Guide to managing climate and nature-related risks

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DeNederlandscheBank

EUROSYSTEEM

Contents

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Introduction

Climate change and nature degradation can pose risks to financial institutions in the Netherlands. Financial institutions should understand their relevant risks and manage material risks appropriately. This includes climate and other nature-related risks: the 'E' in ESG[1]. In this Guide, DNB provides insurers, pension funds[2], investment firms and institutions[3], and electronic money and payment institutions with guidelines for managing climate and nature-related risks. This Guide does not apply to banks, as the ECB Guide is used in banking supervision.[4]

Climate change and nature degradation can pose risks to financial institutions in the Netherlands. They must manage these risks.[5] These risks may result from physical damage due to climate change and nature degradation or arise because financial institutions must adapt to stricter climate and nature-related policies, new technology and/or changing market and consumer sentiment.[6] DNB research and self-assessments show that financial institutions are making strides in integrating sustainability, but have not yet fully embedded climate and nature-related risks in their core processes.[7]

The aim of this guide is to contribute to the appropriate management of climate and nature-related risks by providing sectoral good practices in four focus areas: business model and strategy, governance, risk management and information provision. Good practices are examples of approaches to fulfilling regulatory obligations arising from laws and regulations, possibly observed at one or more institutions, which we believe to be effective. Good practices are suggestions or recommendations for supervised institutions. Financial institutions are free to adopt another approach as long as they comply with the laws and regulations, and are able to demonstrate this on reasoned grounds.[8] As such, the good practices in the Guide are therefore not binding, but are intended to offer inspiration to institutions in fulfilling the statutory requirements related to climate and nature-related risk management in a way that suits them.

DNB takes a risk-based approach to supervising compliance with the legal standards, taking into account the nature, complexity and size of the institution and the materiality of the risks. As such, supervisory activities aimed at climate and nature-related risk management may differ between sectors and institutions. Institutions will be informed about this

1 ESG: Environmental, Social, Governance. The Guide focuses on the climate and nature subset, for which the most concrete risk management measures are currently available. The sectoral legal requirements for risk management are in some cases identical for all sustainability risks, which is why we use the terms 'ESG risks' or 'sustainability risks' in some good practices.

2 Although premium pension institutions (PPI) are not explicitly included in this Guide, the good practices can also provide guidance on risk management for PPIs.

3 As the authority supervising the ethical operational management of investment firms and institutions, the Dutch Authority for the Financial Markets (AFM) ensures that they pursue a policy to manage the risks that may adversely affect the treatment of customers and participants. This includes managing climate and environmental risks.

4 In 2020, the ECB published supervisory expectations applicable to Significant Institutions as part of the Single Supervisory Mechanism for banks. We have also declared the ECB Guide applicable to less significant institutions.

5 The term 'financial institutions' is used in a generic sense in this document and includes both financial undertakings governed by the Financial Supervision Act (*Wet op het financieel toezicht – Wft*) and pension funds governed by the Pensions Act (*Pensioenwet – Pw*) and the Mandatory Occupational Pension Scheme Act (*Wet verplichte beroepspensioenregeling – Wvb*).

6 See, inter alia An energy transition risk stress test for the financial system of the Netherlands (2018), Values at Risk? (2019), Indebted to nature – Exploring biodiversity risks for the Dutch financial sector (2020) and Balancing sustainability (2021).

7 The study entitled 'Balancing sustainability' (2021) examined the extent to which banks, pension funds and insurers integrate sustainability risks into their core processes in the fields of strategy, governance, risk management and disclosure. Also, in 2023 and 2024, self-assessments revealed that action is needed among both insurers (2023, 2024) and pension funds (2023, 2024) to integrate sustainability into risk management.

8 See also the Explanatory guide to DNB's policy statements.

individually. If DNB detects non-compliance with legal obligations, we may take enforcement action.[9]

Compared to the previous version (2023), this Guide has been expanded and updated to reflect legislative and regulatory developments.
It contains new good practices, including for managing nature-related risks and for climate ambitions and commitments expressed by institutions. This new version of the Guide replaces the previous version. If there are (significant) developments in laws and regulations and/or new insights into the appropriate management of climate and nature-related risks, we will share additional explanations and practical examples via specific publications and Open Book on Supervision. With the publication of this Guide, DNB is following the recommendation of the Network for Greening the Financial System (NGFS) to provide guidance as a supervisory authority on how to manage climate and nature-related risks.

Reader's guide

The Guide consists of a cross-sectoral section and sector-specific sections (accessible via the sector buttons at the end of each section).

In the cross-sectoral section, we first consider the non-prudential developments in the legislative frameworks regarding sustainability. We then discuss the concept of climate and nature-related risks. Finally, we discuss the focus areas of business model and strategy, governance, risk management and information provision.

The sectoral sections consist of the following for each sector:
- 'Legislation': this lists the sector-specific legislation that financial institutions in the relevant sector must comply with to manage climate and nature-related risks.
- 'Impact of climate and nature-related risks': this presents examples of climate and nature-related risks and their potential impact in the specific sectors.
- 'Good practices for climate and nature-related risk management': good practices are provided for the focus areas of business model and strategy, governance, risk management and information provision for each sector. No good practices are currently available for the electronic money and payment institutions sector.

9 In accordance with DNB's enforcement policy.

Legislation

As a prudential supervisor, DNB conducts risk-based supervision of the sound operational management of financial institutions. As one aspect of this, institutions are expected to manage material climate and nature-related risks. A financial institution must, within the applicable legislative frameworks, be able to decide for itself what measures to take in view of the risks it faces and in line with its nature, size and complexity. The sector-specific tabs, accessible via the buttons on the right, further explain the prudential laws and regulations governing climate and nature-related risk management for each sector.[10] If DNB detects non-compliance with legal obligations, we may take enforcement action.

Non-prudential legislation on climate and nature-related risks and broader legal developments on sustainability are discussed in more detail below.[11] This non-prudential legislation on climate and nature-related risks and broader legal developments on sustainability also have an impact on financial institutions' operational management with regard to sustainability, but DNB does not have the competence as a supervisory authority to take enforcement action under this legislation.

Non-prudential legislation affecting the financial sector

In addition to sustainability aspects being integrated into prudential legislation, a growing number of sustainability-related laws and regulations will continue to impact financial institutions.[12] For example, the European Commission has drawn up the Action Plan for Financing Sustainable Growth (2018) to make sustainability an integral part of risk management and encourage transparency and long-term thinking. This package includes: the EU Taxonomy Regulation, a classification system for sustainable economic activities; the Sustainable Finance Disclosure Regulation (SFDR), containing sustainability disclosure requirements for financial market participants; and

10 Where relevant, the sector-specific tabs of this guide also provide more information on the publications of the European Supervisory Authorities (ESAs).
11 Several examples of relevant legislation and developments are mentioned, but this is not an exhaustive overview.
12 The Guide focuses on climate and nature-related risks as a subcategory of sustainability risks.

the Corporate Sustainability Reporting Directive (CSRD), with reporting requirements as included in the European Sustainability Reporting Standards (ESRS). Institutions covered by these rules must include in their external reporting information on the impact of ESG factors on the institution and the corresponding impact of the institution on people and the environment, known as double materiality. Based on this double materiality analysis, institutions must report, among other things, on their strategy, governance, risk management and performance indicators on the material ESG themes. In addition, the CSRD also requires firms to report on achievable sustainability plans. The Dutch Authority for the Financial Markets (AFM) monitors compliance with this transparency-focused legislation. In the case of the CSRD, AFM supervision is limited to issuers in the financial markets. The Corporate Sustainability Due Diligence Directive (CSDDD) additionally requires certain firms to take appropriate due diligence measures in relation to potential environmental damage and human rights violations. They must, for instance, investigate the environmental and human rights impact of their own activities and those of their suppliers, in order to prevent, mitigate or eliminate any potential negative effects. Financial institutions falling within the scope of the CSDDD are only subject to due diligence requirements for the upstream part of their activity chains in addition to their own operations. In addition, CSDDD firms must prepare a climate mitigation transition plan in line with the Paris Agreement.[13] Monitoring compliance with the CSDDD is yet to be fleshed out. The content and/or scope of the EU taxonomy, CSRD and CSDDD may change due to the Commission's recent Omnibus proposals.

Broader legal developments in the area of sustainability

Sustainability laws and regulations directly affect financial institutions not only because they must comply with them, but also indirectly through their impact on the real economy. The 2019 European Green Deal is a comprehensive package of climate-related policy initiatives (adaptation), circularity and nature restoration. The Green Deal is based on the European Climate Law, which requires net greenhouse gas emissions in the EU to be neutral by 2050, in line with the Paris Agreement. In addition, the European Climate Law includes the binding interim climate target of 55% emissions reduction by 2030 compared to 1990 levels. The Dutch Climate Act implements the European Climate Act at the national level in the Netherlands. Moreover, the central government has set the ambition for the Dutch economy to be fully circular by 2050. To achieve this objective, the National Circular Economy Programme 2023-2030 elaborates potential policy measures for each industrial sector in terms of incentives, standardisation and pricing until 2030. Similarly, the National Implementation Programme on Climate Adaptation sets out the adaptation strategy for the Netherlands, and various targets have been set aimed at promoting nature restoration.[14]

13 Transition plans prepared in line with the CSRD are also in line with the CSDDD.
14 Examples of these targets include meeting the European Birds and Habitats Directives, creating new forests and restoring biodiversity in existing forests, and improving water quality.

Climate and nature-related risks

This Guide deals with climate and other nature-related risks. These are the financial and non-financial risks that may arise from financial institutions' exposure to the effects of climate change and nature degradation.

Physical and transition risk factors

Nature includes both the living and non-living parts of our planet.[15] Climate is thus part of nature. Climate and nature-related risks may be driven by **physical** and **transition risk factors**:

- Physical risk factors are related to the physical impacts of climate change and nature degradation. These can be both acute and chronic. Acute physical risk factors in climate change include more frequent and intense extreme weather events such as prolonged drought, heavy precipitation or severe windstorms. In terms of nature degradation, acute physical risk factors include disasters resulting in air, soil and water pollution. Chronic physical risk factors evolve over a longer period; these include sea level rise and biodiversity loss due to ecosystem degradation.[16]
- Transition risk factors are related to the transition to a lower-carbon and more nature-inclusive economy, such as changes in climate and nature policies, technology or consumer and market sentiment.

Physical and transition risk factors are interrelated. The longer policy action and hence the transition to a lower-carbon and more nature-inclusive economy is delayed, the greater will be the (actual or expected) physical consequences. This may require more drastic policy measures. Major and abruptly implemented policy measures are a transition risk factor.[17] Physical and transition risks can also lead to systemic risks, which are risks that result in the failure of the entire system, rather than the failure of individual components. This may be the case if an ecosystem collapses due to the accumulation of physical risks, if multiple sectors are affected by physical and transition risks, and/or if the financial problems of one or more firms or financial institutions spill over to the entire system.

There is also a close interaction between climate and other nature-related risks. Biodiversity loss, for instance, amplifies climate change through deforestation and CO_2 released in the process, while climate change in turn is one of the main drivers of biodiversity loss. Conversely, good forest management can actually mitigate further climate change. Climate and nature-related considerations can also have opposing effects in certain circumstances. For instance, mining raw materials needed for the energy transition can degrade nature. Thus, for proper risk management, it is important that financial institutions assess risks in conjunction with each other.

15 See also NGFS Conceptual Framework on Nature-Related Risks.
16 Ecosystems are complex and dynamic systems of plants, animals and microorganisms, together with the non-living environment, interacting as a functional unit. See, inter alia, the DNB and PBL study Indebted to nature – Exploring biodiversity risks for the Dutch financial sector.
17 The NGFS Scenarios Portal compares the impacts of a number of policy and market scenarios with different physical and transition risk factors.

