



# Finnish businesses & the biodiversity crisis

Opportunities & risks associated with  
biodiversity loss





## Preface:

# Finnish businesses are facing a biodiversity crisis

The focus on businesses' impact on the environment and climate has increased rapidly over the past decades. However, when it comes to biodiversity and nature loss, businesses' awareness of the magnitude of their impact as well as the extent of action taken remains limited and is in many cases far from sufficient.

According to IPBES, biodiversity is declining faster than at any other time in human history and the negative trends are projected to continue or worsen in many future scenarios. The effects will be felt by all parts of society – businesses included – as the World Economic Forum estimates that half of the world's GDP is at risk due to society's and businesses' high dependency on nature. Clearly, there is an urgent need for large-scale transformative change. It is also crucial to speed up change, as the actions taken so far have been far from sufficient. Companies will have to adopt business models that are aligned with planetary boundaries. This is also driven by a range of stricter regulations that are underway. For early movers, this may be a key to competitive advantages, and while businesses acting early deserve acknowledgement for what they are doing, they will also be better prepared for the increasing scarcity of resources and other disruptions that lie ahead.

To help businesses pick up the pace, WWF Finland and Bain & Company have compiled an overview of the latest knowledge on biodiversity and nature loss which carries significant relevance for all Finnish businesses regardless of their size.

## Purpose of this report:

Presenting the context to accelerate an important discussion

### 1.

Provide an overview of the status of biodiversity relevant in the Finnish business context

### 2.

Summarize opportunities and risks related to biodiversity

### 3.

Outline potential next steps for Finnish businesses across key industry sectors

This report presents insights on the state of biodiversity efforts among Finland's largest businesses. To gain an understanding of Finnish companies' awareness, ambitions, and strategies related to biodiversity, WWF and Bain & Company have conducted a survey among the largest Finnish businesses. In addition, 15 in-depth interviews were held with executives and sustainability leads from Finland's largest companies to gather more nuanced perspectives and understand the surveyed topics in more detail. The resulting insights inform the conclusions and recommendations in this report and provide key examples from the Finnish business environment.

When reading through the report, we hope that you will agree on the urgent materiality of biodiversity loss. Nature's decline around the world and determined policy intervention seeking to reverse the trend will pose momentous changes to Finnish businesses in the coming years. These developments are intertwined with climate change and should not be treated separately. But putting nature loss in scale, these developments might very well exceed the challenges and costs we all face with the climate crisis right now. However, there is also good news. Significant business opportunities lie ahead if, and only if, Finnish businesses take on the challenge – and soon.

This report aims to put biodiversity in a relevant context for you. It provides data and context – but not necessarily all the answers. The purpose of the report is to accelerate the discussions we need to have to both make the right and necessary biodiversity-saving decisions as well as define the role of businesses in these decisions right now and in the coming years. This will be crucial if we are to reach the targets set in the landmark UN Biodiversity Agreement (COP15) signed in December 2022. We hope you will take up the challenge. Finnish businesses, society, welfare, and – not least – the planet cannot do without it. The concept of wellbeing is about to be transformed.



A handwritten signature in black ink that reads "Liisa Rohweder".

**Liisa Rohweder**  
General Secretary, WWF



A handwritten signature in blue ink that reads "Jani Kelloniemi".

**Jani Kelloniemi**  
Partner, Bain & Company



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## Executive summary:

# Businesses must act now to address the biodiversity crisis and capture opportunities

The biodiversity crisis in Finland and around the globe is real. Businesses are pivotal in changing the perilous trajectory and must now step up to that task. While market shifts and new regulation are underway to help induce the much-needed change, Finnish businesses should be prepared and step up in action. Several existing tools, frameworks, and tangible actions help in addressing the immense biodiversity challenge ahead of us. Businesses must decide if they just want to manage this transition or utilize its opportunities to the full. In either case, now is the time to act.

Biodiversity, the very foundation of life on Earth, is in crisis. Wild species populations are rapidly declining, and the stability of ecosystems is under significant pressure both in Finland and globally. If this trend is not reversed, declining biodiversity is likely to cause the loss of significant human and economic values, impacting our quality of life and effectively putting more than half of global GDP at risk.

All Finnish businesses, big or small, play a role in the biodiversity crisis because all Finnish businesses impact nature and contribute to the overconsumption of natural resources. Many businesses are also directly dependent on the natural resources and ecosystem services that nature provides. The survey and interviews carried out for this report clearly show that large Finnish businesses recognize that biodiversity loss poses a significant threat to their operations. Still, many fail to recognize the extent of their own impact and have yet to set tangible goals or take concrete action. This needs to change.

Change of transformative magnitude is needed to reverse the trend of biodiversity loss. We cannot afford to make only small, incremental changes – we need a shift in how we think and act in our

interactions with nature. This not only involves reducing the negative impact we have on biodiversity today, but also taking action to restore and enhance biodiversity.

Business activities drive much of the human impact on nature, meaning that businesses obviously also have an important role to play in driving the necessary transition. But businesses cannot solve all the problems on their own. To enable our move toward a sustainable future, we need holistic action on a societal level. In this scenario, transformative business efforts are supported by equally transformative and clear regulation and incentives. Fortunately, there are signs that this change is coming, with a long list of regulation in the works on both national, EU, and international levels, and rather ambitious international targets set in the landmark UN Biodiversity Agreement (COP15). For businesses, this means that now is the time to understand and incorporate biodiversity into the strategic thinking and act accordingly. Those who fail to act will be unprepared when inevitable market shifts and new regulation are put in place.

The necessary transformative change may not happen overnight, but there are clear benefits for businesses that choose to act today. Being an early mover provides an attractive position from which businesses can tap into the potential of nature-positive business models, currently estimated to provide opportunities worth over \$10 trillion per year by 2030. Additional benefits for businesses that choose to act now include business improvements within current and future operations, access to finance, and risk mitigation. Many of the actions needed to combat biodiversity loss will also help in addressing the closely related and equally urgent issue of climate change, providing additional synergies for those who choose to do something today.

Interviews with Finnish businesses indicate that addressing biodiversity impact is perceived as a challenging task, even despite the potentially significant benefits. Fortunately, there are many tangible things businesses can do to get started today. Tools and frameworks such as the WWF Biodiversity Risk Filter, Science Based Targets for Nature (SBTN), and Task Force on Nature-related Financial Disclosures (TNFD) are available to help assess the current impact on biodiversity and incorporate and come up with a strategy aligned with planetary boundaries, but there are also straightforward actions that can be taken today to start moving in the right direction. These include, for example, ensuring traceability and sustainability of the value chain. At the same time, businesses should also keep the long-term perspective in mind and collaborate across the value chain, with innovative small and medium-sized enterprises and start-ups, and with the rest of civil society to develop measures, understand regulation, and find new opportunities to re-invent business models and operate in biodiversity-friendly ways.

While transformative change in our interactions with nature is inevitable and will impact all businesses, the good news is that it is in the nature of modern market economies that businesses anticipate, adapt to, and even take benefit of changes. If history is any guide, it clearly shows that the fittest companies reap significant rewards. Businesses are constantly facing the need for transformation, driven by factors such as technology, regulation, and consumer preferences. As a result, we know it is possible to rise to the challenge. Seeing as we also know that there are many tangible things that can be done today, there is no longer any excuse to wait around for a perfect strategy, new measures, or mandatory regulation. Solving the biodiversity crisis will be a journey, but the most important thing is that businesses start this journey today.

## **Reader's guide**

This report consists of six chapters and an appendix. Chapter 1 provides an overview of the status of biodiversity globally and in Finland, how biodiversity relates to climate change, and why biodiversity is a relevant concern for businesses. Chapter 2 explains how businesses impact biodiversity locally and globally through value chains, and how this differs between business sectors. Chapter 3 provides the rationale for businesses to act by describing risks associated with biodiversity loss and opportunities that arise from doing something about it. Chapter 4 describes the magnitude of change needed, outlines the areas that businesses can start working on today, and provides examples of how this can look in practice. Chapter 5 covers the perceived roadblocks that Finnish businesses face in their biodiversity efforts and provides solutions for how these can be tackled. Chapter 6 gives examples of tools and frameworks that businesses can use to get started and underlines the importance of taking action now. The appendix provides further details on relevant regulation.

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“Nature and climate go hand in hand, and you cannot focus only on climate and assume you have done your share. We understand that it is our responsibility to understand the impacts our operations have on nature and take action.”

Annina Tanhuanpää  
Director of ESG & Corporate Responsibility,  
OP Financial Group

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## Chapter 1:

# The foundation of life is at serious risk

**The biodiversity crisis is rampant in Finland and globally, putting the foundation of life at serious risk everywhere. No businesses, governments, or individuals will be immune to the impacts of biodiversity loss. We must act collectively to reverse the negative trend.**

While Finnish companies recognize that biodiversity loss poses an unprecedented threat to society and their operations, their knowledge of the topic as well as the extent of action taken to reduce impacts on biodiversity remains limited. This chapter introduces biodiversity as a concept, explores the links between biodiversity loss and other key sustainability areas, and highlights the importance of addressing the multitude of challenges biodiversity loss entails.

## Key takeaways

- ▶ Biodiversity encompasses the variety of life on Earth that supports the resilience to maintain favorable conditions for human societies on our planet by enabling food production, providing access to clean water, absorbing emissions, mitigating risks of natural disasters, and much more.
- ▶ Over the last decades, biodiversity has been under unprecedented pressure, causing increased degradation and loss of habitats and species across the globe. Populations of mammals, birds, amphibians, reptiles, and fish have on average declined by 69 percent since 1970. In addition, a million species globally are at risk of facing extinction.
- ▶ The increasing pressure on biodiversity is caused by human activities and constitutes a threat not just to businesses but to humanity itself.
- ▶ Businesses, the wider economy, and society at large rely on nature's goods and services to operate. Human-induced pressure on nature – and the institutional failure to reverse biodiversity loss – puts \$44 trillion of economic, nature-dependent value at risk.
- ▶ In Finland, 12 percent of known and assessed species, and 48 percent of habitats are considered threatened. Today, 312 species are considered regionally extinct and another 188 possibly extinct, meaning the species have not been observed in Finland for years.

- ▶ Biodiversity is tightly connected to other environmental and social sustainability topics, especially climate change. To solve the nature crisis, it is imperative that businesses, civil society, and individuals address these sustainability challenges holistically.
- ▶ The scientific consensus is that if we continue our current trajectories, we will not be able to achieve the goal of reversing biodiversity loss by 2030. Reversing the negative trend will require an integrated strategy and fundamental, system-wide reorganization of society across technological, economic, and social factors (including paradigms, goals, and values).

## Biodiversity is the foundation of human life on Earth

**Ecosystems, species, and genes: Biodiversity encompasses the variety of life on Earth at all levels, making it hard to overstate its importance to human society.**

Biodiversity encompasses the natural variety of life on our planet. It supports humans, societies, and businesses with critical natural goods that we depend on (Exhibit 1). In addition to the food we eat, the clothes we wear, and the diverse nature we inhabit and enjoy, biodiversity increases ecosystems' resilience toward natural disasters and climate change.<sup>1</sup> Despite the crucial importance of biodiversity for life on Earth and for the wellbeing of our societies, we have taken these natural goods and services for granted during the past decades and caused significant damage and pressure on biodiversity.

### Biodiversity underpins all aspects of life

BIODIVERSITY COMPONENTS	BENEFITS TO HUMANS (EXAMPLES)							
ECOSYSTEMS								
SPECIES								
GENES								
Marine	Terrestrial	Freshwater		Climate control	Disease regulation	Nutrients	Clean water	
Mammals	Birds	Insects	Fish	Soil / health / integrity	Flood control	Food	Fiber	
Fungi	Plants	Algae	Bacteria	Materials	Pollination	Materials	Fuel	
				Bio-refinery	Natural agents for medicine		Pharma	

**Exhibit 1:** Illustrative examples of the natural goods and services provided by ecosystems, species, and genes.

<sup>1</sup> WWF, 2022 a

The benefits provided by the natural environment and healthy ecosystems are generally referred to as ecosystem services. We typically distinguish between provisioning services (or ecosystem goods) such as food, raw materials, and energy; regulating & supporting services such as carbon sequestration, pollination, and pest & disease control; and cultural services such as recreational experiences. While the ecosystem goods are often assigned monetary value, we less often assign monetary value to the two latter services, which are nonetheless critical.

## Biodiversity is at serious risk

**Biodiversity has been put under significant pressure over the last decades. Industrialization and overconsumption of natural resources have driven an unprecedented loss of species and habitats – both globally and in Finland.**

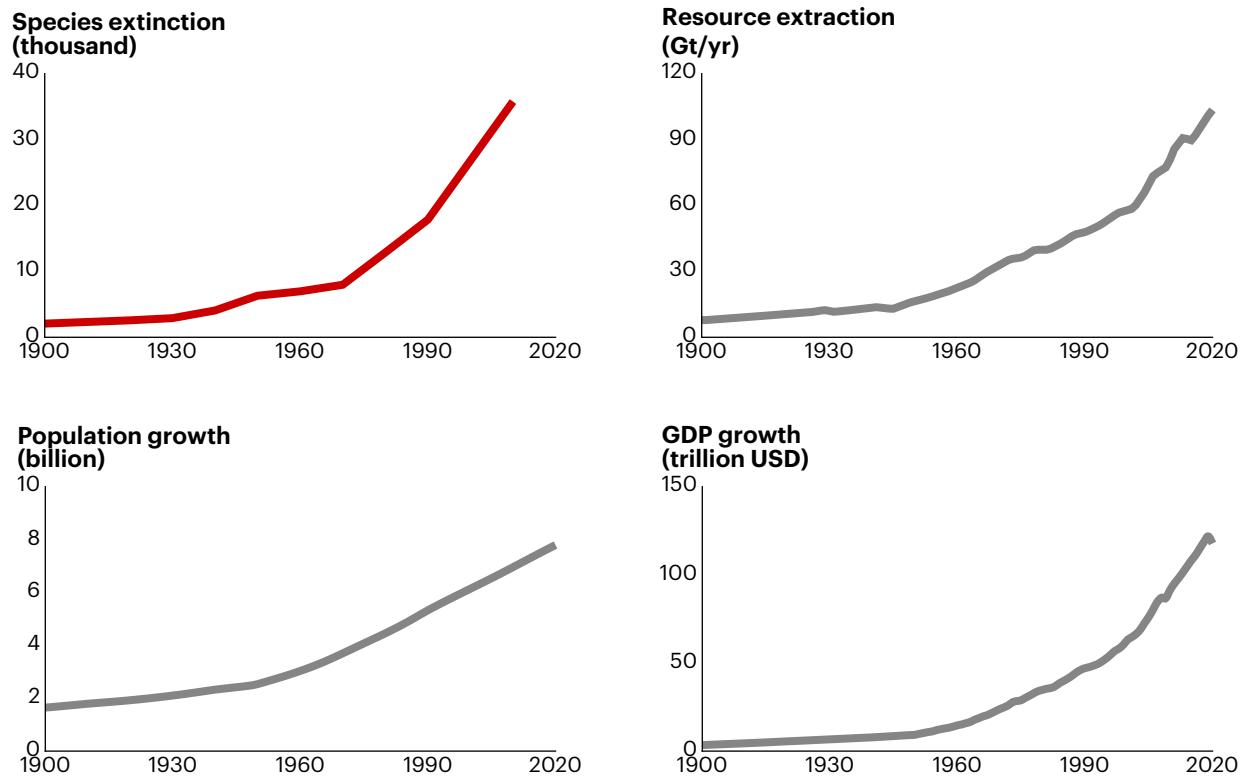
The main driver of the swift loss and degradation of biodiversity is the continuous and increasing human-induced pressure. The second half of the twentieth century stands out as an age of acceleration for human activity. In this period, we saw the most rapid transformation of the human relationship with the natural world ever recorded, fundamentally affecting the state and functioning of Earth's socio-economic and biophysical systems.<sup>2</sup> A million species globally are at risk of facing extinction<sup>3</sup> and population sizes of mammals, birds, amphibians, reptiles, and fish have on average declined 69 percent since monitoring began in 1970.<sup>4</sup> Human activity is a key driver of biodiversity loss and caused by extensive changes in land, freshwater, and sea use, resource exploitation, pollution, climate change, and invasive species and diseases.<sup>5</sup> This degradation of biodiversity has a severe impact not only on ecosystems and species, but also on modern societies, including businesses, which cannot exist without functioning and stable ecosystems. Businesses and society at large are extracting more goods and services from nature than ever before, and the overconsumption of natural resources comes at the expense of nature's biodiversity and resilience.

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<sup>2</sup> Stockholm Resilience Center, 2016  
<sup>3</sup> Intergovernmental Science-Policy Platform, 2019

<sup>4</sup> WWF, 2022 a  
<sup>5</sup> Intergovernmental Science-Policy Platform, 2019

## Overexploitation of natural resources accelerates species extinction



**Exhibit 2:** Population growth, economic growth, and consumption have fueled more than a 3x increase in global resource extraction by humans across supply chains between 1970 and 2020. During that same time interval, global species extinction has accelerated at a similar alarming rate <sup>6,7,8,9</sup>

Note: GDP data for 1900-1950 is extrapolated based on available data for 1900, 1913, 1940, and 1950

Despite the severity and inherent risks associated with the nature crisis, biodiversity has historically received less attention than other global threats, most notably climate change. This is now changing. As reported by the World Economic Forum, over 1,000 global experts and leaders expect global biodiversity loss and related environmental risks to become the most critical threats to the global economy within the coming decade (Exhibit 3).<sup>10</sup> In addition, studies indicate that failure to reverse degradation of nature before 2030 can push biodiversity beyond irreversible tipping points where essential ecosystem services start collapsing and more than half of global GDP is put at risk.<sup>11</sup> This underlines why businesses need to improve their understanding of the impact of the crisis, their role in reversing the current trend of biodiversity loss, and how to act.

<sup>6</sup> Scott, 2008

<sup>7</sup> Krausmann, et al., 2018

<sup>8</sup> Maddison Project Database / World Bank, 2017

<sup>9</sup> United Nations Population Division, 2019

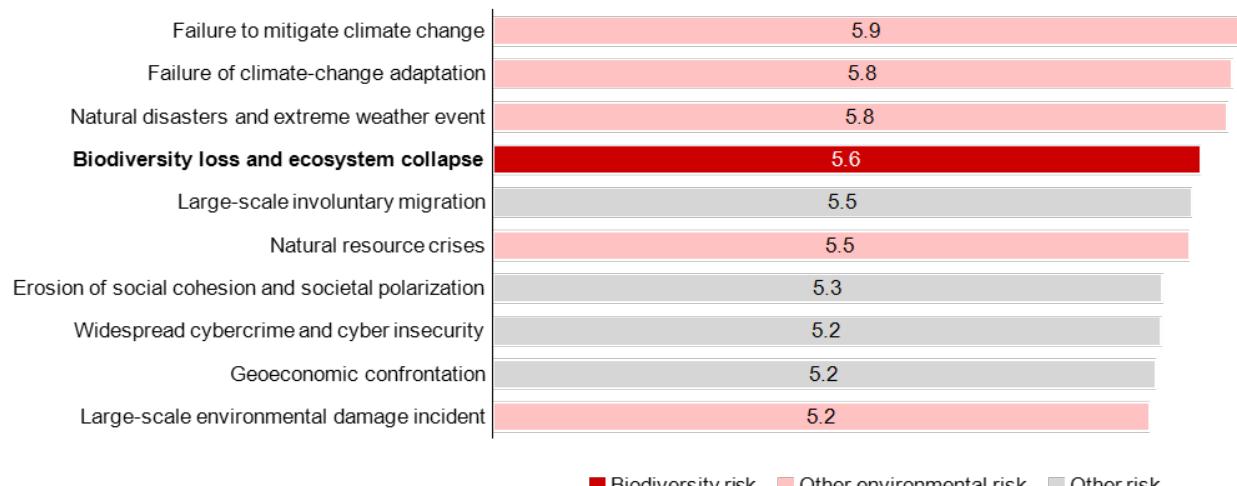
<sup>10</sup> World Economic Forum, 2023

<sup>11</sup> World Economic Forum, 2020 a

## Biodiversity loss and related environmental risks are top risks to the global economy

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Top 10 global risks ranked by severity over the long term (10 years), average score on a scale 1-7



**Exhibit 3:** Biodiversity loss is expected to become a top risk to the global economy in the next decade<sup>12</sup>

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While the degradation of biodiversity is a threat on a global scale, the impacts of the crisis have ramifications also on a local scale. Unfortunately, Finland is no exception when it comes to biodiversity loss. According to the Finnish Red List Assessment, 2,667 (12 percent) out of the 22,407 assessed species in Finland are classified as threatened, 312 species are classified as regionally extinct, and an additional 188 are in danger of becoming regionally extinct if strong measures are not taken.<sup>13</sup>

In addition to species, the state of Finnish habitats is another lens through which the pressure on nature becomes apparent. In Finland, 48 percent of all natural habitats are threatened, and 67 percent have a poor or bad conservation status (Exhibit 4). The share of threatened habitats is higher in Southern Finland (59 percent) than in Northern Finland (32 percent). Notably, 76 percent of forest habitat types and all cultural habitats including seminatural grasslands and natural pastures are threatened in Finland.<sup>14</sup>

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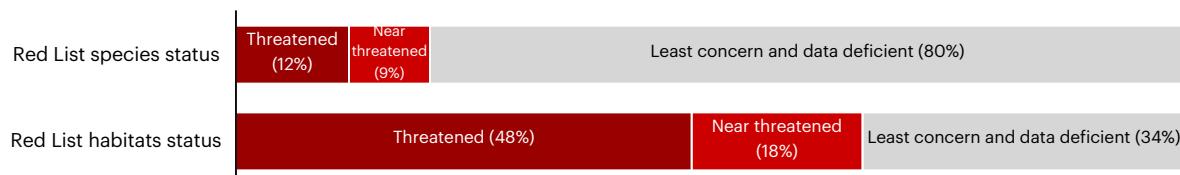
<sup>12</sup> World Economic Forum, 2023

<sup>13</sup> Red List of Finnish Species, 2019

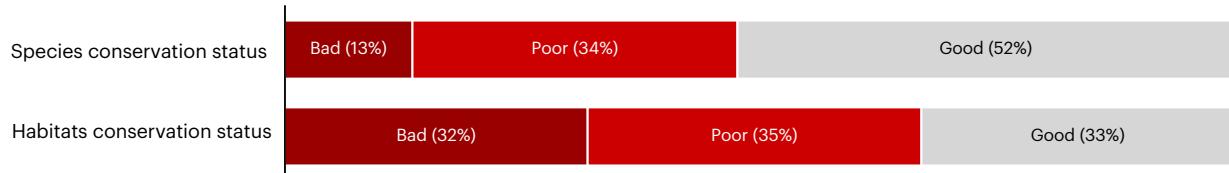
<sup>14</sup> Finnish Environment Institute and Ministry of the Environment, 2019

## Threatened species and habitats in Finland

### Status of Finnish Red List species and habitat types



### Conservation status of Finnish species and habitats protected under EU law



**Exhibit 4:** Multiple species and habitats in Finland are threatened, and the conservation status of many protected species is poor<sup>15, 16</sup>

Biodiversity loss is clearly a pressing issue and awareness of the impacts of biodiversity loss is also increasing among both businesses and consumers. Yet many still see biodiversity as just one of several sustainability topics fighting for attention. In the next section, we will explore the need for a more holistic approach to nature-related issues.

## Biodiversity loss is closely related to other major sustainability aspects

**The biodiversity crisis is strongly linked to – and must therefore be solved together with – other environmental and sustainability aspects. This will both accelerate sustainable development and reduce the cost of risk mitigation.**

The UN's Sustainable Development Goals (SDGs) are a key framework for identifying and prioritizing sustainability efforts – for businesses and society at large. The 17 SDGs outline what needs to be achieved to create “a better and more sustainable future for all” across themes relating to the biosphere, society, and economy.<sup>17</sup> The biosphere, consisting of all parts on Earth where life exists, is the most foundational part with goals that include access to clean water, halting climate change, and maintaining biodiversity through SDG 14: “Life below water” and SDG 15: “Life on land”.

