Ilmarinen Biodiversity Roadmap

2022

ILMARINEN

Ilmarinen biodiversity roadmap

Contents

Pictures of this Roadmap are from the photography competition held for Ilmarinen's staff.

Executive summary

Natural capital including biodiversity, and the ecosystem services they generate, are crucial basis for enabling the global economy and human societies to function. The economic system is both profoundly dependent, and has a profound impact, on natural capital and biodiversity. The world is currently facing an unprecedented biodiversity loss, and the related systemic crisis risk is gaining growing awareness amongst investors, companies, regulators, civil society, and other stakeholders. Consequently, market participants can no longer dismiss biodiversity in economic decision making and risk management. Fortunately, various initiatives have emerged to enable inclusion of biodiversity into economic decision making.

Ilmarinen's societal mandate is to invest pension assets in a profitable, secure, and responsible manner so that we can pay pensions now and in the future. Similarly, as climate risk Ilmarinen views that biodiversity loss has the potential to affect investment portfolios across asset classes, sectors, and geographical regions. As a long-term risk averse investor, it is important for Ilmarinen to consider long-term risks related on biodiversity and natural capital. We need to find ways to map and address both biodiversity related dependencies and risks of our investments, as well as impacts on biodiversity that our investments generate. At the same time, it is increasingly important to recognize nature positive investments. At Ilmarinen, we foresee that biodiversity loss and related economic impacts are an increasingly relevant theme for investors, which is why we aim to follow the best available practices and continuously develop our biodiversity approach to address our portfolio impacts and dependencies.

We have already taken steps to address biodiversity in context of our investments.

Building understanding

As a first step, we have built our understanding on biodiversity and mapped current approaches available for investors. Via this paper we also hope to share our insights with other market participants because we see shared learning and collaboration essential in internalizing biodiversity into economic decision making.

Portfolio assessment

Second, we have done preliminary analysis and screening of our listed portfolio to identify most biodiversity dependent and biodiversity impacting sectors and activities. Currently the materials sector has been identified as the most high-risk and high impact sector.

Investment policy and portfolio management

Third, we are designing methods to further integrate biodiversity in our investment policy, e.g., enhanced due diligence, engagement with our investees and voting in favor of meaningful nature-positive proposals.

Reporting

Fourth, we are developing further ways to report relevant information on our portfolio's impacts on biodiversity and aim to report through best industry standards once available. At Ilmarinen we take part in advocacy and building partnerships for shared learning, and we are continuously learning and trying to find ways to improve our biodiversity approach and knowledge around it.

Key action by 2025

There is currently a lot of action on biodiversity from different market participants, regulators and investors included, and fast evolution of increasingly practical solutions is expected. Much development is still needed and going forward one key feature is the need to build common understanding on nature risks in financial terms, and also on nature positive investment opportunities. In this Biodiversity Roadmap we establish our current knowledge and action on biodiversity and our foreseen way forward. Through this Roadmap we also wish to share our knowledge and learn from others.

2022

Portfolio level analysis to build understanding on biodiversity and natural capital related risks and impacts

2023

Enhanced due diligence on high-risk sectors and economic activities

Portfolio level reporting

Supporting selected key industry collaborations on biodiversity

2024

Biodiversity specific engagement strategies

Increased activity specific requirements – e.g. certifications

Terhi Ojala

What are biodiversity and natural capital?

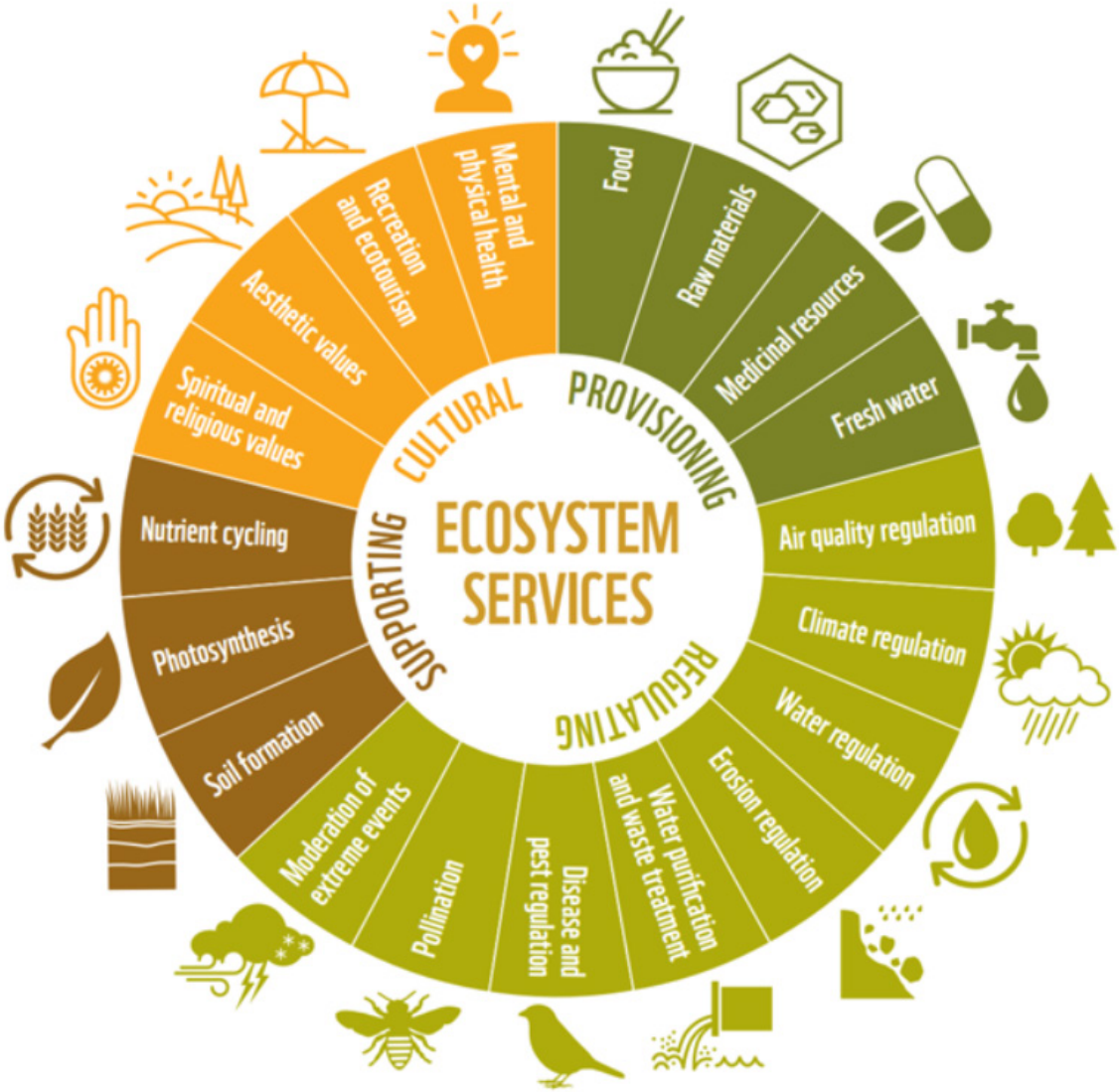
Biodiversity and natural capital are important building blocks of our economic and productive systems. Natural capital is a stock of assets including for example soil, minerals, water, air, and living organisms. It is one of four categories of capital which also include economic, human, and social capitals. Traditionally, capital is thought in financial terms, however, capital describes any asset that stores or provides value to people. Biodiversity is a key component of natural capital stock that provides flow of goods and services that in turn are used by many sectors which extract resources directly from natural systems, such as food, fuel, and medicines, see Figure 1. Many other sectors are further depending on these flows via indirect linkages. The significance of biodiversity loss for primary industries is obvious but can be significant for secondary and tertiary industries as well.