Climate and nature-related risks as a source of prudential risks

Climate and nature-related risks can lead to financial or non-financial risks for financial institutions, such as market and reputational risk, through transmission channels (see Figure 1), Climate change, for example, will make extreme weather events more frequent, potentially causing capital destruction and increasing the unforeseen claims burden for non-life insurers, as well as their underwriting risk. Extreme weather events can also damage the premises, data centres and services of financial institutions, disrupting production processes and jeopardising business continuity. Such events can also cause physical damage to firms in which financial institutions invest, thus giving rise to higher market risk. Adaptation measures such as strengthening dykes or climate-proofing buildings can act as risk mitigators in this regard. New climate policies, technical developments and/or changes in consumer preferences could also potentially reduce the market value of certain investments and even result in stranded assets[18]. In the case of financial institutions, this may imply increased market risk. If transition risk factors make firms less profitable, financial institutions may see their credit risks rise.

Nature degradation poses a major risk to our society and the global economy. Indeed, firms depend on animal pollination of plants, soil stabilisation, protection against erosion and water purification, among other things. These activities are also known as ecosystem services: nature provides them to the real economy. Financing companies that are highly dependent on ecosystem services exposes financial institutions to physical biodiversity risks. A study by DNB and the PBL Netherlands Environmental Assessment Agency shows that Dutch financial institutions have hundreds of billions of euros worth of loans and other financial products outstanding that are at risk due to the disappearance of ecosystem services.[19] Investments in companies that negatively impact nature can lead to transition risks if governments start banning or pricing these impacts.

The extent to which climate and nature-related risk factors permeate or interact with the institution may differ from sector to sector and also depends on the institution's business model. The sector-specific tabs contain a table with examples of how climate and nature-related risk factors feed through into existing financial or non-financial risks.

In addition to these direct impacts, financial institutions may encounter indirect or second-order effects. For instance, the chronic effects of climate change may have repercussions on macroeconomic factors, for instance lower labour productivity or higher food prices, which may indirectly affect the financial sector. The (negative) impact on the financial system may in turn worsen the macroeconomic conditions. The feedback arrows between the economy and the financial system in Figure 1 illustrate these second-order effects.

Climate change and nature degradation do not only affect financial institutions; financial institutions themselves have an impact on the climate and environment through their activities. This is also known as double materiality[20]. Whereas financial materiality refers to the impact of people and the environment on an institution's financial performance (risks and opportunities), impact materiality is about the impact of the institution itself on people and the environment. This impact may also involve financial risks related to the transition risks mentioned earlier as parties adapt to a sustainable society or are compelled to do so. For example, financial institutions that invest in firms with high negative environmental impacts may face increased reputational, legal or market risks. Financing and

18 Stranded assets are defined as assets that have suffered unexpected or premature depreciation, write-downs or conversion to liabilities as a result of, for example, new climate and nature-related regulations.

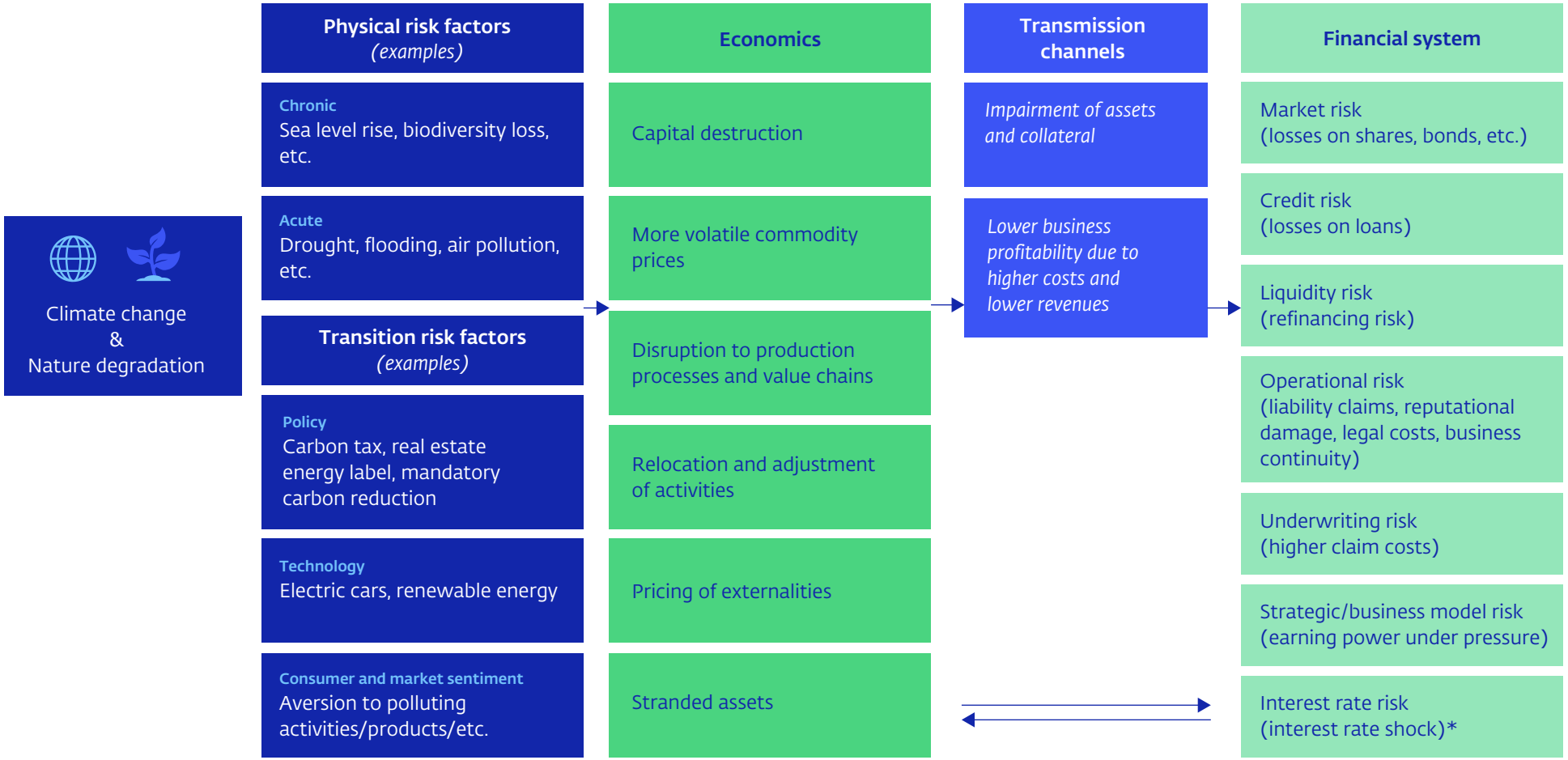
19 ECB research (2023) also shows that over 60% of the total assets of non-financial undertakings located in the Netherlands are highly physically dependent on one or more ecosystem services.

20 See also ESRS 1 General Requirement for an explanation of what should be considered material.

investments with an (intended) positive impact on climate or nature can also carry reputational risks in the event of greenwashing, unmet expectations or if stakeholders feel that sustainability is given too much or too little weight compared to other interests and risks.[21] Institutions may then face claims that increase their operational costs, as explained in Box 1 on legal sustainability risks.

21 See also an EBA report and a report by EIOPA. The AFM is the primary regulator of greenwashing as such, while DNB supervises whether the institution adequately identifies and manages the prudential risks that may arise from greenwashing.

Figure 1 Climate and nature-related risks as a source of prudential risks[22]



Macroeconomic deterioration leads to increasing risks to the financial system; and (negative) financial consequences lead to macroeconomic deterioration

22 Figure 1 is for illustrative purposes only and is not exhaustive for every institution. The climate and nature-related risk factors that may affect an institution, and to what extent, vary by institution.

Box 1 Legal sustainability risks

Inadequate management of climate and nature-related risks can give rise to legal sustainability risks for financial institutions through various channels. For example, it is conceivable that a fine or other sanction could be imposed on a financial institution if it fails to comply with climate and nature-related laws and regulations. Moreover, it cannot be ruled out that a financial institution could be challenged in court (e.g. under tort law) for failing to have an adequate climate policy.

Legal sustainability risks are relevant in prudential supervision for several reasons. For example, they can translate into financial risks if potential customers and investors shun a financial institution that is associated with non-compliance with laws, regulations or its own voluntary climate commitments, whose climate policies are inadequate or, according to its stakeholders, that gives sustainability too much or too little weight over other interests and risks. Legal sustainability risks can also increase operating costs for financial institutions (e.g. due to mass tort litigation and high legal fees). It is therefore important that financial institutions identify and manage the various risks that can arise from legal sustainability risks.

Read more:

- NGFS: Climate-related litigation: recent trends and developments
- NGFS: Nature-related litigation: emerging trends and lessons learned from climate-related litigation

Climate and nature-related risks can also impact people and society: the 'S' of ESG (Environment, Social, Governance). Laws and regulations in the area of sustainability increasingly cover the entire spectrum of ESG themes, meaning 'social' risks are often subject to similar risk management standards. Box 2 discusses the intertwined nature of climate and nature-related risks and social risks.

Box 2 Intertwined nature of social risks with climate and nature-related risks and impact on the financial system

Sustainability also has a social dimension that focuses on the well-being of people and communities. Identifying and managing social risks is also part of the general standard of sound and ethical operational management. More and more sector-specific prudential laws and regulations explicitly mention social risks. Non-prudential EU legislation also identifies social issues. For instance, the EU Taxonomy contains minimum standards regarding human and labour rights that firms engaged in green activities must comply with. And according to the CSRD (and the associated ESRS) and CSDDD, financial institutions in scope must report on material social issues, and investigate and address them in their value chain.

Social themes can be independent drivers of prudential risks, but can also be intertwined with climate and nature-related risks. For example, consider the use of child labour in mining minerals for the production of solar panels or batteries. Moreover, under certain circumstances, such mining can also cause substantial damage to the local natural environment, potentially leading to financial risks for financial institutions. This may be the case, for example, if the firms they invest in are forced by new legislation to adjust production processes, potentially resulting in higher costs, lower profitability and lower share prices.

Generally speaking, there is as yet limited understanding of social risks for financial institutions and setting quantitative and science-based standards is a complex undertaking.[23] It is important for institutions to be aware of any material social risks (whether or not related to climate and nature-related risks) and to monitor developments.[24]

Managing climate and nature-related risks

Climate and other nature-related risks have specific characteristics that are key to the comprehensive management of these risks. Climate change and nature degradation are systemic in nature and can have unpredictable and disproportionate ecological and economic consequences. Historical data is therefore often of limited value in assessing the risks. In addition, risks materialise on an uncertain timeframe ranging from quick to protracted, the consequences associated with these risks are characterised by their enormous scope, and both the probability of a risk materialising and the scope of consequences depend on short-term (policy) action. Finally, climate and nature-related risks are relatively new in the financial sphere and new developments and insights are emerging in rapid succession. Appropriate management of climate and nature-related risks does not stand in isolation but is part of an integrated approach to risk management. It is therefore important for institutions to be mindful of the interrelationship between various risks and make conscious trade-offs in case of conflicting risk management objectives.

Impact of risks on sectors

- Pension funds
- Insurers
- Investment firms and institutions
- Electronic money or payment institutions

23 See also the EU report (2022) on a possible social taxonomy. Whereas greenhouse gas emissions can be used as an unambiguous indicator to quantitatively represent the contribution to climate change, social risks are based on norms and values elaborated in principles, making them more difficult to represent with an objective, quantitative indicator.

24 For more background, see also the European Banking Authority's report (2023) on the role of natural and social risks in the prudential framework.