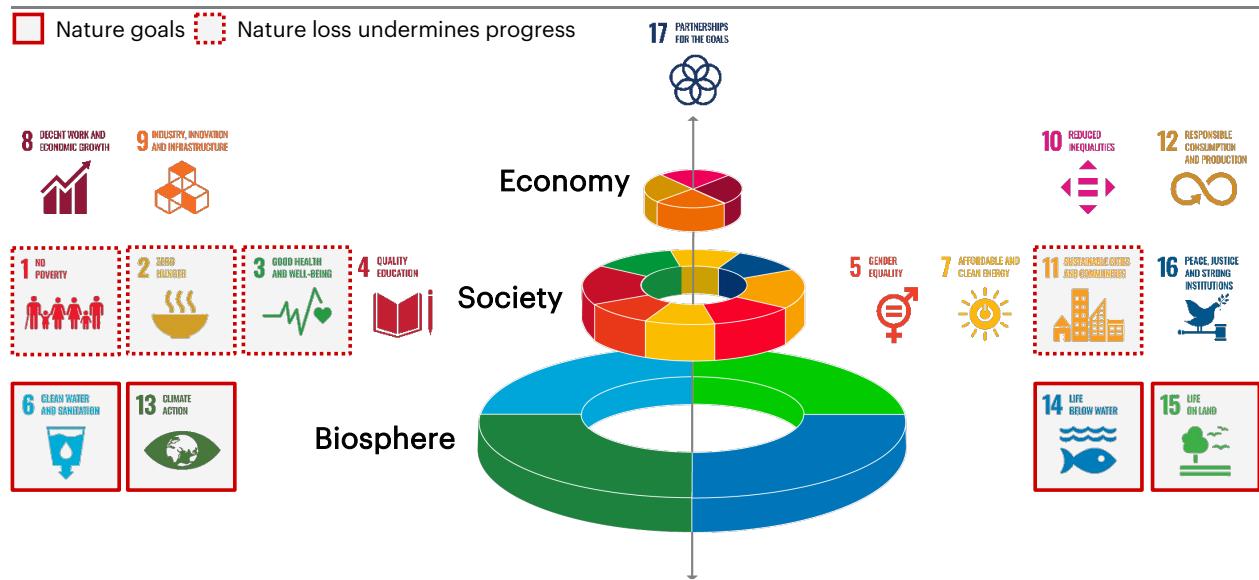
<sup>15</sup> Finnish Environment Institute and Ministry of the Environment, 2019

<sup>16</sup> Red List of Finnish Species, 2019

<sup>17</sup> United Nations, no date

An intact biosphere is absolutely crucial for maintaining an intact society and economy (Exhibit 5). If biodiversity loss continues, and we fail to achieve the goals related to the biosphere, all other SDGs related to society and economy will become unreachable. According to IPBES, current negative trends in biodiversity will undermine progress toward 80 percent of the SDG targets set for poverty, hunger, health, water, cities, climate, oceans, and land.<sup>19</sup> As an example, nature loss threatening global food systems is putting at risk the progress toward SDG 2: “Zero hunger”. According to Finnish Business & Society, 93 percent of businesses in Finland implemented the SDGs in their 2021 strategy, a strong increase from 52 percent in 2019. However, only 13 percent of companies consider biodiversity an important theme, indicating that there is still a long way to go in terms of increasing awareness of the importance of biodiversity.<sup>20</sup>

#### Biodiversity is highly interconnected to multiple sustainable development goals



**Exhibit 5:** Biodiversity is the foundation for sustainable development in society and the economy<sup>18</sup>

While maintaining biodiversity is crucial for achieving several of the SDGs, climate and biodiversity are also evidently intertwined. Climate change is one of the key drivers of nature loss, which in turn is also accelerating climate change.<sup>21</sup> For example, climate change accelerates the drying of peatlands which not only has a negative impact on the species in this habitat but also releases more CO<sub>2</sub> and lowers carbon sequestrations, thereby further accelerating climate change. This phenomenon is also a relevant concern in Finland, where many areas are rich in peatlands.<sup>22</sup>

Compared to pre-industrial times, temperature on Earth has already increased by 1.2°C. When looking at the concrete effects of temperature increases, the impacts on biodiversity are clear.<sup>23</sup> Unless we prevent global warming from exceeding 1.5°C, the temperature increase is forecasted to diminish the number of species significantly. The more the temperature rises, the worse the impact

<sup>18</sup> Stockholm Resilience Center, 2016

<sup>19</sup> Intergovernmental Science-Policy Platform, 2019

<sup>20</sup> Finnish Business & Society, 2021

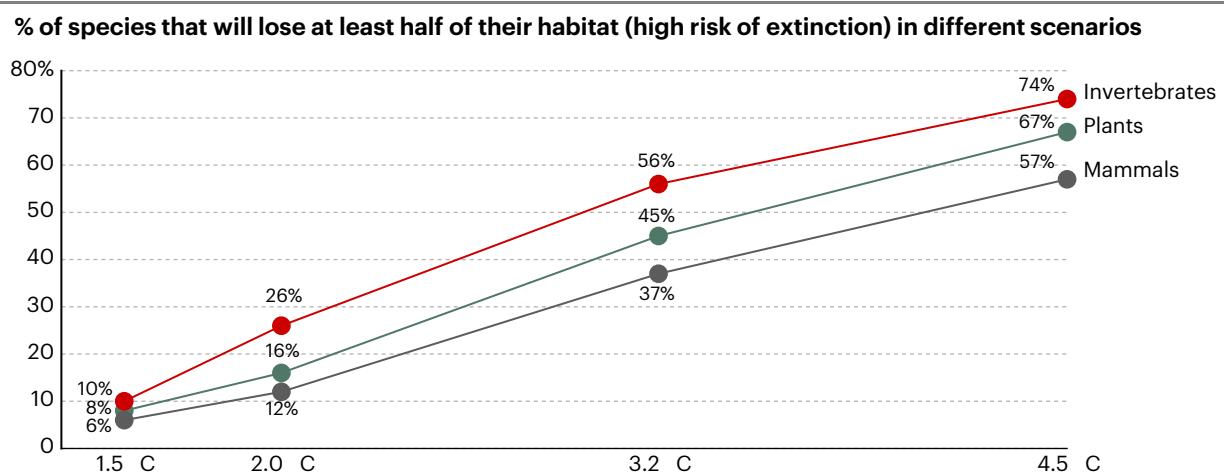
<sup>21</sup> World Economic Forum, 2022

<sup>22</sup> Finnish Meteorological Institute, 2020

<sup>23</sup> World Meteorological Organization, 2022

on life on Earth. Unless we limit warming to a maximum of 1.5°C, climate change is likely to become a dominant cause of biodiversity loss.<sup>24</sup> For example, if the Earth's temperature increases by 2°C as opposed to 1.5°C, extinction risk will accelerate by at least 2x within the biodiversity hotspots.<sup>25</sup> One reason being that increased warming causes a larger number of species to lose at least half of their habitats. An increase of more than 1.5°C is expected to have particularly severe effects, and with each surpassing tenth of a degree the impacts and risks grow substantially larger (Exhibit 6). Projections also show that the northern hemisphere will exhibit much higher increases in temperatures compared to the global average.

#### Climate change accelerates species loss



**Exhibit 6:** Higher temperature increases are accelerating biodiversity loss which in turn leads to lower resilience to climate change pressures and lower carbon sequestration potential<sup>26</sup>

There is also evidence of the connection between the climate crisis and the biodiversity crisis on a national level. In Finland, climate change is considered a current or future threat factor for 154 habitats<sup>27</sup> and 639 species (of which 374 are currently threatened).<sup>28</sup> The fact that climate change is becoming a more significant threat to habitats is also underlined by the assessment of the Finnish Environment Institute and Ministry of the Environment who state that “climate change has become more and more significant, especially in the contexts of fell habitat types and water bodies.”<sup>29</sup>

The impact of climate on biodiversity is thus very clear, but the recently published IPCC report also strongly underlines the fundamental importance of protecting biodiversity due to its key role in enabling climate-resilient development and reducing pressures related to climate change. As a concrete example, marine and terrestrial ecosystems remove nearly 50 percent of human-created CO<sub>2</sub> from the atmosphere.<sup>30</sup> Given these strong interdependencies, biodiversity loss and climate change must be tackled together.

<sup>24</sup> WWF, 2022 a

<sup>25</sup> Intergovernmental Panel on Climate Change, 2021

<sup>26</sup> Warren, et al., 2018

<sup>27</sup> Finnish Environment Institute and Ministry of the Environment, 2019

<sup>28</sup> Red List of Finnish Species, 2019

<sup>29</sup> Finnish Environment Institute and Ministry of the Environment, 2019

<sup>30</sup> Intergovernmental Panel on Climate Change, 2022

## **Businesses impact nature and depend on ecosystem services**

All businesses depend on nature's goods and services to operate, and more than 50 percent of global GDP is estimated to be highly or moderately dependent on nature and the services it provides. Conversely, businesses also impact nature in the places they operate and throughout their value chains, putting large pressures on nature and biodiversity.

Businesses rely on a range of ecosystem services, from provisioning services – or 'ecosystem goods' – such as raw materials and water, and business-enabling regulating services such as pollination, water regulation, or soil fertility.<sup>31</sup> For example, agriculture is highly dependent on pollination by bees and other pollinating insects; forestry depends on complex forest ecosystems for nutrients; and the construction industry relies on timber, sand, and other raw materials.

Given businesses' dependence on nature it should be clear that the current rate of biodiversity loss poses a major threat to the economy as well as to the role businesses play in it. The World Economic Forum estimates that more than half of the world's economic value generation is moderately or highly dependent on nature, and recent findings suggest that global biodiversity loss is expected to become one of the most critical threats to the global economy.<sup>32,33</sup>

While businesses depend on nature, they are also heavily impacting biodiversity through their operations and value chain activities. The pressure they apply – both in Finland and globally – is one of the main factors driving the biodiversity degeneration that pose a significant threat to business-as-usual. To limit the biodiversity loss-related risks for the economy and society and enable businesses to act, businesses need to obtain a comprehensive view of the pressures they put on nature. Slowing down and reversing this trend is possible but will require transformative changes across economic, social, political, and technological dimensions.

## **Finnish businesses recognize the threat but underestimate their impact**

**While most of Finland's largest companies are familiar with biodiversity and the threat it poses, this study shows that few companies treat it as a strategic priority, and most lack an understanding of the magnitude of their own impact.**

As input to the report, 48 of Finland's 100 largest companies participated in the survey. Businesses from all sectors which are important to the Finnish economy participated in the survey, providing different points of view on the biodiversity crisis.

All surveyed companies are familiar with biodiversity as a topic and believe global biodiversity loss to some degree poses a threat to their business. However, even though Finnish companies are at the stage where they acknowledge the biodiversity crisis, they are at different stages of maturity in terms of understanding the magnitude of their effects on nature. When asked to assess their

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<sup>31</sup> WWF, 2022 b

<sup>32</sup> World Economic Forum, 2020 b

<sup>33</sup> World Economic Forum, 2022

biodiversity impacts, ~50 percent of companies believe they have low or no impact on biodiversity locally in Finland, while ~30 percent believe they have low or no impact globally. Furthermore, the extent of acting on the issues at hand varies across industries and individual companies. Around 30 percent have no initiatives addressing biodiversity specifically, and only one in three respondents have a specific section on biodiversity in their sustainability strategy.

Businesses further removed from primary production and resource extraction are generally not fully considering their biodiversity impacts across their value chains. Certain sectors with evident exposure to nature loss – such as forest products, agriculture, and non-food consumer goods – address biodiversity more commonly as a strategic priority and are on average more aware of opportunities related to reducing nature impacts. Other sectors – such as industrials and materials, health and pharma, and finance – treat biodiversity as a lower strategic priority, and a majority of respondents from these sectors report that they have no initiatives addressing biodiversity in place.

Comparing survey results from Finland with results from Denmark and Sweden reveals that the countries' overall level of maturity in terms of awareness and efforts is fairly comparable. This is evident when looking at the estimated impact on biodiversity, as around 20-25 percent of companies in all three countries believe they have a large impact. A comparable share of Finnish (~50 percent) and Swedish (~45 percent) companies also perceive biodiversity loss as a large threat, while fewer Danish companies (~30 percent) are of the same opinion. In addition to this, Finnish companies seem to be ahead of their counterparts in terms of acting on their impact, as only ~30 percent of Finnish respondents report that they have no initiatives addressing biodiversity compared to ~40 percent and ~45 percent in Denmark and Sweden, respectively.

This survey focuses on Finland's largest companies as they are critical in driving the required change and have the resources to address the problem. While small and medium enterprises (SMEs) and public sector entities were not included in the scope of this report, they also have important roles to play in reversing the negative trend of biodiversity loss. As SMEs make up a significant share of the Finnish economy, employing 57 percent of the Finnish labor force, it is critical to have them embark on the biodiversity journey alongside large corporations.<sup>34</sup> In addition to constituting a significant share of the general economy, SMEs are also able to contribute to positive development by being more flexible in driving innovative, sustainable solutions, and further accelerating the uptake of biodiversity in business models.

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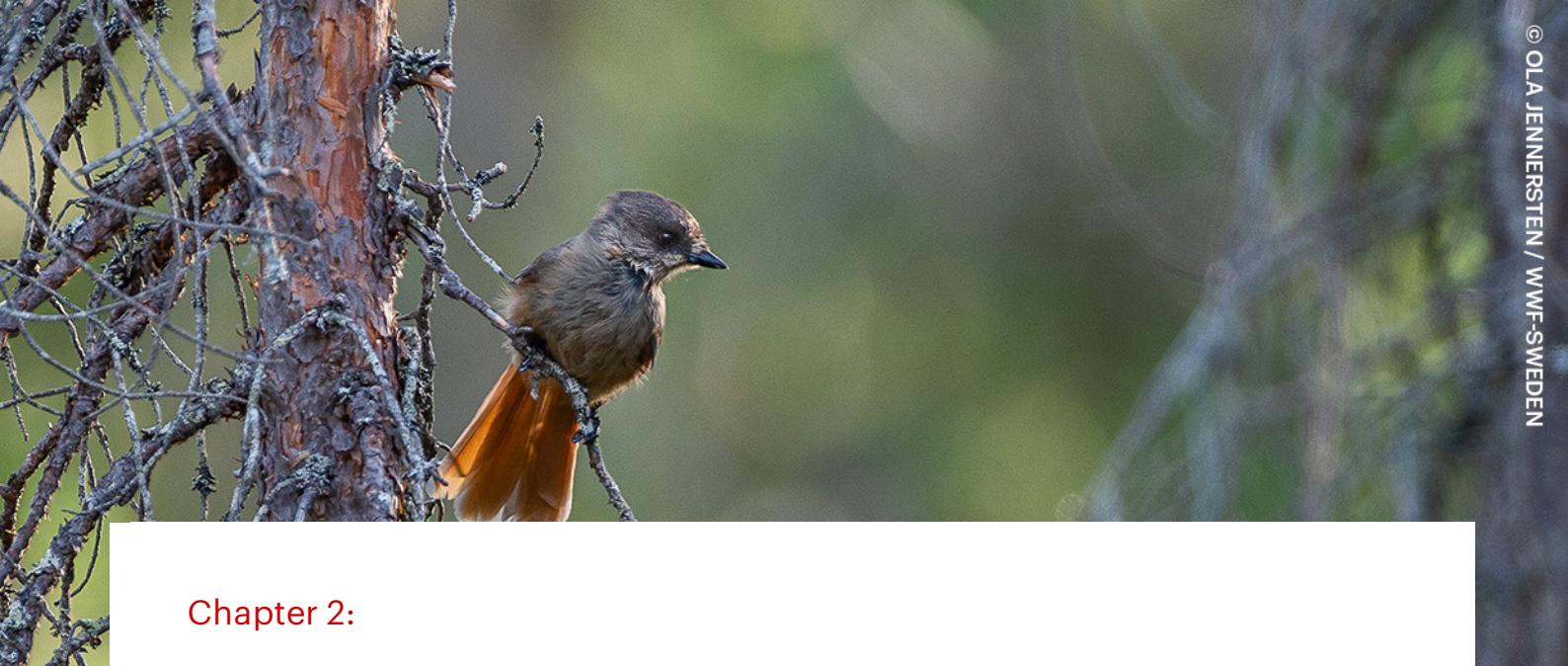
<sup>34</sup> OECD iLibrary, no date

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“We need to reduce our own impacts. But if we want to create significant change, we need to look at where the real impact comes from – the value chain.”

Riikka Joukio  
EVP Corporate Responsibility and Public Affairs, Kesko

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## Chapter 2:

# Finnish businesses have significant impact on biodiversity

**Finnish businesses exert pressure on biodiversity in several ways – in a local Finnish context and globally through their supply chains and operations.**

Finnish business representatives recognize that their activities impact biodiversity, but exactly how and why remains unclear to many. This chapter presents an overview of the global drivers and locally relevant areas of impact that can help Finnish businesses understand their biodiversity impact.

## Key takeaways

- ▶ Based on work by UN's biodiversity expert panel, IPBES, this chapter presents five main global direct drivers of biodiversity loss: land, freshwater and sea use change, resource exploitation, pollution, invasive species and diseases, and climate change.
- ▶ This report identifies nine key areas, related to the global direct drivers, where Finnish businesses negatively impact biodiversity, of which the most important ones are cultivation of crops and livestock and forest management.
- ▶ Each Finnish business has direct and/or indirect impact on biodiversity, but the magnitude of each type of impact and the importance of addressing it differs based on the business sector and the characteristics of each business.

## Global biodiversity loss is caused by five main direct drivers

Finnish businesses have significant impact on biodiversity both at home and abroad. On a global level, IPBES has classified this impact into five main science-based direct drivers of biodiversity loss. These drivers have clear connections to human and business activities and all five are relevant in a Finnish business context.

Executives at leading Finnish businesses express an urgent need for a methodology that can help link specific business activities to biodiversity loss. Five global direct drivers of biodiversity loss can

### Biodiversity loss stems from five main global direct drivers linked to human activity

A Land, freshwater and sea use change		Modification of nature by complete removal, fragmentation, or reduction in quality of ecosystems, caused by activities such as unsustainable agriculture and forest management, infrastructure, construction, and extraction of metals and minerals.
B Resource exploitation		Direct exploitation through unsustainable hunting, fishing, and harvesting practices as well as water, soil, and organic resource extraction, and indirect exploitation when resources are unintentionally removed (e.g., bycatch in fisheries).
C Pollution		Direct impact on ecosystems and species by, e.g., oil spills, incineration, and chemical substances used in production sites, microplastics, pesticides, and excess nutrient loads.
D Invasive species and diseases		Non-native species competing with native species for space, food, and other resources, preying on native species or spreading non-native diseases. Such species/diseases can spread involuntarily via ballast water or via imported living material, e.g., exotic garden plants.
E Climate change		GHG emissions causing increased temperatures, which result in extreme weather events that require species to adapt (if possible) and lead to seasonal events such as migration and reproduction occurring at the wrong time.

**Exhibit 7:** The five global direct drivers of biodiversity loss, based on classification by IPBES<sup>35,36</sup>

<sup>35</sup> IPBES, no date

<sup>36</sup> Bain analysis

serve as a starting point: 1) Land, freshwater, and sea use change, 2) Resource exploitation, 3) Pollution, 4) Invasive species and diseases, and 5) Climate change (see Exhibit 7).

From a global perspective, all five direct drivers play a key role in our understanding of the biodiversity crisis. However, the work carried out for this report shows that the first three drivers (A-C) describe the clearest direct link between Finnish business activity and biodiversity loss. The driver of invasive species and diseases (D) has only limited direct links to Finnish business activities and is a smaller problem in Finland compared to other drivers, but it is still relevant (e.g., in relation to ballast water) and sometimes destructive locally. Climate change (E) on the other hand is expected to play an increasingly important role in the loss of habitats and species, but the link between actions of individual businesses and biodiversity loss is not always as direct. While businesses overexploiting populations of fish or using land in ways that destroy habitats can be directly connected to loss of specific species or habitats, GHG emissions caused by businesses cannot be directly linked to specific biodiversity loss. Instead, they contribute to climate change and indirectly impact biodiversity on a more systemic level. Still, climate change remains a key factor that cannot be disregarded when assessing businesses' impact on nature.

In addition to the five direct drivers of biodiversity loss, a number of underlying indirect drivers exist. As described in the Living Planet Report, these indirect drivers of biodiversity loss include, among others, human population growth, technological development, and overconsumption,<sup>37</sup> with especially the latter two having close links to business activity. The indirect drivers affect biodiversity primarily by accelerating the impact of the direct drivers. It is beyond the scope of this report to describe each indirect driver for Finnish sectors in detail, but system-level change and solving issues such as overconsumption are a necessity in reversing nature loss.

While the drivers of biodiversity loss are key to our understanding of the biodiversity crisis, there still is a justifiable need to define more concretely the ways in which businesses impact nature. For this reason, the next section breaks down the direct drivers into more detailed areas of impact that are relevant in a Finnish business context.

## **Finnish businesses place substantial pressure on biodiversity**

**Finnish businesses have a significant negative impact on biodiversity both locally and globally, directly and through supply chains. Nine areas of impact are particularly relevant in a Finnish context.**

The interviews conducted for this report show that many Finnish businesses are aware that they impact biodiversity, but many lack an understanding of how this impact manifests itself. The direct drivers of global biodiversity loss, presented in the preceding section, allow a high-level understanding of the mechanisms. To make the drivers relevant in a Finnish business context, we compiled WWF expert insights on how Finnish businesses contribute to different areas of impact on biodiversity and how the areas of impact could cause disruption to ecosystem services that Finnish businesses rely on. We then combined this with a literature study and global data sets on

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<sup>37</sup> WWF, 2022 a

## Identified areas of impact have a clear link to the direct global drivers of biodiversity loss



\*A minority of associated business activities could be classified as resource exploitation. This is not illustrated in the figure.

**Exhibit 8:** The link between global drivers of biodiversity loss and identified areas of impact

biodiversity impacts, and identified nine primary areas of impact where Finnish businesses contribute to the drivers of biodiversity loss (Exhibit 8). The listed areas of impact were developed using the IUCN's global Red List of Threatened Species as a point of departure and cross-checked with the threats from the Finnish Red List Assessment of Threatened Species (from now on simply referred to as the "Finnish Red List").<sup>38,39</sup> The areas cover a significant share of biodiversity impact caused by Finnish businesses and were selected to provide a relatable overview of the most relevant issues. However, the list presented here is by no means exhaustive and other potential impacts should also be considered where relevant.

Since the areas of impact describe how Finnish businesses are impacting biodiversity, they are also key to understanding where Finnish businesses should initiate action. The impacts stem from direct activities performed by businesses across all sectors, such as incineration or use of different substances (contributing to climate change or other pollution), extraction of resources, construction of built environment, and more (Exhibit 9). All areas of impact put serious strain on nature, but the larger land use-related impacts (cultivation of crops and livestock and forest management and logging) are deemed to have the highest overall impact on biodiversity in Finland. While these are relevant throughout much of Finland, cultivation of crops is of particular importance in the southwest of Finland where a large share of agricultural land can be found.

As mentioned previously, the areas of impact are defined as those most relevant for Finnish businesses, but reflect both impact from activities in Finland and the pressure Finnish businesses place on global ecosystems. Many Finnish businesses have production facilities abroad and therefore directly impact biodiversity in other countries through, for example, construction of facilities, use of large volumes of freshwater, and pollution of local environments. More crucial than the direct impact abroad, though, is the fact that Finnish businesses rely on global supply chains to provide them with raw materials or goods for sale, and thereby drive demand for activities that put pressure on the environment in all parts of the world. In fact, for many Finnish businesses the vast majority of biodiversity impact occurs through supply chains. This is particularly true for businesses that rely on risk commodities such as soy and palm oil, though all businesses have a role to play in limiting their supply chain impact. As a concrete example of this impact, Finnish businesses' dependence on imports, such as soy (used as feed for livestock) or palm oil, contributes to global land use and further drives deforestation for cultivation. In fact, only a minority of Finnish soybean meal consumption is verified as deforestation-free today, indicating clear room for improvement.<sup>40</sup>

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<sup>38</sup> IUCN, no date

<sup>39</sup> Red List of Finnish Species, 2019

<sup>40</sup> IDH, 2018

## Finnish businesses affect biodiversity through nine specific areas of impact

Cultivation of crops and livestock		Global: Land conversion and degradation through value chain impact (related to e.g., sourcing of feed or fibres). Large scale monocultures and loss of mosaic landscapes. Finland: Intensive agriculture with limited crop diversity resulting in low soil quality and lack of biodiversity bearing elements; Degradation of rich biodiversity habitats on previously traditionally managed mowing fields.
Forest management and logging		Loss of forests with High Conservation Values, including old-growth forests. Loss of connectivity for wildlife. Degradation of forest resilience.
Built environment		Conversion and destruction of habitats and ecosystems for urban and industrial developments as well as infrastructure.
Extraction of metals and minerals		Destruction and degradation of natural habitats through exploitation and resource removal, including the drilling, quarrying, and extraction of non-renewables (including metals, minerals, rocks, and fossil fuels).
Water management (incl.) dams		Disruption of natural bodies of water (rivers, lakes, and wetlands) either through deliberate action (e.g., dams, drainage, and straightening of water courses) or as a result of side effects of constructions for other purposes. Inefficient or excessive water use in value chain (agriculture and production) depleting global water resources.
Harvesting aquatic resources		Overfishing and excessive extraction of aquatic resources. Destructive extraction methods (e.g., bottom trawling) disrupting marine ecosystems.
Effluents and airborne pollutants		Air- and waterborne pollutants from e.g., agricultural and forestry activities (pesticides, organic and chemical fertilizers, bio-based nutrients, heavy metals and soil particles) lead to eutrophication and other forms of degradation of air and water habitats.

