UNIVERSITY OF CAMBRIDGE
INSTITUTE FOR SUSTAINABILITY LEADERSHIP

Developing a Corporate Biodiversity Strategy:

A primer for the fashion industry

supported by

KERING

The University of Cambridge Institute for Sustainability Leadership

The University of Cambridge Institute for Sustainability Leadership (CISL) is a globally influential Institute developing leadership and solutions for a sustainable economy. For over three decades we have built the leadership capacity and capabilities of individuals and organisations, and created industry-leading collaborations, to catalyse change and accelerate the path to a sustainable economy.

CISL's Business and Nature team collaborates with companies to identify what the ecological crisis means for their businesses and take steps to transform their operations and strategies.

Rewiring the Economy is our ten-year plan to lay the foundations for a sustainable economy. The plan is built on ten interdependent tasks, delivered by business, government, and finance leaders co-operatively over the next decade to create an economy that encourages sustainable business practices and delivers positive outcomes for people and societies.

Kering

A global Luxury group, Kering manages the development of a series of renowned Houses in Fashion, Leather Goods, Jewellery and Watches: Gucci, Saint Laurent, Bottega Veneta, Balenciaga, Alexander McQueen, Brioni, Boucheron, Pomellato, DoDo, Qeelin, Ulysse Nardin, Girard-Perregaux, as well as Kering Eyewear. By placing creativity at the heart of its strategy, Kering enables its Houses to set new limits in terms of their creative expression while crafting tomorrow's Luxury in a sustainable and responsible way. They capture these beliefs in their signature: 'Empowering Imagination'. In 2018, Kering had nearly 35,000 employees and revenue of €13.7 billion.

The Conservation Hierarchy Team

Led by Professor E.J. Milner-Gulland at The University of Oxford, the Conservation Hierarchy Team is a collaboration between academic, not-for-profit and private sector organisations who collectively wish to develop better ways of managing our relationship with nature.

Biodiversify

Biodiversify is a conservation knowledge-broker and consultancy that specialises in applying academic expertise to develop practical solutions to real world problems. Biodiversify supports a range of private, public and third sector clients who want to act for nature. With in-house expertise covering both terrestrial and marine biodiversity, we are able to offer a full suite of services related to global biodiversity management and governance. By working with a range of partners across different sectors, Biodiversify aims to ensure successful outcomes for both nature and people.

Publication details

Disclaimer

The opinions expressed here are those of the authors and do not represent an official position of CISL, the University of Cambridge, or any of its individual business partners or clients. This report is not, and should not be construed as, financial advice.

Copies

This full document can be downloaded from CISL's website: www.cisl.cam.ac.uk/publications, Biodiversify's website: www.biodiversify.org/copy-of-publications and Kering's website: www.kering.com/en/sustainability/media-library

Acknowledgements

The lead authors of this report were Dr Sam Sinclair (Biodiversify),Dr Michael Burgess (Biodiversify) with support from Dr Cath Tayleur (CISL) and Dr Gemma Cranston (CISL). The authors would like to thank colleagues at Kering, Wild Business, the University of Oxford and the Conservation Hierarchy Team for their invaluable contributions. The content of this report was developed from an unpublished report authored by Joe Bull, Prue Addison and Biodiversify.

Contact

To obtain more information please contact: businessandnature@cisl.cam.ac.uk or sam@biodiversify.org

January 2020

Executive summary

Nature is declining at a rate unprecedented in human history, with one million species now threatened with extinction. This degradation of nature affects society as a whole, including businesses that rely on natural resources, like the fashion industry. A critical action point has been reached: businesses need to create new strategies that will transform their relationship with nature, safeguarding their operations while at the same time taking responsibility for their impacts on the natural world.

Biodiversity, the living component of nature, is under threat; globally biodiversity is undergoing a precipitous decline, with many contributing and interacting drivers. Businesses and society will suffer if this rate of decline continues, not least because the goods and services provided by biodiversity are essential for the stability and resilience of production systems across the world. Defining sustainable use limits for biodiversity is complex and the development of a science-based target for biodiversity, or 2 degree equivalent, is still some way off. However, the current nature crisis demands immediate action and the international community is placing a spotlight on nature in 2020. It is therefore critical for businesses to ensure they have a strategic response to the challenge. This paper focuses on the practical steps a fashion company can take now in order to develop a biodiversity strategy and to create the foundation for more resilient supply chains.

Fashion companies are highly dependent on the secure supply of a number of nature-dependent commodities: from animal skins through to cashmere and cotton. Given the importance of high quality raw materials, many of which come directly from nature, protecting biodiversity is even more of an imperative for the luxury sector. The largest impacts on nature occur at the start of the value chain, during the production and harvesting of these commodities. For example, deforestation in critical forests around the world is primarily driven by cattle-ranching, an important source of leather, whereas cotton production accounts for 16 per cent of the world's insecticide use, an underlining factor in global pollinator decline. Association with these types of negative impacts can generate reputational risk, but may also contribute to operational issues, such as security of supply over the mid and long term.

New innovations are emerging to support companies in making informed decisions about their relationship with biodiversity. This document draws on a new approach called the Conservation Hierarchy to lay out a simple process for fashion companies wishing to develop a robust corporate biodiversity strategy. The Conservation Hierarchy is a flexible framework which can be used to guide decisions about the mitigation of impacts on biodiversity at different scales, from setting global-level visions to planning sustainable development at a national scale or guiding local action in a national park. This framework can be adapted to a wide range of contexts, making it suitable for addressing the variation between different companies within the fashion industry.

The eight steps detailed within this document provide guidance to develop a corporate biodiversity strategy. It aims to support decision makers in designing a strategy that can inform their company of its impacts and dependencies within its operations and where to prioritise action. Further, it highlights how a company can identify a portfolio of mitigation actions to reduce impacts on and restore biodiversity.

In particular, the paper provides guidance on:

- How to engage key decision makers within a company to develop and deliver a biodiversity strategy
- What tools are available to enable the conversation, deliver and develop a biodiversity strategy
- How to structure the decision-making processes
- What types of data are required
- How to reach decisions about biodiversity using available data

This step-by-step process is designed to support sustainability professionals within fashion brands to develop their own corporate biodiversity strategy.

Without nature businesses will not be viable; it is important for companies to respond to the depletion of nature through strategic responses and plans. This document aims to support companies in transforming their relationship with nature.