Focus areas for the management of climate and nature-related risks

The 'Legislative framework' sectoral tabs describe the prudential laws and regulations financial institutions within a sector must comply with to manage climate and nature-related risks. This section discusses in general terms the main areas of focus for achieving comprehensive risk management. The focus areas are (1) business model and strategy, (2) governance, (3) risk management and (4) information provision.
Before going into these focus areas, the section looks at important elements for the materiality analysis, which forms an important starting point in integrating climate and nature-related risks by identifying which risks are material.
The sector-specific tabs offer good practices for each focus area as examples of approaches to fulfilling the regulatory obligations arising from laws and regulations, possibly observed at one or more institutions, which we believe to be effective.
Good practices are suggestions or recommendations for supervised institutions. Financial institutions are free to adopt another approach as long as they comply with the laws and regulations, and are able to demonstrate this to DNB on reasoned grounds. As such, the good practices in the Guide are therefore not binding, but are intended to offer inspiration to institutions in fulfilling the statutory requirements related to climate and nature-related risk management in a way that suits them.

As sectoral laws and regulations differ, some of the focus points for a specific sector may contain a legal requirement and/or must be approached in a prescribed manner. These legal requirements are always leading.

Box 3 Focus points for materiality analysis[25]

Financial institutions must manage risks appropriately. The same applies to material climate and nature-related risks. A materiality analysis (risk analysis) can be used to determine whether climate and nature-related risks are material to the institution.
The following points should be taken into account when conducting a materiality analysis:

1. Difference between physical and transition risk factors
Examples of physical risk factors include drought, floods, biodiversity loss and water stress. Transition risk factors include policies, technology and market sentiment.

2. Impact on the various prudential risk areas
This involves identifying how the physical and transition risk factors mentioned may impact the risk domains used by the institution, such as credit, market, liquidity, operational/reputational, business model and strategic risk (see the 'Climate and nature-related risks' tab for an explanation of how climate and nature-related risks impact prudential risk categories).

3. Different time horizons
Here a distinction can be made between the short term (0-5 years), medium term (5-10 years) and long term (>10 years).

4. Qualitative and quantitative analysis methods
Examples of quantitative methods include exposure and/or concentration analysis, scenario analysis, sensitivity analysis, portfolio alignment assessment and ratings or climate scores assigned by external data providers. Qualitative methods include a heat map and qualitative scenario analysis. It is important to choose the data, models and assumptions carefully and to acknowledge the limitations because of the implications these factors have on the results.

5. Materiality assessment
Materiality can be assessed by combining information on probability and impact for different time horizons. This assessment is institution-specific and depends on the institution's business model, operational environment and risk profile characteristics. It is important that institutions document the results of this analysis. This will enable them to provide an explanation if climate and nature-related risks turn out to be non-material.

25 The materiality analysis in this Guide focuses on material financial risks. This aligns with financial materiality analysis, as one side of the double materiality analysis required under the CSRD. Institutions can use the requirements from the CSRD as additional guidance. The AFM, as the supervisory authority for the CSRD, has published ten waypoints for conducting the CSRD double materiality analysis.

Focus area 1 Business model and strategy

Mapping the potential impact of climate and nature-related risks on the business environment and business model

Institutions should consider all material climate and nature-related risks to which their business model may be exposed. These risks may arise from developments in the business environment, among other things. This includes various external factors and trends that influence the conditions under which the institution operates. These may be related to geographical and sectoral exposure, for instance. Climate change and nature degradation can affect this environment and pose risks to the business model. For instance, increased flood risk can make a region's business climate less attractive. An institution that is dependent on income from this region may have lower earning potential in the long run. At the same time, climate change and nature degradation can provide opportunities for the institution to maintain its earning potential. Using a materiality analysis, the institution can determine which risks from the environmental analysis constitute a material risk (see Box 3 for focus points for the materiality analysis).

Adopt a granular and long-term perspective when identifying risks (and opportunities)

A good way to identify risks (or opportunities) in the business model is to inventory them at the level of sectors, geographical areas and services in which the institution operates or wishes to operate, also indicating the timeframe over which these risks are likely to materialise. Some climate and nature-related risks may occur within the regular planning cycle, such as reputational effects or extreme weather events. Other risks, such as technological breakthroughs, may come into play and affect the business model in the longer term.

Include climate and nature-related risks in strategy formulation and implementation

Material climate and nature-related risks may impact the effectiveness of the existing and future strategy. Forward-looking tools such as stress tests and scenario analyses can be used to assess this. Material risks arising from the analyses are taken into account when formulating or updating the strategy.

Set performance indicators

Performance and risk indicators are useful for implementing and monitoring the strategic targets regarding climate and nature-related risks. The indicators allow for adjustment and action in the implementation of the strategy. Depending on the activities and materiality, specific indicators can be drawn up for relevant parts of the institution and portfolios. These could include indicators such as the organisation's carbon footprint or the share of sustainable assets in its strategic investment policy. Transition and action plans prepared by financial institutions, including those prepared pursuant to the Climate Commitment, describe these indicators and the tools required to achieve the targets.[26]

Good practices for sectors

- Pension funds
- Insurers
- Investment firms and institutions

26 See also the Third Progress Report on the Climate Commitment of the Financial Sector 2023. This report monitors the strategy and progress relating to climate and nature of the institutions that signed the Climate Commitment in 2019.

Focus area 2 Governance

Policymakers[27]

Embed climate and nature-related risks in governance and policy frameworks

It is important that policymakers, making up the senior level of the institution, embed climate and nature-related risks in the governance, strategy, risk appetite and risk management framework. As these risks can affect the institution in multiple ways, comprehensive embedding within both corporate governance and internal key functions is essential to ensure that these risks receive sufficient attention within the organisation and are adequately addressed. In doing so, they also promote a culture of values, standards and behaviour that contributes to conscious consideration of climate and nature-related risks.

Assign responsibilities for climate and nature-related risks within the institution's own policymaking bodies

Assigning tasks and responsibilities for climate and nature-related risks in the institution's own policymaking bodies stresses the importance of this theme and demonstrates a commitment to climate and nature-related risks from the most senior levels of the organisation. To ensure that climate and nature-related risks are properly embedded, it is possible to examine which structure, working method and/or division of tasks is appropriate within the institution's own policymaking structures. Various options are possible, including setting up a specific management board or supervisory board committee for climate and nature-related risks.

Ensure that policymakers are fit to manage climate and nature-related risks

It is essential that policymakers have sufficient knowledge, experience and skills to assess exposure to climate and nature-related risks and make balanced decisions. We also pay particular attention to this when assessing the fitness of policymakers and other officers for whom we conduct fit and proper assessments.[28] As these risks are relatively new, complex and diverse, it is particularly important to have sufficient knowledge, experience and skills in this area. Developments, e.g. new legislation, move quickly, which is why it is advisable to ensure continuous emphasis on fitness with regard to climate and nature-related risks.

Organisation

Allocating responsibilities and resources for climate and nature-related risk management within the organisational structure

By explicitly assigning roles and responsibilities and distributing them in a balanced way across functions, it is possible to make well-informed decisions on climate and nature-related risks. The nature of these risks requires institutions to take account of major uncertainties surrounding the timing and impact of climate change and nature degradation in their decision-making. This makes it particularly important to include input from the relevant functions involved in the management of climate and nature-related risks. Sufficient financial and human resources, including the required knowledge and skills, are essential for the adequate performance of the functions. As developments are occurring rapidly in this area, it is advisable that the adequacy of resources, expertise and skills to manage climate and nature-related risks is assessed on a regular basis.

27 In this Guide, we take 'policymakers' to mean the highest executive body (the management, board of directors or management board) and the supervisory body (the supervisory or oversight board) of the institution, as applicable.

28 This is explained in greater detail in the sector tabs. See also: Climate-related risks are now a part of fit and proper assessments | De Nederlandsche Bank

Align remuneration policies and practices with the strategy and management of climate and nature-related risk

By aligning remuneration policies and practices with the institution's strategy, goals, long-term targets and risk appetite, it is possible to encourage behaviour that can help achieve effective risk management, including management of material climate and nature-related risks.

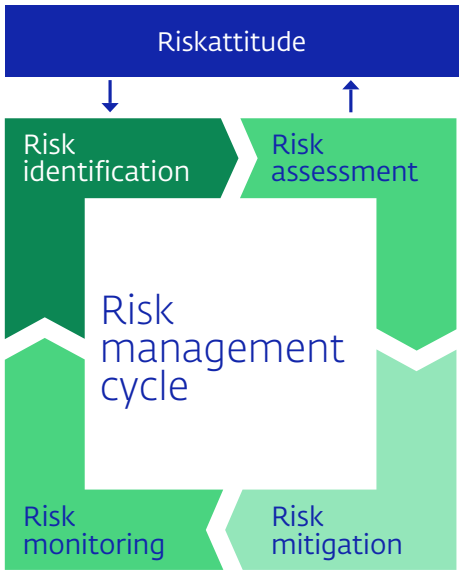
Good practices for sectors

- Pension funds
- Insurers
- Investment firms and institutions

Focus area 3 Risk management

Include climate and nature-related risks in the risk appetite
A risk appetite is formulated and targeted measures are taken to account for exposure to current and future risks. The risk appetite is the starting point for the structure of the risk management cycle. By including all risks – both material and non-material – in the risk appetite, an organisation indicates which climate and nature-related risks are acceptable as it works to achieve its strategic goals and which are not. These could include a risk tolerance for market risk caused by asset impairment due to stricter climate policies. It is sensible to review this risk appetite regularly, particularly in view of the new and dynamic nature of climate and nature-related risks and related legislation and regulations.

Figure 2 Risk management cycle



Integrate climate and nature-related risks in the existing risk management cycle
Integrating climate and nature-related risks in the existing management cycle (see Figure 2) ensures ongoing emphasis on these risks. The cycle identifies, assesses, mitigates, monitors and evaluates exposure to relevant risks against the established risk appetite. Management in accordance with these steps in the risk management cycle can be demonstrated in writing, through policies, management information and risk reports. The identification and assessment are based on financial institutions' legally required risk assessments.[29]

Form a comprehensive picture of climate and nature-related risks in the identification phase
In the identification phase, the institution forms a comprehensive picture of the climate and nature-related risks that affect its business model and strategy and that generally arise in the medium to long term, and how these risks will affect the current balance sheet and organisation in the short term. A comprehensive picture of climate and nature-related risks in the identification phase takes into account the different characteristics of these risks. This includes the fact that they can be driven by both physical factors and transition factors. It also takes into account that climate and nature-related risks are interrelated and can reinforce or counteract each other. Additionally, it identifies the extent to which climate and nature-related risks can affect multiple financial or non-financial risk categories simultaneously and whether the effect on one category can spill over to other categories.

29 The Own Risk and Solvency Assessment (ORSA) in the insurance sector, the Own Risk Assessment (*Eigen Risico Beoordeling – ERB*) in the pensions sector and the Internal Capital and Liquidity Adequacy & Risk Assessment Process (ICAAP and ILAAP) for investment firms and managers of institutions and UCITS, insofar as they provide investment services.

Use scenario analyses and stress tests to estimate exposure to climate and nature-related risks

Scenario analyses and stress tests are useful tools given the uncertainties and complexities associated with both short-term and long-term climate and nature-related risks. For the shorter regular planning period, these tools can be used to identify the impact of these risks on capital (and required capital). Business impact analyses and continuity tests can be used to assess the resilience of critical operational processes to climate and nature-related risks. Longer-term scenario analyses are useful particularly to assess the resilience of the business model. See Box 4 for additional information on scenario analyses. When conducting and interpreting the analysis, it is important to consider the implications of the data, models and assumptions used on the outcomes, and to be aware of the limitations of the analysis. For instance, many climate and nature models assume linear relationships, without taking tipping points into account. This may lead to an underestimation of risks. It is also important to keep testing and revising the scenarios to ensure that they reflect new developments adequately.