Figure 1 *Flow of products and services from ecosystems generated by biodiversity and natural capital creating value for human societies as established by Capitals Coalition*

According to UN Convention of Biological Diversity (CBD) biodiversity is “Variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.” Biodiversity describes the variety of life and is the living component of what can be thought of as natural capital stocks. According to Capitals Coalition and Cambridge Conservation Initiative “Biodiversity underpins natural capital, which in turn supports all other capitals by providing essential resources to support a healthy planet, thriving societies and prosperous economies.”

Ecosystem services are products and services that natural capital stock provides including e.g., food, photosynthesis, clean water, soil formation, habitat, pollination and alike, see Figure 2. In addition, ecosystem provides regulating services, for example forests, which absorb and storage CO_2 and buffer planet against climate change or wetlands that, among other services, provide clean water. Nature depletion is overuse of natural capital and ecosystem services e.g., depleting fish stock through overfishing, depletion of arable soil through sub-optimal farming practices, depletion of forests through conversion, depletion of watersheds through infrastructure expansion etc.

Figure 2. *Ecosystem services as described by WWF in Living Planet Report*



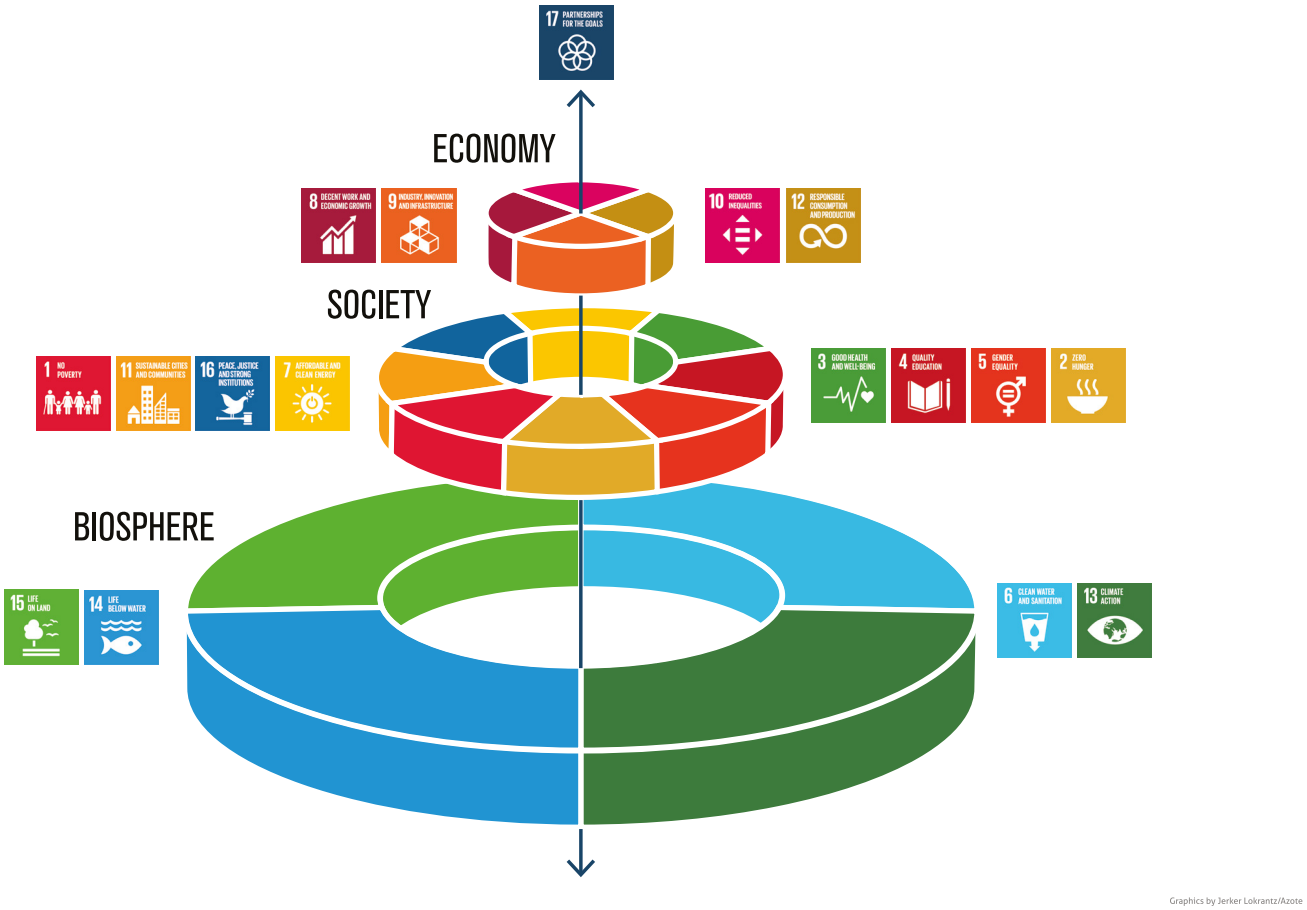
The Dasgupta report on the role of biodiversity in the economy, commissioned by the British Treasury, was published in February 2021. The key message of the report is that biodiversity and the services provided by nature make it possible for the economy to operate. Therefore, natural capital should be taken into account in decision-making in the same way as other types of capital, such as economic, social and human capital. According to the report, economic growth will be limited in the long run to the ecological carrying capacity of the planet. Already, our lifestyle requires about 1.6 earths. Stockholm Resilience Centre has mapped a

set of nine planetary boundaries within which humanity can continue to operate sustainably in the long term. Some of these boundaries have been breached, including climate, bio-chemical flow, land use and biosphere integrity, see Figure 3.

Figure 3. *Nine planetary boundaries as established by Stockholm Resilience Center*

Biodiversity and natural capital are also crucial building blocks for meeting Sustainable Development Goals, see figure 4. Natural capital and biodiversity specific SDGs build the basis and are needed for reaching any other SDGs.

Figure 4. *Hierarchy of Sustainable Development Goals as established by Stockholm Resilience Center*



Loss of biodiversity and climate change are also interrelated. Rising temperature and associated climate change related event, such as storms and changing weather patterns, can lead to ecosystem disruption and loss of biodiversity. Further, ecosystem degradation can lead to increasing greenhouse gas emissions further feeding climate change. According to Partnership for Biodiversity Accounting Financials (PCAF) "Biodiversity can also be a key asset for climate change mitigation and climate change adaptation. Carbon sequestration in carbon-rich ecosystems, like forests, grasslands, drylands, coastal and/or marine ecosystems (e.g., mangroves) and other wetlands (e.g. peatlands) contributes to climate mitigation. Nature-based solutions like agroforestry and restoration of coastal ecosystems (like mangroves) contribute to climate adaptation."

Climate change is recognized as one of five key drivers of biodiversity loss. According to Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) these drivers are: changes in land use and sea use, resource extraction, climate change, pollution and invasive alien species. Ilmarinen is addressing climate change through its Climate Roadmap with net zero 2035 goal, see: Ilmarinen Climate Roadmap (pdf).

Box 1. *Definitions on biodiversity terminology*

Biodiversity describes the variety of life and is the living component of what can be thought of as natural capital stocks. According to Capitals Coalition and Cambridge Conservation Initiative "Biodiversity underpins natural capital, which in turn supports all other capitals by providing essential resources to support a healthy planet, thriving societies and prosperous economies." UN CBD defines biodiversity as "Variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems."

