes, 4 February 2021, <https://www.forbes.com/sites/jessibaker/2021/02/04/hey-beauty-its-time-to-lift-the-lid-on-ingredients-and-impact/>.
152. EcoBeautyScore Consortium, <https://www.ecobeautyscore.com/>.
153. Union for Ethical BioTrade (UEBT), <https://uebt.org/>.
154. Fairtrade Foundation, Using the core FAIRTRADE Mark, <https://www.fairtrade.org.uk/what-is-fairtrade/using-the-fairtrade-mark/>.

155. Unilever, Why we're putting our climate plans to a shareholder vote, 22 March 2021, <https://www.unilever.com/news/news-search/2021/why-we-are-putting-our-climate-plans-to-a-shareholder-vote/>.
156. Unilever, Inspiring Sustainable Living, Expert insights into consumer behaviour & Unilever's Five Levers for Change, <https://www.unilever.de/files/92ui5egz/production/c828cf5796884dd5b30717963ee36698bb183106.pdf>.
157. Conservation and Restoration, Knowledge Project, Nature Education, <https://www.nature.com/scitable/knowledge/conservation-and-restoration-13228126/#:~:text=Where%20conservation%20biology%20is%20often,loss%20of%20our%20biological%20resources>.
158. Fondation Good Planet, Biodiversity Conservation and Restoration, <https://www.goodplanet.org/en/projet/biodiversity-conservation-and-restoration/>.
159. Place-based conservation tends to operate at a smaller, more localized scale, while landscape and jurisdictional approaches cover broader spatial scales. Landscape and jurisdictional approaches often involve a broader set of stakeholders, including governments, NGOs, communities and industries, to create integrated solutions. Place-based conservation might not always require such extensive collaboration. Place-based conservation primarily aims to protect a specific location or species. In contrast, landscape and jurisdictional approaches aim to create a sustainable balance between conservation and development across a broader area.

A jurisdictional approach is a type of landscape approach where the landscape is defined by administrative boundaries of subnational government. Accordingly, the approach is implemented with a high level of government involvement. Jurisdictional approaches often focus on the enabling regulatory framework and alignment of public spending with development priorities.
160. Natura, Preserve the Forest, <https://www.naturabrasil.fr/en-us/our-values/sustainable-development/preserve-the-forest>.
161. Union for Ethical BioTrade (UEBT), White Truffle: Diamond of Italy, <https://uebt.org/ingredient-stories/white-truffle>.
162. Nexira, Beyond Sustainability, <https://www.nexira.com/commitments/beyond-sustainability/>.
163. Unilever, Sustainable and regenerative sourcing, <https://www.unilever.com/planet-and-society/protect-and-regenerate-nature/sustainable-and-regenerative-sourcing/>.
164. Henkel, The Partnership of Henkel and Solidaridad in Colombia, <https://www.henkel.com/resource/blob/1828098/e3f0eb2f2c0adf3b08c14017bc4db8cf/data/factsheet-farm2bar-colombia.pdf>.
165. 1t.org: A platform for the trillion trees community, <https://www.1t.org/>.
166. CEW UK, REN Clean Skincare Meets Its Zero Waste Pledge, 7 January 2022, <https://cewuk.co.uk/ren-clean-skincare-complete-zero-waste-by-end-of-2021-pledge/>.
167. Bower Collective, Bower partners with CleanHub to remove plastic waste from the ocean, 10 March 2023, <https://bowercollective.com/blogs/news/bower-partners-with-cleanhub-to-remove-plastic-waste-from-the-ocean>.
168. Henkel, Sustainability: Our partnership with Plastic Bank, <https://www.henkel.com/sustainability/regenerative-planet/sustainable-packaging/plastic-bank-partnership>.
169. Estimate based on average value of ranges provided for each category of funding needs and sources; Deutz, et al., Financing Nature: Closing the Global Biodiversity Financing Gap, The Paulson Institute, The Nature Conservancy, Cornell Atkinson Center for Sustainability, 2020.
170. For example, in the voluntary biodiversity credit market, questions remain about the irreplaceability of unique ecosystems, time lag, enforcement, permanence and equitable benefit-sharing with local communities. Companies that are interested in exploring can start engaging in the design and piloting of high-integrity biodiversity credit markets to ensure they deliver just and equitable benefits for nature and people.
171. The Pew Charitable Trusts, Breaking the Plastic Wave: A Comprehensive Assessment of Pathways Towards Stopping Ocean Plastic Pollution, https://www.pewtrusts.org/-/media/assets/2020/10/breakingtheplasticwave_mainreport.pdf.
172. Ellen MacArthur Foundation, Towards the circular economy Vol. 2: opportunities for the consumer goods sector, <https://ellenmacarthurfoundation.org/towards-the-circular-economy-vol-2-opportunities-for-the-consumer-goods>.
173. Ellen MacArthur Foundation, Towards the circular economy Vol. 2: opportunities for the consumer goods sector, <https://ellenmacarthurfoundation.org/towards-the-circular-economy-vol-2-opportunities-for-the-consumer-goods>.
174. Sources:

Morgan Stanley Investment Management, Single-Use Plastic in the Consumer Staples Sector, November 2019, https://www.morganstanley.com/im/publication/insights/investment-insights/ii_singleuseplasticintheconsumerstaplessector_us.pdf.

Henkel Sustainability Report 2022, <https://www.henkel.com/resource/blob/1804850/56551a2284bd7d2c9838410b8395a5dd/data/2022-sustainability-report.pdf>.
175. Union for Ethical BioTrade (UEBT), Biodiversity Barometer: The Biodiversity Reckoning, 2022, <https://static1.squarespace.com/static/577e0feae4fcb502316dc547/t/6409db549975dd4b6aa32da1/1678367585952/UEBT+Biodiversity+Barometer+2022.pdf>.
176. World Economic Forum, Future of Reusable Consumption Models, 20 July 2021, <https://www.weforum.org/reports/future-of-reusable-consumption-models>.
177. Morgan Stanley Investment Management, Single-Use Plastic in the Consumer Staples Sector, November 2019, https://www.morganstanley.com/im/publication/insights/investment-insights/ii_singleuseplasticintheconsumerstaplessector_us.pdf.

178. WWF, WWF Position: Biobased and Biodegradable Plastic, https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/5tm1hfp3vz_WWF_Position_Biobased_and_Biodegradable_Plastic.pdf?_ga=2.53943912.139075386.1689174366-1109153684.1685018031.
179. Algramo, Technology-led innovation to revolutionize the way we consume, <https://algramo.com/en/>.
180. Terracycle, Closed-Loop Solutions, <https://www.terracycle.com/en-GB/pages/closed-loop-solutions>.
181. NPD, The Rise of Refillable Beauty, 15 September 2022, <https://www.npd.com/news/press-releases/2022/the-rise-of-refillable-beauty/>.
182. Unilever, Unilever announces plans to scale up UK refillable packaging trials, 16 June 2021, <https://www.unilever.co.uk/news/press-releases/2021/unilever-announces-plans-to-scale-up-refillable-packaging-trials-of-household-brands-across-the-uk/>.
183. Huhtamaki, Huhtamaki invests in Emerald Technology Ventures' sustainable packaging fund focusing on next-generation sustainable packaging solutions, 13 September 2022, <https://www.huhtamaki.com/en/media/media/press-release/2022/huhtamaki-invests-in-emerald-technology-ventures-sustainable-packaging-fund-focusing-on-next-generation-sustainable-packaging-solutions/>.
184. European Investment Bank (EIB), Spain: EIB agrees venture debt financing with PackBenefit to accelerate rollout of leading sustainable food packaging technology, 23 February 2023, <https://www.eib.org/en/press/all/2023-070-eib-agrees-venture-debt-financing-with-packbenefit-to-accelerate-rollout-of-leading-sustainable-food-packaging-technology>.
185. European Food Agency (EFA), EFA News, Nestlé invests in Eureka! 250 million francs for packaging innovation, <https://www.efanews.eu/en/item/22993-nestle-invests-in-eureka.html>.
186. The Consumer Goods Forum, Plastic Waste, <https://www.theconsumergoodsforum.com/environmental-sustainability/plastic-waste/>.
187. EPR Indonesia, Unilever Indonesia and QYOS Present Refill Stations as Shopping Alternatives, 11 March 2022, <https://epr-indonesia.id/news/unilever-indonesia-and-qyos-present-refill-stations-as-shopping-alternatives>.