Contents

Developing a corporate biodiversity strategy

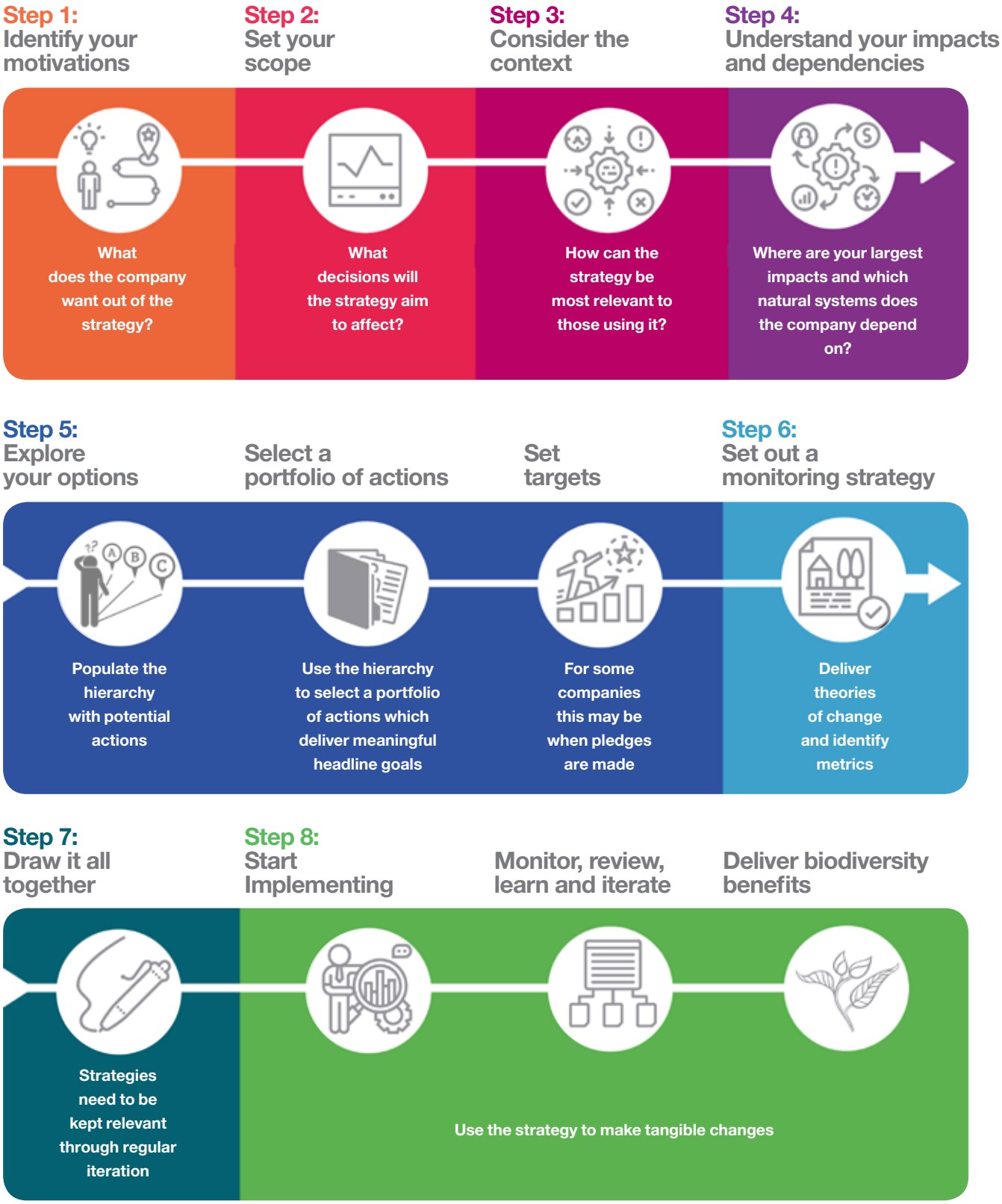


Figure 1. Summary of the process to develop a corporate biodiversity strategy. Whilst there is a logical order to the steps, this process is highly iterative, and it may be necessary to revisit earlier steps as development progresses.

Introduction

Achieving sustainable development which delivers economic growth whilst simultaneously allowing nature to thrive, is both the greatest challenge and opportunity of our generation. As a result, many organisations are realising that a biodiversity strategy is an essential management tool for guiding their actions in a rapidly evolving world.

This presents a novel challenge for the fashion industry, a sector which sources from suppliers around the world to create products which are worn by people of all creeds and cultures. This guide sets out the key issues and presents a simple approach to developing a corporate biodiversity strategy. The intention is not to be prescriptive – readers are encouraged to adapt these suggestions to their own contexts. Whilst this guide will be particularly useful to companies developing their first biodiversity strategy, it also showcases useful resources for those who already have experience in this area.

A brief introduction to biodiversity

Biodiversity is, simply put, the variety of life on earth. It encompasses the full spectrum of living things, from the tiniest of species all the way up to vast ecosystems that span continents. When we think about biodiversity, we might picture the huge range of ecosystems the world contains, from coral reefs to jungles to grasslands. We might conjure up images of exotic animals from nature documentaries, vistas we have seen whilst travelling or creatures we have encountered in our own gardens. This wealth of life has an intrinsic value: most people will never see a blue whale, but many would agree that they are glad they exist. There is a clear importance beyond this: collectively biodiversity forms the natural systems which are essential for supporting human life. As individuals, as societies and as the organisations we represent, we all receive a wide range of benefits from biodiversity, known as ecosystem services. Some of these benefits are obvious, for example, the healthy soils critical to producing natural plant fibres depend on a diverse community of soil organisms. Other benefits are more subtle and indirect, for example we may not be aware that a wetland prevented a major flood, protecting homes, farms and factories, all critical to ensuring that supply chains function smoothly.

Biodiversity is currently undergoing a precipitous decline. The most robust global assessment to date estimates that one million plant and animal species are currently at risk of extinction[1]. This problem is not due to a single threat but is rather the combination of many separate impacts acting together, from global threats like climate change and pollution, to the more localised threats of poaching and habitat destruction. World leaders from all sectors have come together to agree on goals, principles and targets for biodiversity and nature. For example, the Sustainable Development Goals (SDGs) are a set of 17 global targets which if achieved will lead to a better world for all. Protecting biodiversity is a theme that underpins the delivery of the SDGs. Another important example is the United Nations Convention on Biological Diversity (CBD),

an agreement between countries with the primary goal of sustainable development. The CBD recognises that biological diversity (biodiversity) is about our shared need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment in which to live. Such high-level accords are not limited to nation states. By the end of 2019, 63 leading apparel and textile companies had signed the Fashion Pact[2], representing around 250 brands to date and equaling more than 30 per cent of the industry. Through this agreement signatories pledge to develop strategies to address their impacts on biodiversity, climate and oceans. They also demonstrated clear intentions to work with their supply chains to support best practices with a focus on agriculture, forestry and mining.

Why develop a biodiversity strategy

Companies interact with biodiversity in many different ways, both positively and negatively, and so a strategy may need to approach the topic through several different angles and employ new ways of thinking. Fortunately, the question of how to make business sustainable is currently the focus of considerable innovation. New approaches are emerging to support the private sector in making informed decisions about their relationship to biodiversity. The purpose of this document is to draw on these innovations to lay out a simple process for fashion companies wishing to develop a robust corporate biodiversity strategy in order to achieve positive outcomes for both nature and business. This should be a positive process as there are a range of potential benefits to both biodiversity and companies in the fashion sector.

[1] IPBES: Global assessment on biodiversity and ecosystem services (2019)
[2] Fashion Pact, (2019), France, Biarritz

Step 1: Identify motivations

An important first step is to articulate the corporate interest in developing a biodiversity strategy.

There are multiple benefits that can emerge from establishing a clear approach to addressing impacts on biodiversity; identifying those that are most relevant can streamline strategy creation and improve the likelihood of delivering the desired benefits. Establishing a clear organisational ethos towards biodiversity can also help ensure continuity between a range of actions across a company. This can be particularly helpful where companies have a broad suite of international operations.

Whilst there are many potential motivations and benefits, the majority can be described by the following four categories:

1.1 Operational motivations and dependencies

Society depends on an enabling natural environment in order to thrive, and the fashion industry is no exception.

Potentially the most important benefit of an improved relationship with nature is the strengthening of the systems that support business operations in the long term. This is particularly important for enterprises that depend on natural materials. Changes with the potential to impact supply can be gradual, due to ongoing environmental degradation, or they can be sudden; when tipping points are reached this can cause rapid shifts or unexpected events such as forest fires. Understanding and managing these risks can play an important role in ensuring supply is reliable in the long term. Identifying how to ensure business-critical natural processes are resilient to emergent threats is therefore a key purpose of an effective strategy.

Many of the soils critical to agriculture are slowly being degraded. To address this, a sports lifestyle brand has worked with their supply chain to develop a certification scheme; Regenerative Organic Certified. One of the key pillars of this scheme is improving soil health through responsible agricultural practices which simultaneously reduce the impact on surrounding natural areas.

1.2 Reputational drivers

The negative consequences of our collective impacts on nature are becoming widely recognised by societies around the world. This growing awareness is leading to biodiversity taking a place in the forefront of public concern, often expressed through protests, political action or consumer choice. A well-designed biodiversity strategy can tap into this zeitgeist and help support and strengthen a brand by demonstrating ethical conviction, responsible stewardship and a respect for nature. This may also be a differentiating factor for staff recruitment and investors as well as customers. In addition to providing positive reputational benefits, a biodiversity strategy can protect against negative reputational impacts. If public attitudes continue to shift towards sustainable options, public commitments to protecting and restoring biodiversity may become standard practice across the private sector, changing perceptions of what constitutes an acceptable minimum effort. A robust strategy plays a key role in managing reputational risks by identifying potential issues early and setting out positive mitigation actions, making it a prudent tool for the development and maintenance of a strong positive public reputation.

1.3 Synergies in corporate sustainability

As the importance of business sustainability becomes paramount, many organisations are developing a number of strategies, addressing topics such as carbon, water pollution and the livelihoods of local communities. It may be that through these existing actions, companies are already managing their impacts on biodiversity to some extent and making positive contributions, for example, by reducing their water usage or protecting critical forests to offset their remaining carbon footprint. An important step in developing a biodiversity strategy will be identifying the mitigation efforts already being undertaken and building on them to create win-wins for biodiversity and other aspects of corporate sustainability. There may be synergies with efforts to improve business operations, for example: improving soil health may help ensure continuity of supply and benefit local biodiversity. In some cases, there may also be biodiversity-friendly alternatives to existing processes. In many cases these environmentally sensitive approaches require nature-based engineering solutions, reducing costs as well as providing biodiversity benefits.