These seven areas of impact act alongside introduction of invasive species and diseases, and climate change

### Exhibit 9: Description of identified areas of impact<sup>41,42</sup>

<sup>41</sup> WWF experts

<sup>42</sup> Bain analysis

While the areas of impact summarize the main ways in which Finnish businesses impact biodiversity, the importance of the different areas of impact differs across sectors. The survey carried out for this report shows that the perception of Finnish businesses' own impact on biodiversity varies across sectors, with less than 20 percent of companies believing that they impact biodiversity to a large extent. However, the perceptions of impact do not necessarily match reality, and all sectors have work to do to reduce their impact on biodiversity and address the overconsumption of resources. In the next section, we take a deep-dive into this and look at the ways in which the main business sectors in Finland impact biodiversity.

## Biodiversity impact differs by sector and business

All Finnish business sectors affect biodiversity, but impact mechanisms differ across sectors. Some sectors have a more direct and local impact, while others affect biodiversity more indirectly and abroad. Still, all Finnish business sectors have a role to play in combatting biodiversity loss.

Exhibit 10 presents an overview of the extent to which Finnish business sectors contribute to the direct drivers of biodiversity loss, directly and through supply chains. The extent of impact was estimated through iterative dialogues with WWF experts, drawing on their combined knowledge and experience to provide an approximate assessment of the extent to which each sector impacts biodiversity. The subsequent sections provide more details on how the sectors impact biodiversity. They cover businesses in primary sectors (i.e., those that extract and harvest natural products such as agriculture and forestry), but also those in secondary or tertiary sectors (i.e., companies in manufacturing and services such as producers and retailers of consumer goods and industrials). Primary sectors tend to have mainly direct impacts on nature, while the impact from the secondary and tertiary sectors is mostly indirect, through supply chains.

It is already now worth noting that while direct impacts for each sector are closely related to the sector's activities, all sectors to some extent contribute to the indirect impacts caused by built environment and transport of goods, for example, through driving demand for buildings, contributions to emissions, or introduction of non-native marine species. These impacts are important on a national level, with, e.g., transport causing one fifth of Finland's greenhouse gas emissions,<sup>43</sup> but for many individual sectors they are small in comparison to the sector's other biodiversity impacts. Nonetheless, they are important to keep in mind.

It is also worth mentioning that secondary sectors have many biodiversity impacts in common with each other. The use of inputs from primary sectors and the resulting demand for resource extraction is a common theme across most secondary sectors, and though the types of inputs and their particular issues differ, mechanisms are similar. Use of freshwater in production (especially abroad) and energy to run stores and factories are also key areas of impact for secondary sectors, as are greenhouse gas emissions and pollution resulting from production.

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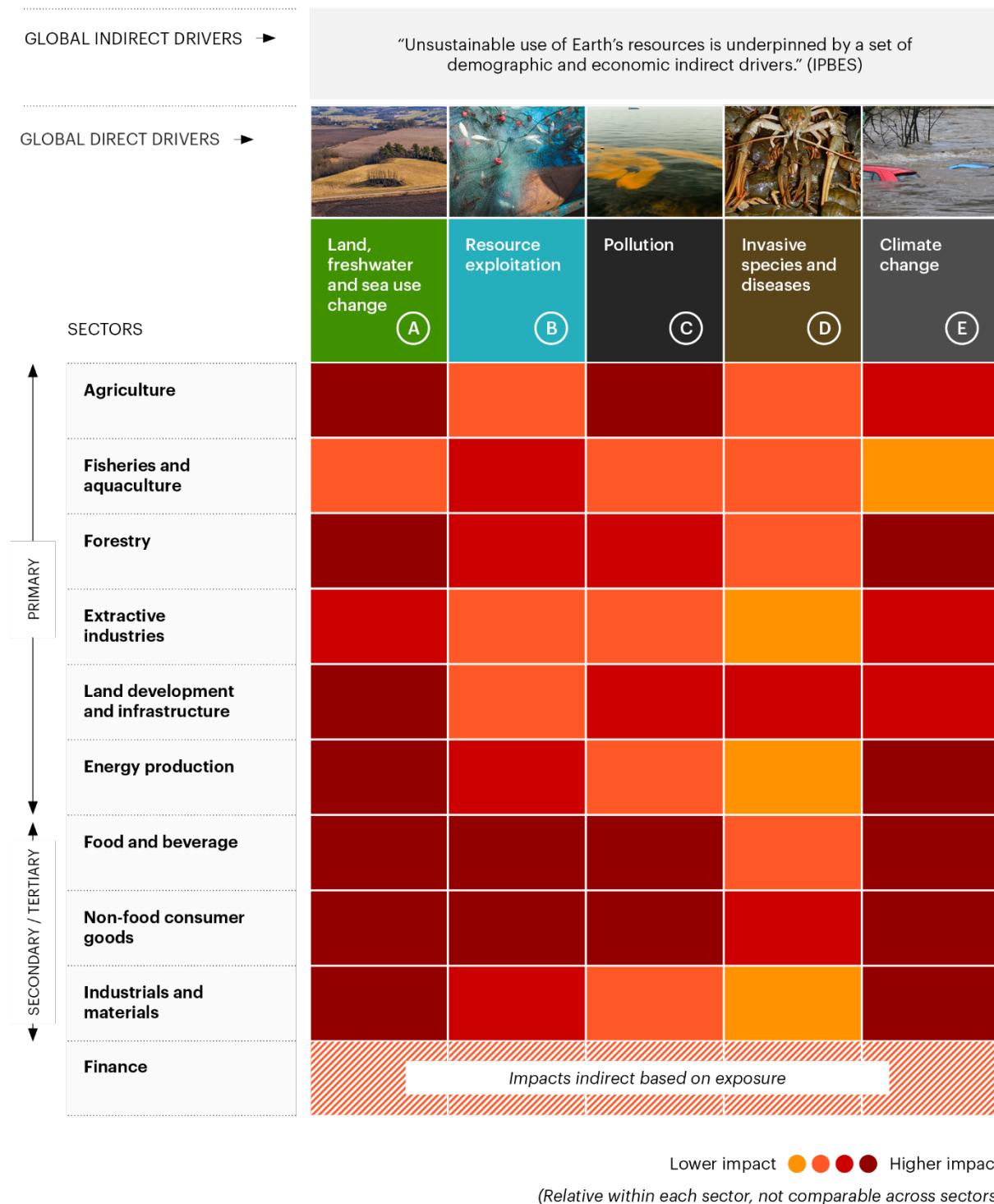
<sup>43</sup> Finnish Government, 2021

Impacts that are similar across sectors are not described in detail for each sector, but certain aspects are highlighted if deemed particularly important. Since Finnish businesses have a unique responsibility in addressing impacts in Finland, sectoral descriptions below cover these in some more detail than those abroad but reducing all impacts regardless of location should be considered of high importance. The impact abroad may also be particularly time sensitive since a lot of the active destruction of habitats now happens there, and it often happens fast. In fact, all areas designated as “high-priority areas for risk mitigation” by the WWF are located outside Europe.<sup>44</sup> Also, while the descriptions of sector impact hold true on an industry level, it is worth remembering that each company is different and needs to understand its own impact when choosing which actions to undertake to reduce pressure on nature. Chapter 6 provides further guidance on how to do this.

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<sup>44</sup> WWF, 2022 a

**All Finnish businesses impact biodiversity and need to take responsibility for impacts across the entire value chain**



**Exhibit 10:** Approximate assessment of impact on biodiversity by different Finnish business sectors, directly and across the value chain.<sup>45, 46, 47</sup> Comparable within each sector only. See Exhibit 7 for definition of drivers

<sup>45</sup>WWF experts

<sup>46</sup>Bain analysis

<sup>47</sup>ENCORE, no date



## AGRICULTURE

Finnish agriculture is impacting biodiversity primarily through cultivation of crops and animal husbandry, with most of the impact happening locally because of land use and eutrophication as well as the manipulation of water and carbon cycles and the use of chemicals. The share of land used for agriculture in Finland (seven percent) is comparable to both Sweden (seven percent) and Norway (three percent), but not as pronounced as in Denmark (60 percent).<sup>48</sup> However, the relatively small scale of Finnish agriculture does not mean that the biodiversity loss it causes is negligible. On the contrary, a significant part of Finland's surface area is still dedicated to agriculture (primarily animal production and related inputs) and thus exposed to the biodiversity impacts these activities cause. It should be added here that agriculture actually has the potential to contribute to enhancing biodiversity, even though this is rarely the case today.

Historically, Finnish agriculture has had considerable impact on biodiversity by significantly transforming the landscape. While some agricultural practices have benefitted species that are dependent on different kinds of grasslands and natural pastures, harmful ecosystem conversions have been extensive. Slash and burn methods were widely used and impacted the extent and quality of forests. Negative effects of agriculture also included conversion of species-rich habitats, e.g., groves (herb-rich forests) to agricultural lands and lowering of water levels in lakes to create space for farmland. Increasingly large-scale agriculture has also led to the loss of important diversity in landscapes, e.g., mosaic landscapes and ditches serving as nesting habitats for, e.g., pollinators and predators of crop pests.<sup>49</sup>

Though the nature of biodiversity impacts changes over time, agriculture remains a major threat to biodiversity in Finland today. The ongoing intensification and transformation toward industrial-scale farming is one key factor in this. For example, methods such as natural pasture grazing of livestock have historically maintained open meadows, a key habitat for many different species. However, with intensification of agriculture and natural pasture grazing on the decline, open habitats such as meadows are disappearing. This disappearance of open habitats is considered one of the main threats to biodiversity in Finland according to the Finnish Red List.<sup>50</sup>

The right type of grazing maintains important habitats and enhances biodiversity because the resulting manure benefits insect populations, and this in turn benefits, e.g., farmland birds. However, it should be noted that most of the current volume of animal production relies heavily on inputs and extensive land use for feed production without providing the biodiversity benefits from the right type of grazing. It has been estimated that one tenth of current production animals (ruminants and horses) could provide sufficient grazing pressure to maintain open meadows and other cultural landscapes which are important for biodiversity. In addition, there are cases where grazing ends up putting excessive pressure on biodiversity. For example, overgrazing caused by reindeer herding poses a threat to biodiversity in the north of Finland because it alters the composition of vegetation and thereby undermines ecosystems.<sup>51,52</sup>

Changes in cultivation of crops and livestock impact biodiversity also through the prevalence of crop monocultures, chemical fertilizers, and use of pesticides. These practices are often seen in conjunction with more intensive feed production and spatial concentration of animal production. While these methods are typically more financially productive in the short term, the intensification also increases dissemination of effluents from pesticides and fertilizers (chemical or organic) as well as airborne pollutants. Intensified farming and suboptimal farming practices also contribute to soil degradation, and

<sup>48</sup> World Bank, no date

<sup>49</sup> WWF experts

<sup>50</sup> Red List of Finnish Species, 2019

<sup>51</sup> Finnish Environment Institute and Ministry of the Environment,

2019

<sup>52</sup> WWF experts

when erosion flushes off soil particles, this leads to increased nutrient and particle loads in surrounding bodies of water. Together, the aforementioned factors pose a real threat to the Finnish biodiversity because they harm important habitats (in particular aquatic habitats) of species through excessive nutrient load, particle load, and the presence of harmful chemicals. Eutrophication leads to reduced biodiversity by changing aquatic communities and constitutes the largest pressure to surface waters in Finland, as observed, for example, in the Southwestern part of Finland and the Baltic Sea catchment area.<sup>53</sup> Pesticides are also a direct threat to pollinating insects and the use of fertilizers requires mining for phosphorus, thereby further altering habitats elsewhere through the extraction process.

In addition to impacts from intensified agriculture on existing farmland, creation of new farmland continues to contribute to biodiversity loss. Conversion of forests into agricultural land contributes to habitat fragmentation and is detrimental to the species that depend on these habitats. Agricultural businesses also have indirect supply chain impacts that contribute significantly to global biodiversity loss, for example, through purchasing of soy used in poultry and pig feed. In fact, more than 90 percent of the biodiversity impact related to land and water use that is associated with Finnish food consumption is driven via imports that impact biodiversity abroad.<sup>54</sup>

Climate change and its many impacts on biodiversity are further accelerated by negative impacts from agriculture. Weather events causing more pronounced flooding of agricultural areas will in turn lead to increased eutrophication, but also to dry periods that will harm both aquatic nature and agriculture.<sup>55</sup> Agriculture contributes to these developments in several ways. Greenhouse gases are released from the ground during tilling, and emissions can be significant from some types of soil, with peatlands and organic soils causing especially large emissions into the atmosphere. Emissions of greenhouse gases such as methane from livestock farming as well as the use of heavy machinery also play an important role.

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<sup>53</sup> WWF experts

<sup>54</sup> Sandstrom, et al., 2017

<sup>55</sup> WWF experts



## FISHERIES AND AQUACULTURE

The Finnish fishing industry, though not as significant a threat locally as it is globally, has direct impact on fish species in Finnish waters. The main biodiversity impacts caused by fisheries in Finland is the direct harvesting of aquatic resources, and of fish in particular, putting vulnerable species at risk. Especially the populations of landlocked salmon, Arctic char, brown trout, whitefish, and European eel are suffering from these negative impacts when caught as targeted or accidental by-catch by commercial and recreational fisheries.<sup>56</sup> Vulnerable mammals and birds are also at risk of being caught as accidental by-catch. This is the case with, for example, the Saimaa ringed seal and the Baltic Harbor porpoise, with impact on the former well-documented and some mitigation measures mandating less harmful fishing equipment in place.<sup>57</sup>

Aquaculture poses an additional threat to aquatic habitats. Though not considered a major factor for environmental degradation in Finland due to strict permit requirements and reduced production volumes, aquaculture does cause leakage of nutrients into the water locally at the production site. The heightened nutrient load causes oxygen depletion, harming many fish and vegetation species. An additional but until now minor issue is the escape of cultivated fish from aquaculture compartments. These fish can compete with wild populations of, e.g., brown trout for food and thus put additional pressure on the native species.<sup>58</sup>

Feed for fish is also a potential threat, though limited from a national perspective and with only indirect impact on biodiversity. Fish feed consists of both plant and marine-based (fish) components that require farming and the associated use of land, and so the fishing and aquaculture industry's demand for this feed enables further agricultural land conversion.



## FORESTRY

Finland has the highest share of forest area of all European countries (74 percent)<sup>59</sup> and forests are home to 30 percent of all threatened species in the country.<sup>60</sup> Impact is largely local at the site of the forest and the scale and impact of forestry activities have led the Finnish Red List to classify forest management activities as the main threat to biodiversity in Finland.<sup>61</sup> Hence, the Finnish forestry industry has a crucial role to play in maintaining biodiversity.

Forestry is a key business sector in Finland today, but its impact on biodiversity also has a longstanding history. Alteration of habitats through drainage of peatlands, with the intention of enabling better forest growth, has contributed significantly to Finnish biodiversity loss. The extent of the practice is evidenced by the fact that 25 percent of Finnish forests currently grow on drained peatland.<sup>62</sup> Extensive cutting down of old-growth forests has also had a significant impact on Finnish biodiversity in the past, and the modification of waterways to enable transportation of logs has had some impact on habitats as well. Especially the disappearance of old-growth forest continues today, with loss of habitats that are irreplaceable in the short-term, putting significant pressure on biodiversity, and the area of protected forest still highly limited (particularly in southern Finland).

<sup>56</sup> Natural Resources Institute Finland, 2021

<sup>57</sup> WWF experts

<sup>58</sup> WWF experts

<sup>59</sup> Metsäteollisuus, 2022

<sup>60</sup> Red List of Finnish Species, 2019

<sup>61</sup> Red List of Finnish Species, 2019

<sup>62</sup> Metsä Group, 2020

Harmful forest management activities and high harvest levels continue to drive biodiversity loss in Finland. Harmful practices take many forms but include clear-cutting, planting of forest monocultures, and, to a limited extent, continued drainage of peatlands. Clear-cutting is closely linked to biodiversity loss and used in 85 percent of Finnish forests today.<sup>63</sup> Completely cutting down forest areas inevitably causes radical changes to the habitat by near-complete destruction of the ecological structures. The ecological recovery takes centuries rather than decades. Subsequent preparation of the ground for planting seriously disturbs the soil ecology and increases climate impacts. Open soil releases carbon to the atmosphere and is prone to erosion and nutrient leaching. In most cases, new forest is planted after clear cutting and ground preparation, but this new forest typically consists of only a couple of tree species that are roughly the same age and lack most of the forest dwelling species that can be found in more diverse forests. Taken together, these factors make it impossible for several forest-dwelling species to survive in these forests. Though there are alternative practices such as continuous forest cover management that represent some improvement for biodiversity, these are used to a limited extent and will not provide the change needed on their own.

An important cause of biodiversity loss in forests is the practice of removing dead wood from the forests. Dead wood is a crucial habitat for many threatened species and though the amount of dead wood has risen slightly in recent years, the amount is well below what many species need to thrive. Obstruction of forest water ways can also put pressure on biodiversity, and straight cut drainage networks in forests can increase flooding in downstream agricultural areas.<sup>64</sup> Increased nutrient and solid loads in water resulting from forest management and harvesting practices also put pressure on biodiversity, something that is particularly relevant as recent studies show that nutrient loading from drained peatlands is more intense than previously assumed.<sup>65</sup> The factors above do not necessarily harm biodiversity as severely as the practices mentioned previously but nonetheless add to the impacts on aquatic habitats.

In addition to the direct impacts on biodiversity, forestry is also closely linked to climate change. Clear-cutting and other methods of wood harvesting are a first step in the removal of forest carbon sinks, which, when the wood is burned, contributes to emissions that accelerate climate change. As mentioned previously, soil preparation related to forest management activities also releases carbon stored in the ground. In the context of climate impact, forest products can sometimes be less harmful than other options, though there are often options that would cause even less harm. Regardless, if we are to reach forest-related goals on, for example, conservation and carbon storage, there are clear benefits from reducing the overall extent of logging.

## EXTRACTIVE INDUSTRIES



In a Finnish national context, biodiversity impacts of mining and other forms of extraction do not rank as high as certain other sectors. However, due to the nature of mining activities, the impact on biodiversity can still be tremendous, especially in the immediate vicinity of mines and other extraction sites.<sup>66</sup> Mining is also a growing concern as interest in mining – in particular in Lapland – has increased in recent years in light of the growing interest in rare earth elements, driven in part by expected growth in material demand for renewable energy devices.<sup>67</sup> It is also relevant to this context that the declining quality of new reserves necessitates more extensive excavation.

<sup>63</sup> WWF experts

<sup>64</sup> WWF experts

<sup>65</sup> Nieminen, 2020

<sup>66</sup> WWF experts

<sup>67</sup> Lapland Business, no date

The main impact on biodiversity from mining activities comes from the construction of the mines themselves and the resulting fragmentation of habitats. Despite a tightening of regulations such as restoration requirements aimed at minimizing the impact of Finnish mines in the long run, nature's scars are often permanent. In addition to the mines themselves, construction of related infrastructure such as roads puts additional pressure on the environment through fragmentation of habitats. Pollution in the form of leakage of chemicals can put strain on local water systems, and emissions from transport and use of machinery contribute to climate change. Extraction of other materials such as sand and rocks have similar impacts on biodiversity as traditional mines, especially related to destruction and fragmentation of habitats.

In the local Finnish context, extraction of peat from peatlands also puts pressure on biodiversity, climate, and water bodies. Harvesting peat typically involves lowering the water levels and impacts water quality through leakage of organic matter and nutrients, thereby disrupting the local ecosystem. This impact comes in addition to the direct habitat destruction caused by the extraction of peat itself.

## LAND DEVELOPMENT AND INFRASTRUCTURE



Land development and infrastructure exert pressure on Finnish biodiversity by transforming natural habitats into urban living and commercial spaces. The resulting damage is twofold: It causes direct habitat fragmentation and indirect impacts related to extraction of necessary raw materials. Impacts are largely linked to land use and while much of the impact of already constructed buildings and infrastructure has already taken place, new construction projects are an ongoing cause of land conversion.

Built environment for commercial, logistical, or housing purposes have direct impact on biodiversity, mainly because it requires the clearing of natural habitats. This activity is a necessary part of the pre-construction but severely degrades and diminishes important habitats. Such alterations are usually not minor but require the complete transformation of natural forests, meadows, and other open or closed habitats. Habitat fragmentation is driven, for example, by building through natural areas and causing disconnection of habitats as well as construction of obstacles that make it harder for species to move freely. Additionally, by paving large areas with asphalt or covering them with buildings, water can no longer return to the soil and enter the groundwater, thus disrupting the natural water cycles. This has further effects on habitats depending on water resources as well as those habitats that receive the extensive run off that used to filtrate to the ground.

Additionally, construction has indirect impact on biodiversity, for example, through the extraction of minerals and rocks that are used as direct input for production and construction. As with other forms of extraction, this threatens habitats that hold these resources. Sand in particular is a commonly used input in construction materials and used for cement and concrete work. One concrete Finnish example is the lichen species *Placidium rufescens*, which is listed as Vulnerable in the Finnish Red List as a result of limestone quarrying, construction, and overgrowing of habitats.<sup>68</sup> Further, timber is commonly used as a building material and drives the need for logging and clearing of forests both locally in Finland and abroad.

<sup>68</sup> Red List of Finnish Species, 2019

## ENERGY PRODUCTION



The energy sector in Finland has important impact on biodiversity directly through the construction of necessary production facilities and infrastructure, but also indirectly through sourcing of fuels and emissions contributing to climate change. Different types of energy production have their own distinct challenges, but all have the potential to reduce the pressure they place on biodiversity.

Hydropower is a key source of electricity in Finland, with on average 18 percent of electricity produced in the country from this source 2015-2021.<sup>69</sup> While production of hydropower has a relatively low carbon footprint, construction and operation of dams significantly alters habitats in river ecosystems. The process of damming a river leads to habitat fragmentation and alteration as upstream areas flood while rapids are replaced with dam structures. The resulting reservoirs act as sources for methane emissions, absorb heat, and reduce water quality.<sup>70</sup> Dams also cut off migration routes and, unless proper routes to bypass the dam are constructed, this can make it impossible for migratory fish to reach their spawning grounds. It is worth noting that much of the impact of construction of dams has already taken place and that undoing it would require removal of dams, but the impact caused by their operation and the blocked migration routes put pressure on biodiversity to this day. This is the case, for example, for Finnish species of trout and salmon, with almost all Baltic salmon rivers in Finland currently dammed.<sup>71</sup> It is also worth mentioning that while 97 percent of hydroelectricity in Finland is produced by the 100 largest hydro power plants, the remaining 3 percent contribute significantly to biodiversity impact through more than 600 dams. Hydropower facilities that are smaller than 1MW produce only 0.3 percent of electricity, while blocking eleven full river systems.<sup>72</sup>

The biodiversity impact of dams is clearly direct and, based on studies of renewable energy sources, the most damaging to nature.<sup>73</sup> However, other types of construction related to energy production also put pressure on biodiversity. Nuclear power plants, crucial for energy production in Finland, require water for cooling that can impact water levels in surrounding lakes and rivers. The used cooling water, which can raise water temperatures if released back into nature, also impacts living conditions in aquatic habitats. Wind turbines, set to be a growing source of energy in the future, also pose a threat to biodiversity through their construction and because they can disturb birds and degrade or destroy habitats, at times also causing deadly collisions, as has been the case for, e.g., the white-tailed eagle in certain places.<sup>74</sup>

Both fossil and biofuels used as input in energy production also put pressure on biodiversity. That the burning of these fuels contributes directly to climate change through emission of greenhouse gases is rather well-known, but the biodiversity impact through the supply chain is also worth noting. Drilling for and extracting crude oil causes direct habitat fragmentation in other parts of the world. This is also true for biofuels which are often based on agricultural or forestry products and put the same pressures on the environment as cultivation for other purposes. In this context, it is also worth mentioning that collecting dead wood for burning still occurs, though this should ideally be left in the forest if goals for dead wood are to be achieved.

As the need for renewable energy and batteries increases, the sourcing of rare earth elements and minerals is a growing concern, with mining activities related to the extraction of these placing significant pressure on biodiversity in the local area.

<sup>69</sup> Statistics Finland, no date

<sup>70</sup> WWF experts

<sup>71</sup> WWF experts

<sup>72</sup> WWF experts

<sup>73</sup> WWF experts

<sup>74</sup> Lie Dahl, et al., 2011



## FOOD AND BEVERAGE

The food and beverage sector in Finland is highly dependent on input resources produced by the agricultural sector, and it therefore drives many biodiversity impacts indirectly. In other words, much of the sector's biodiversity impact is supply-chain driven. To meet customer demand for products, food and beverage producers source their raw materials (such as agricultural products) from suppliers abroad. A substantial \$6.25 billion worth of food and beverage products were imported by Finland in 2020<sup>75</sup> and, as mentioned in the context of agriculture, more than 90 percent of the biodiversity impact from Finnish food consumption is driven via imports.<sup>76</sup> Soy, coffee, cacao, and palm oil especially make up imported resources that threaten many species abroad due to land conversion and fragmentation of natural habitats.