188. Unilever, Reuse. Refill. Rethink. Our progress towards a packaging revolution, <https://www.unilever.com/reuse-refill-rethink-plastic/>.
189. Minime Insights, QYOS and Nestle Indonesia launch refill stations for MILO and KOKO KRUNCH, 7 May 2023, <https://www.minimeinsights.com/2023/05/07/qyos-and-nestle-indonesia-launch-refill-stations-for-milo-and-koko-krunch/>.
190. Saathipads, <https://saathipads.com/>.
191. Re-Fresh Global, Transforming textile waste into new raw materials, <https://re-fresh.global/>.
192. Goyal, Nishu and Frankline Jerold, Biocosmetics: technological advances and future outlook, Environmental Science and Pollution Research, 25 November 2021, <https://link.springer.com/article/10.1007/s11356-021-17567-3>.
193. McKinsey & Company, The Bio Revolution: Innovations transforming economies, societies, and our lives, 13 May 2020, <https://www.mckinsey.com/industries/life-sciences/our-insights/the-bio-revolution-innovations-transforming-economies-societies-and-our-lives>.
194. Global Plastic Action Partnership, <https://www.globalplasticaction.org/home>.
195. Business Coalition for a Global Plastics Treaty, <https://www.businessforplasticstreaty.org/>.
196. The Consumer Goods Forum, Better Lives Through Better Business, <https://www.theconsumergoodsforum.com/>.
197. World Economic Forum, Consumers Beyond Waste, <https://www.weforum.org/projects/consumers-beyond-disposability>.
198. EcoBeautyScore Consortium, <https://www.ecobeautyscore.com/>.
199. International Association for Soaps, Detergents and Maintenance Products (A.I.S.E.), <https://www.aise.eu/>.
200. Transition Plan Taskforce (TPT), Transition Plan Taskforce moves into next phase, <https://transitiontaskforce.net/transition-plan-taskforce-moves-into-next-phase/>.
201. Glasgow Financial Alliance for Net Zero (GFANZ), Financial Institution Net-zero Transition Plans: Fundamentals, Recommendations, and Guidance, Final Report, November 2022, <https://www.gfanzero.com/our-work/financial-institution-net-zero-transition-plans/>. Full report accessible here: <https://assets.bbhub.io/company/sites/63/2022/09/Recommendations-and-Guidance-on-Financial-Institution-Net-zero-Transition-Plans-November-2022.pdf>. GFANZ's framework is primarily aimed at financial institutions but can also be applied to firms in the real economy.
202. WWF, Nature in Transition Plans: Why and How? How companies can consider climate and nature together in current transition planning, January 2023, https://www.wwf.org.uk/sites/default/files/2023-02/WWF_Nature_In_Transition_Plans_Feb23.pdf.
203. Taskforce on Nature-related Financial Disclosures (TNFD), Additional draft guidance for corporates on science-based targets for nature, Beta v0.3, November 2022, https://framework.tnfd.global/wp-content/uploads/2022/11/TNFD_Additional-Draft-Guidance_v0-3_v9C.pdf.
204. Assessment metrics are used internally by report preparers to inform management decisions, while disclosure metrics are intended to be published in disclosures for report users. 'Core' disclosure metrics are reported on a comply or explain basis.