Capital defined by the Capitals Coalition's description: "Capital has traditionally been thought of only as money, but capital describes any resource or asset that stores or provides value to people. Natural capital, social capital, and human capital work in much the same way as traditional capital – if we invest in them, they create value, and if we degrade them, we limit their value."

Drivers of biodiversity loss are processes by human activity that contribute to the loss of biodiversity. IPBES has identified five main drivers: land and sea use change, climate change, pollution, direct exploitation, and invasive species.

Ecosystem services are products and services that nature provides including e.g., food, photosynthesis, clean water, soil formation, habitat, pollination and alike.

Natural capital is a stock of assets including e.g., soil, minerals, water, air, living organisms etc. It is one of four categories of capital which also include produced, human and social capitals.

Nature depletion is overuse of natural capital and ecosystem services e.g., depleting fish stock through overfishing, depletion of arable soil through suboptimal farming practices, depletion of forests through conversion, depletion of watersheds through infrastructure expansion etc.

Further information on definitions, see for example: CBD, IPBES and Capitals Coalition publications.

Ulla Rimpiläinen

Why are investors interested in biodiversity?

According to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the loss of nature and the ecosystem services it provides is now faster than ever before in human history. Early 2022 biodiversity loss was ranked to third most serious threat to humanity in the World Economic Forum survey[1] , immediately after climate change and extreme weather events.

Recent years the understanding on the dependency of the economy on nature has improved and there are now also quantification studies on these dependencies. For example, according to World Economic Forum (WEF) and PwC study[2] over half of the global GDP is moderately or highly dependent on nature. The total gross value added (GVA) of the three largest, highly nature dependent sectors (construction, agriculture, and food and beverages) is close to $8 trillion together. Further, according to IPBES[3] for example three quarters of global food crop types rely on animal pollination and over two thirds of cancer medicines are inspired or based on nature. Nature also provides crucial ecosystem services as forests, wetlands and oceans absorb 5.6 gigatons of carbon annually.

According to "Changes in the global value of ecosystem services" (sciencedirect.com) study's estimates, ecosystem services as a whole could be valued at 145 tn USD per year. According to Global_Futures_Technical_Report.pdf (wwf.org.uk) projected reductions projected reductions in six key services[4] could cost the global economy almost 10 tn by 2050. Sectors crucial for green transition are also linked to loss of biodiversity and natural capital, e.g., mining.

Hannu Mykkälä

In biodiversity and natural capital context both companies, and their investors, can be exposed to physical and transition risks. The Taskforce on Nature-related Financial Disclosures (TNFD) beta framework (2022) defines nature-related risks as potential threats organization faces that are linked to its, and other organizations', nature-related impacts and dependencies. Nature-related risks can be divided into physical, transition and systematic risks. Transition risks can further be divided into regulatory, market, technology, and reputation risks. At Ilmarinen we look into nature-related risks in the context of TNFD framework, see Table 1 below. More examples of biodiversity loss -related risks in Dutch financial sector are discussed in Box 2.

1 Survey population was nearly 1000 global experts and leaders
2 World Economic Forum and PwC. 2020. "Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy".
3 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). 2019. "The Global Assessment Report on Biodiversity and Ecosystem Services."
4 Pollination, water yields, fisheries, forestry, carbon storage and coastal protection

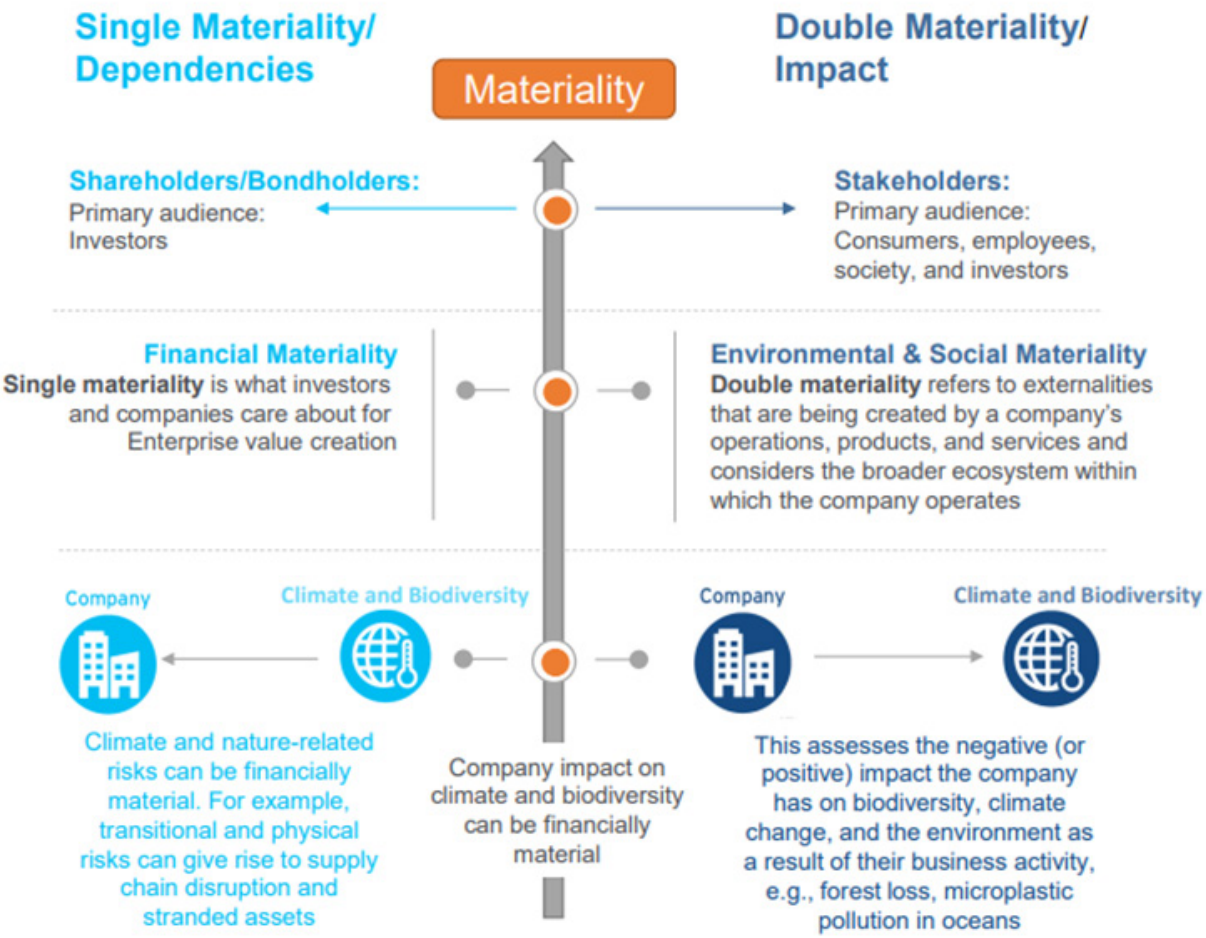
Table 1. *Nature-related risk types. Retrieved from TNFD Beta v.01 (2022) and WWF Biodiversity guide for business (2022)*

Nature-related risk type	Definition	Examples
Physical risks	Risks that are direct results of the organization's dependencies on nature and arising if natural systems are compromised, e.g., impact of climatic or geologic events or ecosystem equilibria changes.	• Loss of pollination populations reducing pollination dependent crop yields. • Costs associated to water resource depletion in areas with water dependent industrial facilities. • Operational disruptions from floods or landslides.
Transition risks **a) Policy & legal** **b) Market** **c) Technology** **d) Reputation**	Risks arising when organization's - or investor's - strategy and management are not aligned with the changing environment it operates in. Risks can lead to increasing costs and loss of revenue or brand value.	• Regulatory changes in land protections. • Consumer or investor preference changes shifting supply, demand, and finance. • New substitute products with a lower impact or dependency on nature. • Biodiversity misconduct in public eyes leads to decline of sales or share price, or damages brand value.
Systemic risks	Risks resulting from the entire system breakdown, rather than an individual part failure.	• Ecosystem collapse when critical natural system no longer functions. • Modest tipping points combine indirectly and lead to larger failures when physical and transition risks trigger a chain reaction (contagion).