By far the largest impact on biodiversity by the food and beverage sector is caused by its increasing demand for agricultural products, which indirectly accelerates the biodiversity impact of the global agricultural sector. Such indirect, supply-chain enabled impacts include the effluents and land use from the cultivation of crops and livestock but also the harvesting of fish for the production processes – in Finland but even more so abroad. The water footprint from cultivation also has significant impact on aquatic habitats in other countries. Though packaging is often a small part of the product, the further use of water, forestry resources, and plastics based on fossil material for packaging material is also a result of the demand for the final consumer product.

While the supply chain impact on biodiversity is by far the most severe for the food and beverage sector, direct impact is also caused by the presence of commercial buildings, used either for the processing of raw materials or for the storage and sale of the final product. While minor in context, the geographical dispersion of retail stores also requires great logistical infrastructure and transportation, thus negatively impacting the climate through the emission of greenhouse gases.



## NON-FOOD CONSUMER GOODS

The non-food consumer products sector in Finland is relatively modest compared to other sectors, both financially and in terms of direct biodiversity impacts. Still, it has an impact on biodiversity, primarily through supply chains. There is also some local impact through a vast network of retail stores and production facilities, though this is a minor part compared to the indirect impact of sourcing input materials and other goods.

Significant indirect pressures are exerted through the use of raw materials, such as the sourcing of cultivated natural fibers (e.g., cotton), leather, and wool for the textile sector. Rubber, metals, and fossil-based plastics are also common inputs that impact biodiversity. Forestry products and water use in global production processes are also negatively impacting biodiversity as their extraction threatens the ecosystems in sensitive habitats.

<sup>75</sup> OEC, no date

<sup>76</sup> Sandstrom, et al., 2017



## INDUSTRIALS AND MATERIALS

The industrials and materials sector, including pulp and paper production, is a major part of the Finnish business landscape and the second biggest sector in terms of revenue. Many of Finland's industrial companies are major players who operate globally, contributing to biodiversity impacts across the globe. Industrial production, which is highly dependent on raw material extraction and processing, puts significant pressure on biodiversity especially through supply chain impacts, but to some extent also directly.

The many input resources required for production of industrial goods mean that the sector significantly enables the activities of extractive industries in particular. Metals, minerals, and rocks are especially important, but so are plastics based on oils and various fibers as well as other agricultural and forestry products. Forestry products used in the production of pulp and paper have especially large impact on biodiversity locally in Finland. Many industrial processes also require significant water resources which can have major impact on biodiversity, especially in other parts of the world.

Production of industrial goods and materials also results in polluting effluents that harm sensitive habitats. These effluents can be oil, heavy metals, or other chemicals that are part of the production process and pose a risk if not controlled and disposed of correctly.



## FINANCE

The financial sector is somewhat different in nature to other business sectors and therefore displays different impact dynamics. Financial companies generally do not extract resources or produce goods, so their impact on biodiversity is primarily indirect. Rather than damaging habitats or species directly, they indirectly enable biodiversity loss by financing firms whose business activities pose a threat to biodiversity. The intensity of biodiversity impact therefore depends highly on the portfolio exposure of the financial institutions.

Investments supporting businesses that have a negative effect on biodiversity can be attributed as indirect impacts from the finance sector, while the inverse is true for investments in businesses employing sustainable practices. As most businesses are dependent on financing of some form, the highly influential financial sector has a critical role to play in enabling biodiversity supporting activities and discouraging businesses that are harming nature.

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“The potential to create competitive advantages through climate actions is clearly understood – now we should actively seek to create advantages around biodiversity as well.”

Juha Kostiainen  
EVP Urban Development & ESG, YIT

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## Chapter 3

# Reducing biodiversity impact brings opportunities and helps mitigate risks

Biodiversity loss poses significant risks for Finnish businesses. Reducing impact on nature and engaging in long-term transformative change can help Finnish businesses mitigate these risks and provide both immediate and long-term benefits and business opportunities.

According to survey results, Finnish businesses see biodiversity loss as a serious threat, but most have yet to set tangible goals or take the action possible to address the issue. Still, the business risks associated with biodiversity loss are real, with justifiably stricter environmental regulation being one of the most immediate impacts that many businesses must manage. Many businesses are also not fully aware of the benefits from reducing their biodiversity impacts. It is therefore important to outline the key risks that can be mitigated and the attractive opportunities that can be gained by addressing biodiversity loss.

## Key takeaways

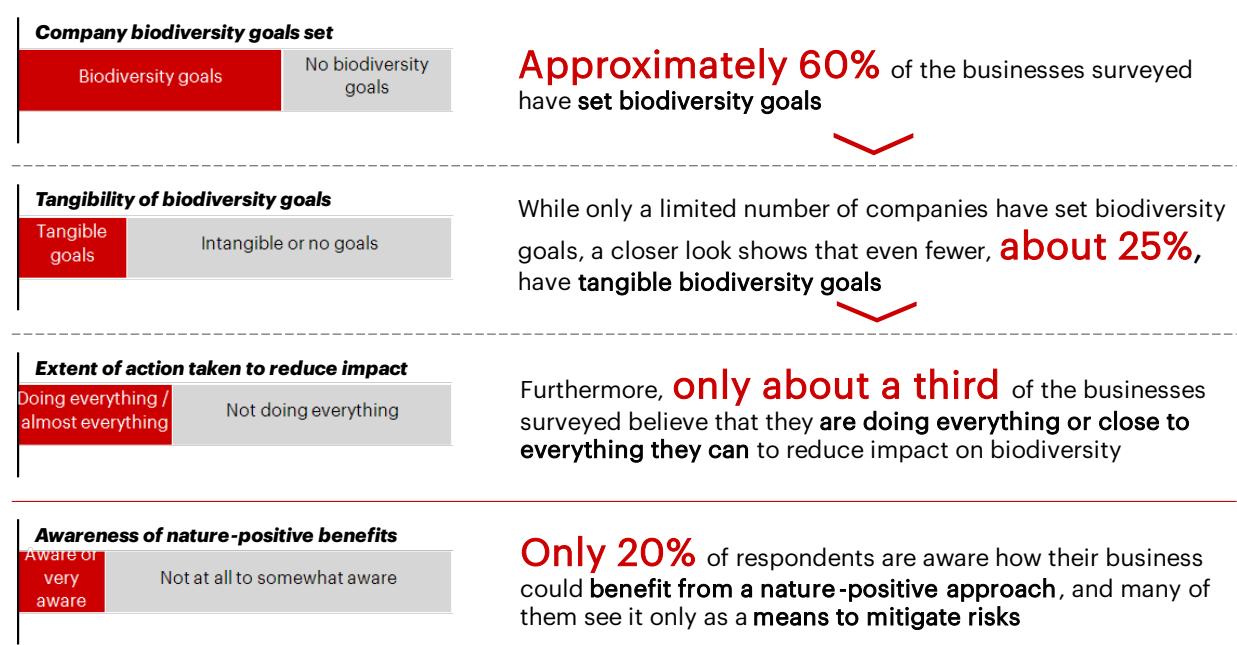
- ▶ There is clear room for improvement as less than 25 percent of Finnish businesses have set tangible goals related to biodiversity loss. Furthermore, a majority believe there is a lot more they can do to address the issue, and only 20 percent of the respondents are well aware of ways they can benefit from adopting approaches that reduce biodiversity impacts and restore degraded ecosystems.
- ▶ Risk avoidance will play a particularly large role in motivating businesses to act, as the impact of biodiversity loss becomes increasingly clear directly and indirectly through increasing costs of natural raw materials and services, business disruptions, regulations, reputational consequences, and changing market conditions.
- ▶ Businesses that actively reduce their impact on nature and engage in transformative change (covered in Chapter 4) can earn significant and sustainable benefits through, e.g., risk avoidance, lower costs (e.g., through reduced use of materials), brand enhancement, market expansion, product innovation, and financing opportunities.

## Finnish businesses lack awareness of the benefits of taking action

Most Finnish businesses view biodiversity loss as a threat but perceive their own impact as relatively, and perhaps unrealistically, small. Still, having some biodiversity goals in place is common, but they remain intangible, and many businesses remain largely unaware of the benefits from reducing impact on nature.

Understanding the current state of biodiversity efforts at Finnish businesses is a first step toward defining how to combat biodiversity loss (Exhibit 11). As demonstrated in the previous chapters, Finnish businesses perceive their impact on biodiversity as relatively low despite the many direct and indirect impacts they have on nature. Still, many companies do set goals related to biodiversity, but these tend to be intangible. The lack of tangible goals is driven by different factors, chief among them is the fact that biodiversity is hard to measure and that businesses lack the competence and prioritizations needed to set appropriate goals. However, interviews and survey results also indicate that it correlates with the fact that many companies are unaware of both the concrete risks and the potential benefits of reducing biodiversity impact and moving toward business models restoring degraded ecosystems. To remedy this, the following sections highlight the key business risks related to biodiversity loss as well as the opportunities available to companies that choose to act.

**Most businesses surveyed are aware of the threat of biodiversity loss and have set goals. However, they lack tangible action and awareness of the benefits of reducing their biodiversity impact**



**Exhibit 11:** Responses from Finnish businesses to selected survey questions. Tangible targets refer to concrete targets that are measurable and/or have a set timeline

## Biodiversity loss is a serious business risk

There are strong reasons to believe that the business risks associated with biodiversity loss will become more pronounced in the coming years. Finnish businesses must act now to mitigate the physical, regulatory, reputational, and market risks they are vulnerable to.

Many businesses in Finland are starting to see biodiversity-related risks materialize through new regulation, changes in consumer behavior, and reduced reliability of farm yields, etc. Still, many lack a concrete understanding of the risks associated with biodiversity loss. Therefore, it is crucial that businesses now move to understand the risks and prepare accordingly. Failing to do so, the effects of biodiversity loss in Finland and around the world will likely hit the Finnish economy hard.

### Biodiversity poses major business risks

<b>Physical risk</b>	 	Decline in ecosystem services and increased exposure to natural hazards. Can result in increased cost of inputs, lack of natural goods, loss of productivity, as well as disruption of operations as resilience to climate-related natural hazards is reduced.
<b>Regulatory risk</b>	 	Additional costs and business disruption caused by tighter regulations, for example, through tougher reporting, licensing, industry standards, taxation, and penalties.
<b>Reputational risk</b>	 	Loss of brand value due to biodiversity negligence or misconduct, and access to financing becoming more difficult due to increased investor scrutiny.
<b>Market risk</b>	 	Increased cost or lost revenue due to market dynamics being unfavorable to businesses not adapting fast enough.

**Exhibit 12:** Biodiversity-related business risks

Businesses are exposed to a wide range of sector-specific risks, but as highlighted by WWF<sup>77</sup> there are four main types of business risk. These stem from biodiversity loss and not keeping up with the transition to a nature-positive society, and they include physical, regulatory, reputational, and market risks (Exhibit 12).

**Physical risk** is location-specific and threatens businesses that depend directly on ecosystem services. The risk can materialize in many ways, for example, through lack of natural inputs, reduced productivity due to loss of ecosystem services (e.g., less fertile soils), or disruptions to operations caused by lower resilience to natural hazards. A local example of this can be found in the southwest of Finland where a loss of pollinating insects was found to potentially coincide with decreased rapeseed yields, which had fallen by a third over the past 15 years.<sup>78</sup> Another example is the combination of loss of trees and climate change limiting access to food for reindeer in Lapland during winter, weakening reindeer populations and threatening the livelihood of reindeer herders.<sup>79</sup>

**Regulatory risk** stems from changes to the regulatory context, driven by increased environmental legislation. As regulators realize the importance of preserving biodiversity, increased focus on the topic and upcoming tightened regulation are likely to cause cost increases and business disruptions. This will be driven by, for example, restrictions and compliance requirements, additional certification and reporting requirements, raised standards driving up input costs (e.g., by requiring the use of recycled paper), or through direct taxation and litigation costs caused by the direct impact of business activity. At the extreme end of the scale, non-compliance with tighter regulation can lead to the suspension of business activities altogether. As an example, the EU deforestation regulation completely excludes businesses that offer products contributing to global deforestation from the market.

**Reputational risk** affects businesses through increased stakeholder scrutiny of biodiversity impact from, for example, consumers and investors. Biodiversity-related misconduct or lack of transparency on actions can lead to negative publicity, loss of brand value, and lower sales as consumers increasingly avoid businesses and products that have negative impact on nature. Reputational risk can also play a role in worsened investor perception for businesses putting pressure on nature, contributing to putting access to financing at risk for businesses that do not act to reduce their biodiversity impact. Several interviewed Finnish businesses mention reputational risk as an important consideration – and for good reason. Living sustainably is important to 78 percent of Finns according to data from 2019,<sup>80</sup> and this also shows in their consumption choices as 42 percent of Finns have rejected products due to environmental impact.<sup>81</sup>

**Market risk** refers to the change in prices of input materials or competitive dynamics resulting from changes in the other risk categories. For example, Finland's dependency on imports for domestic food and beverage production makes the whole sector dependent on successful international trade and exposes it to physical risks in other countries.<sup>82</sup> Despite no direct exposure to these specific physical risks, resource scarcity and natural hazards abroad can make it difficult for Finnish businesses to acquire crucial inputs at reasonable prices. Shifts in market dynamics may

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<sup>77</sup> WWF, 2022 b

<sup>78</sup> Hokkanen, 2018

<sup>79</sup> Finnish Environment Institute, no date

<sup>80</sup> Sitra, 2019

<sup>81</sup> Yle, 2010

<sup>82</sup> Yle, 2020

also occur in favor of businesses that adapt more quickly and gain sympathy with both consumers and investors. This could, for example, be the case if some businesses adopt circular business models, source certified inputs, making competitors that refuse to do the same fall behind.

Mitigating biodiversity-related risks is of crucial importance for Finnish businesses. Reducing biodiversity impact provides significant risk mitigation potential for businesses that choose to adapt. However, finding solutions to reduce impact on nature also opens up to a world of attractive businesses opportunities.

## Reducing impact on nature creates attractive business opportunities

**While risk avoidance is top-of-mind for many Finnish businesses when considering biodiversity, enhancing biodiversity also comes with significant additional benefits in the form of improvement of existing business, innovations, and access to finance.**

Interviews and survey results show that very few of the largest Finnish businesses realize that mitigating biodiversity risks can also create significant business opportunities. In addition to the opportunities from direct risk avoidance, businesses that address their biodiversity impact can reap several benefits (Exhibit 13).

### Significant and sustainable benefits from reducing impact on nature

Risk avoidance	Improvement of existing business	New business and innovation	Access to finance
E.g., avoidance of resource scarcity, operational disruption, reputational scrutiny, and regulatory interference	E.g., reduction of operational costs from efficiency gains or by deploying eco-efficient/circular production, and internal and external brand enhancement	E.g., development of new products, technologies or business models driven by recognition of the potential of a nature-enhancing approach. Includes refinement of by-products and waste materials, models like product-as-a-service and market innovations	E.g., sustainable finance through high environmental rating, or green or blue bonds. Also proactively managing the fact that financial institutions are expected to limit access to finances for nature-negative businesses in the future

**Exhibit 13:** Potential benefits for businesses from reducing impact on nature

**Risk avoidance** can take many forms but covers avoidance of any biodiversity-related risks described in the previous section. One example of physical risk avoidance can be to take pre-emptive measures such as supporting conservation or restoration of critical sites to avoid resource scarcity or natural hazards. This can, for example, be by restoring wetlands in agricultural areas that are prone to flooding, as wetlands have been shown to reduce water flows and the risk of flooding.<sup>83</sup>

<sup>83</sup> Jordbruksverket, 2010

Another example is avoidance of regulatory risk by taking action early to meet market expectations, thereby staying ahead of competition that will eventually be forced to meet the same requirements through regulation. One additional benefit of early action is that pioneers are better positioned in crafting new practices suitable for their businesses. Late-comers must accept the practices and rules developed by others.

**Improvements to existing business** can materialize through, e.g., cost savings or brand enhancement. These can arise, for example, as a result of more efficient production processes that make better use of inputs, or through improved access to ecosystem services, all contributing to keeping the business healthy. This can already be seen in Finland, where experiments with adding beehives on farms have resulted in yield increases for multiple crops compared to farms without additional pollination.<sup>84</sup> While introducing domestic bees can also be a threat to local insects, improving the habitats for native pollinators could yield the same benefits while increasing resilience in the ecosystems. Some interviewed Finnish businesses also recognize the upside of business models reducing biodiversity impacts and already see the demand for sustainable products and services despite a premium on prices.

**New business and innovation** can also arise from reducing impact on nature and a change in strategic mindset, as it can drive the development of new technologies or products that can be used to expand or create entirely new businesses. This can be through, for example, refinement of by-products into entirely new materials. Rather than merely relying on the refinement of existing waste, however, businesses need to adjust their strategic thinking in order to meaningfully reduce the dependence on natural resources and re-design business models or products, moving toward, e.g., models that reduce the need for ownership and serve the need of the customer in an innovative way (e.g., Product-as-a-Service).

**Access to finance** is also likely to improve for those who act. Green or blue bonds can be ways to secure funding for biodiversity-friendly projects, while higher environmental ratings may provide access to capital at better rates. While many attractive financing options are available to those ahead of the curve, proactively managing biodiversity impacts and taking biodiversity-enhancing action is of importance to all. The interviewed Finnish businesses mention the push from investors and financial institutions as a crucial factor for acting on biodiversity. Many also highlight that investors and financial institutions are increasingly conscious of biodiversity impact and factor this into their decision-making, which implies that staying ahead on the topic is a crucial factor in securing future financing.

Recognizing these opportunities associated with a reduced biodiversity impact and acting on them early can help businesses gain competitive advantages as they adopt the nature-preserving business models we need to rely on in the future. These business models are described in more detail in the next section.

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<sup>84</sup> Hokkanen, 2018

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“We are not only looking at how we can make our existing product portfolio more sustainable - we also have a target of bringing disruptive and biodiversity-friendly innovations to the market every year.”

Heli Anttila  
VP Product Development, Fazer

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## Chapter 4

# A sustainable future economy requires transformative change

**Reducing impact on nature and reversing the negative trend of biodiversity loss requires that businesses undergo transformative change and halt and reverse nature loss. Working toward transitions within three value chain areas can be a starting point for action here and now.**

It is critical that Finnish businesses realize that an urgent transformative change is needed to halt and reverse nature loss. The nature-positive economy of the future and truly sustainable wellbeing requires that societal needs are served with far smaller pressures on nature. Transforming business models accordingly requires insight and action. Acting within three identified areas is a first step on the path toward this mission, and all businesses must engage in this transformation. The degree of change needed varies between businesses, but many will need to go through a profound and disruptive process.

## Key takeaways

- ▶ While reducing impact on nature is good for business and will help to halt the destruction of nature, a sustainable future economy requires that businesses embrace transformative change and move toward a more disruptive goal: to develop nature-positive business models that ensure halted and reversed nature loss, restore the damaged habitats, and lead to resilient ecosystems.
- ▶ According to the World Economic Forum, becoming nature-positive comes with major business opportunities. A global transition toward a nature-positive approach is estimated to provide annual business opportunities worth \$10 trillion by 2030 (equivalent to more than 10 percent of current global GDP), but it also requires businesses to invest in nature-based solutions.
- ▶ As a first step to maximize impact here and now, Finnish businesses should focus on critical improvements across supply chain, operations, and consumption, while also advocating for broader societal change in, e.g., regulation and consumption patterns.
- ▶ There is plenty of inspiration available from Finnish businesses that have already taken action, as well as from transformative changes that have taken place historically.

## **Transformative change is a prerequisite for the nature-positive society of the future**

**We must achieve transformative change to reverse the nature loss that has largely resulted from market demands and businesses' impact on nature. The long-term goal is nature-positive business models, which address the current pattern of overconsumption and promise both vast business opportunities and risk mitigation potential. Accomplishing the transformation will be a journey, and businesses need to step up their efforts now.**

It is no longer sufficient for businesses and societies to simply reduce their impact on nature. Slow, incremental changes need to make way for actions and investments in nature that lead to transformative change. A call to action by non-state actors makes clear that we need to halt and reverse the current trajectory of nature loss and become nature-positive by 2030 in order to recover thriving, resilient ecosystems by 2050.<sup>85</sup> Businesses play a key role in achieving these goals by promoting protection of significant land and marine areas, drastically reducing consumption of natural resources, and improving production processes. Ideally, they should also work toward nature-positive business models.

Nature-positive business models are those in which businesses take action to minimize and remove pressures that have driven the degradation of nature while also actively enhancing the recovery of a resilient biosphere.<sup>86</sup> Based on regeneration, resilience, and recirculation, nature-positive business models address societal challenges and/or business needs while also protecting, sustainably managing, and restoring natural or modified ecosystems. An example of a nature-positive business model is the sale of sustainably managed ecosystem services, such as sustainable tourism in preserved or restored environments (under the assumption that tourism and associated travel is aligned with planetary boundaries). Another example is provision of nature-positive services, such as the improvement of energy efficiency of buildings, which reduces the average need for natural resources over time and allow energy infrastructure to be leaner and lighter.

In addition to being positive for biodiversity, nature-positive business models are also expected to add significant economic value. The World Economic Forum estimates that from 2030 onward, a nature-positive economy can create global business opportunities worth \$10 trillion annually, add 395 million new jobs, and support good governance, long-term stable societies, and healthy economies. However, realizing these opportunities and reaching a nature-positive economy by 2030 requires that businesses and societies invest in nature-positive solutions. The World Economic Forum estimates that the transition would require redirecting \$2.7 trillion of funding each year, and closing this investment gap equates quadrupling society's investments in nature.<sup>87</sup> As new policies and societal change make it increasingly lucrative to invest in nature-positive business models, a significant share of these investments is expected to come from businesses.