Example: cross benefits

If a manufacturing plant manages water pollution as part of regulatory obligations, future approaches may include natural water purification methods such as constructing wetlands, thus providing additional biodiversity benefits whilst reducing costs.

1.4 Evolving regulations and policies

In November 2020, the governments of the world will agree on the next steps towards delivering the vision of the CBD. This will include updated targets for improved management of nature. In parallel, the SDGs, which explicitly recognise the importance of biodiversity, are being incorporated into practice by the private, public and charitable sectors alike. These high-level agreements reflect a growing recognition of the urgent need to halt biodiversity loss and are likely to lead to increased regulation in the short to medium term. As the fashion sector has a significant impact[3] on biodiversity and the environment more broadly, it is likely that changing regulation will have implications for the industry. Proactively developing strategies that address the SDGs and CBD goals will ensure that a company can maintain its licence to operate in the face of changing legislation. In addition, by better understanding the practical challenges of incorporating nature into business operations, the sector can contribute to the process of shaping regulation and potentially gain a voice in these important debates.

Actions and outputs

After considering the motivations for developing a strategy, a company might achieve the following:

- A list of specific benefits to the business
- A list of specific benefits to different departments within the business
- Alignment with existing commitments and pledges
- Sight of the potential overlaps with other business operations or aspects of sustainability

[3] Global Fashion Agenda and The Boston Consulting Group. (2017). Pulse of the Fashion Industry

Step 2: Set the scope

It is important to consider the potential scope of a biodiversity strategy up front. Because every company is different, biodiversity strategies must be tailored to the needs and context of each organisation. The scope of a strategy should not be seen as static, but something that is returned to iteratively as development progresses.

2.1 Exploring context and setting the scope

A company may wish to reflect on the following aspects:

i) Desired outcome for biodiversity

There are different overarching goals a company may have towards biodiversity. Possibly the most fundamental is whether a company wishes to focus on managing the impacts caused solely as a result of their activities, or whether they wish to make a positive impact on global biodiversity trends. For example, a company might minimise their impact on biodiversity by sourcing exclusively from sustainable suppliers. Alternatively, they may wish to reduce impacts on biodiversity more broadly by working with their existing suppliers, as far back in the supply chain as raw materials production, to help them adopt less impactful practices. Both are equally valid goals, however, it may help to clarify which is most relevant to the company.

ii) Audience

It is important to consider who will be reading the strategy. For example, the language and contents of an external position statement would be quite different from an internal strategy designed to inform key decisions.

iii) Depth

The approaches laid out in this primer are intended to help a company develop a high-level corporate strategy. This means it may lay out an overarching approach to support decision-making but will likely not explore different aspects of the business in fine detail. Many organisations may build on this by developing explicit strategies for different types of impact, sectors of their operation or geographic areas.

iv) Sphere of influence

Companies have significant agency to affect not only the resources in their direct control, but also to change the systems that surround them. For example, a company can decide internally to source materials from sustainable suppliers, or they may extend their reach externally to manage biodiversity impacts across their supply chains. Some companies may wish to extend a positive influence even further to uplift entire sectors or regions, for example through supporting certification schemes, improving legislation or motivating an industry to raise standards.

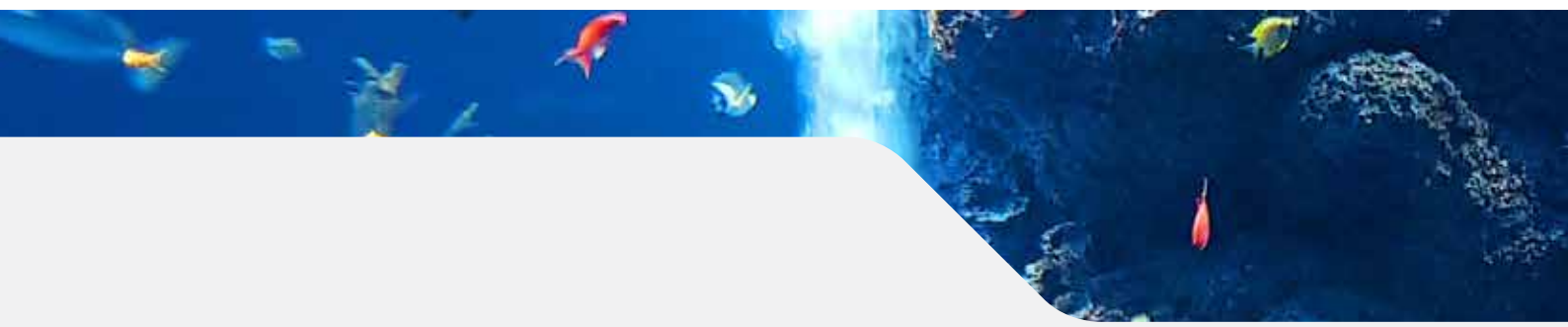
v) Role of the strategy in decision-making

A biodiversity strategy could be used to support decision-making across many different departments of a company. It is likely to do this more effectively if it is tailored to suit the context of these decision-making processes. This may be relatively simple to achieve if considered up front, for example by consulting key decision-makers to ensure that the language is relevant, the metrics applicable and the purpose clear.

Actions and outputs

In assessing the scope and context, a company should:

- Understand and articulate the overall purpose of the strategy
- Establish the key audiences
- Outline which actions and decisions the strategy might expect to affect
- Establish some guidelines on the language and information to include in the strategy



A biodiversity strategy could be used to support decision-making across many different departments of a company.

Step 3: Consider the context

Understanding how a business interacts with biodiversity can require new ways of thinking and innovation. The approaches laid out in this document recognise this and have been designed to break down the process of managing impacts into manageable steps whilst providing a framework that supports new ideas.

3.1 Taking the first step

These approaches might be applied at a high level initially, and then as an organisation learns over time, they can be used to develop more detailed strategies. This makes it important to have a process which can function equally well for a company developing their first biodiversity strategy as for a leader in the field. Whilst there will likely be a range of advances in approaches in methods, there are key areas where innovation might be expected.

3.2 Data and evidence

The use of evidence and data is one of the key ways in which methods improve over time. In an ideal world we would have data on every aspect of our work, allowing us to make perfectly informed decisions. However, in reality there are often limitations in the data available. This should not prevent a company from producing a robust strategy, but it does make it important to use a flexible approach that considers the strength of the evidence available and is transparent about limitations. The lessons from early experiences can then provide the insights needed to guide targeted data collection in the future. Identifying clear priorities through practical experimentation can be important for ensuring cost-effective data collection.

3.3 Organisational infrastructure

During early iterations developing a biodiversity strategy may require establishing new links within an organisation, improving capacity and developing new approaches. As a company moves through successive iterations, establishes partnerships and develops internal infrastructure, the decision-making process will become more streamlined. Ideally biodiversity considerations should become a routine part of operations, woven into all aspects of a business. Developing the necessary infrastructure will require a blend of pragmatism and science.

3.4 Improving ambitions

A biodiversity strategy may set out principles, articulate an ethos and identify strategic targets. Initially, these targets may focus on "no regret" actions and easily achievable goals. As companies gain experience and knowledge, future iterations may build towards more ambitious goals.

Example: working towards biodiversity net gain

A company may start by working to address their impacts on a specific aspect of biodiversity, such as ensuring that they do not contribute to deforestation, but may ultimately work towards making the company's positive actions outweigh their impacts across all forms of biodiversity, a goal often referred to as 'biodiversity net gain'.

3.5 Improving techniques, methods and approaches

For many companies developing a biodiversity strategy will be a new process. This may mean that early iterations are exploratory with a focus on learning lessons. As a company gains experience with these new issues, there will likely be a range of improvements to the strategy. These may be logistical, for example changes in the order of stages in the development process, or the way in which different departments are engaged. There might be refinements in the way decisions are made, e.g. the data used, or the individuals consulted. The field of biodiversity sustainability is currently in a period of rapid innovation with new approaches, techniques and frameworks in development. The lessons learnt through practical experience may help a company test or incorporate these external innovations as they emerge. These technical improvements can be accelerated through the sharing of innovations between companies.

Figure 2 outlines a number of possible improvements that could be made for data, processes, infrastructure and level of ambition.

Actions and outputs

As a company develops their strategy, they may wish to:

- Articulate how their ambitions might increase over time
- Collate a short list of potential innovations or developments that may be of interest
- Identify data needs
- Outline the ways in which learning will be supported and captured
- Summarise how different aspects of the strategy might improve over time

	Early steps	Established practice	Best practice
Data	Loose proxies used for impact, such as material type or country of origin	Supply chain engaged to collect targeted data on impacts and mitigation	Biodiversity data regularly collected through close collaboration with supply chain
Process	Exploratory, with a focus on lessons learnt	An established process which speaks to different sections of the business and supply chain	Biodiversity considerations integrated into day-to-day operations as routine
Infrastructure	Connections established with departments throughout the business	Regular communications on the strategy between departments and supply chain	Routine reporting and communication as part of business as usual
Ambition	A focus on specific impacts or aspects of nature	A plan for achieving no net loss of biodiversity	Net gain at the organisational level

Figure 2. A brief outline of potential improvements over time.