According to the TNFD framework, nature-related dependencies can be defined as ecosystem services that an organization's functions are relying on, and nature-related impacts as negative or positive changes in the state of nature, which can lead to changes in the nature's capacity to provide social and economic functions. Thus, biodiversity is relevant for business in two ways, and investors are interested in both i) risk stemming from business dependence on biodiversity and natural capital and ii) impacts on biodiversity and natural capital, that business operations have. This is called double materiality.

Figure 5 illustrates the concept of single and double materiality. The left side describes the single materiality that can be seen as a "traditional" business point of view. The right side describes the double materiality which refers to company's direct or indirect impact on nature. Also, company impacts are financially material as they can affect the business. For example, a company affecting biodiversity negatively can face transition risks leading to financial losses.

Figure 5. *Single and Double Materiality as established by Citi Research*



Box 2. *Examples of biodiversity loss risks in Dutch financial sector.*

De Nederlandsche Bank (DNB) and The Netherlands Environmental Assessment Agency analyzed the risks of the Dutch financial sector to biodiversity loss in 2020. The results showed that banks, pension funds and insurers face physical, reputational and transition risks through financing of economic activities that depend on natural capital, which is underpinned by biodiversity. An example of a physical risk is decreasing ecosystem services. According to DNB 36 % (€510 billion) of the Dutch financial institutions' portfolios examined is highly or very highly dependent on ecosystem services, for example €28 billion of the portfolio is dependent on animal pollination.

If companies must adapt their operations due to government policy aimed at reducing impacts on biodiversity, institutions financing these companies are exposed to transition risks. For example, Dutch financial institutions have €81 billion worth of loans for nitrogen-emitting companies and transition to less nitrogen-intensive business might lead to transition risks. Also, an expansion of nature conservation areas can affect the risk profile of companies operating in those areas if the business activities cannot be continued, and Dutch financial institutions are exposed to these companies by € 28 billion. Financing biodiversity-harmful companies can lead to reputational risks. Dutch financial sector invests in companies that have an impact on biodiversity; €96 billion of investments are related to environmental controversies and negative consequences on biodiversity and €97 billion is exposed to reputational risk resulting from deforestation and related activities.

As a central bank with a task to supervise the stability of the Dutch financial system, DNB recommends financial institutions to identify the exposure of their own portfolios to biodiversity risks, since understanding these risks informs adequate risk management.

For further information see DNB report Indepted to Nature, Exploring Biodiversity Risks for the Dutch Financial Sector, June 2020

So far, as established for example in the Dasgupta report, our economy has grown at the expense of natural capital. In investment terms, we should live on interest, not consume the capital base itself. In practice, our economic system can no longer afford to ignore biodiversity and natural capital. For investors, the loss of nature is a significant risk, and it may not be possible to fully hedge against this risk, for example by diversifying investments. The need for risk mapping is clear as this allows both risk management and seizing opportunities. Therefore, it is also important for the investor to understand the two-way effects of the investments on biodiversity: the exposure to biodiversity related risks by investments, as well as the effects of investment on biodiversity and natural capital.

What can an investor do to address biodiversity?

There are currently at least 15 different investor initiatives, commitments, or pledges on biodiversity. Collaboration is key to scale up investor action. However, it can be challenging to navigate in the vast number of initiatives to understand their differences. Also, multitude of initiatives may disperse investors rather than create the necessary critical mass.

Biodiversity loss is increasingly acknowledged as a material business risk, with businesses and investors building their understanding on biodiversity dependencies and impacts and strengthening the way they integrate biodiversity in their decision-making processes.

Some of the key challenges include number of initiatives and commitments and nascent nature of company and location specific data. There is currently biodiversity relevant data available, for example in the data underlying ESG ratings or in climate specific datasets. However, there is currently lack of information on individual companies' dependency on biodiversity or natural capital due to the lack of consistent and reliable data on a company level. Also, biodiversity is typically specific to local context but location specific data on companies and their supply chains is still forming. For example, physical climate risk related data sets include location data which can be likely utilized also to enable more accuracy.

Albeit common standards and data are still nascent, there are already number of actions an investor can take in building understanding of portfolio exposure to biodiversity and natural capital related risks and in build approaches to allocate capital to transition leaders in their respective industries and engaging with them to move further. Examples for possible investor action on biodiversity in Table 2. Examples of financial institutions taking biodiversity related action in Box 3.

Table 2. *Potential investor actions*

On going at Ilmarinen
Two-way analysis at portfolio level to increase understanding of biodiversity risks and impacts: i) measuring biodiversity related exposures and dependencies of investments and ii) measuring investment portfolio impacts on biodiversity.
Influencing investment targets both proactively and reactively to reduce adverse effects and increase positive effects though **engagement and voting.**
Influencing market participants, for example through increased awareness and co-operation, and committing to common goals of the financial sector.
Planned at Ilmarinen
Enhanced risk based due **diligence and investment policy** on biodiversity.
Supporting creation of biodiversity **measurement and disclosure** standards.
Setting biodiversity **targets**, including description of approaches and **reporting** on actions and results.
Possibly in future*
Geographic identification of high-risk areas and value chains and enhanced due diligence to minimize risks and impacts on biodiversity.
Restricting the investment universe, for example through exclusions, on economic activities that are particularly detrimental to biodiversity.
Selecting **biodiversity-beneficial** or net positive investments.

*Implementation is subject to data availability and common definitions, which both are evolving.

Box 3 *Examples of biodiversity related action by various financial institutions*

Robeco has established a white paper on biodiversity in January 2022. Robeco is engaging with companies in sectors it has identified high deforestation risk: cocoa, natural rubber, soy, beef, and tropical timber and pulp. It has selected a number of companies operating in high-risk sectors for engagement requiring zero deforestation, impact assessment, restoration, reporting, and social management.

AXA IM has established its Ecosystems Protection and Deforestation Policy in 2021. To protect ecosystems and tackle deforestation, AXA IM has decided to extend its Palm Oil policy with a more extensive approach on Deforestation and Ecosystems protection. AXA IM excludes certain companies under the criteria they set, for example palm oil producers without "sustainable palm oil" certifications or companies with severe controversies related to "land use and biodiversity" are excluded. AXA IM is also focusing on enhancing their engagement approach as they see active stewardship and helping companies to mitigate negative environmental impacts and natural ecosystems conversion is their duty as an investor. AXA IM has developed special engagement questionnaire to ease dialogue with the target companies, and AXA IM cooperates with external experts like WWF and CDP on specific biodiversity-related engagement cases to support a "forest- and nature-positive" transformation of target companies. AXA IM continues integrating biodiversity challenges in the context of their voting policy in 2022.

Norges Bank Investment Management NBIM has established an investee expectations paper on biodiversity. NBIM expects that material nature-related considerations should be integrated into corporate strategy, risk management and reporting by companies that highly impact or depend on biodiversity and ecosystems. In addition, NBIM sets expectations on disclosing material nature-related dependencies, impacts and metrics and targets, and engaging with policymakers and other stakeholders on sustainability. NBIM uses internationally recognized principles, like UN Global Compact, as a base for their expectations. These expectations are mainly directed at company board level because the board must understand its company's relevant consequences and consider relevant stakeholders' interests also. NBIM notes in their paper that also other companies and the fund's long-term return may be affected by externalities rising from unsustainable use of natural resources by other companies.