Set appropriate risk tolerances and indicators for measuring and assessing climate and nature-related risks

For example, given the risk appetite, tolerances can be set on exposures to sectors or geographical areas that are highly sensitive to climate and nature-related risks and thus a source of market or counterparty risks. Clearly defined tolerances and, where possible, measurable indicators are important for monitoring the risk appetite. To form a complete picture of the risks, it may be necessary to formulate multiple indicators for a single risk. For example, these could be indicators derived from certain concentration risks on investments and loans or indicators reflecting the potential impact of physical risks on outsourcing. In doing so, it is important to take the risk picture as the basis, rather than the available data. By prioritising risks, blind spots are avoided and the right data can be found efficiently. In cases where quantitative data is lacking, it is possible to use qualitative indicators based on expert judgement. For each risk indicator, probability and impact analyses can be used to assess whether the identified risk level falls within the risk tolerance and hence the risk appetite. When interpreting the results, it is advisable to draw prudent conclusions, especially where risks are only measurable to a limited extent.

Box 4 Focus points for preparing and conducting scenario analyses[30]

Phase	Action	Notes
1	Define goal	Understanding long-term risks to the business model or short-term financial risks. Input for risk management or strategic policy discussions.
2	Choose scenarios	Type (dependent on goal): qualitative or quantitative, trend, exploratory or stress. Number: Two or more, including a scenario in line with limiting global warming to 1.5 degrees for transition risks and a high-emissions scenario for physical risks.
3	Assumptions, measure and parameters	Assumptions: internal or aligned with recognised third parties (e.g. NGFS, KNMI, IEA). Measure: choice of emissions, temperature rise. Parameters: type of transition (orderly and timely, disorderly or no transition). Make prudent assumptions in a stress scenario.
4	Time horizon	Short (e.g. up to 5 years) and medium (5 to 10 years) horizon for financial risks and impact on soundness of the institution. Long horizon (>10 years) for qualitative estimates for impact on business environment and business model.
5	Method and procedure	Method: calculation model or narrative behind the scenarios. Procedure: include stakeholder engagement, workshops with experts.

30 The CSRD contains specific reporting standards when using scenarios. Institutions not covered by the CSRD can also use these standards when preparing and conducting scenario analyses.

Managing climate and nature-related risks that fall outside the risk tolerance

If the potential impact of climate and nature-related risks falls outside the established risk tolerance, it is important to indicate how these risks will be mitigated within a defined timeframe. For example, an institution can reduce its carbon footprint or opt for investing in firms that transition to renewable energy. It is advisable to evaluate the effectiveness of the mitigation tools used, to make this measurable and to monitor effectiveness where possible. Where measures are unlikely to be sufficient to align the risk profile with the risk appetite, appropriate follow-up steps are defined.

Monitor and periodically report on exposure to climate and nature-related risks

By monitoring climate and nature-related risks using the identified risk indicators, these risks and their development can be tracked. Institutions that have committed themselves to specific climate targets or alliances must ensure that they monitor their progress on these commitments to remain credible and avoid reputational risk. Risk reporting helps the policymaking body to make informed decisions on the management of material climate and nature-related risks.

Frequent evaluation of the climate and nature-related risk management cycle

Developments in climate and nature-related risks are occurring rapidly. There is a growing body of knowledge about these risks and their modelling, data coverage is growing and there is more and more legislation in this area. This means it is essential to frequently evaluate the climate and nature-related risk management cycle. These evaluations may give rise to questions such as: is the list of identified risks still complete? Is the materiality estimate of the risks still correct? Is the impact of the risks being properly measured? Are the mitigation measures effective? By setting a target maturity level, the institution can identify what future steps are still needed to improve the risk management cycle.

Good practices for sectors

- Pension funds
- Insurers
- Investment firms and institutions

Focus area 4 Information provision

AFM/DNB division of duties

Information provision is an area in which supervision is shared between DNB and the Dutch Authority for the Financial Markets (AFM). Among other things, the AFM monitors whether information provision complies with legal obligations such as those arising from the SFDR and CSRD. It also ensures that public information is correct, clear and not misleading. DNB focuses on prudential reporting and the prudential implications of external reporting, such as reputational risks that may arise due to insufficient or inadequate information provision. Meaningful reporting requires adequate data and infrastructure, which is why both the AFM and DNB incorporate these aspects into their supervision. The focus points below describe which components DNB examines in its supervision of information provision.

More information on the AFM's supervision of sustainability information provision can be found at Sustainability (afm.nl).

Create appropriate data infrastructure for internal and external reporting of climate and nature-related risks

An appropriate data infrastructure for climate and nature-related risks helps in the identification of these risks. For proper embedding and an integrated approach, it is important to link the collected data on climate and nature-related risks to existing models and processes and integrate them into data governance and quality assurance (QA) processes. An important part of that infrastructure is determining the data requirements, which partly depends on the business model, strategy, goals, risk profile and size of the institution. This data can serve as input for internal reporting to guide strategic decisions, as well as external reporting such as the annual report and prudential reports. DNB acknowledges that the data and methodologies used to identify climate and nature-related risks are still under development and are sometimes incomplete. As a result, quality and accuracy may vary. These nuances should be factored in to avoid drawing incorrect conclusions. Policies and control processes for accuracy and completeness can support data quality.[31] By working on a best-effort basis and keeping up with developments, the data quality and data infrastructure can be raised to an increasingly mature level.

Pay attention to new reporting standards in the area of sustainability when determining the data requirement

The legal obligations for prudential reporting are a good starting point for determining data requirements. There are also various initiatives to boost transparency in the area of sustainability in the financial sector, such as the SFDR and CSRD[32], which will also play a role in determining data requirements. Even if institutions are not subject to these reporting obligations, it may be useful to use these European reporting standards when determining data requirements.

Provide meaningful information on material climate and nature-related risks in the context of prudential information provision

Providing information on material climate and nature-related risks enhances supervisors' and market participants' understanding of the risk profile and resilience of financial institutions. The institution's information provision policy may include the considerations behind the assessment of the materiality of climate and nature risks, as well as the frequency and method of disclosure. When preparing prudential reports, it is important to present a complete picture of material climate and nature-related risks. Providing an explanation of the methodologies, definitions and criteria used makes it easier to understand how the figures, measures and targets were calculated. The key performance indicators (KPIs) and key risk indicators

31 See also the recent AFM explorative study into Asset Managers' use of ESG data: ESG data risk management.
32 See Legislation/Non-prudential legislation for a further explanation of the SFDR and CSRD.

(KRIs) used in risk management and strategy formulation, together with current performance on these indicators, also provide valuable insights into institutions' performance and risks. If climate and nature-related risks are considered non-material, it is advisable to document the qualitative and quantitative information used to arrive at this conclusion. As both disclosure frameworks and user needs evolve rapidly, it is recommended to regularly evaluate the extent to which additions are needed in order to provide an accurate picture of the risk profile with regard to climate and nature-related risks.

In the case of voluntary commitments: provide accurate and substantiated information about the commitments

DNB does not supervise the structure and progress of voluntary commitments. However, institutions' commitments are relevant to DNB as a prudential supervisor from a risk perspective.[33]

A large group of financial institutions have voluntarily committed to achieving national and international climate and nature-related targets and have drawn up action and transition plans to this end. It is important that institutions communicate accurately and transparently about these commitments to avoid greenwashing or even the semblance of greenwashing. Indeed, an institution associated with greenwashing is at increased risk of reputational damage and legal proceedings, which may also lead to prudential risks.[34] If an institution commits to specific policy goals, it is essential to provide sufficient clarity on issues such as the long-term objectives and intermediate milestones, the concrete strategies to achieve these goals and the associated governance. It is also worthwhile to explain why portfolios and/or activities have been selected while others are considered irrelevant. Additionally, it is advisable to provide a realistic picture of the institution's dependence on other parties in achieving climate targets, as well as the risks that emerge if these targets cannot be met. Regular progress monitoring allows adjustments to be made as needed.

Good practices for sectors

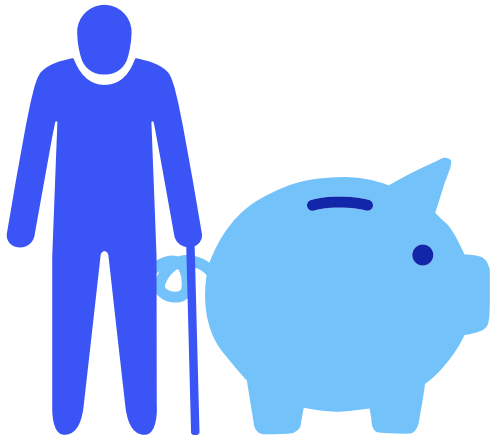
- Pension funds
- Insurers
- Investment firms and institutions

33 Implementation of the plans will help institutions manage climate risks and adapt their business models where necessary in anticipation of the transition; the plans provide information in addition to regular supervision information. In addition, the plans allow the institutions to respond to society's increasing focus on the impact on nature they have through their investments and assets. It should be noted that insufficient progress can actually increase reputational and legal risks. Also see DNB's analysis of financial institutions' climate action plans.

34 See also EIOPA's final report and opinion for the European Commission on preventing greenwashing and the NGFS report on Climate-related litigation (2023).

Sectors

Pension funds



Legislative framework for pension funds

Below, we describe the legislative framework for managing climate and nature-related risks by pension funds[35]. In addition to the Financial Supervision Act (*Wet op het financieel toezicht – Wft*), the Pensions Act (*Pensioenwet – Pw*), the Mandatory Occupational Pension Scheme Act (*Wet verplichte beroepspensioenregeling – Wvb*) and the Financial Assessment Framework are relevant for pension funds. We set out the requirements for (i) risk management, (ii) governance and (iii) prudential reporting.

Risk management

As part of sound and ethical operational management, pension funds must adopt a written policy on the management of the risks they run and ensure the implementation of their policy. In addition, pension funds must document strategies, processes and reporting procedures to identify, measure, monitor, manage and report on these risks, at both individual and aggregate levels. These risks include climate and nature-related risks that may impact the investment portfolio and its management. As part of its risk management procedures, a pension fund must conduct an own-risk assessment at least every three years and document this in writing. The own-risk assessment must also include new and emerging risks, including risks related to climate change, resource use and nature, and risks related to asset impairment due to regulatory changes.

Other governance requirements

A pension fund must ensure good governance. Principles for good pension fund governance are set out in the Pension Funds Code 2024, drafted by the Labour Foundation and the Federation of Dutch Pension Funds. These principles include being mindful of sustainability, which means that pension funds should have an investment policy that explicitly includes climate and nature-related factors, also taking into account stakeholders' preferences and interests. A pension fund should also proportionally take into account the potential long-term impacts on nature and the impact of sustainability risks on investment decisions. The pension fund's management board reports on compliance with these principles in its regular report. The pension fund's policies should be set by individuals fit to occupy their position.

Similarly, the pension fund's risk management function should be entrusted to individuals fit to perform this role. The fitness of the day-to-day policymakers and risk management function is assessed with regard to sound and ethical operational management, among other things. Risk management, including risks related to climate and nature, is taken into account in the fitness assessment. The individuals assessed must also be fit in terms of governance, organisation and communication. This includes having insight into and driving for long-term value creation. The explanatory notes to the Policy Rule on Suitability 2012 clarify that the management body must possess sufficient knowledge and experience with regard to the effects of climate change and the sustainability regulations relevant to the financial sector. In our fitness assessments we take into account the candidate's proposed position, the pension fund's nature, size, complexity and risk profile, and the composition and functioning of the board as a whole. Pursuant to Section 102a(1) of the Pensions Act, the pension fund lays down the policy principles and objectives, including the risk appetite, after consultation with the fund's decision-making bodies. The policy principles and objectives, including the risk appetite, are a starting point for setting the strategic investment policy. The pension fund must have a sustainable and sound remuneration policy that is aligned with its risk profile, objectives and long-term interests, among other things (Section 21a of the Pension Fund (Financial Assessment Framework) Decree).

35 Here, this includes only the statutory provisions falling under DNB's prudential supervision. Provisions falling under DNB's integrity supervision or supervised by the AFM are excluded.