[6] www.cisl.cam.ac.uk/business-action/natural-capital/natural-capital-impact-group/about

Step 4: Understand your impacts and dependencies

In order to think strategically about a corporate relationship with biodiversity, it is necessary to understand how business activities lead to impacts on biodiversity.

4.1 Understanding impacts

Some impacts may be clear and direct, for example, where overgrazing is causing soils to degrade. Other impacts may be indirect, for example, shipping and transport can introduce invasive species which can damage ecosystems over time. In many cases a single action can cause multiple types of impact, for example, developing a new road to a remote location not only causes impact through construction but can also often increase poaching and habitat degradation due to improved access. One way of better understanding these connections is to work through the pathways which connect actions to the impacts they have on biodiversity (Figure 3).

A useful way to examine impacts is to understand the pathways which cause biodiversity to decline.

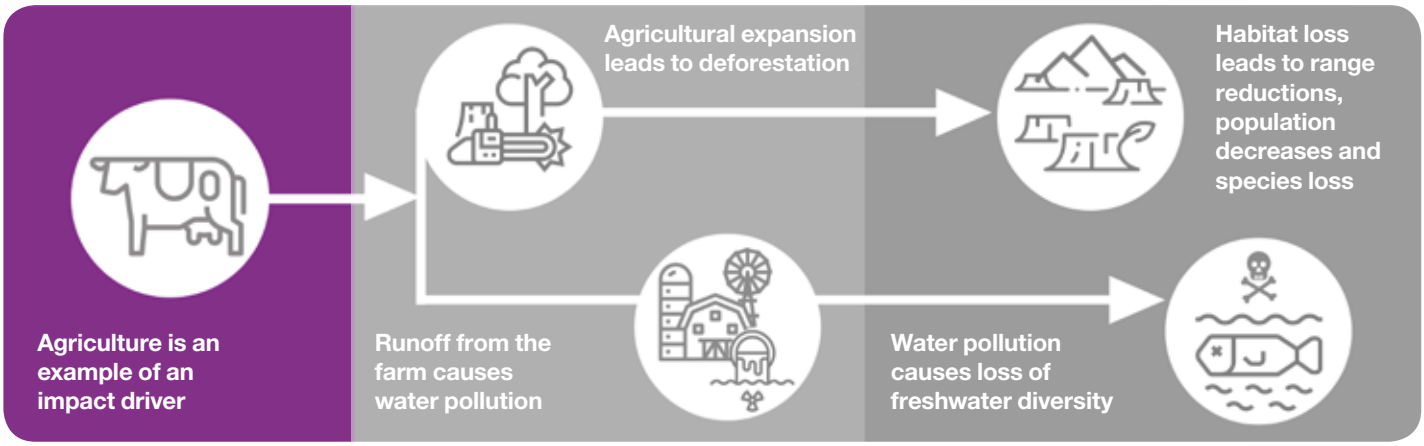


Figure 3. Visualizing impact pathways

4.2 Understanding dependencies

There are many ways in which society routinely depends on nature, and the fashion industry is no exception. The biodiversity and ecosystem services which are important to business processes are referred to as dependencies. For example, a factory may depend on a steady supply of water from a river. Forests on nearby highlands play a key role in maintaining a regular water supply, making their conservation relevant to the company operations. The forests can be considered a dependency, or part of a dependency pathway. The processes of understanding dependencies and impacts are often best conducted in parallel, as where dependencies are threatened by impacts this may indicate a priority for mitigation action.

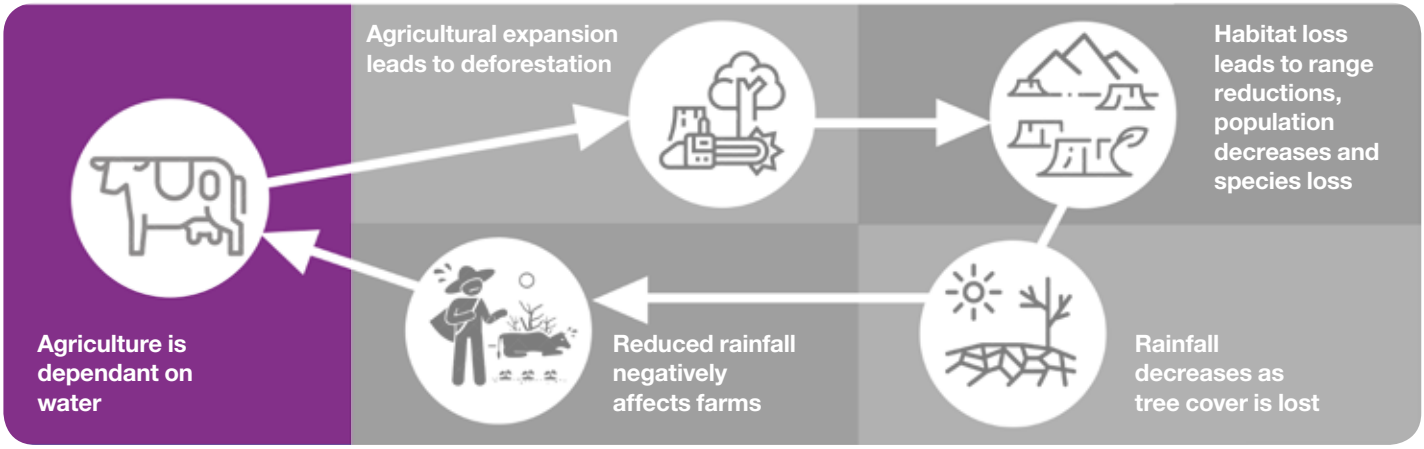


Figure 4. Visualizing dependency pathways

4.3 Building a picture of company impacts

The initial aim for many companies will be to understand where and how their activities are causing impacts on biodiversity. Ideally this will also provide some insights into the relative size and scale of different types of impact across their enterprise. As impacts are explored, they should be linked to the company's operations in a way that helps decision-making. There are different options for achieving this: a company with a limited geographic footprint might categorise their impacts by region, whilst a company with a wide international reach may differentiate between impacts caused at different stages in the supply chain or by the production of different types of material.

Most companies use a range of metrics to inform their operations, such as weight of materials purchased, country of origin or details of the manufacturing process. These data can potentially be used to track where impact might occur: if a large quantity of a particular material is manufactured using substantial amounts of water then this may be linked to a correspondingly large impact on biodiversity. However, there are other methods being developed specifically for monitoring impacts on the environment and biodiversity . Two prominent approaches are Environmental Profit and Loss account and the Biodiversity Impact Metric.