Aviva Investors introduced its Biodiversity Policy in September 2021. One of the key themes is engaging with companies and supporting them in addressing biodiversity impacts and dependencies. According to Aviva Investors' Biodiversity voting policy, they declare to vote against targeted management resolutions at companies operating in forest risk commodity area and are performing the worst according to Global Canopy Forest 500 ranking, and to communicate their concerns to these companies. Aviva Investors state to vote in favor of proposals requesting companies to abstain from operating in, or using materials extracted from, areas that are either protected, essential to biodiversity or environmentally sensitive. The voting policy also includes supporting shareholder resolutions proposing management to consider nature-related key impacts and dependencies for high-impact sectors by assessing, reporting, and reducing. Other important areas in Aviva Investor's Biodiversity Policy include influencing policymakers and governments in making system-level changes, eliminating deforestation, and promoting biodiversity restoration by investing in and exploring new products.

ACTIAM has set the goal to achieve zero net biodiversity loss by 2030, measuring it by zero net deforestation, as a part of its sustainable investment strategy released in February 2022. Complexity in consistent measurement of deforestation in the investee companies' supply chains is one of the main challenges in achieving the goal. Therefore, ACTIAM partnered with a geodata-analytics company called Satelligence in 2019 to measure and reduce deforestation in a company level, and later in 2020 launched an investor initiative "Satellite-based engagement towards zero deforestation" together with other investors, who are representing assets by €1.8 trillion. The deforestation cases found by satellite detection are addressed by this investor group by entering dialogue with companies and seeking preventative measures for deforestation. The goal of this data-driven engagement program is to accelerate the transition to elimination deforestation in supply chains.

What is Ilmarinen doing to address biodiversity?

In our view loss of biodiversity is a system level risk, much like climate change. For this reason, long term risk averse investors, such as Ilmarinen, need to find ways to map and address both biodiversity related dependencies and risks to our investments, and impacts on biodiversity deriving from our investments. We at Ilmarinen have taken number of actions to enhance our approaches to increasingly address biodiversity issues and plan to take many more as our understanding and capabilities grow. Our framework to address biodiversity is described in Figure 6. We aim to continuously improve our approaches as we learn and as the best practices in the financial sector evolve.

Lassi Antila

Figure 6 *Ilmarinen approach on biodiversity*

Step	Building understanding	Stage	Portfolio assessment	Stage	Investment policy & portfolio mgmt.	Stage	Reporting	Stage
Approach	Building understanding on biodiversity and natural capital from pension investor perspective Joining and supporting industry alliances, standards and reporting initiatives on biodiversity	 	Utilizing currently available tools and data to analyze biodiversity related impacts and dependencies in the investment portfolio Identifying of material sectors and geographic areas in investment portfolio Identifying companies whose value chains and value creation activities are materially dependent on, or affect, biodiversity Further analysis of high-risk sectors and investee companies within the sector with the view on developing sector specific requirements	   	Engagement: Encouraging investees in material sectors to map, measure, manage and report on biodiversity Voting: supporting meaningful nature positive proposals Investment policy: Enhanced risk based due diligence Establishing investment selection criteria specific to biodiversity Biodiversity specific exclusions Identifying and investing in biodiversity beneficial opportunities	     	Including biodiversity relevant information into reporting on investment portfolio Continuous improvement as understanding, capacities and resources increase	 
Example tools	Finance for Biodiversity Pledge, PBAF and TNFD   		For top-down analysis UNEP-FI Encore, SBTN sectoral materiality tool For bottom-up analysis data on biodiversity from current ESG data streams Sector specific: e.g. PBAF and Align are cooperating in the development of sector-specific guidance for investors IFC GMAP for contextual country and Agro-commodity specific information IBAT database for location specific information		Engagement: Natural capital protocol, TNFD for companies, taxonomy reporting Voting: use of sustainability proxy services		Disclosure through TNFD for investors, taxonomy reporting,	

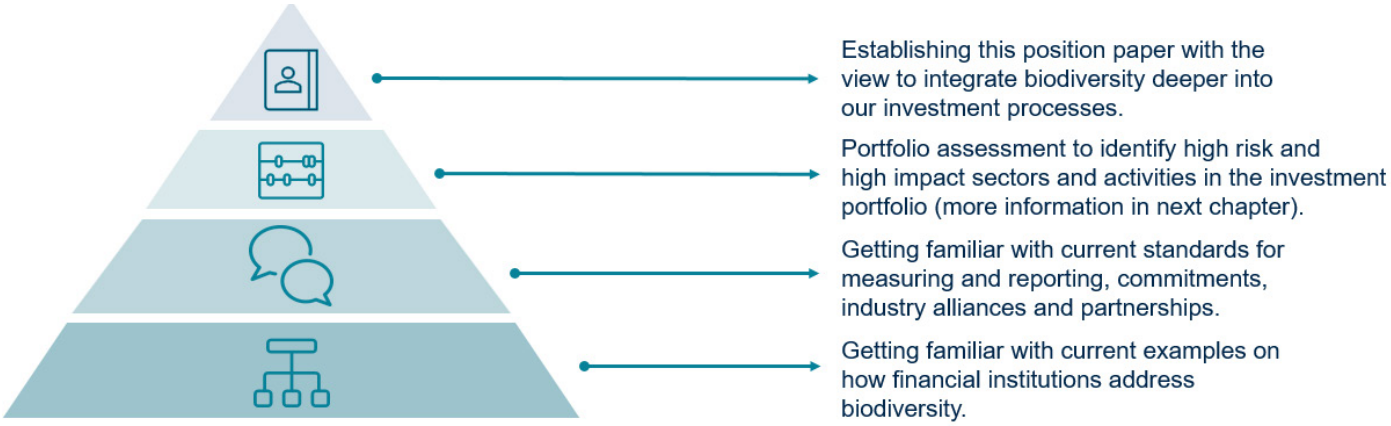
Progress

 = continuously on-going

Step1: Building understanding

Significant development is on-going which enables investors to understand and analyze biodiversity in investment portfolios. These approaches include the double-materiality, i.e. biodiversity related dependencies and consequent risks and biodiversity related impacts of the economic activities within the investment portfolio. At Ilmarinen, our first step has been to build our understanding on biodiversity and what approaches are currently possible from the perspective of a highly diversified global investor. This learning process is described in Figure 7.

Figure 7 *Ilmarinen learning process on biodiversity*



As we have learned, there are at least fifteen different biodiversity related investor commitments and also on-going work on biodiversity measuring and reporting standards. Collaboration and common standards are essential in finding consistent way forward for investors to assess and integrate biodiversity and natural capital related information in investment decision making and portfolio management.

Biodiversity and natural capital and their inclusion to economic decision making are complex themes and shared learning is crucial. Ilmarinen is striving for co-operation with other progressive financial institutions and financial market participants and stakeholders. We are currently members of PRI (Principles of Responsible Investment) and Finsif among others, both of which are active on advancing biodiversity integration. In advocacy work, we consider biodiversity issues in both proactive and reactive influencing and engagement. Proactive advocacy refers to the promotion of good and responsible practices. These processes help to build our understanding on natural capital and biodiversity. An example of proactive natural capital and biodiversity engagement is our engagement related to sustainable use of water through our Nordic Engagement Co-operation (NEC), see Box 4.