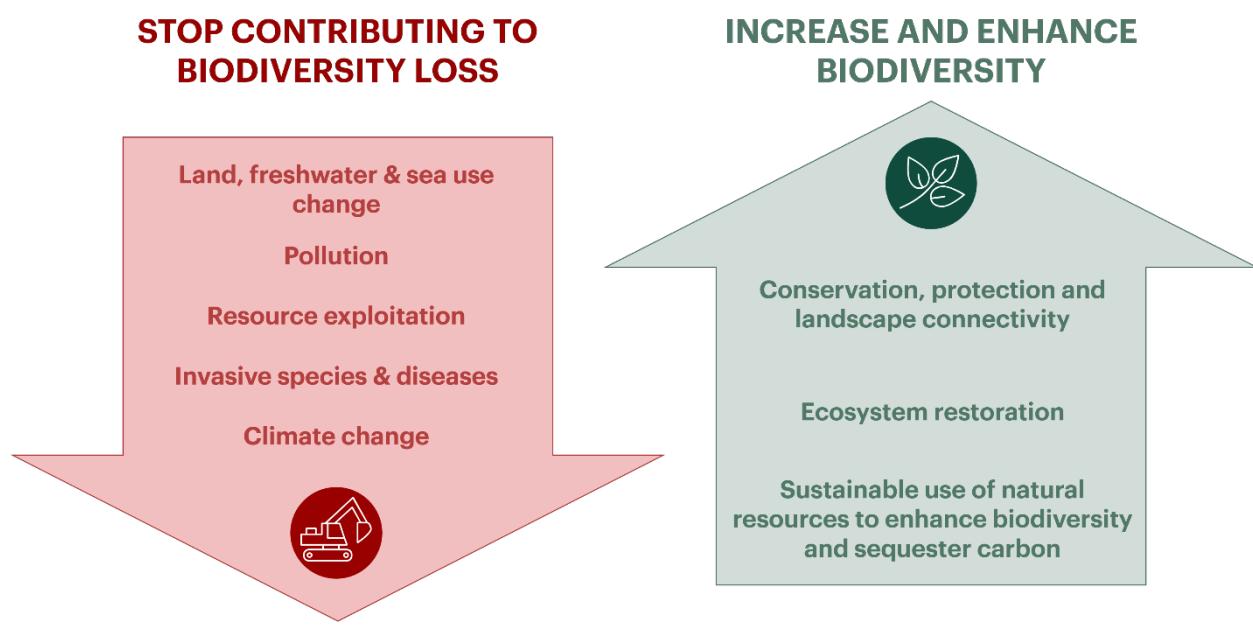
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<sup>85</sup> Naturepositive, no date

<sup>86</sup> World Economic Forum, 2021

<sup>87</sup> World Economic Forum, 2020 c

**Businesses need to first eliminate excessive impact on nature to ensure compatibility with planetary boundaries. However, they must also enable the recovery of biodiversity**



**Exhibit 14:** The two dimensions businesses need to work across to reverse the trend of biodiversity loss

A key part of the development toward a nature-positive society is a two-fold shift in mindset (Exhibit 14). First, instead of sectors anticipating current level or ever-increasing demand for natural resources, drastic reductions in consumption of resources must be achieved. This includes halving the total footprint and addressing the direct drivers of biodiversity loss, e.g., by transforming the way natural resources are used so that it supports biodiversity across the value chain. Second, in addition to halving the footprint, businesses should also seek ways to contribute to restoring and enhancing biodiversity by contributing to more conservation and restoration. Businesses need to work across both dimensions to reverse the trend of biodiversity loss. While doing this, it is also crucial that businesses base their efforts on the principles of inclusive conservation, meaning that both conservation and transformation must respect and take the rights of indigenous peoples to manage their own land into account.<sup>88</sup>

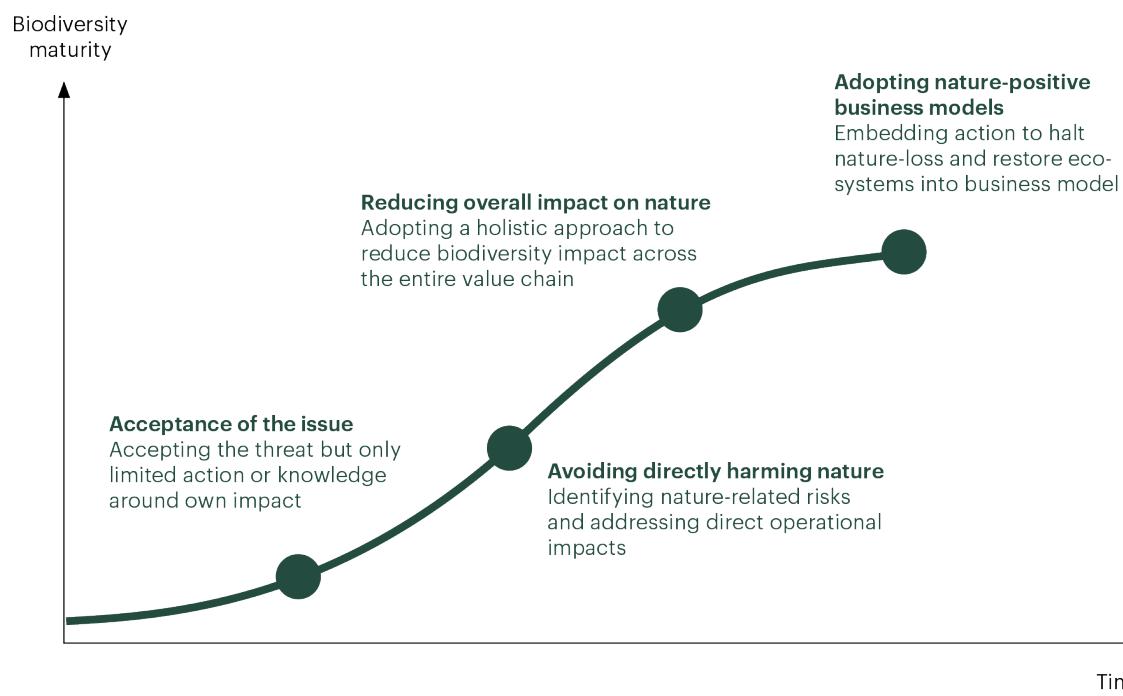
Interviews with large Finnish businesses indicate that there is significant work to be done across both dimensions in Exhibit 14, but the change in priorities needed is especially large when it comes to the dimension of enhancing biodiversity. While many businesses have started taking the first small steps toward reducing their impact, the vast majority of them do not think in terms of restoring and enhancing nature yet. They therefore need to increase their work on restoration, while simultaneously continuing to reduce impact. There cannot be a trade-off between the two.

<sup>88</sup> WWF, 2022 c

As is often the case, much of the required change is likely to be driven by grassroot initiatives and new, innovative businesses adopting and investing in nature-positive models. However, incumbent businesses also have an important role to play; by acting to transform their own supply chains and business models; by investing in new, innovative companies; and by contributing to research developing new solutions. Naturally, investing in business model changes and new solutions early does bear some risks in addition to the abundant opportunities. However, as described in the previous chapter, doing nothing also comes with other, potentially larger risks. These risks can be realized quickly and hit hard for companies that are unprepared. For example, the peat energy industry in Finland seems to have been taken by surprise despite the foreseeable impact of carbon pricing on peat demand. Regardless, all companies have a choice to make as to whether they invest in transformation now or wait until changing regulation and market conditions will force everyone to make the changes.

**A nature-positive economy requires that businesses start moving toward nature-positive business models**

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**Exhibit 15:** Biodiversity maturity curve illustrating the move toward nature-positive business models

While there is considerable value in nature-positive models for businesses that choose to invest in them, implementing these models will not happen overnight. To accomplish the necessary transformation and unlock environmental, societal, and economic value, businesses need to start moving along the maturity curve (Exhibit 15). After accepting that the current trajectory needs to change, businesses must build up knowledge around their own impact and the nature-related risks they are exposed to. Survey results show that many Finnish businesses have already recognized that biodiversity loss exposes them to additional risks and that swift action is required. Now, businesses need to make a move to avoid directly harming nature and reduce their overall impact through

direct pressures and supply-chain activities. They can then continue by adopting business models that are net-positive for nature and thus support the creation of a nature-positive economy.

Not all businesses will necessarily take all the steps on the curve; some may have a net-positive impact on nature from the start. Regardless of how the journey looks though, it is a fact that large-scale transformation together with policy and regulation changes are needed to support the regeneration and resilience of global ecosystems. Regulation is often necessary to set the bar and ensure that new business models and products – including those that seem niche at the beginning – can show proof of concept and achieve a breakthrough to penetrate the whole market. This is especially true within sustainability, as shown by, e.g., the German renewable energy policy. By driving down prices and improving practices, this became an important driver of the Europe-wide breakthrough of renewable energy.

### **Key actions that drive transformative change**

**To make the necessary transformative change happen, each primary sector should focus their efforts on a few areas locally and globally. Secondary and tertiary sectors play a key role in enabling these changes, but also need to transform their own operations to be more sustainable.**

Because primary sectors drive most of the extraction of natural resources, these sectors have an important role in driving transformative change. While all businesses within these sectors are unique, there is a set of high-level common actions that will drive and enable most of the necessary change. Exhibit 16 shows examples of the most important and urgent changes each of the primary sectors need to make on a local Finnish and global level. Meanwhile, as the customers of primary sectors and the ones serving the end demand, secondary and tertiary sectors play a potentially even more crucial role in enabling and incentivizing these changes. They need to do this both by directly enabling the changes through their supply chains and by reviewing their own operations. The latter should be done with the aim to come up with transformative innovations that produce less waste and lower the resource intensity, thereby reducing the demand for natural resources and overall impact on nature from primary sectors.

## Key actions for primary sectors to drive transformative change

### GLOBAL TARGETS

(these will need to be achieved in collaboration with governments, civil society, and consumers)

- Halt and reverse the loss of nature and biodiversity so that by 2030 we have more nature than now
- Protect 30% of the planet using rights-based approaches that respect and secure the rights of indigenous peoples and local communities
- Halve the global footprint of production and consumption

### SECTORS

### GLOBAL

### FINLAND

#### Agriculture



- Level of animal production aligned with WWF Planet-Based diets
- Stop global deforestation and conversion of all natural ecosystems as well as semi-natural grasslands with High Conservation Values.
- Restore nature (e.g., wetlands, mosaics) and create wildlife connectivity at landscape levels
- Ensure considerable regeneration of agricultural soils
- Apply agricultural practices that retain and enhance flora and fauna populations on semi-natural grasslands, production lands and beyond

- Level of animal production aligned with WWF Planet-Based diets
- Significantly increased area of grazing and maintaining biodiversity rich meadows
- Significantly increased restoration of wetlands
- Significantly increased recirculation of nutrients and other resources
- Apply agricultural practices that retain and enhance flora and fauna populations on production lands and beyond

#### Fisheries and aquaculture



- Stop all fishing of stocks outside biologically sustainable levels
- Use an ecosystem-based and holistic approach to fisheries management
- Align the extent of aquaculture to the carrying capacity of the local conditions (biodiversity-driven spatial planning)
- Transform to sustainable and responsible aquaculture (taking nature and all stakeholders into account)

- Fishing activities prohibited in sensitive and marine protected areas and/or areas with High Conservation Values
- Total Allowable Catch/Quotas based on scientific data derived from an Ecosystem-based Fisheries Management approach
- Full implementation of the European Common Fisheries Policy (CFP)

#### Forestry



- Level of harvests aligned with ecological boundaries
- Stop forest degradation and conversion of forests to forest plantations
- Restore degraded forests
- Apply forestry practices that retain and enhance flora and fauna populations in production forests and beyond

- Level of harvests aligned with ecological boundaries
- Long-term conservation of significant areas of representative forest types
- Significant share of logging not using clear cutting practices
- Manage a large share of production forests with enhanced conservation consideration
- Considerable restoration of forest ecosystems, incl. wetlands and streams
- Apply forestry practices that retain and enhance flora and fauna populations in production forests and beyond.

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SECTORS

<b>Extractive industries</b> 
<b>Land development &amp; infrastructure</b> 
<b>Energy production</b> 

 GLOBAL

- Level of material extraction aligned with ecological boundaries
- No net loss of natural ecosystems. Avoid biodiversity hotspots and High Conservation Values areas and ensure wildlife connectivity between natural ecosystems
- Ensure responsible operations by minimizing impact on physical environment and emissions of metals and other substances to water
- Rewild fully exploited open pit mines and adjacent buffer zones
- No net loss of natural ecosystems – avoid biodiversity hotspots and High Conservation Values areas
- Employ biodiversity driven spatial planning for all land and sea areas to minimize impact and ensure wildlife connectivity between natural ecosystems
- Retain or create “natural infrastructure services” (e.g., wetlands and mangroves for flood protection)
- Ensure natural water flows and fauna connectivity in river systems affected by hydropower
- Increase wind and solar power along with measures to enhance biodiversity
- Phase out use of fossil fuels and stop fossil fuel extraction
- Minimize bioenergy use to a sustainable level and limit bioenergy fuel sourcing to sustainable feedstocks

 FINLAND

- Level of material extraction aligned with ecological boundaries
- No net loss of natural ecosystems. Avoid biodiversity hotspots and High Conservation Values areas and ensure wildlife connectivity between natural ecosystems
- Ensure responsible operations by minimizing impact on physical environment and emissions of metals and other substances to water
- Rewild fully exploited open pit mines and adjacent buffer zones
- No net loss of natural ecosystems – avoid biodiversity hotspots and High Conservation Values areas
- Employ biodiversity driven spatial planning for all land and sea areas to minimize impact and wildlife connectivity between natural ecosystems
- Retain or create “natural infrastructure services” (e.g., wetlands)
- Realize opportunities of enhancing biodiversity conditions in infra-related marginal lands (e.g., road verges, power line corridors, and ruderal areas)
- Ensure natural water flows and fauna connectivity in river systems affected by hydropower and removal of small hydropower dams that are marginal for energy security but disrupt ecological connectivity
- Increase significantly wind and solar power along with measures to enhance biodiversity
- Phase out use of fossil fuels
- Minimize bioenergy use to a sustainable level and limit bioenergy fuel sourcing to sustainable feedstocks

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**Exhibit 16:** Some of the most crucial changes for primary business sectors that contribute to the shift to nature-based solutions and help ensure social license to operate for businesses

## **Addressing three key areas can guide the way**

**To begin implementing concrete transformation and address the most crucial areas of change, Finnish businesses must engage in transitions within three key areas to reduce business impact on nature and enhance biodiversity. Value-chain focused actions and industry-wide collaboration are the key means of driving change.**

By now, it is clear that businesses need to start reducing their impact on nature. Businesses can drive transformation on different levels, from areas that are within their direct control all the way up to advocating for system-level change, but for most it is natural to start with the factors they have a high degree of influence over. To this end, we have identified three key areas (Exhibit 17) where businesses should engage. These are areas that businesses can start working on right now, as a first step toward the complete transformational change that is required to ensure the compatibility with planetary boundaries (covered in the previous section). Actions within the identified areas are focused on what companies can do in their respective value chains and potential sector-wide collaboration in the value chain-adjacent areas. They do not, however, cover aspects outside of the organizations' direct control and influence, such as enabling systemic societal change. Nevertheless, the role of businesses in advocating for broader system-level change should not be underestimated and is covered in more detail toward the end of this section.

### **Improvements in three areas to reduce impact on nature**

Supply chain	Operations	Consumption
 Ensuring supply chain sustainability, driven by transparency and traceability, and the sourcing of sustainable input materials from responsible suppliers, to enable and incentivize further impact reduction and regenerative actions among upstream suppliers.	 Reducing dependencies on natural resources and ecosystem use by embedding nature-consciousness into development of products and services, and business model design. Includes introducing and adopting transformative products and business models, more resource- and energy-efficient operational practices, and ensuring buildings and infrastructure are resource-, energy- and space-efficient, as well as restoring and enhancing biodiversity.	 Advocating for sustainable resource consumption and consumer behavior by providing alternative, sustainable products and services that reduce overall natural resources demand considerably. Also cooperating with businesses in value chain to co-develop and ensure provision of sustainable products (e.g., by defining joint circular models).

**Exhibit 17:** Improvements needed across supply chains, operations, and consumption

The upcoming sections provide a high-level description of actions that can be taken within the identified areas, covering both what they are and what businesses should strive to achieve when engaging in them. Immediate and concrete action within these areas is crucial and puts businesses on the path to reducing their biodiversity impacts. Any improvements should, however, be seen as the first steps in an iterative process of continuously evaluating and addressing impact with the end goal being transformative change.

### **Supply chain**

Establishing sustainable supply chains is crucial for Finnish businesses because, for many, this is where the majority of biodiversity impact occurs. Though supply chain impact is by definition indirect, Finnish businesses are responsible for driving demand for resources and need to work with their suppliers to ensure sustainable supply chains. While this is particularly true for secondary and tertiary sectors, also primary sectors have the potential to drive change in this area. Globally, it is key that businesses stop contributing to deforestation and land conversion, emissions of greenhouse gases, unsustainable water use, and overfishing, to name a few. When sourcing locally, contributing to biodiversity-rich forests and agricultural landscapes, and ending eutrophication are also highly important factors.

In practice, the shift to sustainable supply chains involves ensuring that sourced materials are produced in a sustainable way. This can be done through, e.g., sourcing of materials that are certified against credible certification systems with ambitious criteria for the conservation of biodiversity and ecosystems. However, it is important to remember that not all certifications automatically guarantee more sustainable products, and the reliability of each certification needs to be evaluated. If not already in place, agreeing on credible industry-wide certification standards can be an important step to take here.

In addition to what is currently sourced, Finnish businesses also play a critical role in driving more long-term improvements in supplier behavior. This involves advocating strongly and consistently for change, and supporting and creating incentives for more sustainable practices highlighted earlier in this chapter. Setting up traceable and monitored supply chains can help ensure adoption of and adherence to sustainable practices among suppliers and provide visibility on progress. It is also a necessary enabler for businesses to understand their impact on nature and make conscious decisions to reduce it. While traceability can sometimes be a challenge, technological solutions and digital tools can be helpful in allowing detailed assessment and monitoring.

### **Operations**

At its core, a transition in operations is about the urgent need to move toward more resource and energy-efficient operations and developing transformative products in order to lower upstream and downstream impacts on nature, both locally and globally. This is where businesses have the most direct control and therefore also have the clearest responsibility over the choices they make (but this does of course not diminish the importance or responsibility for impacts through supply chain or consumption). For primary sectors, possible improvements within operations are mainly related to minimizing land and sea use, and resource extraction (described in more detail in the previous section) as well as enhancing biodiversity in agriculture and forestry, while for secondary sectors

new, innovative business models that are increasingly circular and reduce overall resource demand are particularly relevant.

All sectors also need to consider their use of industrial buildings, infrastructure, and other facilities that drive habitat fragmentation, resource extraction, and high energy usage. Re-using and improving the energy efficiency of existing buildings, becoming energy self-sufficient using sustainable energy sources, and using alternative as well as recycled materials are examples of ways to reduce the impact on nature. The same is true of repurposing or multi-purposing of existing buildings, which reduces the need for new construction, as well as working with neighboring companies or communities to enhance biodiversity in the immediate area, both by leaving nature intact and through, for example, green roofs or green parking lots.

The exact actions to take in this area will depend on the current operations of each individual business, but the end goal is the same: swiftly find new ways to operate that are less resource-intensive, employ circular practices whenever feasible, and get as close to zero waste as possible. Also, it is critical that businesses start focusing on integrating regenerative action into their operations and go beyond impact reduction to become nature-positive. Regenerative action in this context can take the form of, for example, re-introduction of grazing of semi-natural pastures or employing forest practices that better mimic natural forest regimes.

Innovation and industry collaboration are key for a transition in operations, but they also provide opportunities to come up with new solutions related to, for example, the refinement of by-products and waste material from other businesses.

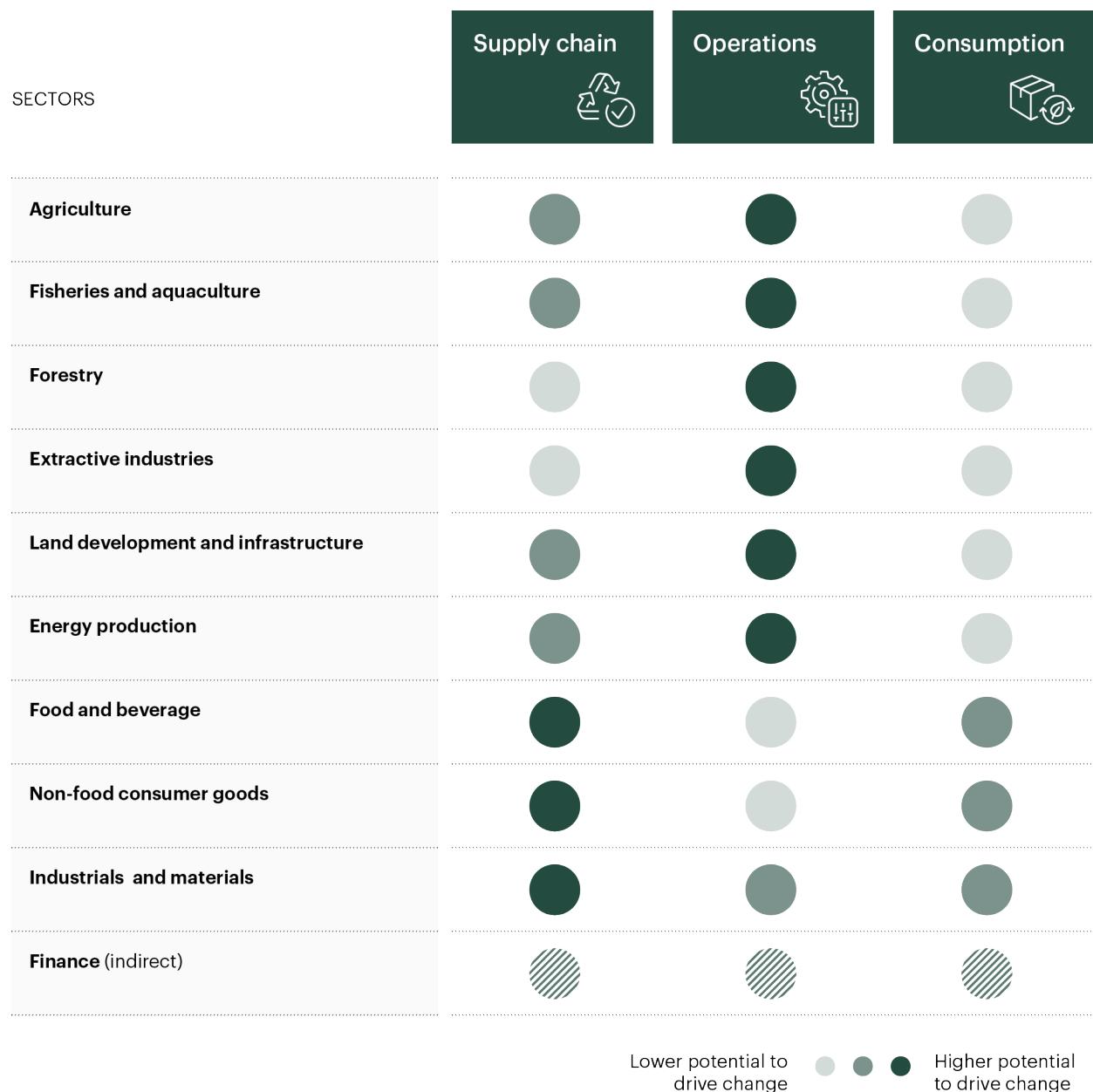
### **Consumption**

Reduced consumption and shifting to more sustainable alternatives can contribute significantly to reducing resource extraction and land and sea use. This is crucial if we are to achieve the significant reduction in resource consumption that is needed to stay within planetary boundaries. A shift in consumer behavior is also an important driver of more regenerative practices and reduced production of high-impact products (e.g., many types of meat), and can encourage other biodiversity enhancing business actions. Businesses play a key role in this area and must both enable more sustainable alternatives and educate and guide both B2B customers and consumers toward more sustainable products and purchasing behaviors. This also involves cooperating with B2B customers and other businesses in the value chain to co-develop and ensure provision of sustainable products, for example, by ensuring products are recyclable or otherwise defining joint circular (or in other ways disruptive) business models.

While consumer-facing businesses have a particularly critical role to play in this area, all businesses can and must contribute to raising awareness and changing societal norms by influencing their customers. Some practical examples of what businesses must do include: offering sustainable alternatives to resource-intensive products (such as proteins, dairy, leather, and natural fibers), making sustainable alternatives the default option, and moving toward business models promoting circular consumption, for example, by offering subscription-based models instead of straight sales. Increasing awareness through joint sector communication can also help guide customers and

consumers in the right direction, as has been done, for example, through campaigns encouraging higher recycling rates.

**Different sectors should focus on immediate action in different areas for the biggest near-term impact, while also working to ensure sustainable business models in the long term**



**Exhibit 18:** Sector-specific potential in driving change across three areas. Covers only near-term potential. What can be done in the long term is covered in Chapters 5 and 6<sup>89,90</sup>

Exhibit 18 illustrates the potential of the different Finnish business sectors to drive immediate change across the value chain. This should be interpreted as where the most impactful near-term

<sup>89</sup> WWF experts

<sup>90</sup> Bain analysis

improvements can be achieved, without losing sight of the fact that changes in all areas are needed in the long term. The assessments are made based on potential for both contributions to reducing negative impact on nature as well as actions to enhance biodiversity. As shown, all sectors have the potential to positively affect nature and biodiversity through actions right now, but which areas provide the biggest change potential, and therefore where efforts should be focused, differs.

In general, primary sectors can make a difference mainly through their own operations, while secondary and tertiary sectors can drive change primarily through supply chains. That is, agricultural and forestry businesses, for example, should look toward their own operations to identify the biggest levers for impact reduction and biodiversity-enhancing actions. Food and non-food consumer goods sectors, on the other hand, drive a high negative impact through their supply chain, for example, through the sourcing and initial processing of raw materials. They should thus firstly aim to address these highly impactful elements of their value chain with concrete and holistic actions, while also working to reduce overall resource consumption. It is worth noting that while Exhibit 18 provides high-level guidance on focus areas, not all businesses within the same sector are the same, and so each company needs to make its own evaluation of what efforts can have the largest transformative potential. More high-level direction on building capabilities can be found in Chapter 5, while Chapter 6 gives some guidance on assessing and addressing own impact.

The financial sector plays a big role in enabling and driving change across all areas. Interviews carried out for this report indicate that many businesses see requirements from the finance sector as a key driving force to implement new solutions and following up on impact. Such measures can accelerate the actions on biodiversity beyond regulations and encourage businesses to move faster than regulators mandate, similar to the development that has been seen for climate change. The driver behind these increasing demands from financiers on their portfolio companies is the growing demand for enhanced disclosure of nature-related risks and opportunities from financial regulators and supervisors, as well as from industry-led initiatives such as TNFD.<sup>91</sup> This demand builds on the recognition that nature loss, just as climate change, is a source of systemic risk to markets.<sup>92</sup>

As alluded to in the beginning of this section, businesses also need to engage more broadly and act outside of the value chain-adjacent areas to enable systemic societal change. This can take the form of, for example, advocating for changed behavior and regulation or forming broader collaborations to accelerate the development and more widespread adoption of sustainable practices and improvements. It also includes being mindful of how business decisions impact society on a broader level, keeping in mind that, for example, businesses establishing facilities in an area also drives demand for construction of societal infrastructure such as roads and commercial areas.

Businesses advocating for systemic change is already seen today, for example, through the coalition Business for Nature, where large businesses and financial institutions are calling for mandatory requirements to disclose impact on nature.<sup>93</sup> For front-runners, this is not only the right thing to do, but it also makes commercial sense as it gives them a chance to take part in shaping the regulation. Additionally, regulation can also help level the playing field and, by setting standards for acceptable

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<sup>91</sup> Taskforce on Nature-related Financial Disclosures, 2022

<sup>92</sup> NGFS, 2022

<sup>93</sup> Business for Nature, 2022

practices, remove any advantages that less advanced competitors can gain from potentially disruptive practices.