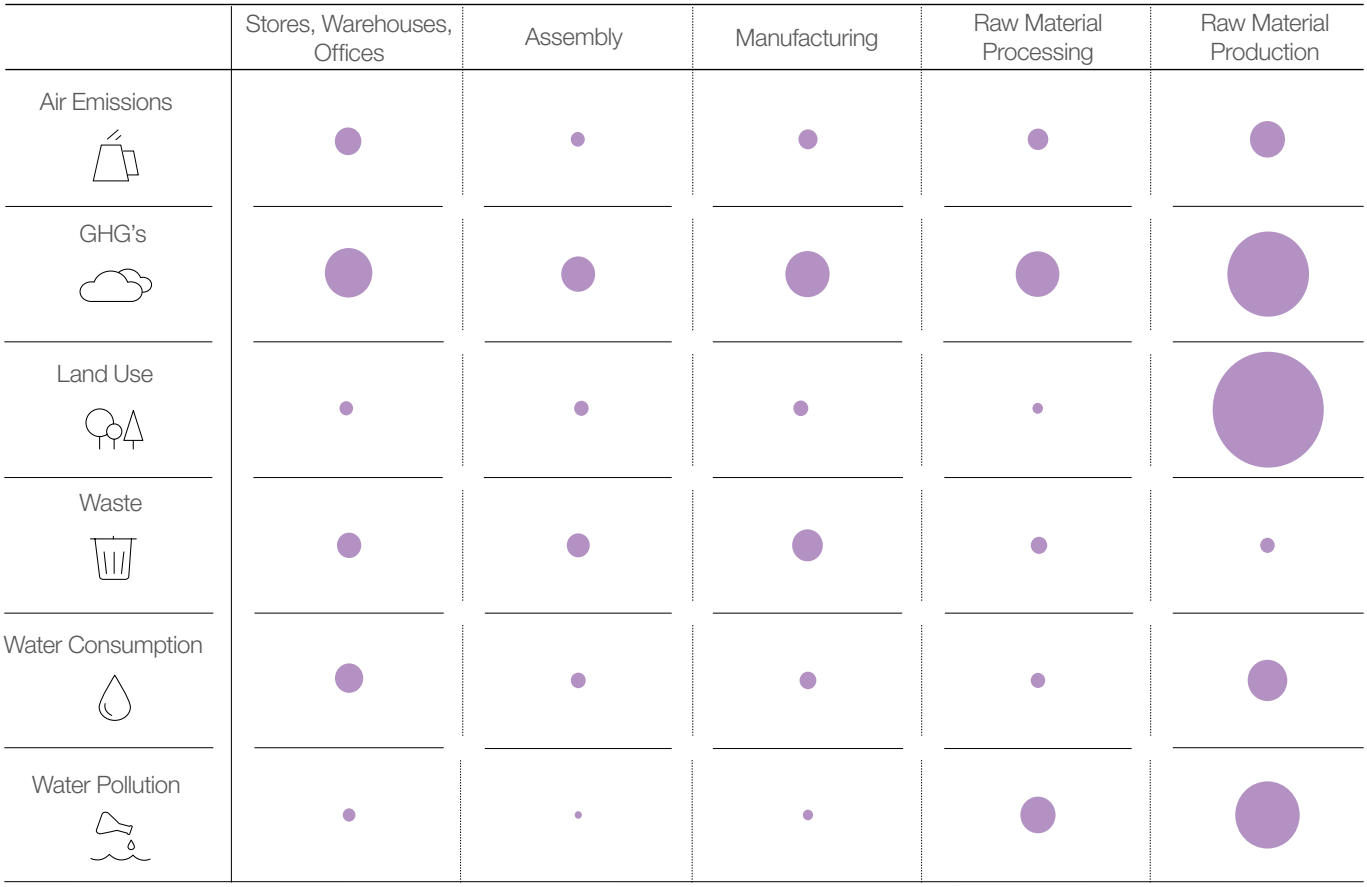


Figure 5. Kering's Environmental Profit and Loss (EP&L) account and the Group's impacts across the different tiers

Approach 1: Environmental Profit and Loss

Kering uses its pioneering Environmental Profit and Loss (EP&L) accounting to help manage their impacts on the environment. This management tool translates environmental impacts into a business-friendly language. It is important to note that the EP&L has a broad scope and does not specifically address biodiversity, however, many of the impacts it seeks to manage have consequences for biodiversity and the principles applied through the framework are transferable.

In order to enable comparison between different brands and branches, the company's operations have been split into five tiers (Figure 5) and six categories of impact. A large set of metrics has been used to track a range of impacts within the six categories across each tier of its own operations and the supply chain. This allows for a direct comparison between different elements and clearly identifies that land use change caused by raw material production has the most significant impact (Figure 5). Guided by this, Kering has conducted a more thorough analysis of each material to identify its relative impacts (Figure 6). This shows that the most environmentally damaging materials are leather, animal fibres and metal. The full report then takes this further and explores impact by country, providing a clear insight into where impact mitigation efforts should be prioritised.

Kering has twinned this tool with a pledge to reduce their EP&L intensity by 40 per cent by 2025 all the upstream to where the Group sources its raw materials. The EP&L has provided Kering with the means to set an achievable, time-bound target as well as insights into where their impact mitigation efforts should be focused. This allows the company to take informed, practical steps, learn lessons and deliver outcomes for nature.

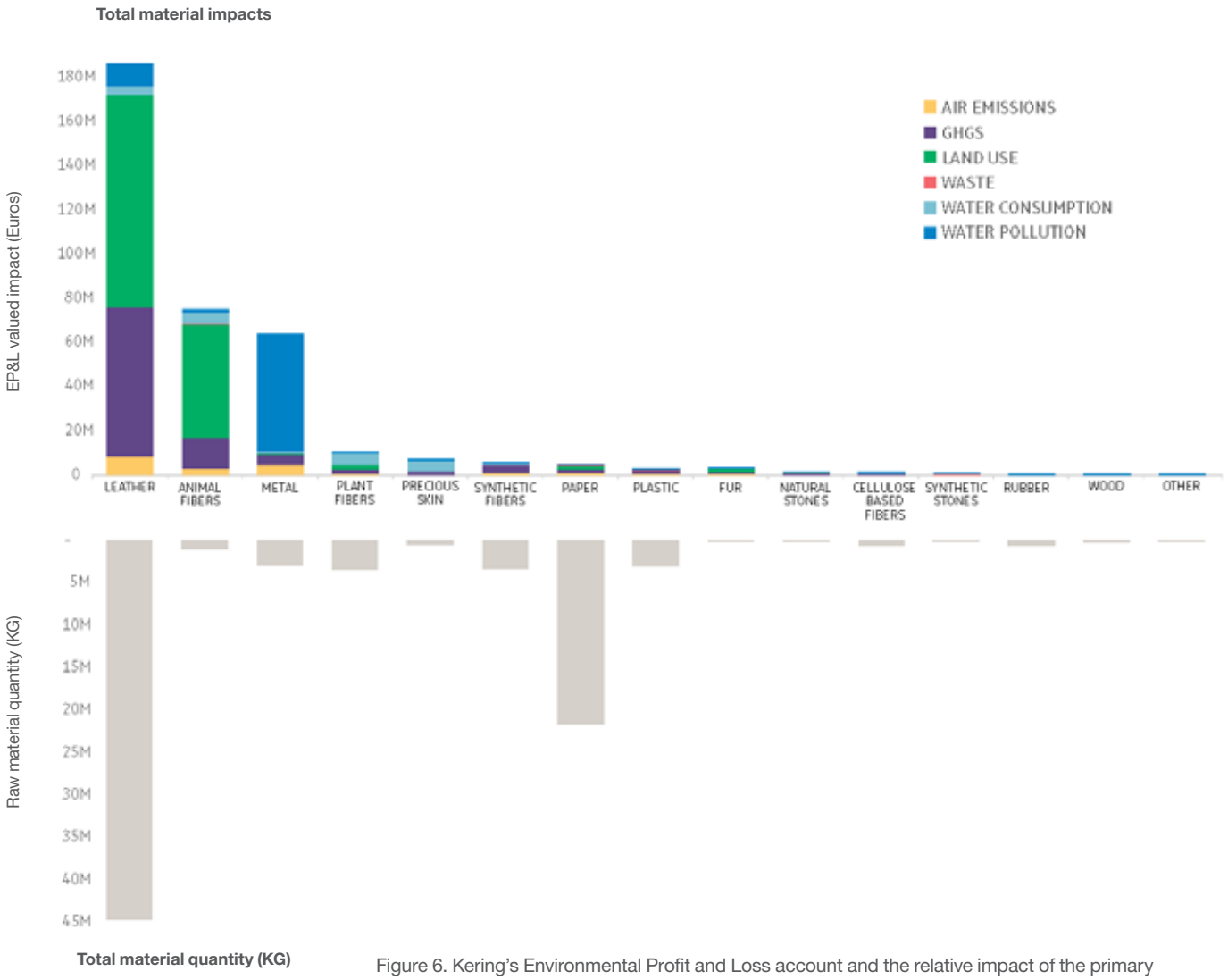


Figure 6. Kering's Environmental Profit and Loss account and the relative impact of the primary production of different materials.