Prudential reporting

A pension fund is required to draw up an actuarial and technical business report. This report explains the actuarial and operational policy, along with the overall functioning of the pension fund. The statement of investment principles, which is included in this report, sets out how climate and nature are taken into account in the investment policy. In the management report, the pension fund states how climate and nature are taken into account in the investment policy. The financial accounts include a breakdown of investments with respect to ESG principles.

Overview of laws, regulations and policy statements

The following laws and regulations are particularly relevant:

- Section 143 of the *Pw* and Section 138 of the *Wvb* in conjunction with Section 18(1), (2) and (3)(g) of the Financial Assessment Framework Decree.
- Section 143 of the *Pw* and Section 138 of the *Wvb* in conjunction with Section 18b(1) and (2)(h) of the Financial Assessment Framework Decree.
- Section 33 of the *Pw* and Section 42 of the *Wvb* in conjunction with Section 11 of the *Pw* and *Wvb* Implementing Decree.
- Section 106(1) and (3) of the *Pw* and Section 110c(1) and (3) of the *Wvb* in conjunction with the Policy Rule on Suitability 2012.
- Section 145(1) of the *Pw*, Section 140(1) of the *Wvb* in conjunction with Section 29a of the Financial Assessment Framework Decree.
- Section 135(1) and (4) of the *Pw* and Section 130(1) and (4) of the *Wvb*.
- Section 203(3) and (4) of the *Pw* and Section 197(3) and (4) of the *Wvb* in conjunction with Section 30(1)(c)(5) of the Financial Assessment Framework Decree.
- Pension Funds Code 2024

The following other policy statements are particularly relevant:

- Policy Rule on Suitability 2012
- Managing sustainability risks - EIOPA

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Impact of climate and nature-related risks on pension funds

The table below shows an example of how climate and nature-related risk factors can affect a pension fund's existing financial or non-financial risk areas. The same risk factor can affect multiple risk areas simultaneously. The table is intended purely as an illustration to provide a starting point for the materiality analysis. The ultimate impact will depend among other things on the scale and distribution of physical and transition risks and on the pension fund's business model. The institution will have to determine this impact and its materiality in its materiality analysis.

Examples of how climate and nature-related risks feed through into a pension fund's risk profile (non-exhaustive)

Risk channel	Market risk	Reputational risk
Physical risk	Damage to property and assets in high-risk locations. Prolonged droughts and floods can result in loss of value of investments and can increase volatility in real estate markets, for example.	Providing finance to firms with a detrimental impact on the welfare of people and communities can lead to reputational risks, for example if investments have been made in sectors or firms involved in human rights controversies. Reports in the news media on such investments could reach pension fund members, leading to dissatisfaction. Litigation and/or non-compliance with a fund's own policies and signed commitments can also be an additional source of risk.
Transition	Depreciation of assets of carbon-intensive firms due to policy measures such as carbon tax/negative impact on revenue model due to product substitution (e.g. in the automotive industry). Changes in climate and nature-related policies, disruptive technologies and changing market sentiment may lead to stranded assets in carbon-intensive industries and other turmoil in financial markets.	Members' preferences are changing; they do not want to invest in fossil energy or carbon-intensive sectors.

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Overview of good practices for pension funds

Focus area 1: Business model and strategy

- GP1: Mapping the potential impact of climate and nature-related risks on the business environment and business model
- GP2: Surveying of member preferences regarding climate and nature-related risks
- GP3: Formulating investment principles and strategic investment objectives for climate and nature-related risks
- GP4: Translating strategic investment objectives into specific performance indicators

Focus area 2: Governance

- GP5: Ensuring that policymakers are fit to manage climate and nature-related risks
- GP6: Allocating responsibilities for climate and nature-related risk management within the organisational structure

Focus area 3: Risk management

- GP7: Formulating an ESG risk appetite
- GP8: Specifying the ESG risk appetite
- GP9: From longlist to shortlist in risk identification
- GP10: Conducting nature-related impact and dependency analysis
- GP11: Using various forward-looking methods in risk identification
- GP12: Defining ESG risk indicators in the risk assessment
- GP13: Listing mitigation measures for ESG risks
- GP14: Assessing the effectiveness of mitigation tools
- GP15: Monitoring ESG risks on the basis of key risk indicators
- GP16: Setting targets for improving the ESG risk management cycle and devise a strategy to achieve them

Focus area 4: Information provision

- GP17: Setting up an appropriate data infrastructure for climate and nature-related risks
- GP18: Reporting in SRI section in annual report
- GP19: Climate transition plan

Step-by-step plan

- GP20: Step-by-step plan for pension funds

Good practices for management of climate and nature-related risks by pension funds

The good practices are practical examples that, in our view, are good examples of integrated climate and nature-related risk management. These serve as inspiration for how institutions can address cross-sectoral focus points. The good practices are organised according to the aforementioned focus areas. To assist institutions that are in the early stages of embedding climate and nature-related risks into their core processes, we conclude with an example of step-by-step implementation of risk mitigation measures.

1 Business model and strategy

GP1: Mapping the potential impact of climate and nature-related risks on the business environment and business model

A pension fund's board wishes to know the impact of climate and nature-related risks on the business environment and business model because it needs to factor this impact into its strategic investment policy and risk management cycle. The board first conducts an environmental analysis, looking at upcoming laws and regulations, court rulings, European sustainability targets and initiatives, stakeholder wishes and the steps other pension funds are taking in the area of sustainability. In addition, the board conducts a materiality analysis of sustainability risks. To this end, the board analyses both the physical impacts of climate change, deforestation and biodiversity loss, among other things, on investments in the short, medium and long term, as well as the transition risks arising from policies to counteract these physical impacts. The investments are broken down by sectors with sufficient granularity to allow for an accurate and relevant impact analysis. The pension fund also uses location data to analyse physical nature-related risks, including biodiversity loss. Investment opportunities in new technology sectors are also on the board's radar.

In addition to the impact that climate and nature-related risks have on investments on the balance sheet, the board examines which risks its investments actually create for the climate and nature, known as 'double materiality'. The board is keen to do its part in the transition to a climate-neutral world, including placing emphasis on nature and the societal aspects of doing business. The board is explicitly determined to ensure a balanced investment portfolio, also from an ESG perspective. Moreover, the increased emphasis that members and society place on these risks may lead to reputational risk or litigation concerning the investment policies pursued. The board is aware such a situation can arise if they place too much or too little weight on sustainability considerations in the eyes of stakeholders compared to other interests and risks. Failure to comply with its own policies and signed commitments – such as the Dutch financial sector's Climate Commitment to which the pension fund is a signatory – can also be a source of risk. If the board fails to honour the signed commitments, this may lead to a loss of support among the fund's members and hence additional reputational and legal risk.

The board must also bear in mind potential dilemmas that may come to light in a broad impact analysis. An investment that has a positive impact on carbon reduction may simultaneously have an undesirable negative impact on social aspects, for example, resulting in reputational risks.

We consider this a good practice because:

- the board acknowledges the risks to which the pension fund is exposed.
- the board examines the impact of climate and nature-related risks with a broader scope and longer horizon than in the regular risk analysis. Many climate and nature-related risks only manifest themselves over the longer term.
- the board breaks down the investment portfolio with sufficient granularity. The impact of climate and nature-related risks often becomes visible only when the investment portfolio is included in the analysis at activity, firm, region or sector level. Asset classes may be exposed to climate and nature-related risks to varying degrees, with the way investments are made within a class also having an impact (e.g. the characteristics of a real estate portfolio). The sensitivity of firms to carbon pricing is also becoming more visible, as are the opposing effects. For example, a climate risk scenario may lead to a fall in the market value of the equity portfolio, while an assumed rise in interest rates would make the impact on the funding ratio seem limited. Separating these effects provides a better understanding of the impact of the different assumptions.
- the board considers the impact on society, in addition to the impact of climate and nature-related risks on investments and operational management.
- See also Box 3 Focus points for materiality analysis on page 13.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP2: Surveying of member preferences regarding climate and nature-related risks

Member preferences are important when it comes to choosing the sustainability themes the fund wants to invest in. The pension fund therefore uses periodic surveys and panels to gauge members' investment preferences with climate and nature-related risks in mind.

The strategic investment policy is set based on thorough research, such as an appropriate Asset Liability Management study. Member input is used to make specific choices within asset classes, such as an allocation to the energy transition. In a newsletter to members, the board provides insight into how member preferences are reflected in policy choices and it reports on their impact.

The pension fund is aware of limitations inherent to preference surveys. For example, members may have limited knowledge of sustainable investment; this should be taken into account in the survey design.

We consider this a good practice because:

- the pension fund actively solicits and applies member preferences in setting policy principles and objectives.
- the pension fund board ensures that the objectives and policy principles, including the risk appetite, are documented.
- by gauging member preferences, the fund bolsters support for its policies and mitigates potential reputational risks.
- the board knows that it has ultimate responsibility for the investment policy. It makes its own assessments based on the results of the member survey and is transparent about this. The fund explains to its members how it arrived at its policy choices and reports on their impact.

Relevant laws and regulations: Sections 102a and 135 of the Pensions Act.

GP3: Formulating investment principles and strategic investment objectives for climate and nature-related risks
The management board of a pension fund formulates investment principles and strategic objectives and documents them as part of its overall strategy. It must also include how its investment policy takes account of climate and nature, human rights and social relations as follows:

Investment principles of the fund's board:
- Climate and nature-related risks are material financial risks that are currently not adequately reflected in market prices. Traditional measures of risk such as volatility and tracking error are not suited for hedging these risks.
- Investing in line with the Paris Agreement will reduce risks in the long run and boost members' chances of retiring in a liveable world.
- ESG integration improves the portfolio's risk-return profile in the long run.

Objectives:
- The fund invests in line with the Paris Agreement.
- The fund invests in firms that focus specifically on climate mitigation and climate adaptation.
- The fund reduces the negative impact of its investments on nature.

The fund translates its long-term beliefs and strategic investment objectives into an investment plan with concrete guidelines. This plan contains action-oriented steps to manage climate and nature-related risks in the portfolio. For example, the fund structurally aligns its investment portfolio with the Paris Agreement and integrates physical climate risks and biodiversity impacts into its risk assessment. In addition, the fund invests 10% of its assets in SDG-related projects and periodically evaluates the effectiveness of its sustainable investment strategy.

We consider this a good practice because:
- the pension fund formulates investment principles and strategic investment objectives.
- the pension fund includes the impact of climate and nature-related risks on its business environment and business model when defining its beliefs and strategic and concrete objectives, so that it can work on achieving them.

Relevant laws and regulations: Section 145 of the Pensions Act and Section 13 of the Pension Fund (Financial Assessment Framework) Decree.

GP4: Translating strategic investment objectives into specific performance indicators

The pension fund board translates the strategic investment policy for climate and nature into specific key performance indicators (KPIs) for the coming year. These KPIs are in addition to the existing KPIs and measure different aspects of operational management. To this end it uses existing standards, indicators and methods such as the TCFD (Task Force on Climate-related Financial Disclosures), the PAI (Principal Adverse Impacts) indicators of the SFDR, the PCAF (Partnership for Carbon Accounting Financials) for measuring the carbon footprint, the SBTi (Science Based Targets initiative) and the TNFD (Taskforce on Nature-related Financial Disclosures) for setting targets.

KPIs

1. There is a roadmap to net zero by 2050 in line with the Paris Aligned Benchmark (PAB).
2. Physical climate risks in the real estate and mortgage portfolios have been assessed and a plan is in place to reduce them by 10%.
3. At year-end, 5% of assets were invested in specific SDGs (e.g. SDG 7, 13 and 15).
4. The fund is engaged in collective engagement initiatives on climate and biodiversity loss.
5. The fund has conducted a nature-related impact and dependency analysis of its equity and corporate bond portfolios, which identified ways to reduce the negative impact of its investments on nature. The fund has translated this analysis into concrete targets.
6. The fund has developed and published its own nature strategy, including a policy for investing in nature-based solutions.
7. When appointing a new asset manager, the selection process includes whether the asset manager has a climate transition plan.
8. The fund has explored becoming a signatory to the Finance for Biodiversity Pledge.