Still, we cannot afford to await regulation that mandates action. Businesses and societies have a responsibility to continuously question and challenge the status quo and not blindly accept outdated perceptions. To foster the necessary transformative change, it is crucial that businesses act proactively and start engaging in this area now.

### **Leading businesses are starting to take action**

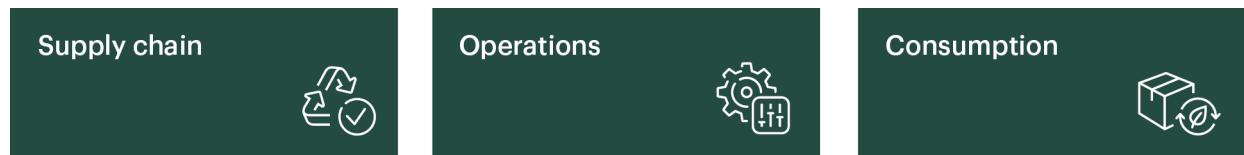
**Multiple businesses in Finland have already taken action to reduce their biodiversity impact along the dimensions of supply chain, operations, and consumption.**

Full transformative change is the necessary end goal, but immediate concrete action is also crucial if we are to become nature-positive by 2030. Our analysis shows that most companies surveyed do not believe they are currently doing everything in their power to mitigate biodiversity loss which means that all organizations hold opportunities for improvement. Exhibit 19 illustrates examples of how some Finnish businesses have started engaging in making improvements to reduce their impact on nature and positively enhance biodiversity. These range from value-chain actions and cross-sector collaborations to community engagement and local restoration projects.

While these actions are a great step in the right direction and can serve as an inspiration for other businesses looking to start their transitions, it is also worth noting that all businesses (including the ones below) have the potential to, and in the long run must, go much further in their efforts.

Without more profound changes to most business models, we will not achieve alignment with planetary boundaries. To ensure progress in the right direction, the key right now is to identify the most impactful actions a business can take today and engage in an iterative process of continuous improvements, while continuing to develop a strategy, set targets, and pursue the longer term goal of transformative change.

## Leading businesses are taking action to reduce the impact on nature and enhance biodiversity



### Fazer:

- Fazer started empowering local farmers in West Africa through vocational training in responsible cocoa farming
- In 2020, Fazer also began supporting sustainable farming in Ecuador by offering training and paying a premium for the adoption of sustainable farming practices to 333 farmers in the program
- The program has led to full traceability to individual farm level of all cocoa shipped from Ecuador
- This initiative aims to address the challenges in cocoa sustainability, including deforestation, water waste, and social issues.

### Combi Works:

- Combi Works offers production capacity as a service
- The company does not have its own production facilities, but instead offers its customers access to the excess capacity of other factories
- This offers a resource-efficient and cost-efficient alternative, optimizing operations, resource use, and land use by reducing the need to invest in new machinery and hardware.

### Jalotofu:

- To prevent negative impacts on nature, Jalotofu produces alternative Fair Trade proteins
- European soy is organically sourced, and production is enhanced by constantly analyzing and reducing carbon and water footprint on nature.

### Spinnova:

- Spinnova has created alternative feedstock materials for textiles
- The solution is based on transforming cellulosic fibre into textile fibres mechanically
- Spinnova has, for instance, utilized wood, textile waste, and agricultural waste such as barley straws in their production process
- Through their technology, Spinnova aims to reduce the pressure the textile industry is putting on the environment by reducing demand for conventional virgin materials for textiles.

### Exhibit 19:

Finnish businesses have already started to take action<sup>94, 95</sup>

Actions, like the ones featured in Exhibit 19, are required to start moving in the right direction. However, a complete transformation is necessary to reach a nature-positive state by 2030. Fortunately, it is not new for companies to have to undergo transformations. Factors like climate change and digitalization, and industrialization before that, have already challenged businesses repeatedly and required drastic re-thinking of the status quo, so we know transformation is possible. The next chapter covers the roadblocks companies may face in getting started and offers solutions for how to tackle them and putting us on the path to reversing biodiversity loss and making the changes needed to allow us to live within our planetary boundaries.

<sup>94</sup> Company websites and interviews

<sup>95</sup> Sitra, 2021

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“We cannot do everything alone – active networks are the basis for all development. Active stakeholder engagement and collaboration with researchers, authorities, politicians, and NGOs will be necessary for companies to take the next steps on biodiversity.”

Timo Lehesvirta  
Leading Nature Expert, Metsä Group

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## Chapter 5:

# Solutions to drive action

Finnish companies face a range of roadblocks that prevents them from advancing their biodiversity efforts. Fortunately, existing solutions can help companies overcome these challenges.

Businesses play a crucial role if we are to reverse biodiversity loss by 2030, but they need to address their impact starting today. The insights collected through the conversations with business executives generally reveal a strong and laudable readiness to place biodiversity higher on the strategic agenda – and to initiate action. However, biodiversity is an emerging field for some businesses, and the level of complexity, lack of earlier priority and experience, and the sheer difficulty of making the connection between biodiversity impacts and business value produce a range of roadblocks that delay action. However, existing solutions can help companies overcome these roadblocks.

## Key takeaways

- ▶ Finnish companies face a variety of roadblocks that limit their ability to systematically address biodiversity loss. However, solutions do exist, and companies can take steps today to advance their biodiversity efforts.
- ▶ Through conversations with business executives, we have identified three categories of roadblocks common among Finnish companies: unawareness of impact and dependency on nature, immaturity of biodiversity in a corporate context, and difficulty of demonstrating the value of biodiversity initiatives.
- ▶ It is imperative that companies act today instead of waiting for the ‘perfect’ infrastructure (i.e., standardized frameworks, metrics, and regulation) to be put in place.

## Finnish companies face roadblocks to action, but there are solutions

Companies mention several challenges which hinder them from taking further action to mitigate biodiversity loss. This chapter explores a range of solutions that companies can pursue to address – and overcome – these roadblocks.

The insights collected through our conversations with business executives generally reveal a strong readiness to place biodiversity higher on the strategic agenda and initiate action. However, biodiversity is an emerging field for some businesses, and the level of complexity and lack of proven approaches to effectively deal with it creates a range of roadblocks that delay concrete action.

However, for every roadblock there are solutions that can help companies push forward already today. Such solutions will naturally have to be tailored to company- and industry-specific characteristics, while some also depend on close collaboration with external stakeholders such as legislators, NGOs, and other civil society organizations. The six roadblocks addressed in this chapter fall within three main categories (see Exhibit 20):

### Finnish businesses face a multitude of roadblocks to action

#### 1. Companies are unaware of their impact and dependency on nature

1A Lack of understanding of own impact on biodiversity

1B Biodiversity and other sustainability topics compete for attention

#### 2. Companies are inhibited by the immaturity of biodiversity in a corporate context

2A Lack of standardized metrics and measurement approaches

2B Lack of guiding regulation and reporting requirements

#### 3. Companies find it difficult to identify and demonstrate the value of biodiversity initiatives

3A Difficulty in identifying concrete business opportunities from biodiversity efforts

3B Challenging to drive action in supply chains

**Exhibit 20:** There are several solutions to help companies overcome roadblocks and further the biodiversity agenda

In the following sections, we discuss each of the six roadblocks and their corresponding solutions.

## **1. Companies are unaware of their impact and dependency on nature**

Most companies are aware of the biodiversity crisis and see biodiversity as an increasingly important sustainability topic. However, many are unaware of the potentially massive business implications and lack an understanding of their impacts and dependency on nature. As a result, other strategic (sustainability) priorities are prioritized over biodiversity.

### **1A Lack of understanding of own impact on biodiversity**

As established earlier, all companies impact nature and the ecosystems. However, the high complexity of the dynamics within natural ecosystems makes biodiversity a challenging topic. As a result, many companies lack a sufficient understanding of their direct and indirect impact on biodiversity as well as the concrete business risks and opportunities associated with this. A thorough understanding of this serves as a fundamental starting point for defining actions that can ensure the halting and reversal of nature loss. A lack of understanding, on the other hand, poses a critical roadblock toward real action as it often results in a lack of attention, which in turn leads to the omission of biodiversity as a strategic priority on a par with other key sustainability topics.

### **Map impacts and dependencies on nature and understand implications of responses to avoid common pitfalls**

A first step for companies eager to reduce their impact on biodiversity is to build a detailed understanding of their impacts and dependencies on nature, both in direct operations and throughout their value chains. Gaining this overview provides a baseline for risk and opportunity assessments, target setting, identifying actionable areas, and the tracking of progress. It, thus, constitutes a critical starting point for a company's biodiversity efforts.

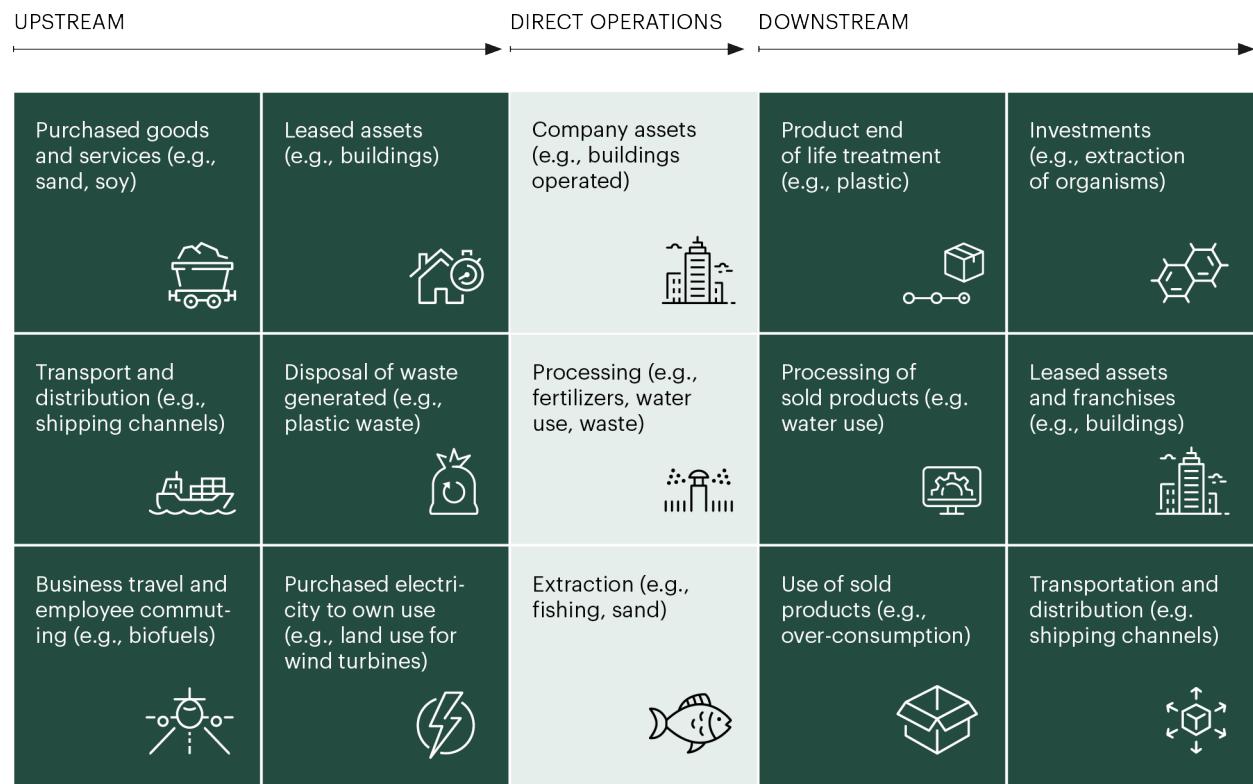
Assessments of impacts and dependencies can be done at different levels and should ultimately be done at the most detailed (and feasible) level. A sector-level materiality assessment can give companies a quick overview of the issue areas associated with the economic activities of its sector and is a low-effort activity for any company given the range of readily available resources (e.g., SBTN's Sectoral Materiality Tool).<sup>96</sup> A natural next step is to perform a value chain assessment to understand where impacts and dependencies occur, both in terms of activities and geographical locations. It is vital that such an assessment not only covers the company's direct operations (gate-to-gate), but also upstream and downstream value chain activities (see Exhibit 21). Performing these assessments requires that companies can trace their supply chains back to their origins, which may prove a daunting challenge for companies with complex supply networks. Establishing clear

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<sup>96</sup> Science Based Targets Network, 2022

traceability should be an early priority for these companies, as impact assessments will be severely hindered without it.

### Biodiversity impact is exerted across the value chain



**Exhibit 21:** Businesses' impact assessments should consider their full value chains, both upstream (including third-party suppliers), direct assets and operations, and downstream (including final product use, recycling, or disposal)<sup>97, 98</sup>

There are several frameworks in development, like SBTN and TNFD, aiming to guide companies in their learning journey and toward identifying relevant actions. In addition, several tools are available for companies to assess and measure their concrete impacts. For example, the Global Biodiversity Score is a recognized tool for corporate biodiversity footprint assessments.<sup>99</sup> It allows companies to assess biodiversity impacts of economic activities across their value chains, along the five global drivers of biodiversity loss. The output from the tool allows companies to identify issue areas and locations, and provide them with a preliminary identification of baseline. For a further discussion of relevant tools, we refer to Chapter 6.

A detailed impact and dependency assessment is essential for companies if they are to identify risks and opportunities. Without an understanding of how the business depends on ecosystem services and the magnitude and location of the pressures business activities exert on nature, a thorough assessment of the risk exposure will be difficult to conduct. To be able to assess and identify key

<sup>97</sup> Natural Capital Coalition, no date

<sup>98</sup> Bain experience

<sup>99</sup> CDC Biodiversité, 2022

risks and opportunities facing the business, companies should therefore build internal knowledge and capabilities on biodiversity in relevant functions (e.g., R&D and procurement), both by training employees and hiring new talent with relevant backgrounds.

In addition to building a solid understanding of impacts and dependencies, it is important that companies understand the implications and implicit trade-offs of their current and planned sustainability initiatives to avoid counterproductive outcomes. An example of this could be circular economy solutions which will be fundamental to addressing overconsumption. While increased circularity of resources, in general, will reduce pressure on biodiversity, there can be unintended trade-offs for biodiversity if not carefully applied. For example, the large-scale use of biomaterials, that may be considered waste in other processes, for biofuels or other applications could exacerbate land use pressures or hinder the development of regenerative agriculture and forestry practices.

Lastly, having an overview of impacts, dependencies, risks, and opportunities – as well as the companies' exposure to nature and biodiversity loss in general – will be necessary to create a sense of urgency around biodiversity, especially in companies where biodiversity is currently not a strategic priority. In certain cases, shareholders primarily led by strong financial incentives will have incentives that are misaligned or conflicting with addressing biodiversity, forcing top management to balance and prioritize between competing strategic agendas. It is essential that top management teams are informed about the business rationale for lifting biodiversity higher up on the agenda. While the most persuading business rationale in many cases will be reducing exposure to nature by mitigating risks, the potential opportunities related to biodiversity should not be overlooked.



### CASE EXAMPLE: Developing a Biodiversity Roadmap to get started

Ilmarinen, a large Finnish private pension insurance company, acknowledged the need to start taking the biodiversity-related impacts and risks into consideration within their investment portfolio. Instead of waiting for comprehensive ‘third-party’ frameworks to reach a more mature stage, Ilmarinen decided to develop their own approach based on existing information. This resulted in their Biodiversity Roadmap, which was launched in 2022. By publishing the roadmap, Ilmarinen aims to contribute to the development of addressing biodiversity within the financial sector.

The Biodiversity Roadmap outlines Ilmarinen’s plans to address biodiversity from an investment point of view. The roadmap comprises four steps: 1) building understanding, 2) portfolio assessment, 3) investment policy and portfolio management, and 4) reporting. Ilmarinen has already taken on the first two steps; building an understanding of biodiversity and natural capital from an investor perspective, assessing biodiversity-related impacts and dependencies in the investment portfolio utilizing existing tools, and identifying material sectors and areas within investments. Going forward, Ilmarinen plans to establish investment selection criteria specific to biodiversity and identify and invest in opportunities beneficial to biodiversity.

Ilmarinen has not only learned that taking action is doable already today, they now reap benefits from their Biodiversity Roadmap, including advanced internal understanding of the topic and an easier process regarding the identification and prioritization of high-risk focus areas. Ilmarinen sees the roadmap as an iterative tool that will keep developing as more knowledge is gathered and encourage all companies – whatever the industry – to start building their biodiversity roadmaps right now.

## **1B Biodiversity and other sustainability topics compete for attention**

Biodiversity is competing for attention with other sustainability topics and companies struggle to balance these priorities due to the limited resources available. Climate change and decarbonization especially have for some years been regarded as more pressing issues for businesses, partly driven by an increase in demands from regulators, investors, and consumers. The subsequent lack of capacity makes it difficult to address several concerns simultaneously, even though key concerns around biodiversity and climate change are often closely interconnected.

### **Prioritize actions that simultaneously tackle several sustainability problems**

As discussed in Chapter 1, biodiversity is tightly interlinked to other sustainability aspects, making it difficult to treat biodiversity in isolation from other aspects. In many cases, companies are already addressing issues like climate change and pollution, which are impact drivers that also affect biodiversity. Companies could move toward a more integrated sustainability strategy by increasing the linkage among these sustainability areas, and still keep climate change at the top of the agenda.

To move toward a more integrated sustainability strategy and capitalize on actions already being taken, companies should review their portfolios of sustainability initiatives and educate themselves on the dependencies between biodiversity, climate change, and other sustainability topics to understand the potential trade-offs and adverse effects that exist. An important area for companies to strengthen their efforts in that regard is toward reducing overconsumption of natural resources, which is an indirect driver of both climate change and biodiversity loss. On the other hand, initiatives conflicting with biodiversity goals should be adapted or replaced, and actions that tackle several sustainability problems at a time should be prioritized. By doing so, companies will generally do better for nature without sacrificing their progress on other sustainability objectives. Exhibit 22 provides examples of Finnish companies' sustainability initiatives that address several issues simultaneously.

What is sometimes labeled 'nature-based solutions' can also be very beneficial, as they benefit from the positive feedback loops that exist between climate and biodiversity. For instance, stopping deforestation and restoring natural ecosystems have obvious benefits for both climate change and biodiversity. Even if most climate actions are positively reinforcing biodiversity, companies should keep in mind that this is not true in all cases. Certain proposed climate solutions could also have large adverse effects on nature more broadly (e.g., waste- or residue-based biofuels).

While integrated approaches have clear benefits for nature, it can also provide benefits for companies. First, companies can drive synergies from tackling several issues simultaneously, as companies' targets for decarbonization, society, and nature can be met with fewer cost-efficient solutions. Additionally, early biodiversity efforts will start building internal capabilities and could potentially help companies reduce the transition risks associated with rapidly changing regulations and reporting requirements.

## **Examples of solutions addressing several sustainable issues at once**

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### **Anora: Regeneratively grown barley**

- Anora has been working together with the Baltic Sea Action Group (BSAG) and local farmers to promote regenerative farming practices in Finland.
  - In late 2021, the company's Koskenkorva distillery produced its second batch of grain spirit made from regeneratively grown barley. Regeneratively grown barley helps to mitigate climate change and protect biodiversity, while also improving profitability due to, e.g., better resilience and more secure crop.
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### **Valio: Plant-based product offering**

- Valio, dairy producer and Finland's biggest food exporter, has extended their offering to include plant-based meat and dairy alternatives. In 2022, they acquired the Gold&Green® brand best known for its Nyhtökaura® meat alternative that is produced from oats and other plant-based protein sources.
  - Shifting toward more plant-based meat and dairy alternatives will reduce greenhouse gas emissions caused by food consumption and limit the pressures agriculture exerts on land use by reducing the need to produce animal feed.
- 

### **Helen and the City of Helsinki: Helsinki Energy Challenge**

- The City of Helsinki and their energy utility company Helen are investing in heat pump solutions for their district heating, aiming to phase out coal by 2029 and become carbon-neutral by 2035.
  - With the goal of limiting the use of biomass and decarbonizing the city's district heating, they launched the Helsinki Energy Challenge, offering a prize of 1 million euros for the best solution.
  - Limiting the use of biomass reduces pressures on land use and investing in heat pumps will reduce emissions and improve the energy efficiency.
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**Exhibit 22:** Integrated solutions allow companies to address several sustainability goals simultaneously<sup>100, 101, 102, 103</sup>

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<sup>100</sup> Altia, 2020

<sup>101</sup> Anora, 2021

<sup>102</sup> Valio, 2022

<sup>103</sup> Helen, 2020

## **2. Companies are inhibited by the immaturity of biodiversity in a corporate context**

Companies that are eager to reduce their biodiversity impacts often find it challenging to drive concrete action and outcomes. One key reason is that they lack concrete enablers and, in some cases, also the relevant experience.

While the further development of standardized metrics and measures for biodiversity and nature is ongoing with many stakeholders contributing, it is still at an early stage and no consensus has been reached. Additionally, there is a lack of consistency in use of biodiversity terms as reporting standards and most regulations are still in its infancy.

### **2A Lack of standardized metrics and measurement approaches**

Despite earlier efforts dating back more than a decade ago, business measurement and reporting on natural capital in general – and concerning biodiversity in particular – is currently limited. Due to evolving reporting and disclosure requirements, businesses increasingly understand the need for robust and consistent measures of biodiversity impacts and dependencies. As there are currently no widely accepted reporting standards for corporate biodiversity impact and performance (e.g., comparable to the ‘CO<sub>2</sub> equivalent’ measure for climate change), many companies are confused about how to proceed or struggle with defining their own metrics. The lack of consistent standards and metrics also amplify the value chain-related challenges that companies face, as traceability, transparency, and data availability are essential elements for assessing impacts and prioritizing actions across value chains.

### **Collaborate with industry peers and NGOs and leverage available measurement methodologies**

Despite a lack of widely accepted standardized metrics to measure and report on biodiversity, some methodologies outlining how to work with and apply measures are available for businesses to leverage as a starting point. In addition, there are more established metrics in place for several of the issues driving negative impact – such as pollution, overfishing, deforestation, and climate – as these are already part of many companies’ sustainability agendas. Current methodologies are still in development, and while they provide examples of concrete metrics, they are more focused on providing guidance on how to approach the development of measurements for nature-related dependencies, impacts, risks, and opportunities across industries. One such initiative is the Taskforce on Nature-related Financial Disclosure (TNFD),<sup>104</sup> which is expected to become a widely backed disclosure framework for companies. A beta version of the framework is publicly available at the time of writing.

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<sup>104</sup> Taskforce on Nature-related Financial Disclosures, 2022

It can be challenging for companies to develop relevant biodiversity metrics that are of interest to a variety of stakeholders. Businesses can benefit greatly from partnering and pooling resources with other companies facing the same challenge(s) or other stakeholders trying to solve similar problems (e.g., NGOs, universities, research institutes, coalitions). Collaborating with NGOs and other parties currently developing standards and metrics allows companies to not only help shape the upcoming standards and metrics, but also provides access to the latest knowledge. An example of this is the Finnish Business & Society (FIBS) that launched a pilot project, funded by the Finnish innovation fund SITRA, which supports companies with applying the new Science-Based Targets for Nature guidance. Ten Finnish companies from various industries are taking part in the pilot, which consists of collaborative workshops and assistance in biodiversity-related target setting.<sup>105</sup>

While defining metrics and target-setting are important activities to advancing the biodiversity work, they can also be resource intensive and time-consuming exercises. Rather than waiting for standardized metrics to be completed, simply ensuring that a given initiative is contributing positively to biodiversity (despite not knowing the full extent of its impacts) can be a pragmatic approach for getting started. Developing nature-related metrics suited for a given business context will likely require several iterations of trying and learning, which requires that companies act today.

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<sup>105</sup> Finnish Business & Society, 2022



### CASE EXAMPLE: Developing a biodiversity footprint calculation method

While carbon footprint calculation methods are already established, there is a lack of a similar, widely understood, and employed tools for environmental degradation. In 2022, S Group joined forces with Finnish innovation fund Sitra and JYU.Wisdom, the School of Resource Wisdom at the University of Jyväskylä, to address this challenge. Together they launched a joint research project aiming to develop a tool that can calculate S Group's biodiversity footprint across the company's operations and value chain.

To calculate the biodiversity footprint, S Group will be using a metric called *Potentially Disappeared Fraction (PDF)* of species, which attempts to estimate the fraction of species richness lost due to pressures on nature caused by business activities. To make the calculation method applicable to a business context, the biodiversity impacts of activities are derived using the company's financial accounts together with databases managed by third parties (e.g., ExioBase and LC-impact).