Box 4 *Example of proactive biodiversity relevant engagement*

The Localized Water Management (LWM) engagement theme has a geographical focus. Although water-related risks are global, the impacts vary a lot depending on the location. The companies that are engaged with are dependent on and impacting of the water of the Tiete River in Brazil or the Vaal River in South Africa. NEC has chosen three out of twenty investee companies whose progress we will monitor more closely and participate in engagement discussions with the companies.

The engagement process was initiated in 2020 with an aim to improve the companies' awareness of water-related risks and the local importance and benefits of water management, offer opportunities to collaborate in the area and encourage companies to take concrete measures and increase disclosures. The engagement theme has several KPIs, all

of which developed favorably in 2021. In 2021, the pandemic continued to affect the engagement processes. Stakeholder participation, for example, continued in virtual format. The focus of engagement calls last year was to encourage companies to better disclose information relating to the availability of water and public water management and to challenge companies to assess whether their current reporting is sufficient for investors to understand water-related risks.

More information on the LWM engagement theme and other engagement processes conducted within NEC can be found in the NEC's annual report.

Reactive engagement aims to change the way companies operate, i.e., to identify violations of international environmental standards and take corrective action. Going forward we will support some of the key initiatives on biodiversity.

Box 5. *Example of a biodiversity commitment*

Finance for Biodiversity Pledge is investor focused forum calling for commitment and implementation of ambitious action on biodiversity. In June 2022 it had EUR 14 trillion in assets held by the 98 signatories. The pledged signatories aim to

- collaborate and share information on best practices with other actors in the field to influence the companies, we invest in in order to reduce the negative impacts on biodiversity and increase the positive impacts
- assess the impact of our investments on biodiversity, both negative and positive
- set biodiversity targets and reporting by 2024.

In terms of standards development, The Partnership for Biodiversity Accounting Financials (PBAF) is discussed in Box 6. Also, number of standards and initiatives are working together. The European Financial Reporting Advisory Group (EFRAG) and Global Reporting Initiative (GRI) are co-constructing a biodiversity standard. Project marks a next step in aligning global and European sustainability standards. Draft standards are planned to be published in 2022. Co-construction means EFRAG and GRI join each other's technical expert groups, share information, align work plans and adjust timelines as much as possible. Importantly, the joint work will incorporate the latest developments and authoritative intergovernmental instruments in the field of biodiversity, will enable consideration of double materiality perspectives, and ensuring multi-stakeholder consensus.

Also, the Science Based Targets Network (SBTN) provides companies with a framework to help tackle nature loss and climate change in their strategies and the CDP is taking steps to improve their metrics and will cover an expanded range of environmental issues including ocean, land use, food production and waste. According to CDB[5] in 2023 they will include new questions on biodiversity and begin scoring all companies against scientific benchmarks reflecting their historic, current and projected impacts; product portfolios; and investment and transition plans. This will provide a clear assessment of a company's ambition and how they are doing against targets.

CDP is also participating to the Global Reporting Initiative (GRI) revision of the GRI Biodiversity Standard (GRI 304). Also, the Taskforce on Nature-related Financial Disclosures (TNFD) has confirmed that they use the revised GRI Standard and other standards, as inputs to their work on a new financial disclosure framework for nature-related risks. Meanwhile GRI is joining the TNFD Forum and is a TNFD Knowledge Hub partner.

5 Bridging the SDG data gap for biodiversity and nature - CDP (www.cdp.net)

Box 6 *Example of biodiversity standard for measuring and disclosing*

The Partnership for Biodiversity Accounting Financials (PBAF) is an independent foundation based in the Netherlands. PBAF started to develop the PBAF Standard in 2019 and it is led by a group of PBAF-partners and supporters, and in February 2022 this group consisted of 30 financial institutions from 7 countries. PBAF is a sister-initiative of the Partnership for Carbon Accounting Financials (PCAF), and it also aligns and collaborates with other initiatives like the Taskforce for Nature related Financial Disclosures (TNFD), Finance for Biodiversity Pledge and the European Align project.

The PBAF Standard aims to help and support financial institutions in assessing and disclosing biodiversity-related impacts and dependencies of their loans and investments. The PBAF standard includes practical guidance on assessment of biodiversity impact and dependencies from financial institution point of view. The standard defines what is needed that these assessments deliver the right information to financial institutions. Biodiversity-related risks and opportunities can be effectively managed and reported by financial institutions with this information, and they can contribute to the sustainable use of biodiversity. PBAF aims to provide best practice for impact and dependency assessment which also contributes to a standardized and transparent approach on biodiversity impact and dependency assessment, which will be relevant for financial institutions as well as for tool developers and data providers.

PBAF Standard v 2022 consists of different biodiversity impact assessment approaches, including a “positive impact” view and a PBAF’s view on biodiversity footprinting. Biodiversity footprinting includes requirements and recommendations and it defines what aspects should be considered to provide the right information to financial institutions. The biodiversity footprinting is closely aligned with evolving TNFD framework.

Significant progress has already been made in measuring climate change. In contrast, the comparable measurement of biodiversity is in many ways still nascent. It is also, in some respects more challenging than assessing climate change. With regard to climate change there is a single and global unit - tonne of carbon dioxide equivalent (tCO2e), which can be measured and priced. However, for biodiversity similar single unit is not available because biodiversity has a wide range of local variations, making harmonization of measurement more challenging. While challenging, measuring and integrating biodiversity and natural capital related risks and impacts is crucial for long term resilience of the economic system.

Several initiatives have emerged around measurement, reporting and data application. For example, the taxonomy of sustainable financing in the EU includes biodiversity as one of the key areas. Taxonomy aims to define activities that are considered to have a positive impact (substantial contribution) to biodiversity and ecosystems. In the future, taxonomic information may increase the biodiversity information available to investors, especially, it may be useful in identifying biodiversity related opportunities.