We consider this a good practice because:

- the board translates strategic goals into measurable performance indicators (KPIs) for climate and nature-related risks. KPIs are an effective way to express and specify a strategy so that the board can monitor progress.
- the pension fund uses standards, indicators and methods that are widely accepted in the market.

Relevant laws and regulations: Section 145 of the Pensions Act and Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

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2 Governance

GP5: Ensuring that policymakers are fit to manage climate and nature-related risks
A board has drawn up minimum requirements in terms of knowledge of climate and nature-related risks and opportunities for the management board and the supervisory board of a pension fund. These minimum requirements have been incorporated in the job profiles. The management board has adopted the principle that it and the supervisory board have insight into and an understanding of the key developments in the field of climate and nature, the related legislation and regulations, what society and stakeholders expect from the institution and what that means for operational management.

With a view to maintaining an adequate level of knowledge, the management board of a second pension fund periodically organises knowledge sessions on climate and nature-related themes for the management board, the supervisory board and the key function holders in risk management, actuarial and audit. To broaden their perspectives, they also engage in dialogue with several asset managers. Topics include the causes of climate change and biodiversity loss, laws and regulations, national and international climate policies, standards and frameworks, and the use of models and scenario analyses for climate and nature-related risks and potential social risks.

External experts are regularly invited to these knowledge sessions, to train and challenge session participants to pinpoint the climate and nature-related risks and opportunities for the institution.

The management board and the supervisory board periodically assess whether the knowledge standards are being met and in which areas there is a need for training and education.

The management board of a third pension fund establishes an advisory board with external and internal experts to gather knowledge, experience and advice on integrating climate risks and opportunities into policy frameworks.

We consider this a good practice because:
- the pension fund sets minimum requirements for knowledge of climate and nature-related risks and takes concrete actions to maintain this knowledge.
- in this way, the pension fund ensures that sufficient expertise and focus is present within the management and supervisory bodies to assess the pension fund's exposure to climate and nature-related risks, respond appropriately to risks, identify opportunities, make informed and balanced decisions and maintain effective supervision.
- the pension fund ensures continuous development of expertise and experience in risks and opportunities related to climate and nature.

Relevant laws and regulations and other policy statements: Section 18 of the Pension Fund (Financial Assessment Framework) Decree, Policy Rule on Suitability 2012.

GP6: Allocating responsibilities for climate and nature-related risk management within the organisational structure

The pension fund board has clearly formulated the responsibilities of all bodies in terms of climate and nature-related risk management and in the Socially Responsible Investment (SRI) policy, as shown in Table 1.

Table 1 Example of allocating responsibilities for climate and nature-related risk management within a pension fund

Bodies	Responsibility	Process
Management board	The management board discusses how best to assign the responsibilities for climate and nature-related risks. The board has joint (ultimate) responsibility for the SRI policy and its implementation. One director is the portfolio holder for the theme Climate. The management board discusses how best to assign the responsibilities for climate and nature-related risks. The board has joint (ultimate) responsibility for the SRI policy and its implementation. One director is the portfolio holder for the theme Climate.	The board discusses the SRI policy and its implementation at least quarterly. Its discussions touch on the following subjects: ■ SRI implementation; ■ progress of the SRI KPIs set by the fund; and ■ updates regarding possible new SRI targets.
Investment committee (IC)	The board has delegated the implementation of the SRI policy to the IC. The IC reports to the management board on progress and the results achieved.	Every quarter, the IC reports to the management board on the KPIs and challenges.
Key function holder for risk management function	Based on their duties, roles and responsibilities, the key function holder for the risk management function advises on the design and implementation of the pension fund's SRI policy.	The key function holder attends meetings of the IC and the management board. Before the meeting, the key function holder submits an opinion to the IC (and the management board) for decision-making, by means of a risk opinion or memorandum.
Participant	Members (current members, pensioners and other pension beneficiaries) provide input for the fund's SRI policy when requested. By actively soliciting preferences from members, the fund can increase support for the SRI policy.	Every three years, members are asked for their opinions and preferences on SRI in representative member panels and by means of a broad survey. A webinar on SRI is also organised periodically.
Internal oversight	Internal oversight is tasked with supervising appropriate risk management by the pension fund. They are accountable to the Accountability Body (AB) or Stakeholders Body (SB) and the employer. They also provide accountability in the management report.	The AB or SB has the right to consult with internal oversight.
Stakeholder Body (SB)	The SB advises the pension fund on request or on its own initiative on matters concerning the pension fund. The SB has approval rights, including for the strategic investment policy.	The pension fund board is accountable to the SB for the policy and how it is implemented.
Accountability Body (AB)	The AB gives an opinion on the implemented SRI policy in the management report.	A dialogue is conducted with the AB at least once a year on the policy and its implementation.

We consider this a good practice because:

- the board assigns responsibilities for the management of climate and nature-related risks.
- the board thus ensures that roles and responsibilities are clearly assigned so that climate and nature-related risks are adequately considered in decision-making, risk management, implementation and supervision.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

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3 Risk management

GP7: Formulating an ESG risk appetite
A pension fund has formulated a qualitative ESG risk appetite with regard to the pension fund's reputational, compliance, operational and financial risk. The pension fund's elaboration for reputational and financial risk is as follows:

Reputational risk appetite 1: *"We have a low risk appetite for exposure to reputational risk arising from investments that the fund's board and members find morally objectionable."*
Reputational risk appetite 2: *"We have a medium risk appetite for reputational risk arising from non-compliance with the IMVB Covenant."*
Financial risk appetite: *"Climate change and biodiversity loss may not have a major impact on the financial position of the pension fund."*

We consider this a good practice because:
- the pension fund formulates the risk appetite with regard to ESG factors.
- the qualitative risk appetite is the starting point for the ongoing development of the risk management cycle. It is advisable for a pension fund to distinguish between the different areas where ESG risks affect the pension fund (such as financial, reputational, operational and compliance risk), because each risk may require a different type of assessment and management.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP8: Specifying the ESG risk appetite
The pension fund specifies the (qualitative) risk appetite:
- **Reputational risk appetite 2:** *"We have a medium risk appetite for reputational risk arising from non-compliance with the IMVB Covenant."* Specifically, this means that we have conducted ESG due diligence on compliance with the IMVB policy for at least 80% of the portfolio.
- **Financial risk appetite:** *"Climate change and biodiversity loss may not have a major impact on the financial position of the pension fund."*
  Climate change: Specifically, we do not want to lose more than 20% on equities, 15% on credits or 10% on real estate in two climate (stress) scenarios. Also, in two (plausible) ESG scenarios (such as a scenario involving global warming of 3 degrees), we do not want to lose more than 5% on equities, 3% on credits or 1% on real estate.
  Additional notes: For financial risk, the risk appetite was specified using the results of the (plausible and stress) climate scenarios and expert judgement was used to determine what the pension fund considers acceptable in terms of potential impact. The pension fund is aware of the considerable uncertainty and false sense of security that the scenario analyses and data shortcomings entail, and takes this into account in the expert judgement. The pension fund has decided to review the scenario analyses periodically and adjust them as necessary.
  The pension fund has also identified biodiversity loss as a major financial risk, but does not have the right knowledge and tools to measure this, as these are still being developed. Based on the prudence principle, the pension fund will reduce its high water-intensity investments by 10% next year.

We consider this a good practice because:
- the pension fund specifies its ESG risk appetite
- the management board provides an explicit and, where possible, measurable definition of the maximum risk tolerance, which gives guidance for effective risk management. For ESG risks, the management board seeks as much alignment as possible with the existing financial risk appetite (although such integration for ESG risks is not yet entirely possible in practice).

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP9: From longlist to shortlist in risk identification

A comprehensive risk analysis and a member survey are conducted to determine which risks are potentially material to the fund's risk profile. Furthermore, the fund uses SASB standards and PAI indicators as inputs.

Based on these analyses, the fund compiles a longlist of all possible climate and nature-related risk factors. These include climate change, biodiversity loss, deforestation, water pollution and lack of proper waste disposal.

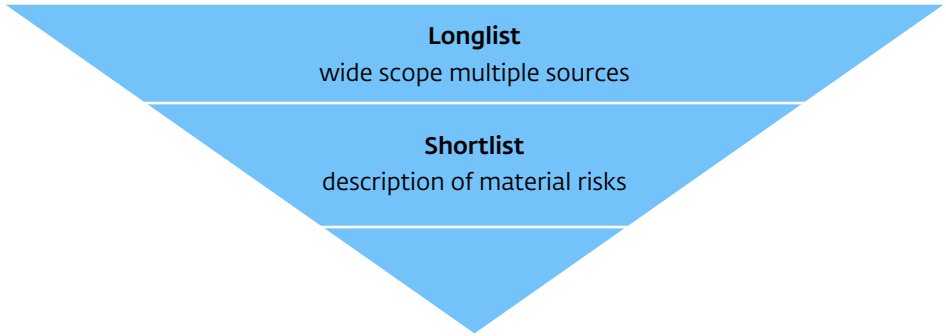
To reduce the longlist of possible risks to a shortlist, the pension fund examines which risks could have a major impact. To this end, the pension fund has combined quantitative analyses with qualitative insights from experts. By examining the impact on the entire investment portfolio, both in the short and long term and in different scenarios, it has obtained a reliable, up-to-date picture of the risks. This process requires data for individual ESG risks for the entire portfolio. The pension fund frequently repeats the identification process, enabling it to identify new risks in a timely manner. The assumption is that more and improved ESG data will be available for individual investments each time the identification process is repeated.

Table 2 shows some of the shortlisted risks (not exhaustive):

Table 2 Examples of ESG risks

ESG risk factor	Impact on	Risk assessment (*= low, **= medium, ***= high)
Climate risk; physical	Financial risk	
Climate risk; transition	Financial risk	*
Climate risk; transition	Reputational risk	**

We consider this a good practice because:
- the pension fund takes a structured approach to determining which sustainability risks are material.
- the pension fund uses different sources and methods for identification, including a combination of expert-driven and data-driven approaches. In doing so, it uses various sources, such as reports and frameworks of international institutions, to prepare a longlist of risks. Engaging with different parties gives the fund a broader perspective. This means that it can assess risks on a best-effort basis, as it is not yet possible to properly take into account all factors and interactions that may play a role.
- the pension fund condenses its longlist into a shortlist.



- the pension fund describes how these risks may impact it (transmission channels). The more specific this assessment, the better the fund can estimate the extent of the risk.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP10: Conducting nature-related impact and dependency analysis
The board of a pension fund identifies its investments' dependencies on nature, including biodiversity to translate this into potential risks, using an appropriate risk framework such as the LEAP approach developed by the Taskforce on Nature-related Financial Disclosures (TNFD). The board's analysis looks at both direct and indirect impacts (through the production chain), also incorporating location data of holding companies. In this way, the pension fund maps nature-related risks in a carefully documented process.

For an initial analysis of the investments' potential nature-related impacts and dependencies, the pension fund prepares a longlist of sectors and activities that may have a high impact or dependence on nature. At the sectoral level, for example, it looks at the top 10 sectors described by the Finance for Biodiversity Foundation and the TNFD's list of priority sectors for financial institutions. The board uses the ENCORE database for its sub-sector-level impact and dependency scan. Based on this analysis, it identifies the investments which potentially face the greatest nature-related risks. These investments are prioritised for further study.

For prioritised investments, the board then examines how impacts and dependencies translate into specific nature-related physical and transition risks based on the WWF Biodiversity Risk filter, among other things. To capture the highly location-specific nature-related risks, the board uses the most granular possible location data for its investments.