205. Sources:
- Taskforce on Nature-related Financial Disclosures (TNFD), The TNFD Nature-related Risk and Opportunity Management and Disclosure Framework, Beta v0.4, Annex 4.3 Disclosure Metrics Annexes, March 2023, https://framework.tnfd.global/wp-content/uploads/2023/03/23-23882-TNFD_v0.4_Annex_4.3_v3-1.pdf.
- TNFD, Nature-related Risk and Opportunity Management and Disclosure Framework, Beta v0.4, Annex 4.7 Guidance on Response Metrics in the Prepare Phase of LEAP, March 2023, https://framework.tnfd.global/wp-content/uploads/2023/03/23-23882-TNFD_v0.4_Annex_4.7_v4-1.pdf.
206. Taskforce on Nature-related Financial Disclosures (TNFD), The approach to metrics, Version v0.4 Beta Release, March 2023, <https://framework.tnfd.global/introduction-to-the-framework/tnfd-methodologies/approach-to-metrics/>.
207. The Organisation for Co-operation and Development (OECD) defines an indicator as a: “Quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect changes connected to an intervention, or to help assess the performance of a development actor”. Source: <https://www.oecd.org/dac/peer-reviews/Development-Results-Note.pdf>.
208. Taskforce on Nature-related Financial Disclosures (TNFD), Nature-related Risk and Opportunity Management and Disclosure Framework, Beta v0.4, Annex 4.7 Guidance on Response Metrics in the Prepare Phase of LEAP, March 2023, https://framework.tnfd.global/wp-content/uploads/2023/03/23-23882-TNFD_v0.4_Annex_4.7_v4-1.pdf.
209. Adapted from: McKinsey & Company, The net-zero transition: What it would cost, what it could bring, <https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring>.
210. See also: Alpha Beta, Identifying Biodiversity Threats and Sizing Business Opportunities: Methodological Note to the New Nature Economy Report II: The Future of Nature and Business, 15 July 2020, https://accesspartnership.com/wp-content/uploads/2023/01/200715-nner-ii-methodology-note_final.pdf.
211. In 2018, the personal care products industry contributed \$267.3 billion to the US economy, which is equivalent to a GDP share of 1.3%. Source: Personal Care Products Council, Our Economic & Social Impact, <https://www.personalcarecouncil.org/about-us/economic-impact-study/#:~:text=In%202018%2C%20the%20personal%20care,federal%2C%20state%20and%20local%20levels>.
212. In 2022, the beauty and personal care industry contributed \$32 billion to the UK economy, which is equivalent to a GDP share of 1.02%. Source: Carrara, A., Beauty contributes £24.5 billion to UK economy in 2022, Cosmetics Business, 25 April 2023, https://www.cosmeticsbusiness.com/news/article_page/Beauty_contributes_245_billion_to_UK_economy_in_2022/208480.
213. Source: Ellen MacArthur Foundation, Towards the Circular Economy: Opportunities for the consumer goods sector, 2013, <https://emf.thirdlight.com/file/24/qzvD2i1qVnZjTMqzpl2ql32rGA/Towards%20the%20circular%20economy%20Vol.%202%3A%20opportunities%20for%20the%20consumer%20goods%20sector.pdf>.
214. Sources:
- Industry Research, Global Fast Moving Consumer Goods (FMCG) Industry Research Report 2023, Competitive Landscape, Market Size, Regional Status and Prospect, https://www.industryresearch.biz/enquiry/request-sample/22366764#utm_source=linkedin_Rangers.
- Oliver Wyman research and analysis, sourced from Euromonitor’s database of 2022 revenues in sub-industries in the household and personal care products sector. Euromonitor: <https://www.euromonitor.com>.



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