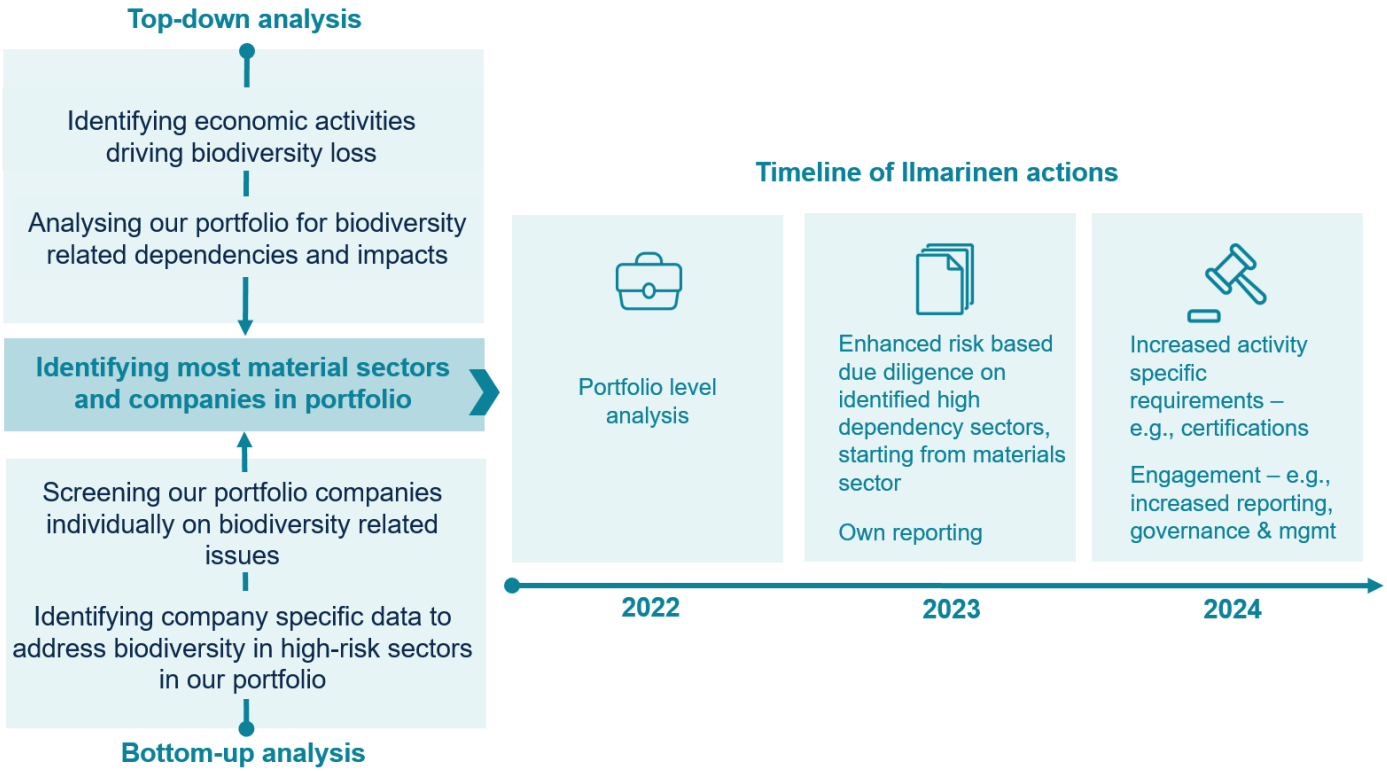
A new TNFD risk management and disclosure framework aims to enable companies and investors to report and disclose nature-related risks and opportunities and support a financial flow shift towards nature-positive and away from nature-negative outcomes. Obtaining comprehensive and comparable information through a common reporting framework would significantly improve investors' access to information, comparisons, and reporting on biodiversity in their investment portfolios. In coming years, once TNFD becomes available and is functional, we expect investors like us to increasingly influence companies through engagement to adopt the reporting. The reporting would enable access to improved data and ultimately integration to investment decision making and reporting. Ilmarinen is following the on-going evolution of the framework and already utilizing the existing TNFD beta framework

to inspire this paper. You can follow the work of TNFD in: TNFD – Taskforce on Nature-related Financial Disclosures (tnfd.global).

Step 2: Portfolio assessment

From the perspective of a highly diversified investor, like Ilmarinen, it is necessary to analyze the investment portfolio to understand what types of investments are most significant from biodiversity perspective. Further, once the most material economic activities are identified, investor can design actions suitable to address biodiversity related risks and impacts, see Figure 8.

Figure 8 *Biodiversity specific analytical approach in development and plan of action*



Examples of currently available tools include ENCORE and SBTN tools. Both the ENCORE and SBTN tools provide broad estimates of potential materiality of biodiversity at the level of sectors and economic activities. Ilmarinen has started with ENCORE tool to map the investment portfolio biodiversity related impacts and dependencies. The aim is to gain better understanding on which sectors and economic activities are most relevant in our investment portfolio regarding biodiversity. This will help in developing further actions on company engagement, enhanced due diligence and alike measures.

Box 7. *Summary of ENCORE tool*

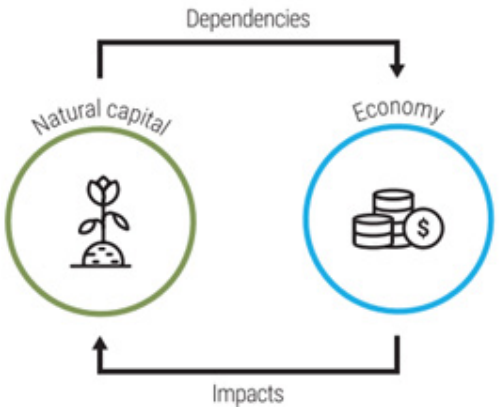
ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) was developed specifically for financial institutions. It is a tool to support users, with a better understanding on the impact of environmental change on the economy. ENCORE is free and was developed by UN Environment Programme Finance Initiative with partner organizations.

ENCORE guides users to understand how businesses across all sectors of the economy "depend" and "impact" on nature. Given the results and output, users can gain better perspective of how these potential "dependencies" and "impacts" might represent a business risk. ENCORE tool helps thereby mapping double materiality aspects, i.e., biodiversity related dependencies in the investment portfolio and biodiversity related impacts of

the economic activities in the portfolio, see Figure 9. In practice this enables identification of high-risk sectors and planning further actions specific on investments in these sectors.

For further information, see ENCORE tool – United Nations Environment – Finance Initiative (encore.naturalcapital.financ)

Figure 9 *Double materiality concept as described by UNEPFI*



Ilmarinen direct listed equity 2021 portfolio was assessed with the Encore tool with following preliminary findings, see Figure 10 and 11[6]. Based on preliminary results from direct listed equity portfolio, a quarter of companies are highly dependent on biodiversity and one third is highly impacting biodiversity. Most significant natural capital base for dependency was water resources. From impact perspective many natural capital bases were equally important. Most significant sector in our investment portfolio is the materials sector. It is worth to mention that in the impacts described in figure 9, the results can be overlapping, since impact can be simultaneously both high and very high. The reason for this is that a company can impact different natural assets in different ways, e.g., one company can have a high impact on atmosphere and a very high impact on water. Going forward, we aim to review these results also against suitable benchmark and take a deeper dive into the high risk sector with a view to develop new investment and portfolio management policies described in Figure 6 that can include e.g. enhanced due diligence, specific investment selection criteria, exclusions, and enhanced active ownership and engagement policies.

The analysis carried out is based on revenue data. It needs to be noted that Encore tool does not provide information on financial risk. Also, as it is today it does not consider geographical location which is highly meaningful in biodiversity and natural capital context, nor does it consider management action by individual companies. Encore provides information on potential not actual impacts and dependencies. For information on actual impacts data on e.g., location and management measures would be needed. Thus, Encore generated information that is useful for high level "top down" screening and identification of likely high risk and high impact sectors and activities. This information helps investor for example in identifying sectors, and with additional company specific data from other sources, companies for targeted actions such as engagement and for enhanced due diligence measures.