The board wishes to take appropriate mitigation measures for the identified risks where possible. To this end, the board chooses nature-related targets and indicators, based in part on the Science-Based Targets for Nature (SBTN). The board also uses the Global Biodiversity Framework (GBF) to set ambitions for both the short/medium term (by 2030) and long term (by 2050). The board also uses the guidance in the Nature Target Setting Framework of the Finance for Biodiversity Foundation.

The targets and ambitions selected are set out in the fund's SRI policy and management report and are periodically reviewed. Targets are adjusted where necessary as new data becomes available or new regulations come into force.

We consider this a good practice because:

- the pension fund has a carefully documented process for managing nature-related risks.
- the fund uses standards, indicators and methodologies tailored to these risks and widely accepted in the market.
- the fund takes a granular approach to analysing the equity and corporate bond portfolio, including by using granular location data.
- where data is available, the pension fund uses proxy indicators and treats the available data with caution. A modelled analysis can assist in drawing conclusions. Risk identification need not be hampered by a lack of perfect data.
- the fund uses insights gained from the risk analysis to set concrete targets and monitors progress towards achieving them.

Relevant laws and regulations: Section 135 of the Pensions Act and Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP11: Using various forward-looking methods in risk identification
To understand its potential future financial risks, the pension fund has asked an external party to work with the fund's management board to qualitatively examine a number of scenarios. These scenarios make use of the available climate scenarios for the Netherlands from the KNMI Royal Netherlands Meteorological Institute and the nature scenarios from the PBL Netherlands Environmental Assessment Agency, among other sources.

Questions related to the scenarios include: What if bees go extinct? What if soil quality declines? What if we may no longer use fossil fuels? What if we are only allowed to drive electric vehicles? What if the probability of flooding increases sharply in the Netherlands? What if groundwater becomes scarce, leading to stricter regulation of water use?

The fund then explores the potential impact of these narratives on its revenue model. Next, the pension fund looks at its exposure to transition-prone sectors, e.g. firms that are dependent on water. With regard to physical risk, the fund looks at its exposure to mortgage loans and real estate in areas prone to floods and pile rot. Specifically with regard to climate change and nature degradation, the pension fund uses sector and location data to examine exposure to key ecosystem services such as pollination and soil quality.

We consider this a good practice because:

- the pension fund conducts forward-looking analyses of climate and nature risks.
- the use of multiple 'plausible but severe' scenario analyses and stress tests by the pension fund board (or commissioned by the board) is in line with the long-term nature of pension investments and can provide guidance on reducing the uncertainty and complexity of (non-linear) climate and nature-related risks.
- the pension fund uses indicative estimates and qualitative analyses to form a picture of risks for which there is still little in the way of data and methods. Data and methods do not exist for all climate and nature-related risks that are adequate enough to conduct a detailed forward-looking analysis and calculate the financial impact. It may nevertheless still be possible to estimate the risks, for example by identifying which potentially risky exposures a pension fund has in its portfolio.
- the scenarios selected are consistent with the research question, are based on plausible assumptions, and address the investment portfolio at an appropriate level. For example, a scenario assuming a 1.5-degree temperature rise relative to pre-industrial levels could be a benchmark against which to examine the degree of 'Paris alignment' but may be less suitable as a stress scenario. By examining a range of possible future scenarios, assuming the prudence principle and thinking in 'what if' terms, the board can get a sense of what the relevant risks might be. Calculating scenario analyses and translating them into the impact on the pension fund's balance sheet is complex and inevitably involves uncertain assumptions. It is prudent is to take appropriate account of uncertainty when making the assumptions.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP12: Defining ESG risk indicators in the risk assessment
A pension fund investigates potential risk indicators and compiles them in an overview, see Table 3. The fund uses several sources for this purpose such as the IMVB Covenant, which includes many ESG risk indicators, as well as the SFDR's PAI indicators.

Table 3 Overview of risk indicators

Type of risk	Risk driver	Data requirements	Risk indicator
Transition	Policy, technology, preferences and sentiment, legal	Carbon footprint	Carbon footprint
Transition	Policy, technology, preferences and sentiment, legal	Carbon intensity	Weighted average Carbon intensity (WACI)
Transition	Policy, technology, preferences and sentiment, legal	Biodiversity impact	Biodiversity footprint
Transition	Policy, technology, preferences and sentiment, legal	Corruption score	Exposure to serious abuses (# investments/ monetary value)
Transition	Policy, technology, preferences and sentiment, legal	Human rights violations	Exposure to serious abuses (# investments/ monetary value)
Transition	Policy, technology, preferences and sentiment, legal	Labour rights violations	Exposure to serious abuses (# investments/ monetary value)
Transition	Policy, technology, preferences and sentiment, legal	Environmental rights violations	Exposure to serious abuses (# investments/ monetary value)
Physical, acute	Flooding Forest fire Extreme precipitation Storm damage Desertification	Location of assets + risk maps*	Exposure at Risk (possibly forward-looking)
Physical, chronic	Reduced fertility Heat stress/change in temperature patterns Water scarcity Extreme precipitation Groundwater level change (risk of pile rot, subsidence, etc.) Ecosystem service dependency	Location of assets + risk maps*	Exposure at Risk (possibly forward-looking)

* Where possible, identifying mitigation/adaptation opportunities can strengthen the analysis.

Tables 4 and 5 present an assessment of financial and non-financial risk.

Financial risk
The pension fund estimates how and where the asset classes in which it invests are most affected by physical climate change, based on the risk profile of the investments and region exposure. Wherever possible, the pension fund estimates the impact using quantitative analysis, based on a realistic scenario with far more frequent extreme weather events and stress scenarios involving more severe shocks. In addition, the pension fund has a good idea about the quality of the underlying calculations and is aware of assumptions that may oversimplify reality. An example of this is maps used for specific weather conditions that lack detail, meaning flood risks may not be properly estimated. The fund can explain why it has opted for a specific methodology and/or data provider. The pension fund is also aware of the limitations of the methodology, for example that the potential impact on the supply chain is not in scope and can potentially be large.

The pension fund estimates the level of risk based on the quantitative analysis and qualitative insights. The fund takes into account the fact that the actual impact may be much larger than the calculated impact, for example because the impact on the supply chain is not included. Specific impacts can result in migration flows and economic crises. The pension fund sets signal limits based on the available quantitative risk indicators and conducts a deeper analysis when these signal limits are exceeded. Based on current understanding, the risk is assessed as elevated.

Table 4

ESG	Metric	Exposure	Probability			Impact	Risk
			low	medium	high		
Human rights	Number of companies involved in controversies classified as serious or very serious	30	< 2	2-15	> 15	high	high
Biodiversity loss	Biodiversity footprint (MSA.km2.yr)	237	< 50	50-250	> 250	high	medium

low medium high

Based on these assessments, the pension fund has set all three (gross) risks at high (see Table 6).

Table 5

ESG risk	Risk	Risk appetite	Within appetite?	Risk response	Notes
1. Reputational risk arising from investments that the fund board and participants consider morally objectionable	high	low	not OK	Manage	The assessment is not yet complete; there are no metrics of risk tolerance for child labour yet.
2. Reputational risk arising from non-compliance with the IMVB Covenant	high	medium	not OK	Manage	We have conducted due diligence with regard to IMVB on 70% of the portfolio. On 10% of the portfolio we still turn out to be non-compliant.
3. The financial risk due to climate change and biodiversity loss	high	low	not OK	Manage	The assessment is now only based on climate risk; a biodiversity loss impact analysis is being worked on.

low medium high

Reputational risk
With regard to reputational risk, one or more risk indicators could be formulated for each risk from the shortlist, along with risk tolerances. In general, the higher the exposure to the ESG factor, the higher is the likelihood of the pension fund experiencing reputational damage. For human rights, the pension fund looks at the "number of firms involved in controversies classified as serious (or very serious)" risk indicator and for biodiversity loss at the decrease in mean species abundance (MSA*km2*year, the size of the area where biodiversity is being completely destroyed by the activities of the firms in which the pension fund invests).

The next step in the assessment is to use ESG factors to integrate reputational and financial risk into the overall financial and non-financial risk. As it is unclear to what extent ESG risks are already reflected in the existing risk categories, the pension fund decides to assess these risks separately for the time being, albeit as part of the existing risk categories, so that the impact is visible.

We consider this a good practice because:
- the pension fund uses concrete ESG risk indicators in its risk assessment.
- in the risk assessment, the pension fund identifies the risk using risk indicators and probability and impact analyses, by engaging in dialogue and using expert judgement, and assesses whether the risk falls within the risk appetite.
- to estimate the financial risk, the pension fund measures the impact by means of scenario analyses, with the scenario matching the purpose of the analysis. The fund distinguishes between a baseline scenario and a stress scenario. In addition, a fund can also look at 'portfolio at risk'. This identifies which part of the portfolio is exposed to risk.
- the pension fund uses risk indicators that provide information on the risk. A number of pension funds use carbon indicators such as the carbon footprint, but mostly driven by investment policy objectives and less so from a risk perspective. In the case of human rights violations, the "number of firms involved in controversies classified as serious (or very serious)" risk indicator could be considered, for instance.
- the pension fund makes clear at what level of exposure or impact the risk is assessed as elevated, moderate or low, for example, by stating specifically how many serious (or very serious) controversies the pension fund still refers to as low risk. Table 3 lists a number of possible risk indicators with the data requirement, broken down into risk type and risk driver for different ESG risk factors. This is only an example and the table is not exhaustive.
- where risks cannot be assessed within the existing risk management system, the pension fund looks at what alternatives are available. If there is not yet a method to measure risks such as biodiversity loss, it is important to look at what is possible to identify the specific risks. The pension fund can devise actions to assess these risks in other ways, such as examining approaches based on other data sources and methods, or through a qualitative estimation based on expert judgement.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP13: Listing mitigation measures for ESG risks
A pension fund has prepared a comprehensive plan for managing ESG risks. This includes a list of possible mitigation measures for each identified risk, such as engagement, exclusions, voting policies and best-in-class allocation by sector. Targeted measures have been selected for specific risks: for example, the fund chooses to manage reputational risk through exclusions. For climate-related transition risks, the fund uses a Paris-aligned benchmark. The pension fund chooses to communicate its ESG policy transparently, also with a view to mitigating reputational risk. Feedback from external stakeholders helps the fund remain critical and improve the exclusion policy where necessary.

However, the systemic risk of climate change is still elevated after deploying the above measures. The pension fund cannot mitigate this risk, but includes the impact of climate change on the economy in the Strategic Asset Allocation when making assumptions on macro variables such as GDP and inflation, and in risk and return projections.

The pension fund chooses engagement, among other things, as a mitigation measure, to manage material nature-related physical and transition risks in the investment portfolio. In devising the engagement strategy, the fund takes into scope both direct and indirect drivers of nature loss, as defined by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). Examples of these drivers are altered land and water use, pollution, plant and animal exploitation, climate change and invasive species. The fund applies normative engagement when investments have a significant impact on these drivers and thus have the potential to cause serious damage to biodiversity and ecosystems. Normative engagement means engaging with fund managers/firms involved in potentially harmful practices such as the use of non-organic pesticides, the manufacture of single-use plastics, harmful animal products, deforestation, water pollution from heavy chemical industries, and soil degradation from mining.

In implementing the engagement strategy, the board works with asset managers and other pension funds where possible. It establishes clear criteria for firms to meet, such as mapping their impacts and dependencies on nature, and developing goals and plans to reduce negative impacts. If the dialogue reveals that improvement is not feasible or insufficient progress is made within a reasonable timeframe, the board may decide to exclude the investments in order to mitigate the climate and nature-related risks. The board is considering publishing its mitigation strategy in a climate and/or biodiversity policy plan.