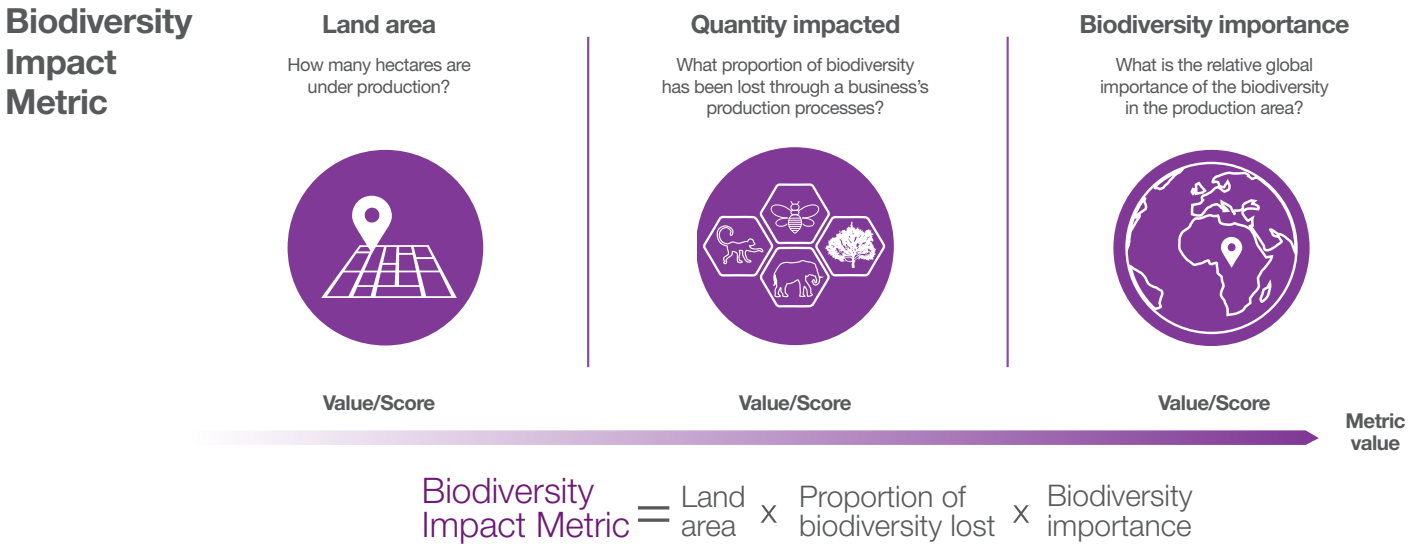


Figure 7. Framework for the Biodiversity Impact Metric

Approach 2: The Biodiversity Impact Metric

The Biodiversity Impact Metric has been developed by CISL to help supply-chain companies better understand their impacts on biodiversity as a result of their raw material sourcing. The metric is designed for companies that do not have full traceability of their supply chains, and uses credible data and assumptions to help fill in the knowledge gaps. For a commodity sourced from a particular location, the metric assesses impact based on:

1. The land area needed for production of the commodity
2. The proportion of biodiversity lost through transforming land to produce the commodity, related to the type of land use and the intensity of the production practices
3. The relative global importance of that biodiversity

The basic framework for the Biodiversity Impact Metric is shown in Figure 7. The metric only requires a company to know how much of a commodity they are purchasing and the country in which it was produced. It is an entry-level approach that allows a company to undertake a rapid risk-screening of its sourcing in order to identify where the greatest impacts are likely to occur, thereby helping to prioritise further investigations and interventions.

The outputs from the metric are most easily interpretable in relative terms, for example, by examining differences between sourcing areas, commodities or companies. Comparative values, such as the global average impact score for a commodity, can help a business benchmark its score. An example of the results for the Biodiversity Impact Metric applied to Kering's cotton sourcing data is shown in Figure 8. These results might prompt closer investigation as to why the biodiversity impact is much higher in India than other sourcing regions. In this instance, lower cotton yields from the Indian producers mean that a greater land footprint is required to produce the amount of cotton that the company needs. A company might respond to this by targeting extension services that improve productivity and reducing the agricultural footprint. The metric could also be used to identify areas where a company may require more biodiversity-friendly production practices from its suppliers, for example, where they are sourcing from regions that contain biodiversity that is particularly threatened or has a high number of species.

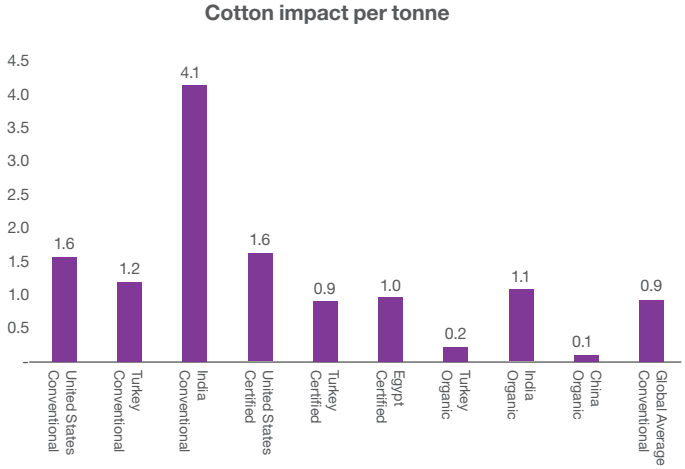


Figure 8. The relative impact of cotton sourced by Kering from different countries per ton as measured by the Biodiversity Impact Metric.

Actions and outputs

Through this stage a company might aim to:

- Develop an overview of the pathways by which their operations impact biodiversity
- Identify dependency pathways and their interactions with impacts
- Examine the data and metrics they already use which might help track impacts
- Start to understand which biodiversity metrics might be suitable for helping them track their impacts and ideally lay out a plan for data collection

Step 5: Explore options and select actions

Once a company understands where its most significant impacts are located, the next stage is to identify a portfolio of mitigation actions. The Conservation Hierarchy is a transparent framework designed to help decision-makers structure their knowledge about biodiversity impacts and work through the options for mitigation or improvement.

5.1 Using the Conservation Hierarchy to prioritise actions

This approach is an adaptation of the mitigation hierarchy which is widely used in development to manage impacts on biodiversity. The Conservation Hierarchy provides a precautionary, staged approach which helps companies prioritise actions and gain clarity about how they collectively contribute to headline goals or objectives.

5.2 Applying the Conservation Hierarchy

To use the hierarchy, a company should identify an impact pathway they wish to address. Through collaboration between departments across the organisation, a range of potential actions for impact mitigation should be identified for each stage of the hierarchy. A robust strategy should combine actions from each stage, however, there should be a focus on the earlier stages. This is because the avoid and minimise stages are more effective, less likely to fail and often more cost effective than the later stages of restore and offset. A company should work through different aspects of their operations to populate multiple hierarchies; these can then be used to inform discussions. Managing the trade-offs necessary to develop a comprehensive strategy may be challenging. The hierarchy should be used to focus the conversation and help understand how different actions can collectively mitigate biodiversity impacts.

Stages	Actions
Avoid	1. Engage with farmers in the supply chain to halt deforestation 2. Collaborate with supply chain to cease predator control practices which impact threatened species 3. Use less impactful materials in place of leather
Minimise	4. Work with suppliers to minimise water usage through water-friendly farming techniques 5. Help livestock suppliers manage effluent runoff 6. Reduce the amount of leather used in products
Restore	7. Support suppliers in establishing regenerative approaches to agriculture that restore soil and increase biodiversity on farms 8. Collaborate across landscapes to support ecological restoration in areas historically impacted by pastoral farming
Offset	9. Support charities to protect species or ecosystems impacted by agriculture or offset through nature-based projects 10. Work with suppliers to conserve natural habitats under stewardship schemes

Figure 9. The Conservation Hierarchy theoretically applied to leather production.