Once finalized, S Group will be able to define tangible and measurable baselines for their biodiversity footprint, set targets for their biodiversity work, and design actions to reduce negative impacts. Besides helping S Group prioritize actions, making the calculation method publicly available will allow other businesses to use it to calculate their own biodiversity footprint and enable cross-industry discussions on what practical assessments and solutions for biodiversity issues can look like. This will help to further develop broadly accepted assessment tools in a collaborative manner and ensure comparability of metrics between businesses.<sup>106, 107</sup>

<sup>106</sup> University of Jyväskylä, 2022

<sup>107</sup> S Group, 2022 a

## **2B Lack of guiding regulation and reporting requirements**

Existing international agreements and national policies have not been sufficiently effective in protecting nature or driving the required change. The lack of more effective and binding international legislation – and, in turn, national policies – that go beyond the loosely set environmental regulation is seen as a hindrance to adopting business models that halt and reverse nature loss. Without a level playing field on a global scale, biodiversity front-runners are put at a disadvantage and more hesitant to take truly transformative action. While both international targets (e.g., Aichi Biodiversity Targets for 2020) and national targets have been set, few have been backed by broad and effective national policies as there has been a lack of accountability among involved parties. Effective policies and regulations could secure the required transparency and traceability needed to drive positive impact in global value chains but remain a challenge for companies. Realizing that current policies are insufficient, governments are working on updating regulation and setting clear targets for biodiversity, and companies need to be prepared.

### **Collaborate with industry peers and NGOs to advocate for stricter regulation**

While there is currently a lack of efficient policies on biodiversity, the increased focus from governments around the world is about to change this. New legislation, regulations, and reporting standards are currently under development and, when finalized, expected to have significant impact on the playing field both in Finland and around the globe. National governments adopted the new post-2020 global biodiversity framework – often referred to as the ‘Paris Agreement for nature’ – through the landmark UN Biodiversity Agreement (COP15) in December 2022, setting 23 targets to be achieved by 2030. Meanwhile, the EU is preparing a series of follow-up initiatives under the EU Green Deal (e.g., EU’s biodiversity strategy and the EU Taxonomy) and introducing the Corporate Social Responsibility Directive that will influence business practices significantly. See the Appendix for an overview of upcoming regulation in Finland and the EU, as well as other international agreements that might shape future regulation.

Given the multitude of upcoming regulations, companies could face considerable transition risks if they fail to react now. Instead, companies should already start to take action, for example, by providing industry-specific expertise on activities linked to policy development and collaborating with NGOs to exchange knowledge and prepare for upcoming changes. By being proactive, companies can remain aware of upcoming changes and start aligning their operations and activities accordingly.

Biodiversity front-runners, a category which comprises several Finnish companies, could benefit from international agreements and national policies that ‘level the playing field’ by ensuring that the front-runners are not at a cost disadvantage against competition lagging in their environmental efforts. For the businesses that are reluctant to address their environmental impacts proactively, regulation will be the key driver for taking action to avoid penalties. Consequentially, front-runners

could benefit from advocating for stricter regulations, which more than 330 businesses and finance institutions have done through the coalition Business for Nature.<sup>108</sup>

Companies can also benefit from being informed and prepared for upcoming regulation, as this can help reduce biodiversity-related transition risks and give a competitive advantage vis-à-vis competition when new regulation is eventually enforced.

### **3. Companies find it difficult to identify and demonstrate the value of biodiversity initiatives**

Businesses play an important role in reversing nature loss and need to take responsibility for their impacts. For some companies, the sense of corporate responsibility might provide enough motivation to initiate action. However, most companies will need to be able to clearly demonstrate the business value of addressing biodiversity before allocating resources to initiatives that address biodiversity impacts rather than other strategic priorities. While internal decision-making is important to drive positive change in a company's value chain, it is equally important to convince and incentivize value chain participants to act because preserving biodiversity will often be a joint effort. All of this is especially relevant in the current absence of effective and binding regulation, which would (at the bare minimum) motivate companies to act to stay compliant and/or mitigate regulatory risks.

#### **3A Difficult to identify concrete business opportunities from biodiversity efforts**

While the business value from mitigating risks related to biodiversity may be apparent, the potential for value creation through active business model development is often more difficult to identify. Only in recent years has biodiversity become more of a strategic interest for companies. This recency, combined with potentially misaligned financial incentives and inefficient regulation, can explain why few proven models exist to show companies how biodiversity-enhancing initiatives can be a real driver of business value at scale.

#### **Broadly explore value creation opportunities, establish connection between impact and business value, and communicate success stories**

Businesses will need to identify tangible value creation opportunities to take action on a larger scale and justify the investments that are needed. As described in Chapter 3, companies can explore several avenues of opportunities when addressing biodiversity impact such as improving core business operation, driving innovation, and gaining access to new sources of financing. It is worth keeping in mind that companies historically have had to adapt their business models and develop

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<sup>108</sup> Business for Nature, 2022

more sustainable products and services to address other sustainability issues, so while biodiversity is the most recent sustainability frontier for many, there is a lot to be learned from past experiences.

It is critical that businesses generate initiatives that clearly connect positive biodiversity impact to concrete business value, because a strong connection between the two will make it easier to scale the initiatives. Scalability of initiatives is important for demonstrating proof-of-concept, rather than smaller ‘one-off’ projects. Making the connection between business value and impact is often focused on own operations, but when searching for opportunities companies should also broaden their view to include value chain level.

While change and sustainable business model innovation can be part of the agenda for larger industry incumbents, the more transformative initiatives will often be driven from a ‘grassroot’ level. Hence, companies should also make sure to actively monitor ‘grassroot’ initiatives to get inspiration for new nature sustaining business models. The Finnish forestry company Metsä Group established a new subsidiary, Metsä Spring, acting as a venture capital fund for internal R&D pilot projects and external start-ups. By doing so, Metsä Group actively monitors the start-up space for sustainable business models that can ‘reshape the forest-based bioeconomy,’ while also providing a platform for developing internal R&D projects.<sup>109</sup>

Also, companies should not forget to communicate success stories and ‘proof-of-concepts’ both externally and internally. By publicly communicating the actions taken, peers can find inspiration on where to get started and what actions to prioritize. Moreover, communicating success stories internally can help to build awareness and knowledge about biodiversity as well as increase employee engagement and even recruitment.

Not every biodiversity-related initiative will have obvious business benefits – at least not in the short term. Companies will have to make potentially significant investments upfront to build the required business structures needed to tackle biodiversity issues (e.g., building internal capabilities, gathering data from own operations and value chains for assessing impacts and dependencies). Such investments should be seen as enablers for long-term value creation in a field that will be critical for most companies over the coming decades.

Additionally, companies should be mapping restoration projects that support the strategic biodiversity targets of the company. To ease investment decisions for such initiatives, companies should commit to strategic ambitions of having ‘no-net-impact’ or ‘net-positive impact’ on nature. Setting such ambitions is both required to reverse the negative trend of nature loss by 2030 but also require companies to invest in biodiversity restoration.

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<sup>109</sup> MetsäSpring, no date



### CASE EXAMPLE: Investing in innovative R&D

Fazer sees food waste as a major issue and has set a target for reducing 50 percent of their food waste. This will be accomplished by improving material efficiency and developing circular solutions. Sustainability plays an integral role in the overall strategy, and encompasses aspects related to climate and circularity, sustainable products and innovation, and sustainable sourcing. To live up to the ambitions, Fazer has been heavily investing in R&D to develop more sustainable solutions to the food market with a clear focus on reducing biodiversity impacts. Fazer is funding foodtech-related research at prominent universities and research institutes while having also established their own Fazer Lab for R&D purposes in order to identify opportunities with concrete business value. Around 90 percent of the ongoing projects in the Fazer Lab focus on developing more sustainable food products, especially from responsibly sourced oats in Finland. Initiatives include developing plant-based alternatives and enhancing upcycling of production side streams (e.g., extracting xylitol from excess oat hulls). When it comes to external ventures, Fazer is for instance the largest shareholder and R&D collaborator for Solar Foods, developing the carbon-neutral Solein protein.<sup>110</sup>

By focusing on improving material efficiency and upcycling side streams, Fazer has seen improvements in overall operational efficiency. In addition, developing sustainable food innovations and plant-based products enables Fazer to capture the growth potential of emerging market segments. In 2021, 45 percent of Fazer's total offering was plant-based, and customer demand clearly exceeded Fazer's production capacity during the period, indicating room to grow. While Fazer has not set an explicit target for the share of plant-based products in novelties or the full offering, they are set on growing these shares.<sup>111</sup>

<sup>110</sup> Fazer, no date a

<sup>111</sup> Fazer, no date b

### **3B Challenging to drive action in supply chains**

To drive significant impact and reduce the biodiversity impact of products and services, companies often depend on transforming activities in their supply chains. To address this, they need to find ways to incentivize both suppliers and customers to reduce impact, and eventually drive the transformative change required to build sustainable value chains. As discussed above, proving the business value of an initiative can be difficult, but influencing suppliers to act on it can be even more challenging, especially among those suppliers that a company does not deal with directly. At the same time, sustainable solutions and services will often be more costly, and convincing value chain participants and customers to bear this additional cost is difficult.

#### **Collaborate with supply chain to influence suppliers and customers to take action**

Well-functioning supply chains are key to driving the biodiversity agenda. As discussed in Chapter 4, the transition to sustainable supply chains involves ensuring that sourced materials are produced in a sustainable way in the very near future, if not done already. This requires that supply chains are transparent, traceable, and monitored to ensure the adoption of sustainable practices among suppliers as well as to provide visibility on progress. To drive these transitions in the long term and have a true impact on biodiversity, companies must incentivize both downstream and upstream supply chain participants to adopt more sustainable practices.

Incentivizing suppliers can be done in various ways, either through requirement setting or more positive business incentives. The purchasing power held by many large corporations already give them significant influence over their suppliers' business practices. Companies should monitor and set high standards for suppliers' sustainability performance and hold them accountable – just like they do with every other business aspect. If suppliers fall short of meeting the standards, companies should react and guide them toward best practices, or in the extreme case, stop doing business with them altogether.

Alternatively, companies can create incentive systems for suppliers to improve their sustainability performance. This can be an effective tactic when procuring goods from smallholders or from countries with lower standards, where economic incentives might be needed to drive the wanted outcomes. For instance, companies sourcing agricultural products can introduce bonus programs aimed at incentivizing farmers to adopt more sustainable farming practices or work with credible certification schemes. Lastly, as supply chains overlap in many sectors, horizontal industry collaborations can be an effective way of driving transformative change in supply chain networks.

Indirect biodiversity impacts are also exerted in downstream value chains, where consumers are key to driving nature-friendly choices. Companies can incentivize changes in consumption patterns by informing customers about the importance of biodiversity and making it easier for customers to make sustainable choices. An example is the design of products for circular consumption, where the downstream impact can be greatly reduced. In recent years, numerous apps and platforms have emerged that offer subscription-based models for customers to rent rather than 'buy-and-own' everything from clothes and furniture to cars and electronics, hence bringing customers concrete incentives to choose a solution with reduced impact on nature.

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“Biodiversity loss is urgent - we need to act now. All companies should start building their understanding, step by step, using the existing knowledge we already have today.”

Karoliina Lindroos  
Head of Responsible Investments, Ilmarinen

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## Chapter 6:

# Getting started

**Existing frameworks can help businesses map out a structured approach to addressing their biodiversity impact. Initiating concrete actions now is essential for businesses to successfully navigate through the environmental crisis.**

The high urgency to halt biodiversity loss underlines the importance for businesses to initiate concrete efforts toward limiting their biodiversity impact now. While the previous chapter explored a range of roadblocks that businesses need to overcome to properly commence their journeys, the interviews conducted with Finnish companies also revealed a strong willingness to step up their actions. Businesses can leverage several existing frameworks to define their approach to addressing their biodiversity impact. While these frameworks can form a solid foundation for moving ahead in a structured manner, companies also need to make sure not to overthink but rather prioritize concrete actions. Driving concrete initiatives will get businesses moving on this vital agenda and ensure that they pick up critical learnings to further inform and improve their work.

## Key takeaways

- ▶ Now's the time – defining an overall approach to biodiversity should not come at the expense of immediate, concrete actions.
- ▶ Frameworks guiding businesses toward structuring their biodiversity efforts are being developed and comprehensive draft versions are already available.
- ▶ An important first step for companies is to thoroughly understand their impact on biodiversity, and a range of tools supporting these activities are available for companies to get started.
- ▶ Companies should adhere to the AR<sup>3</sup>T principles when identifying actions: **Avoid** impact, **Reduce** impact, **Regenerate & Restore** – keeping in mind that **Transformative changes** are required to tackle the fundamental drivers of nature loss.
- ▶ Working with credible certification schemes can be a way for companies to start addressing their biodiversity impact – however, the limitations need to be understood.

## Structure your approach on biodiversity with existing frameworks

Existing frameworks can guide businesses in their biodiversity efforts – from defining and structuring an approach to increasing the knowledge of impacts and, finally, defining a clear course of action.

The survey and executive conversations carried out as part of this report clearly shows that the concrete experience working with and structuring efforts around biodiversity varies significantly from company to company. While some have developed improvised approaches, many mention a lack of a comprehensive and standardized approaches for tackling biodiversity. Many companies are currently exploring how they can apply a more structured approach to biodiversity work, similar to what has been developed for other sustainability topics such as climate change.

Concrete frameworks that aim to guide businesses in structuring their approach to biodiversity-related activities have been around for many years but are now re-emerging (Exhibit 23). These frameworks are typically step-by-step methodologies for assessing how businesses can increase understanding of their own impact, identify and implement action, and set up the right process for monitoring and follow-up.

### Examples of comprehensive frameworks helping companies define their approach to addressing impacts on nature



**Science-Based Targets for Nature (SBTN):** Collaboration between leading NGOs and Science-Based Targets Initiative to guide companies in setting science-based targets for nature. The framework lays out the five-step guide for companies to proactively address their impact on nature. The 'Initial Guidance for Business' was released in 2020, and the first release of SBTs for nature is launched in early 2023.



**WWF's Biodiversity Stewardship Approach:** Roadmap developed by WWF for companies to find meaningful ways of achieving their science-based targets and developing nature-positive business models. The roadmap consists of five iterative steps and is closely linked to the SBTN and TNFD approaches.



**Natural Capital Protocol:** Framework developed by Natural Capital Coalition to support companies in identification, measurement, and evaluation of their direct and indirect impacts and dependencies on natural capital. The protocol was published in 2016 and is publicly available.



**Taskforce on Nature-related Financial Disclosures (TNFD):** Framework for financial institutions and corporates with guidance on assessment and disclosure of nature-related risks and opportunities. The latest beta version of the framework was released in November 2022, and the final release is expected to be launched in late 2023.

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**Exhibit 23:** Comprehensive frameworks can guide businesses in their biodiversity efforts by helping to define a clear approach for how to tackle biodiversity challenges<sup>112, 113, 114, 115</sup>

<sup>112</sup> Science Based Targets Network, 2020

<sup>113</sup> WWF, 2022 b

<sup>114</sup> Natural Capital Coalition, no date

<sup>115</sup> Taskforce on Nature-related Financial Disclosures, 2022

One concrete framework to build a comprehensive roadmap for addressing biodiversity efforts is WWF's Biodiversity Stewardship Approach.<sup>116</sup> This iterative five-step approach helps companies find meaningful ways of achieving their biodiversity targets and is aligned with the approach defined by SBTN (Exhibit 24).

#### WWF's Biodiversity Stewardship Approach



**Exhibit 24:** The WWF Stewardship Approach aims to help businesses take action to reduce their biodiversity impact

As a **first step**, companies must develop an internal understanding of how biodiversity is relevant to their business and raise awareness within their organization. In the **second step**, a detailed analysis of impacts and risks across operations and value chain should be carried out to identify biodiversity areas for action. In the **third step**, companies determine measurable, time-bound, and science-based targets for the prioritized issue areas and locations. As a **fourth step**, companies define actions for driving progress toward the strategic targets. Actions implemented should not only aim to reduce risks but also drive positive impact and transformative change. Lastly, in **step five**, the biodiversity impact and outcomes of companies' biodiversity efforts should be monitored, tracked, and evaluated regularly to ensure that progress is being made.

To embrace a stewardship role, companies will also need to engage in collective action and policy advocacy. Collaboration is essential given the complex interactions between different actors in landscapes where activities take place, so a company's collective action may be coordinating all stakeholders' efforts or supporting other stakeholders with more limited resources to respond to biodiversity issues. As an example, WWF water stewardship project for the Pakistan-Indus basin brought together corporate partners like H&M Group and Levi Strauss & Co, multiple city-level partners, and the Asian Development Bank to promote pollution abatement practices and water replenishment approaches. Similar collaborations will be required to improve the condition of many ecosystems.

Furthermore, companies can improve broader biodiversity governance through policy advocacy. By fulfilling corporate responsibilities for biodiversity and using their influence to encourage governments and other actors to do the same, companies can play a positive role. It is essential to understand that stewardship is about guiding and supporting government policy, not supplanting it, and certainly not thwarting or undermining its implementation.

<sup>116</sup> WWF, 2022 b

General frameworks such as those presented here are critical for businesses as they set out to define a structure for addressing their biodiversity efforts and, not least, what they want to achieve with it. As such, they will provide a strong foundation for deciding how and where to initiate action and measure progress.

Financial institutions differ from other economic sectors in that they provide finance and other services to the companies responsible for reducing their biodiversity impact rather than exercising direct control. Thus, the role of finance is rather to ensure that finance flows are consistent with a pathway toward biodiversity-preserving development. However, financial institutions can leverage many of the same frameworks as corporates, such as the TNFD which is explicitly intended for use by financial institutions. In principle, the steps are the same, but with the portfolio in focus, including assessing assets, setting targets for the portfolio, enabling action, and disclosing portfolio performance.

## **Identify and assess biodiversity impacts using existing tools**

**The first critical step in the biodiversity journey is for companies to map the actual impact they exert on nature. This is a necessary foundation for companies to prioritize actions and develop nature-positive business models. The various approaches to assessing impacts are under constant refinement, but several tools can already be leveraged to initiate this key exercise.**

The interviews and survey carried out for this report show that a considerable share of Finnish companies struggle to make informed decisions regarding biodiversity. Although around 40 percent of survey respondents evaluate their overall familiarity with the topic as being ‘high’, many companies lack a sufficient understanding of their own impacts on biodiversity – both within their operations and the value chain. As discussed in Chapter 5, one way to overcome this is to start by making a detailed assessment of key impact drivers. This helps companies gain deep(er) knowledge of their impacts and identify the most important risks and opportunities. This, in turn, becomes the foundation for prioritizing concrete actions companies must take to phase out their contributions to nature loss and developing nature-positive business models. There are currently a wide range of tools being developed for this purpose, and although few are currently widely recognized and applied, there are existing tools that companies can use to get started with their analyses.

Exhibit 25 presents a selection of established tools and guiding resources that can support companies in making value-chain wide impact and risk assessments. Sector-level materiality screening tools provide a great starting point by helping companies identify impacts and dependencies associated with their respective sectors. Value chain assessment tools can be divided into two categories: 1) tools for assessing the pressures put on nature due to business activities across the value chain, and 2) tools for assessing the state of nature in geographical areas where a company or their suppliers are operating. Lastly, there are a few guiding resources that provide an overview of available tools and measurement approaches. It should be noted that value chain assessments are only as good as a company’s ability to trace materials back to their origin, although they can guide companies toward biodiversity loss ‘hotspots’ where they need to increase traceability.

One of the tools that is currently in development is WWF’s Biodiversity Risk Filter. This ambitious tool will enable companies to analyze spatially-explicit biodiversity data, helping them better assess and respond to biodiversity risks and opportunities across their operations and value chains.

## Tools for assessing biodiversity impacts, dependencies, and risks

### Sector-level materiality screening

- [\*\*Encore\*\*](#): Tool to understand the exposure to natural capital risks by identifying the impact of environmental change on the economy, and of business activities' impact on biodiversity.
- [\*\*SBTN Sectoral Materiality Tool\*\*](#): Tool to understand types of environmental impacts that are materially relevant to a company's sector and activities.

### Value chain assessment: state of nature

- [\*\*WWF Biodiversity Risk Filter\*\*](#): Tool to address biodiversity risks and opportunities within operations and value chain. The tool contains a module for assessing sector-level impacts and dependencies (launched in January 2023).
- [\*\*Integrated Biodiversity Assessment Tool \(IBAT\)\*\*](#): Helps to identify geographical biodiversity risks of projects/sourcing regions and to develop action plans.
- [\*\*GLOBIO\*\*](#): Calculates human-induced changes in terrestrial biodiversity expressed by the mean species abundance (MSA) indicator.
- [\*\*Global Forest Watch\*\*](#): Online platform providing data and tools for monitoring forests and land use.
- [\*\*Integrated Valuation of Ecosystem Services and Tradeoffs \(InVEST\)\*\*](#): Model to report on the supply, use, and value of terrestrial, freshwater, marine, and coastal ecosystem services in a given territory.

### Value chain assessment: pressures

- [\*\*Biodiversity Footprint for Financial Institutions \(BFFI\)\*\*](#): Provides a biodiversity footprint of the economic activities in which financial institutions invest. The methodology is based on calculating the environmental pressures posed by the investment portfolio or parts of it.
- [\*\*Bioscope\*\*](#): Provides businesses and financial institutions with a simple indication of the key impacts on biodiversity caused by their supply chain or financial products.
- [\*\*Exiobase\*\*](#): A global database used for analyzing environmental impacts associated with final consumption of product segments. It is a detailed Multi-Regional Environmentally Extended Supply-Use Table (MR-SUT) and Input-Output Table (MR-IOT).

## Resources for exploring other tools

- [\*\*Natural Capital Toolkit\*\*](#): Lists tools to measure and value natural capital, including filter of applicable tools by sector (including value chain boundaries).
- [\*\*Finance for Biodiversity\*\*](#): Guide for biodiversity measurement approaches. Provides an overview and real-life case examples of measurement approaches in use and underway, mainly targeted at financial institutions. Published in July 2022 as a part of EU Business and Biodiversity work.
- [\*\*Assessing Portfolio Impact \(WWF, 2021\)\*\*](#): Report with overview of currently available tools for portfolio investors to measure investment portfolios' impact on environment.

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**Exhibit 25:** Several tools are in place to support businesses in assessing biodiversity impacts and risks <sup>117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128</sup>

<sup>117</sup> ENCORE, no date

<sup>118</sup> Science Based Targets Network, 2022

<sup>119</sup> Integrated Biodiversity Assessment Tool, no date

<sup>120</sup> Global Biodiversity Model for Policy Support, no date

<sup>121</sup> Global Forest Watch, no date

<sup>122</sup> Stanford University, no date

<sup>123</sup> The Netherlands Enterprise Agency, 2021

<sup>124</sup> Bioscope, no date

<sup>125</sup> Exiobase, no date

<sup>126</sup> SHIFT, no date

<sup>127</sup> Finance for Biodiversity Pledge, 2022

<sup>128</sup> WWF, 2021

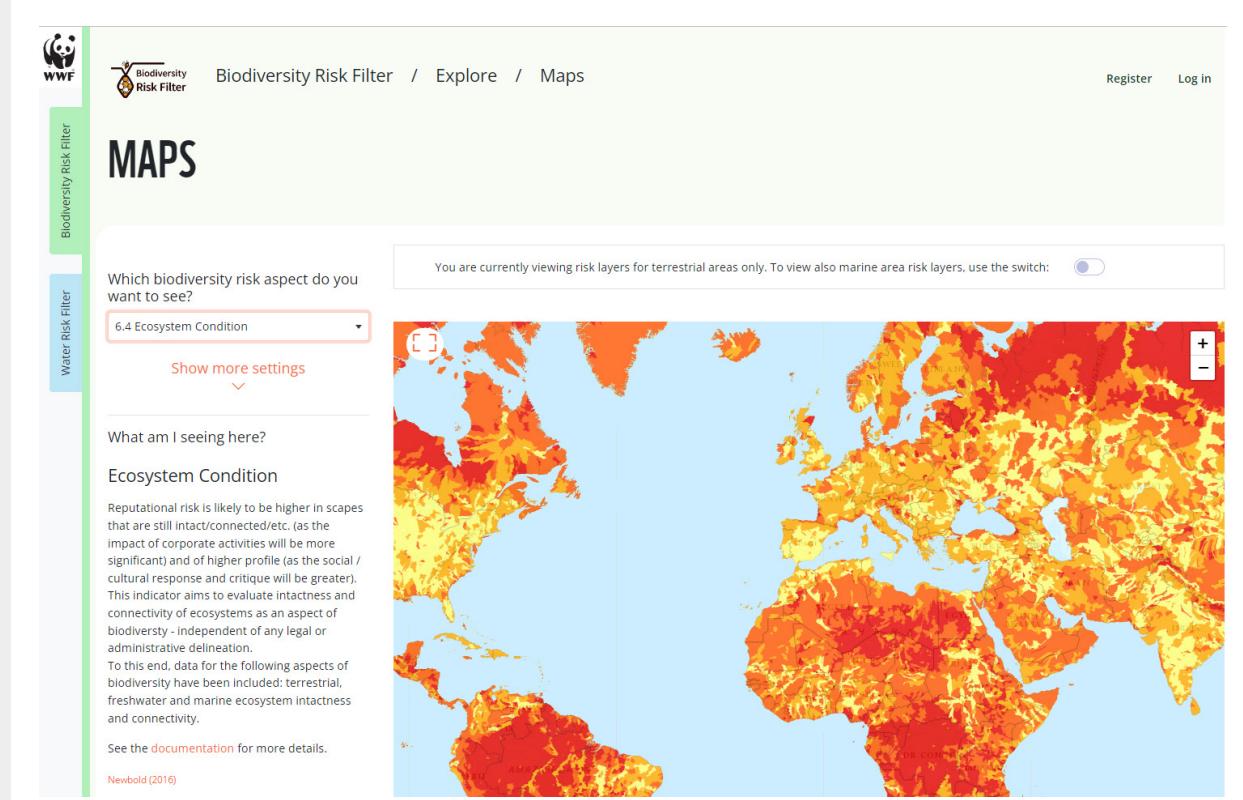
## Deep dive:

### WWF Biodiversity Risk Filter

The WWF Biodiversity Risk Filter is an online tool intended to act as a starting point for companies to address biodiversity impacts, risks, and opportunities within their operations and value chain. The tool supports businesses on their biodiversity journey through four key steps: informing, exploring, assessing, and responding. Three of the tool's four modules were launched in January 2023.