6 ENCORE analysis done in cooperation with SEB (Skandinaviska Enskilda Banken)

Figure 10 *Ilmarinen equity portfolio dependencies on nature.*

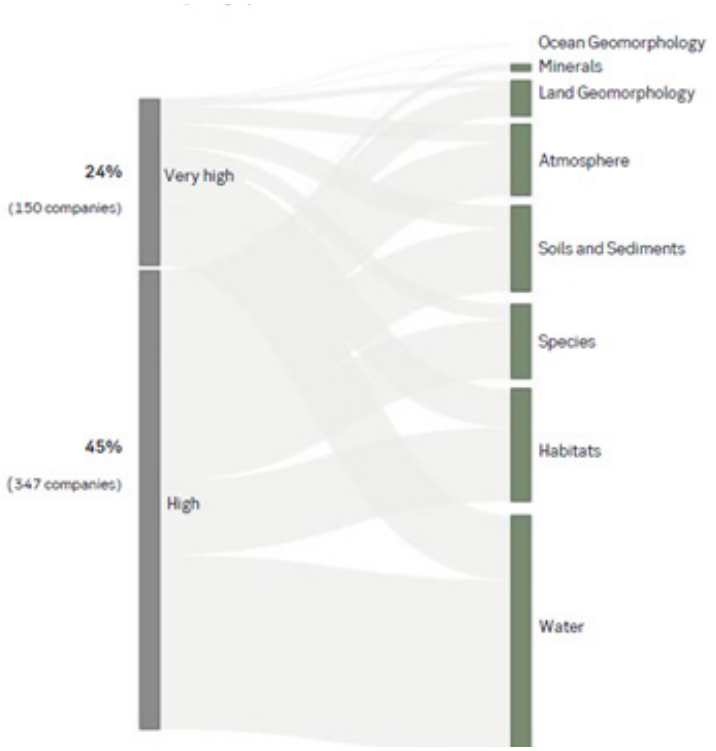
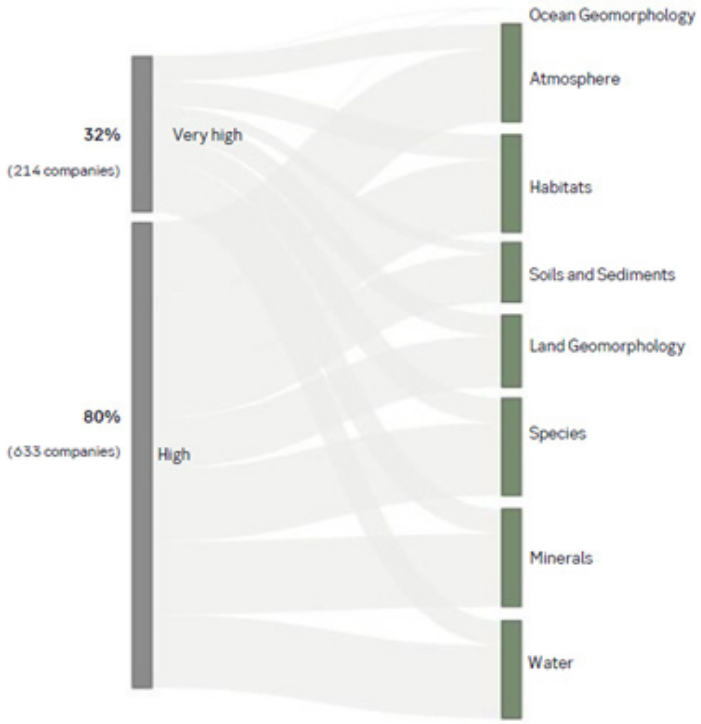


Figure 11 *Ilmarinen equity portfolio impacts on nature*



Step3: Investment policy and portfolio management

With an increased understanding on high risk and impact sectors and companies, specific actions can be designed. These include for example:

- Enhanced due diligence with the aim to screen and identify high-risk companies. This is similar type of method that we at Ilmarinen currently apply for high carbon risk companies.
- Setting biodiversity specific criteria for investments in higher biodiversity risk exposure. As a method this is similar to the current criteria for companies identified to have high carbon risk exposure. Ilmarinen is currently studying how currently available ESG data can be more effectively used in biodiversity context. For example, currently existing data on e.g., environmental controversies can be used in combination to high-risk sector information to identify when to apply additional criteria. We are also studying potential to use specific sector-based requirements and criteria. Based on the portfolio analysis carried out, we are taking a deeper dive into the materials sector as it was identified as most significant sector in our portfolio in biodiversity and natural capital context.
- Active ownership measures can be established to address biodiversity issues. These include proactive and reactive engagement processes and voting policies. Currently Ilmarinen has one proactive water and biodiversity specific engagement process described in Box 4. Going forward biodiversity reporting by companies will be increasingly important. Currently the analytics are typically based on impact estimation. Investors need consistent and comparable information from companies and monitoring of actual changes in biodiversity is key to reduce the current reliance on impact estimations and proxies. For this reason, we aim to encourage companies in high risk and impact sectors to increase their biodiversity and natural capital related measuring and reporting though evolving global standards. Ilmarinen also uses sustainability policy for proxy voting which takes sustainability related general/shareholder meeting items into specific consideration. We have taken some early steps, but many more actions are needed and continuous development, as in all ESG approaches, will be necessary.
- Biodiversity specific exclusions may be also applied. This is similar method as currently applied in climate context e.g. for thermal coal extraction and starting 2023 for oil sand and arctic drilling activities. Also, as shared understanding on biodiversity beneficial economic activities increase, targets for investing in these types of economic activities can be established.

Heidi Suomela

Encore analysis enables analysis of listed side of the portfolio. However, we note that biodiversity and natural capital are crucial issues in other asset classes as well. We continuously seek new analytical options with the view in covering the Ilmarinen's total portfolio.

Step 4: Reporting

In terms of reporting, we are aiming to increase our reporting on biodiversity risks and impact in our portfolio. Specifically on biodiversity, we have identified the Sustainable Development Goals 13 as climate, 14 underwater life, 15 terrestrial life as key reporting issues, as biodiversity-related goals provide a basis for other sustainable development goals. Since 2016, we have reported the contribution of our direct listed equity investments to the sustainability goals, and we will next explore the possibility of reporting in more detail for the various SDGs.

Going forward we aim to report through best industry standards once available, for example the TNFD in similar manner as we report through TCFD. Currently we are observing the evolution of TNFD. In the meantime, we also aim to include in our annual reporting information that is specific on biodiversity, for example our findings on portfolio level analysis and related actions taken.

Going forward

There is currently a lot of action on biodiversity from different market participants, investors included, and fast evolution of increasingly practical solutions is expected. One key feature is the need to build shared understanding on biodiversity and natural capital risks in financial risk terms and also on nature positive investment opportunities. This would, going forward, greatly benefit investors in understanding and integrating nature risks in an integrated manner along traditional risk metrics.

For further reading:

Capitals Coalitions, Cambridge Conservation Initiative. 2021. How to integrate biodiversity as part of your natural capital assessment. How_Primer_Biodiversity-Guidance.pdf (capitalscoalition.org)

Citi GPS: Global Perspective & Solutions. 2021. Biodiversity, the Ecosystem at the Heart of Business BIODIVERSITY: The Ecosystem at the Heart of Business (citifirst.com.hk)

Finance for Biodiversity Pledge. 2022. Finance for Biodiversity Pledge – Reverse nature loss in this decade (financeforbiodiversity.org)

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). 2022. IPBES Home page | IPBES secretariat (ipbes.net)

Science Based Targets Network. 2022 Biodiversity – Science Based Targets Network (sciencebasedtargetsnetwork.org)

Taskforce on Nature-related Financial Disclosures (TNFD). 2022. TNFD – Taskforce on Nature-related Financial Disclosures (tnfd.global)

The TNFD Nature-Related Risk and Opportunity Management and Disclosure Framework, Beta v0.2, June 2022 https://framework.tnfd.global/wp-content/uploads/2022/06/TNFD-Framework-Document-Beta-v0-2.pdf (PDF)

The Partnership for Biodiversity Accounting Financials (PBAF) About | PBAF - Partnership for Biodiversity Accounting Financials (pbafglobal.com)

PBAF Standard v 2022 Biodiversity impact assessment – Footprinting. 2022. PBAF_FP2022.pdf (PDF) (pbafglobal.com)

United Nations Environment Programme – Finance Initiative (UNEP-FI). 2022. ENCORE tool ENCORE tool – United Nations Environment – Finance Initiative (ncore.naturalcapital.finance)

WWF Biodiversity Guide for Business. 2022. wwf-a-biodiversity-guide-for-business.pdf (PDF) (triggerfish.cloud)

World Economic Forum. 2022. The Global Risks Report 2022 WEF_The_Global_Risks_Report_2022.pdf (weforum.org)

World Economic Forum and PwC. 2020. “Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy”. WEF_New_Nature_Economy_Report_2020.pdf ((PDF) (weforum.org)