5.3 The stages in the Conservation Hierarchy

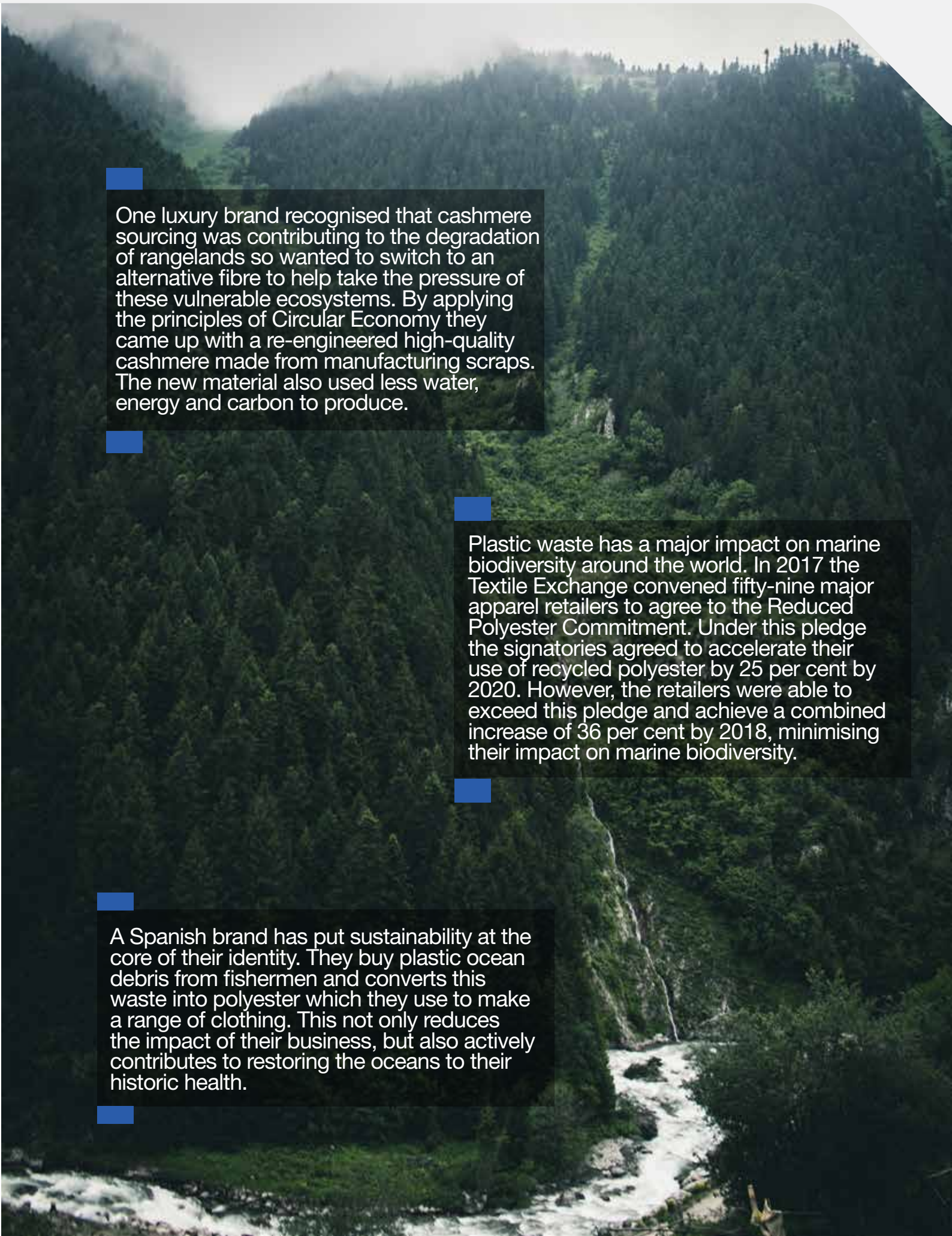
i) Avoid
The most effective way to mitigate impacts is to refrain from causing them at all. Actions should go in this category if they lead to impacts being avoided. This can be achieved through supply choice, for example only using sustainable materials or suppliers who use responsible practices. Alternatively, this might be achieved by working with suppliers to ensure they avoid causing specific impacts.

ii) Minimise
Where impacts are unavoidable, action should be taken to reduce their severity. This is usually achieved by changing day-to-day business practices and may require a more involved relationship between a company and their supply chain. This can include a wide range of actions, such as reducing water pollution, recycling waste or changing predator control practices. In some cases, a company may choose to work with high-impact suppliers rather than avoiding them, on the basis that changing their practices may deliver a better outcome for biodiversity than simply using sources which are already sustainable.

iii) Restore
This stage addresses actions taken to reverse impacts and actively improve biodiversity. For example, by funding tree planting and forest regeneration in areas previously impacted by cotton farming. Alternatively, this could be achieved through business operations or engagement with the supply chain. For example, regenerative farming approaches could be adopted to restore biodiversity on agricultural land and allow soil quality to recover.

iv) Offset
In many cases, it is not possible to fully mitigate impacts through the other stages, such as where a material with high impact is business critical or where innovation is required. For impacts that cannot be reduced a company may seek to take action elsewhere which compensates directly for the impact. Ideally gains should be larger than losses in order to compensate for the fact that whilst losses are certain, there is a risk that efforts to deliver biodiversity gains are not fully successful.

Figure 9 provides an example of actions that could be applied at each of the avoid, minimise, restore, offset stages in the Conservation Hierarchy for leather production.



One luxury brand recognised that cashmere sourcing was contributing to the degradation of rangelands so wanted to switch to an alternative fibre to help take the pressure of these vulnerable ecosystems. By applying the principles of Circular Economy they came up with a re-engineered high-quality cashmere made from manufacturing scraps. The new material also used less water, energy and carbon to produce.

Plastic waste has a major impact on marine biodiversity around the world. In 2017 the Textile Exchange convened fifty-nine major apparel retailers to agree to the Reduced Polyester Commitment. Under this pledge the signatories agreed to accelerate their use of recycled polyester by 25 per cent by 2020. However, the retailers were able to exceed this pledge and achieve a combined increase of 36 per cent by 2018, minimising their impact on marine biodiversity.

A Spanish brand has put sustainability at the core of their identity. They buy plastic ocean debris from fishermen and converts this waste into polyester which they use to make a range of clothing. This not only reduces the impact of their business, but also actively contributes to restoring the oceans to their historic health.

5.4 Achieving headline goals

One of the key features of the hierarchy is that the contributions of each stage can be summed up in order to deliver headline goals. Depending on the company ethos, there may be multiple headline targets, for example the strategy may aim for zero deforestation, zero loss of threatened species and the restoration of 20,000 hectares of historically degraded grasslands. Goals can also be incorporated into the strategy in the relevant stages.

Example: using the hierarchy to achieve goals

If a company has pledged to achieve zero deforestation, then this approach can be used to guide the selection of a suite of mitigation actions and assess whether they collectively achieve this goal.

Avoid: This may mean the company avoids contributing to deforestation by working with their supply chain to ensure that suppliers do not encroach on forests by expanding their operations.

Minimise: The company may also establish agreements with suppliers to minimise pollutant runoff, which would degrade natural habitat through improved irrigation methods and pesticide regimes.

Restore: Aware that there have been historical impacts caused by the supply chain, the company may provide a premium to suppliers who are able to deliver an increase in soil quality and natural habitat through restorative farming practices.

Offset: Despite these efforts, there may be some deforestation, so the company may seek to offset this by financially supporting a local charity or UN backed offsetting project to purchase and conserve native forest threatened by deforestation.

The contribution of each of these activities in terms of forest cover and quality can be calculated in hectares, summed and compared against any deforestation or forest degradation caused by business operations, allowing the company to determine whether they have achieved their target of zero deforestation.

For example, if there is a desire to reverse historical loss of biodiversity on farms, then a company may include 'source from farms which use regenerative approaches to agriculture' as an action within the restore stage. By including existing commitments or principles in the hierarchy, a company can build their strategy around their existing work but also use the process to identify and fill gaps in their efforts. This can help design a comprehensive strategy which takes full advantage of existing progress. Further to this, it is important to recognise that a biodiversity strategy is not just about mitigating impacts and preventing loss, but is also an opportunity for a company to deliver overall positive outcomes for species and ecosystems.

5.5 Linking hierarchies together to develop a corporate-level strategy

Depending on the context, hierarchies might be developed for different aspects of a company. As the Conservation Hierarchy approach can be applied at different scales, it can be used to draw these different elements together to establish a top-level corporate-level strategy. Where possible, comparable actions can be amalgamated or translated from the specific to general. For example, where certification schemes are available for multiple types of material, these may be specifically named at the material level but collated into 'avoid non-certified suppliers' at the corporate level. This can also be used as a common language between departments, providing continuity across an organisation. For example, the hierarchy can be equally applied to the sourcing of cellulose, the waste management of a factory or the sustainable use of cashmere.

Actions and outputs

After this stage a company should:

- Decide what categories they will use to manage their impacts (eg by location, material or impact type)
- Populate a hierarchy with a list of possible actions they could feasibly take to mitigate their impacts on biodiversity for different aspects of the business
- Determine the headline goals they wish to achieve
- Select a portfolio of actions which collectively deliver the headline targets

Step 6: Set out a monitoring strategy

There are many ways of tracking and monitoring the progress of projects. When dealing with projects that have multiple steps or a significant time lag, as is often the case with biodiversity, it can be helpful to identify the pathways by which the actions will lead to positive outcomes for biodiversity. This is commonly known as a theory of change.

Clearly articulating this chain of events can help highlight assumptions, risks and opportunities. Taking a more holistic approach can also help demystify the potentially complex pathways by which actions lead to outcomes for biodiversity. This is particularly useful for biodiversity strategies, as natural systems are dynamic and there may be many actors operating simultaneously across a landscape. These systems may also be slow to respond – there can often be a delay between taking a positive action and seeing a measurable change. Measuring the different stages in the process can help demonstrate that progress is being made, even if the desired final effect is not yet detectable.

Example: considering the impact of multiple actors

A company sourcing cotton from multiple farms in a valley might work with farmers to reduce their chemical and silt runoff with the hope of reducing pollutant levels in local watercourses. One of their assumptions is that other polluters in the valley will continue to pollute at the same levels. If this is not the case, then the farmers' actions may not lead to the desired outcomes. Identifying this assumption up front could help them manage this risk, for example, by reaching out to other actors in the area and establishing a catchment partnership to tackle the problem collaboratively.