The **Inform** module provides companies with an overview of sector-level impact and dependencies. With the **Explore** module, the spatial component is added so companies can identify high risk and opportunity areas globally as well as identify and focus their efforts on locations across the value chain that should be mapped at site level. The **Assess** module brings together sector-level materiality data with relevant biodiversity data to provide a more detailed assessment of risk and opportunity types across a company's value chain sites. This makes it possible to investigate underlying causes and prioritize focus areas. The **Respond** module, which will be launched at a later stage, will support businesses in identifying company-level response options to minimize their biodiversity-related risks. The module offers recommendations fitted to specific issues and locations (Exhibit 26).

#### WWF Biodiversity Risk Filter helps identify high-risk areas



**Exhibit 26:** Biodiversity Risk Filter, which is being developed by WWF, allows companies to address biodiversity-related risks and opportunities within their operations and value chain through visualized map outputs

In addition to the tools mentioned above, some leading companies have also started developing internal tools to measure and monitor biodiversity impacts. The interviews show that companies find collaboration with other companies and NGOs important when they develop these tools and measures because it enables information and experience sharing as well as more synchronized efforts. For an example of this, see the deep dive in Chapter 5 on S Groups collaboration with the University of Jyväskylä.<sup>129</sup>

Survey results show that many companies are struggling to develop indicators and targets on biodiversity impact that are tangible and with concrete timelines, but some more advanced companies have started developing and identifying indicators relevant to their business and pressures to support the assessment and track the impacts. Such indicators target key elements of the companies' operational impact on nature and are hence a way of tracking the development in assessing biodiversity over time. Exhibit 27 presents examples of indicators that Finnish companies are currently reporting on. It should be noted that these should not be viewed as a comprehensive list of recommended indicators, but rather give an indication of the current status of biodiversity indicators.

#### **Examples of current biodiversity-related indicators set by more advanced companies**

Supply chain	Operations	Consumption
 <ul style="list-style-type: none"> <li>Share of certified materials procured (%; BCI, FSC, RSPO)</li> <li>Share of factories audited in high-risk countries (%)</li> <li>Share of goods sourced from EcoVadis CSR assessed suppliers (%)</li> </ul>	 <ul style="list-style-type: none"> <li>Number of habitat restoration and biodiversity improvement projects</li> <li>Number of high stumps left after felling (amount per forest hectare)</li> <li>Share of protected forest areas (% of total forest area owned)</li> </ul>	 <ul style="list-style-type: none"> <li>Sustainable products sold (% of sales)</li> <li>Plastic reduced in packaging (% of plastic reduced compared to base year)</li> <li>Number of discounted expiring products sold</li> </ul>

**Exhibit 27:** More advanced businesses are already assessing part of their biodiversity impacts through evolving metrics across supply chain, operations, and consumption<sup>130, 131, 132, 133, 134, 135, 136</sup>

<sup>129</sup> Ramboll, no date

<sup>130</sup> Sanoma, 2022

<sup>131</sup> Fazer, 2022

<sup>132</sup> Kesko, 2022

<sup>133</sup> S Group, 2022 b

<sup>134</sup> UPM, no date

<sup>135</sup> Metsä Group, no date

<sup>136</sup> Tikkurila, 2021

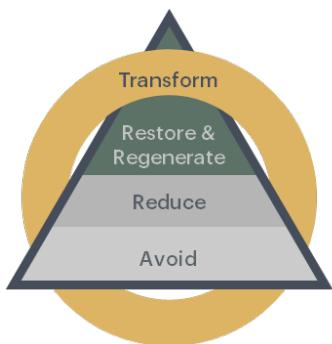
## Identify and drive concrete actions to secure early learnings

Defining an overall approach to addressing biodiversity impact should not come at the expense of initiating concrete action right away. Kickstarting efforts to reduce biodiversity impact can help companies drive company-specific learnings that are critical to defining the right way forward.

Assessing and measuring biodiversity impact help companies understand their natural dependencies as well as related risks and opportunities throughout the value chain. It thus provides a great foundation for taking concrete actions to address biodiversity loss. But defining a more systematic approach to addressing biodiversity can be a comprehensive process. Companies should identify and drive concrete actions addressing biodiversity impact and make sure that these steps are completed in parallel (even if they cannot yet rely on an entirely structured approach). Getting started on concrete, easy-to-implement initiatives will help companies build the internal and organizational awareness and capabilities regarding biodiversity, and, critically, help them develop a more detailed knowledge of industry- and company-specific biodiversity characteristics. Moreover, the lessons learned through these easy-to-implement initiatives should act as an important feedback element that can serve to inform and concretize the definition of the overall company approach to biodiversity as well as future actions.

To start identifying concrete initiatives and actions to address biodiversity, companies can utilize the Action Framework – AR<sup>3</sup>T – developed by SBTN (Exhibit 28). The action framework is expanding on well-known mitigation and conservation hierarchies by including transformative ways in which companies can contribute to systematic change inside and outside their value chains. It guides companies on available actions categorized under four elements. The elements making up the pyramid – Avoid, Reduce, Restore & Regenerate – focus on minimizing, eliminating, and making up for negative impact. Identification of actions should follow the prioritization implied by the pyramid; that is, avoiding impact should be preferred over reducing negative impacts, and restoration and regeneration should only be considered for impacts that are truly unavoidable. However, transformative actions are the most critical to get started on, as these cover ways companies can contribute to needed systemic change inside and outside their value chains.

### SBTN's Action Framework: AR<sup>3</sup>T



**Transform:** Contribute to system-wide change to tackle fundamental drivers of nature loss e.g., by adopting circular economy and working with industry coalitions. Transformative actions should not be the final consideration, but can instead happen before, during, and after other types of actions

**Restore & Regenerate:** Remediate impacts on nature that cannot be avoided or reduced, and achieve measurable positive outcomes for state of nature e.g., through ecological restoration and supporting of individual species recovery

**Reduce:** Reduce the negative impact where it cannot be avoided e.g., through business model changes, supplier engagement, and product stewardship

**Avoid:** Avoid new or potential impact from happening in the first place e.g., by employing alternative product design and avoiding sourcing from particular area

**Exhibit 28:** Illustration of the SBTN's action hierarchy framework<sup>137</sup>

<sup>137</sup> Science Based Targets Network, 2020

## Credible certifications help companies take immediate action

**Companies can drive change in scale within their supply chains by using credible certifications. However, there are limitations to certifications, and they should only be considered part of a company's biodiversity work.**

One significant challenge standing in the way of driving a positive biodiversity impact concerns supply chains. Many of the companies interviewed stated that the lack of traceability and difficulty of incentivizing action among supply chain stakeholders make up significant challenges. To address environmental concerns in the supply chain, various certification schemes have reached an established position across industries. However, not all certification schemes can be considered credible and ambitious enough to deliver satisfactory improvements. WWF has been promoting and co-designing credible certification schemes for more than 30 years. To be considered credible, certifications should be based on ambitious standards, involve multiple stakeholders, and have independent third-party verification of certificate holders and auditors.

Sustainable goods are increasingly demanded by customers and consumers, and certifications play a role in simplifying their decision-making. However, certifications do have limitations that companies should be aware of. First, certifications are not an ultimate guarantee for environmental sustainability. Standards include social, environmental, and economic aspects and trade-offs between the three dimensions might be unavoidable. Second, extensive compliance audits of certificate holders are often not economically or technically viable. For example, some supply chains cannot always keep certified and non-certified products separated due to difficulties in terms of how the supply chain and market operates (e.g., cotton and wood fibers being handled in bulk). Finally, most certification schemes track the producer's processes rather than actual environmental outcomes. Given the limitations, purchasing certified products can only be part of a company's biodiversity efforts. Ultimately, a company continues to bear part of the responsibility for the state of nature in the places they source raw materials from.

Despite all limitations, certifications are an important starting point for companies to quickly bring about change to their supply chain at scale. At best, they can help companies drive hundreds to thousands of suppliers to change their practices. Businesses can also gain reputational benefits as well as competitive advantages when adopting credible certifications. In the case of forest products, for example, these benefits include selling at price premium, achieving operational efficiencies, improving stakeholder relations, and managing reputational risks.<sup>138,139</sup>

Exhibit 29 lists examples of credible certifications already being used by leading businesses today. For example, food industry company Fazer is committed to only using RSPO-certified palm oil in its operations.<sup>140</sup>

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<sup>138</sup> WWF, 2015

<sup>139</sup> WWF, 2017

<sup>140</sup> Fazer, 2022

## Examples of credible certifications

### FORESTRY PRODUCTS

#### Forest Stewardship Council (FSC)

Forest products,  
including paper



### SEAFOOD PRODUCTS

#### Aquaculture Stewardship Council (ASC)

Seafood from aquaculture



### AGRICULTURE AND CONSUMER PRODUCTS

#### Better Cotton Initiative (BCI)

Cotton products



#### Roundtable on Sustainable Biomaterials (RSB)

e.g. biobased fuel, textiles, fibres, and plastics



#### Roundtable on Sustainable Palm Oil (RSPO)

Palm oil and palm oil derivatives



#### Rainforest Alliance

e.g. coffee, tea, bananas, and cacao



**Exhibit 29:** When making sourcing decisions, businesses can choose certified products as a first step to address their biodiversity impact<sup>141, 142, 143, 144, 145, 146</sup>

<sup>141</sup> Forest Stewardship Council, no date

<sup>142</sup> Aquaculture Stewardship Council, no date

<sup>143</sup> Roundtable on Sustainable Palm Oil, no date

<sup>144</sup> Better Cotton, no date

<sup>145</sup> Roundtable on Sustainable Biomaterials, no date

<sup>146</sup> Rainforest Alliance, no date

## **Next steps driving the biodiversity agenda**

**If we are to reverse the trend of global degeneration of ecosystems by 2030, Finnish companies must act today.**

As this report has emphasized, biodiversity is under unprecedented pressure both globally and in Finland. It is evident that the severe pressure on nature and biodiversity is caused by human activities and poses a threat not only to businesses but also to societies and, ultimately, humanity itself. All Finnish businesses contribute to biodiversity loss in one form or another, through direct and indirect activities.

While most Finnish companies recognize biodiversity loss as a threat to their business, they face a variety of roadblocks limiting their ability to address biodiversity loss. The solutions presented in Chapter 5 and the resources presented in this chapter aim to lower the barrier and enable companies to take the first steps toward reducing their biodiversity impact and adopting more nature-friendly business models.

Keeping the urgency of the biodiversity crisis in mind, companies must act today if we are to halt and reverse nature loss by 2030. As covered in this chapter, developing biodiversity-related taxonomy, frameworks, tools, and metrics is still an ongoing process; however, there are many existing resources readily available that can help companies step up their actions. Utilizing these resources will allow companies to build an initial understanding of their biodiversity impact, prioritize key areas of impact, and identify no-regret actions to initiate the learning process.

# **Appendix**

# Glossary

**Afforestation:** planting trees in areas and regions previously not covered by trees

**Biodiversity:** the variety of life on the planet, at the genetic, species and ecosystem levels

**Biodiversity footprint:** impact on biodiversity resulting from production and consumption of resources

**Bioeconomy:** the sustainable use of renewable biological resources to produce goods and services

**Biosphere:** the parts of the Earth where life exists

**Carbon sequestration:** the process by which carbon dioxide is captured from the atmosphere and transformed, e.g., into biomass through photosynthesis

**Carbon cycles:** set of processes governing the movement of carbon elements or compounds through living organisms and the environment

**Carbon sink:** natural environment that retains or sequesters carbon

**Clear-cutting:** practice where all or most of the trees are simultaneously removed in a selected area

**Conservation:** the act of protecting Earth's natural resources for current and future generations

**Conversion of an ecosystem:** the conversion of an ecosystem to another land type, e.g., forests to farmland and pastureland, primarily for human use, leading to the loss of the habitats and animals that were part of the original ecosystem

**Crop monoculture:** the farming of a single crop or organism

**Decarbonization:** the process of reducing the release of carbon gases into atmosphere

**Deforestation:** the process of clearing forest or a large area of trees from land

**Degradation** (environmental): the process by which the natural environment is deteriorated in a way that reduces its biodiversity

**Ecological recovery:** the return of a population or ecosystem to a pre-defined status after a disturbance to its 'normal' state

**Ecosystem:** a community of animals and plants interacting with each other and their physical environment (e.g., soil, water, nutrients and living organisms in the environment)

**Ecosystem services:** benefits that people obtain from nature ranging from provision of commodities to cultural benefits

**Effluent:** liquid waste material discharged into the environment (e.g., stream, lake, and ocean)

**Habitat fragmentation:** the separation of one continuous habitat into smaller non-continuous pieces

**Logging:** the process of cutting, processing, and moving trees

**Natural capital:** the world's natural assets, including water, air, all living things, soil, and geology

**Nature-based solutions:** actions to protect, sustainably manage and restore natural and

modified ecosystems in ways that address societal challenges effectively and adaptively to provide both human well-being and biodiversity benefits

**Nature-positive approach:** an approach that not only minimizes impact on nature, but also enhances resilience of the planet and society

**Overexploitation:** the use of a natural resource to a degree where it is harvested at a greater rate than it can replenish itself

**Red list species:** species belonging to one of the following categories: regionally extinct, critically endangered, endangered, vulnerable, almost threatened or when data is insufficient

**Regenerative agriculture:** approach to farming that restores degraded soils and takes environmental factors such as biodiversity impacts into account



# Global regulation

## Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is an international legal instrument, ratified by 196 nations. The convention aims at the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. The convention covers biodiversity at all levels: ecosystems, species, and genetic resources. The CBD's governing body is the Conference of the Parties (COP). This ultimate authority of all governments (or Parties) that have ratified the treaty meets every two years to review progress, set priorities, and commit to work plans.

The second part of the fifteenth Conference of the Parties to the Convention on Biological Diversity (CBD COP15.2) was held in Montreal, Canada on 7-19 December 2022. The first part (COP15.1) took place in October 2021. At COP15.2, governments from around the world came together to negotiate and agree on a new Global Biodiversity Framework (GBF), with a new set of four goals and 23 targets, to guide global action through 2030 to halt and reverse the loss of biodiversity.

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**The Global Biodiversity Framework is expected to be the equivalent of the Paris Agreement for biodiversity—targets include conserving 30 percent of land and sea areas (Target 3), and for all businesses to report and reduce biodiversity impacts (Target 15).**

## UN Plastic treaty

UN member states have agreed on a roadmap for establishing a global plastic treaty that would address the full lifecycle of plastic, including its production and design, to tackle plastic pollution and its environmental impact. The aim is to complete an agreement by the end of 2024. The final treaty is expected to be legally binding, hence it will require nations to commit to solving their plastic pollution. A future treaty may have a large impact on companies that produce plastic or use it in packaging.

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**Production of virgin plastic will likely be curbed by governments with increased global focus on recycling.**

## Paris Agreement

The Paris Agreement is a legally binding treaty signed by 196 countries on climate change, aiming to limit global warming below 2°C. The utmost importance of ensuring integrity of all ecosystems and the protection of biodiversity in addressing climate change is noted explicitly, and protecting ecosystems is an important element of the long-term global response to climate change. In addition, Article 6 of the agreement, which covers the use of carbon markets in the fight against climate change, also affects biodiversity. The article provides guidelines on how countries can use internationally tradable mitigation outcomes to reach their climate commitments. Companies can already offset part of their emissions through voluntary carbon markets, where nature-based solutions, such as afforestation projects, play an important role.

**Implications for biodiversity within the international treaty on climate change are included in recognizing protection of ecosystems as an important element of fighting climate change and in the use of nature-based solutions for carbon offsetting which is subject to Article 6.**

## Other proposed global regulation

- **Marine biodiversity in areas beyond national jurisdiction:** Negotiations are ongoing to set a global legally binding instrument under the UN Convention on the Law of the Sea (UNCLOS) on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction (BBNJ). The aim of the negotiators is to complete an agreement by 2023.
- **Deep seabed mining:** There is strong pressure to open oceans for deep seabed mining, and discussions on development of regulations are ongoing within the ISA (International Seabed Authority). There is currently no existing regulation in place. WWF, as well as many other organizations, political leaders, and scientists, are calling for a global moratorium on deep seabed mining. This is an important process for businesses and companies to follow.



# EU regulation

The European Commission has set ambitious targets to put Europe's biodiversity on a path towards recovery by 2030. To achieve these goals, a variety of regulation and policies have been enforced and proposed.

This section lays out some of the key regulations and policies enforced by the European Commission to halt biodiversity loss, followed by proposals for new legislation which corporations should be aware of. The new proposals are guided by the European Green Deal – a set of strategies and initiatives ranging from reducing greenhouse gas emissions to preserving the environment.

## EU regulations and policies in place

### *Regulations*

- **EU Taxonomy for Sustainable Activities 2020/852:** A classification system for investors to identify economic activities considered as environmentally sustainable in respect to the EU Green Deal. The taxonomy came into force in 2020.
- **Sustainability Related Disclosures in the Financial Services Sector 2019/2088:** Regulation under which financial market participants need to disclose information about their policies on the integration of sustainability risks in their investment decision-making processes.

### *Directives*

- **The Habitats Directive 92/43/EEC:** Adopted in 1992, the directive aims to promote the preservation of biodiversity, taking into account economic, social, cultural, and regional requirements. It establishes the EU-wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.
- **Water Framework Directive (WFD) 2000/60/EC:** Adopted in 2000, the directive requires all EU member states to protect and improve water quality in all waters to achieve good ecological status by 2015 or, at the latest, by 2027.

### *Policies and programs*

- **8th Environment Action Programme (EAP):** A guide for EU's environment-related policymaking and implementation until 2030. The program sets the most crucial targets for 2030 and defines the conditions needed to achieve these targets.
- **Common Agricultural Policy (CAP):** Launched in 1962, CAP aims to support farmers and improve agricultural productivity, ensuring a stable supply of affordable food, while helping to tackle climate change and the sustainable management of natural resources.
- **Common Fisheries Policy (CFP):** With the latest reform in 2013, the common fisheries policy is the first comprehensive legal framework, featuring attention to the environmental, economic, and social dimensions of fisheries.

## Proposed regulations and policies

### *Regulations*

- **Regulation on Deforestation-free Products 995/2010:** Regulation to guarantee products consumed in the EU market do not contribute to global deforestation. Includes mandatory due diligence rules for operators placing commodities associated with deforestation in the EU market.
- **Legislative Framework for Sustainable Food Systems (FSFS):** Regulation to lay down rules on governance and monitoring, sustainability labelling of food products and minimum criteria for sustainable public food procurement to increase the overall sustainability of EU food system and integrate sustainability into food-related policies.
- **Regulation on Nature Restoration 2022/0195:** Proposed regulation for reviving forests, wetlands, and other sea- and landscapes marred by human development with the aim of making restoration targets legally binding.

### *Directives*

- **Corporate Sustainability Reporting Directive (CSRD):** Directive to revise the existing reporting rules that were introduced by the Non-Financial Reporting Directive (NFRD). The proposed directive would be the foundation of a consistent flow of sustainability information throughout the financial value chain and for other stakeholders.
- **Directive on Corporate Sustainability Due Diligence (CSDD) 2019/1937:** Establishes a corporate due diligence obligation to identify, prevent, and end negative human rights and environmental impacts in the company's own operations, and their value chains.

## EU Green Deal

The EU Green Deal is a coordinated set of policy initiatives with the overarching aim of making the European Union climate neutral by 2050. It includes various strategies and initiatives targeting biodiversity, for example:

- **Biodiversity Strategy for 2030:** All EU member states endorsed the EU 2030 biodiversity strategy in October 2020. The biodiversity strategy aims to put Europe's biodiversity on the path to recovery by 2030 for the benefit of people, climate, and the planet, and contains specific actions and commitments. The strategy includes, e.g., commitments to legally protect at least 30 percent of land and sea by 2030, and to strictly protect at least 10 percent; to establish legally binding EU nature restoration targets; and to reverse the decline of pollinators. In 2023, the EU Commission will evaluate the progress and assess the approach, and may impose a legally binding governance if needed.
- **Farm-to-Fork Strategy:** Includes targets for 2030, such as 50 percent reduction in use of chemical pesticides, 50 percent nutrient loss reduction, and 20 percent reduction in fertilized use, and it aims for 25 percent of total farmland to be organic.
- **Circular Economy Action Plan:** Promotes circular economy processes, targets product design, and aims to minimize waste. Includes a 'sustainable products' policy prioritizing reducing and reusing materials, as well as measures to ensure recyclability of packaging.



# Finnish regulation

## Reform of the Nature Conservation Legislation

A process to prepare a new National Biodiversity Strategy and an action plan toward 2030 related to this is currently in the making and expected to be ready in early 2023. In addition to national objectives, the new strategy takes into account the objectives of the **UN Convention on Biological Diversity** and the new **EU Biodiversity Strategy**.

The legislative reform aims to enable protecting the Finnish natural environment and its biological diversity better than before. The reform of the nature conservation legislation comprises three different projects:

- Updating the **Nature Conservation Act** and **Nature Conservation Decree**
- Drafting a new act on compensations for damages caused by protected species
- Developing a scheme for ecological compensation

## National Biodiversity Strategy

To halt the loss of biodiversity and reverse the trend toward recovery by 2035, a new National Biodiversity Strategy and related action plan toward 2030 is currently being prepared and expected to be completed during early 2023. The new strategy will strengthen the protection of biodiversity and promote the restoration of degraded ecosystems. Moreover, methods are being developed to measure actions and related impacts. Along with national targets, the strategy will be linked to the objectives set internationally and within the EU.

## Helmi Habitats Programme 2021-2030

Helmi Habitats Programme, led by the Ministry of the Environment, aims to strengthen Finland's biodiversity and safeguard the vital ecosystem services that nature provides for us. At the same time, the program is working to curb climate change and promoting the adaptation to it.

Through the program, Finland is taking effective action on biodiversity by:

- Protecting and restoring mires
- Restoring aquatic bird habitats, wetlands, and coastal areas
- Managing semi-natural grasslands
- Restoring forest habitats (such as herb-rich forests and sun-exposed esker forests)
- Managing and restoring coastal and aquatic environments (such as sandy beaches).

## Metso – Forest Biodiversity Programme for Southern Finland

METSO, or the Forest Biodiversity Programme for Southern Finland, combines forest biodiversity conservation and maintenance with commercial use. Set to run until 2025, the program aims at halting the decline in forest species and habitats and establishing favorable trends in forest biodiversity.

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## About WWF and Bain



### WWF

WWF is the world's largest and most experienced independent conservation organization, with over six million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature. We will do this by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable and promoting the reduction of pollution and wasteful consumption.



### Bain & Company

Bain & Company is a global consultancy that helps the world's most ambitious change makers define the future. Across 64 offices in 39 countries, we work alongside our clients as one team with a shared ambition to achieve extraordinary results, outperform the competition, and redefine industries. We complement our tailored, integrated expertise with a vibrant ecosystem of digital innovators to deliver better, faster, and more enduring outcomes. Our 10-year commitment to invest more than \$1 billion in pro bono services brings our talent, expertise, and insight to organizations tackling today's urgent challenges in education, racial equity, social justice, economic development, and the environment. In addition, over the past five years only, Bain has worked on over 950 projects with our clients on sustainability and responsibility in a number of different ways – including in strategy, operations, investing, disruptive models, and results acceleration. Since our founding in 1973, we have measured our success by the success of our clients, and we proudly maintain the highest level of client advocacy in the industry.

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For further information about this report, please reach out to Jussi Nikula ([Jussi.Nikula@wwf.fi](mailto:Jussi.Nikula@wwf.fi)) or Jani Kelloniemi ([Jani.Kelloniemi@Bain.com](mailto:Jani.Kelloniemi@Bain.com))