6.1 Developing a theory of change

Whilst the approach needs to be bespoke, a theory of change often includes five key stages: starting point, actions, outputs, outcomes and impacts (see Figure 10). These should be linked in a logical causal chain to identify how the proposed actions result in benefits to biodiversity. Where pathways are more complex there may be multiple steps within each stage or even additional stages. The approach should not be applied rigidly but rather used as a way of making it easier to understand complex chains of action. They can be used at a local level, as with the example of the farmers in the valley, or at a corporate level. They also do not have to be complex – an overview of the system is often sufficient to identify key bottlenecks, assumptions, or critical factors. Ideally, a theory of change can be created as part of the process of developing a biodiversity strategy. As portfolios of action are assembled to address impact pathways or deliver additional benefits, simple theory of change can be outlined as needed.

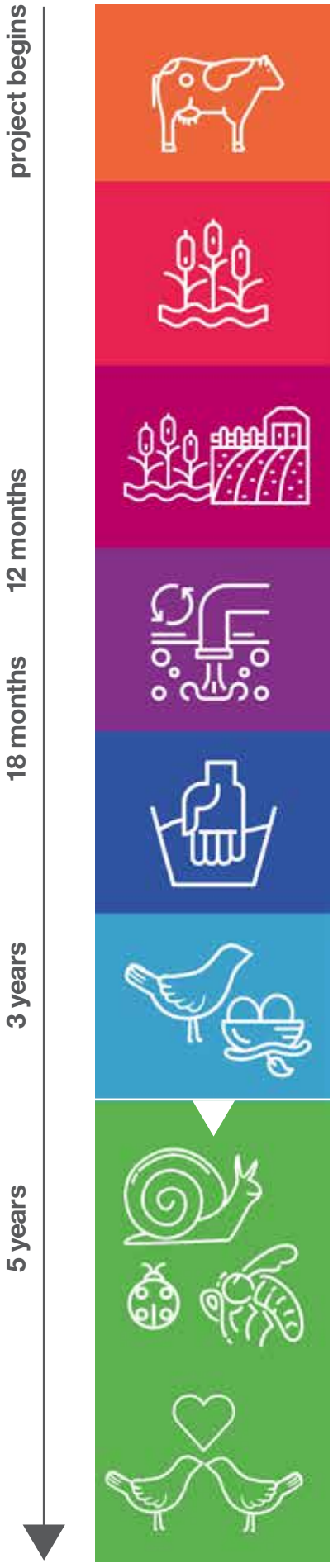
6.2 Using a theory of change to guide monitoring

Once a sequence of steps has been laid out in a theory of change, this can be used to design a monitoring programme. Indictors should be identified for each step to track progress, identify emerging issues and demonstrate results. Ideally baseline measurements should be taken so that change over time can be tracked. Critically, a biodiversity strategy should ultimately include monitoring of changes in biodiversity, ideally using baseline measurements collected at the outset. Due to the time lag between actions and benefits to biodiversity, this may be scheduled for some time in the future, however it is crucial to connect the strategy to the final outcomes.

Actions and outputs

To monitor the effects of their actions a company should:

- Develop a theory of change to connect actions, outputs and impacts
- Use the theory of change to identify assumptions and highlight potential issues
- Select metrics to track the progress of different stages in the theory of change



Starting point

A cattle farm which produces leather produces significant nitrate pollution in the form of effluent runoff

Action

The farmer constructs a wetland onsite to purify water before it reaches local watercourses

Output

A one acre wetland is successfully established

Outcome

The nitrate load of the runoff entering the water course is reduced by 80%

Outcome

The nitrate levels in the watercourse decrease by 15%

Impact

Constructed wetland thrives, providing habitat for threatened birds

Impact

The biomass and diversity of invertebrates in the watercourse increase by 20%

Impact

In parallel with other actions across the landscape, this work contributes to an increase in the number of breeding pairs of a locally threatened bird species

Theory of Change

Begin by framing the **starting point**

Actions are the steps being taken to improve the situation

Outputs are the tangible deliverables provided by the actions

Outcomes are the benefits or effects that occur as a direct result of the outputs.

Impacts are the final goals the intervention is trying to achieve, potentially over many years. For a biodiversity strategy, the final impacts should be a measurable benefit to biodiversity

Figure 10. An example theory of change

Step 7: Draw it all together

Public pledges and commitments are often a key part of corporate biodiversity strategies. In some cases, they contribute to a wider marketing or communications strategy.

7.1 Linking a strategy to a headline pledge

In other instances, it becomes important for an industry to demonstrate to legislators or other groups that they are behaving responsibly. Because of this, corporate pledges and commitments can emerge in many different ways and may follow separate timelines to the development of a biodiversity strategy. Once a public commitment has been made, there may be consequences to rescinding it. This makes it particularly important to have a strategic approach which is flexible and able to readily adapt to changing circumstances.

7.2 Leading by commitment

In some cases, strategies may be developed specifically to help a company meet the terms of a public commitment. For example, the recently published Fashion Pact states that signatory fashion companies will produce a biodiversity strategy, and lays out a number of principles and intended contents. Strong leadership such as this is crucial to delivering the type of cross-cutting work essential to delivering an effective biodiversity strategy. In these instances, the commitments can be incorporated into the Conservation Hierarchy in two ways, either as headline goals or as components of the stages. By using pledges to populate the hierarchy, it is possible to develop a practical strategy with the spirit and wording of the agreement woven through it. This can make explicit what steps are being taken to translate these commitments into meaningful action.

Example: leading by setting goals

The goal of 'Ensuring that we do not contribute to the loss or degradation of natural forests' could be used as a headline goal to be achieved by avoiding deforestation, minimising degradation and restoring or offsetting where impact has occurred. Contrastingly, the target of using 'Regenerative approaches to agriculture' could be seen as an action to include in the restoration stage alongside other options.

7.3 Leading by strategy

Some organisations may prefer to develop a strategy before making public pledges. Companies taking this approach might use an understanding of their impacts to build a strategy from the bottom up. The hierarchy can be populated with potential actions and then from these a strategy developed. The sum contribution of these actions can also be used to determine suitable headline goals. Developing a strategy through a 'bottom-up' approach can ensure that delivery is cost effective and achievable.

Step 8: Implementing, monitoring, learning and delivering

Ultimately the main purpose of a corporate biodiversity strategy is to deliver meaningful, measurable benefits for biodiversity. This requires moving beyond words to action that shifts the status quo and delivers systemic change throughout a company's operations.

As a company moves from strategy to implementation this will most likely include some trial and error. A proactive attitude to tracking progress, monitoring outcomes and learning from experience will be key to developing effective approaches. It is also likely that the collective efforts of the fashion sector will be more successful if companies work together to raise standards and share innovations.

The fashion industry is highly dependent on the resources and services that biodiversity provides, from animal skins to productive cotton farms. With extensive supply chains that extend to some of the world's most biodiverse areas, it is critical that companies take responsibility and are accountable for their potential impacts. As the financial, operational and reputational implications of biodiversity continue to come to the fore, licence to operate will be contingent on the fashion sector developing robust strategies to mitigate its negative impact. In doing so, the industry has the potential to shape the emerging narrative and identify its role as a clear part of the solution to this global issue.

About the University of Cambridge Institute for Sustainability Leadership

The University of Cambridge Institute for Sustainability Leadership (CISL) brings together business, government and academia to find solutions to critical sustainability challenges.

Capitalising on the world-class, multidisciplinary strengths of the University of Cambridge, we deepen leaders' insight and understanding through our executive programmes; build deep, strategic engagement with leadership companies; and create opportunities for collaborative enquiry and action through our leadership groups.

Over the past 30 years we have built up a leadership network of over 9,000 senior leaders and practitioners from business, government and civil society, who have an impact in every sector and on every continent. Their experience and insights shape our work, which is further underpinned by multidisciplinary academic research. HRH The Prince of Wales is the Royal Founding Patron of CISL and has inspired and supported many of our initiatives.

Head office
1 Trumpington Street
Cambridge
CB2 1QA, UK

T: +44 (0)1223 768850
info@cisl.cam.ac.uk

Brussels
The Periclès Building
Rue de la Science 23
B-1040 Brussels, Belgium

T: +32 (0) 2 894 93 19
info.eu@cisl.cam.ac.uk

Cape Town
PO Box 313
Cape Town 8000
South Africa

T: +44 (0)1223 768850
info@cisl.cam.ac.uk

www.cisl.cam.ac.uk