Table 6 Engagement on nature-related risks

Relation to biodiversity		Management tool	Possible next step in case of lagging change
Serious harm to biodiversity and nature	The organisation's activities contribute significantly to one or more of the five drivers of biodiversity loss.	Normative engagement	Exclusion
High impact on and/or dependence on biodiversity and nature	The organisation's activities are highly dependent on an ecosystem service or the activities have a major impact on biodiversity.	Active engagement and criteria-setting	Exclusion
Moderate impact on and/or dependence on biodiversity and nature	The activity has moderate to low dependence on ecosystem services and medium to low impact on biodiversity.	Active engagement	Active engagement and criteria-setting (possibly eventually leading to exclusion)
Has a positive impact on biodiversity and nature	The organisation's activity helps protect and/or restore biodiversity.	Cooperation and investment	x

We consider this a good practice because:

- the pension fund formulates mitigation measures for sustainability risks.
- the pension fund uses various instruments to manage ESG risks, making a conscious choice to deploy controls and matching them to the ESG risks it wishes to manage. For instance, the board distinguishes between firms with a high and lesser impact on nature and applies different strategies to both groups.
- the pension fund seeks ways to effectively mitigate risks through the design and implementation of an engagement strategy, including seeking cooperation with other market participants. As a shareholder, a pension fund can exert influence on organisations that pose climate risks to the fund.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP14: Assessing the effectiveness of mitigation tools

The pension fund assesses the effectiveness of mitigation measures. Table 7 provides an example for financial and reputational risk in which effectiveness is still insufficient. The pension fund has therefore devised actions to boost the effectiveness of its risk management.

We consider this a good practice because:

- the pension fund actively monitors the effectiveness of sustainability risk mitigation measures and adjusts them as necessary.
- the effectiveness of measures to mitigate risk is assessed and, as far as possible, made measurable and monitored. In doing so, the link between the measure deployed and risk (mitigation) is made as explicit as possible, even though it is often difficult to identify a precise link to the risk. This is because the effect of instruments is not always measurable and there may be an indirect relationship between the instrument and the risk.
- the pension fund deliberately adopts an absolute rather than a relative approach. A relative reduction in the risk profile does not provide an effective limit to the absolute level of risk, making it difficult to effectively manage risk in accordance with the risk appetite. Although some pension funds commit themselves to a relative risk reduction (for example by selecting investments with a better ESG score or a lower carbon footprint than the benchmark), the absolute level of risk remains unclear as a result. A relative approach can serve as a first step in the sustainable investment policy, helping to lower the risk profile relative to a benchmark. However, a clear next step is needed should measures prove insufficient to bring the risk profile in line with risk appetite. This may involve a temporary acceptance of risks, combined with an improvement plan (see also the good practice on improving the ESG risk management cycle).

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

Table 7

ESG risk	Risk	Risk appetite	Within appetite?	Risk response	Mitigation tools	Effectiveness	Net risk	Notes
We do not accept any exposure to investments that we consider morally objectionable	high	low	not OK	Manage	Exclusions aimed at excluding human rights violations, child labour	low	high	Our desired exclusions do not match the asset manager's exclusions. We will discuss this with the asset manager and explore the possibilities. When selecting new funds, we look for asset managers whose exclusion list is in line with our requirements in terms of selection criteria.
Risk of ESG risk having a material impact on the fund's financial position	high	low	not OK	Manage	Implement Paris-aligned benchmark for equities	medium	high	With the new benchmark, we incur less transition risk and fall within the risk tolerance with regard to transition scenarios. However, in one of the two stress scenarios our loss is still too high. We will explore whether we can reduce this risk further without coming into conflict with failure to achieve our ambition.

low medium high

GP15: Monitoring ESG risks on the basis of key risk indicators

The pension fund has examined a wide range of ESG indicators and established key risk indicators (KRIs) for each material risk that provide information on the risk, see Table 8. This list includes the most important risk indicators that it uses in risk identification and assessment. Additionally, the pension fund has formulated risk tolerances in line with its risk appetite. For instance, the fund has formulated several KRIs for climate risk, including the carbon footprint and the percentage of the portfolio invested in high climate risk sectors (as per SFDR guidelines), as indications of transition risk. The figures in this example are fictitious.

With regard to climate risk, the pension fund has also developed a climate meter as a KRI, which uses various criteria to examine to what extent Europe is in line with the Paris Agreement. The meter is now on orange/red, indicating that the risk is rapidly increasing.

Table 8

KRI		Low	Medium	High	Now	Previously
Carbon footprint	Weighted carbon footprint	< 30	30-60	> 60	50	high
	Total carbon emissions (1,000 tonnes)	< 40	40-110	> 110	100	high

low medium high

We consider this a good practice because:

- the pension fund uses key risk indicators (KRIs) that provide insight into the development of the risk and whether the exposure to the risk still falls within the risk appetite. In this regard, it is important that the fund is critical in its selection of the indicators to ensure they contribute to a complete risk picture, and that the fund is aware of potential data gaps that may impede forming a complete picture.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP16: Setting targets for improving the ESG risk management cycle and devise a strategy to achieve them

The pension fund has defined a risk management ambition for each step in the cycle. For example, when identifying and assessing financial risk, the pension fund wants to be able to determine the financial impact on the portfolio of climate change and biodiversity loss based on scenario analyses. It then conducted a gap analysis comparing the current status of its risk management with the ambition. Based on this gap analysis, the pension fund drew up a list of actions to improve its ESG risk management.

The pension fund decides to evaluate its ESG risk management annually, asking questions such as: Is the list of identified risks still complete? Is the materiality estimate of the risks still correct? Is the impact of the risks being properly measured? Are the mitigation measures effective? Is the exclusion list still appropriate? How often does the engagement strategy persuade firms to operate sustainably? Do the results of the engagement strategy meet the pension fund's expectations?

Table 9

no.	Cyclus	Action	Status	Notes	When
1	Identification	Expanding sources	high	Currently, we are only using data from two sources. The action is investigating multiple sources and seeing if there is a source we can add to improve our ESG data.	by 1/10/2021
2	Risk attitude	Further elaboration of the financial risk attitude with a (quantitative) risk appetite with regard to the financial impact due to biodiversity loss	high	There are still no useful biodiversity loss scenarios, but we expect them to be developed soon.	by 1/3/2022
3	Assessment	Adding metrics and risk tolerance for child labour	medium	We now have good data for child labour. The action is to discuss with each other what the best metrics are and what our risk tolerances are.	by 1/10/2021
4	Assessment	Adding assessment of financial impact of biodiversity loss	high	See action no. 2	by 1/4/2022
5	Mitigation	Exploring whether we can manage climate risk further	low	Our desired exclusions do not match the exclusion policy of our equity fund with asset manager X. The action is to discuss this with the asset manager and explore the options.	by 1/10/2021
6	Mitigation	Exploring whether we can manage climate risk further	low	After the implementation of the new climate benchmark (and the restructuring of the portfolio), we run less transition risk and fall within the risk tolerance with regard to the transition scenarios. However, in one of the two stress scenarios our loss is still too high. We will explore whether we can reduce this risk further and list possible actions.	by 1/10/2021
7	Process	Embedding ESG risk framework into integrated risk framework	low	This has been completed.	by 1/9/2021

low medium high

We consider this a good practice because:

- the pension fund sets a target maturity level and determines the differences between its current and target maturity. The risk management cycle for ESG risks is sometimes complex or not yet feasible, for example because of limited data availability, the complex relationship between risk factors or because analysis methods have not yet been fully developed. By setting a target maturity level, pension funds can identify the steps they still need to take. These goals may be ambitious. What cannot be done now may well be possible in the longer term. A strategy with specific milestones helps guide the fund as it works to achieve its goals. Rapid developments call for frequent evaluation and possible adjustment of the strategy.
- the fund realises that developments take place in rapid succession in the area of ESG. Some risks grow rapidly, there is more and more knowledge about the risks and their modelling, data coverage is improving and more and more legislation is coming into force. It is therefore important for a pension fund to frequently evaluate the design of its ESG risk management cycle.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

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4 Information provision

GP17: Setting up an appropriate data infrastructure for climate and nature-related risks

Some time ago, following a gap analysis, a pension fund board started setting up a data infrastructure and collecting data required to analyse the risks and opportunities of climate and nature-related change. The fund started by measuring the carbon footprint of its investments. The pension fund board decided to adhere to internationally recognised methodologies, such as that of PCAF (Partnership for Carbon Accounting Financials). For its investments it uses an external data provider in accordance with the PCAF methodology. The carbon footprint data is used internally for decision-making, for example to optimise the investment mix. The pension fund board takes into account the carbon footprint of different asset classes in its strategic investment policy.

To this end, the pension fund board uses a data vendor to determine the extent to which the business activities of its investments are 'green' based on the NACE code[36].

We consider this a good practice because:

- the pension fund sets up an appropriate data infrastructure for climate and nature-related risks
- the pension fund board has conducted an analysis to determine which data is already available and which data needs to be collected to eventually meet strategic and legal requirements.
- the pension fund board has developed a data set to be used for various reporting and (strategic) decision-making purposes.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

GP18: Reporting in SRI section in annual report

In the annual report, a pension fund board reports on climate and nature-related risk management and includes a Socially Responsible Investment (SRI) section, containing:

- a risk analysis of the material risks and what measures the pension fund has taken to manage them;
- the principles, targets and KPIs for climate and nature-related risks and opportunities;
- the risk analysis with regard to climate change and nature degradation;
- stewardship: the engagement and voting policies;
- the SRI implementation (including the rationale for the choices and assessments involved);
- the SRI results with regard to long-term and short-term targets, KPIs and engagement and voting results; and
- the results of the surveys of members and other stakeholders, and the board's choices regarding stakeholder preferences.

We consider this a good practice because:

- it gives the pension fund board insight into the management of climate and nature-related risks on the one hand, and insight into the SRI policy on the other.
- the pension fund board is transparent towards members and other stakeholders with regard to the choices and assessments it has made.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree, Section 21 of the Pensions Act, Section 48 of the Mandatory Occupational Pension Scheme Act and Section 2 of the Pensions Act Implementation Decree.

36 The NACE code is a code assigned by the European Union and its member states to a certain class of commercial or non-commercial economic activities.

GP19: Climate transition plan

The box following this good practice explains various terms in more detail.

A pension fund prepares and publishes a climate transition plan, disclosing its climate ambitions and explaining how it intends to achieve them. Based on the vision of ensuring a good pension in a liveable world, the board has expressed the ambition to bring the emissions of its investment portfolio to net zero by 2050, in line with the Paris Agreement. To specify its ambitions, the fund uses the Net Zero Investment Framework (NZIF) of the Paris-Aligned Investment Initiative (PAII). The fund also observes the Climate Commitment Guideline.

A roadmap shows the key interim and ultimate milestones for 2025, 2030 and 2050. The fund is clear about the asset classes that will be excluded in whole or in part for the time being, and why. It also describes the methodology used to set emission reduction targets. It subsequently explains what actions will be taken to achieve the targets and how progress will be monitored. The fund is transparent about the assumptions underlying the plan and the extent to which achieving the targets depends on external factors.

The fund acknowledges that investments in climate and nature (E) are not always without trade-offs, and can sometimes have negative impacts on social (S) or governance (G) aspects. For example, a strong emphasis on carbon reduction can give rise to social challenges, such as job losses in traditional industries, or governance risks when rapid changes within firms lead to less transparency and control. The climate transition plan therefore covers not only the ecological impact of investments, but also prescribes a balanced approach that takes into account social justice and good governance and the mutual influence of these factors.

For the entire investment portfolio, the goal is to achieve net-zero carbon emissions by 2050, and to halve absolute emissions by 2030 compared to the baseline year. This has been fleshed out into concrete targets for each asset class. The fund explains the strategies it uses to achieve this target and contribute to the climate transition:

- Invest in firms that are committed to the targets of the Paris Agreement. This reduces the likelihood of transition risks such as stranded assets, and facilitates the achievement of future reduction targets.
- Invest in firms that provide climate solutions. This allows the fund to actively contribute to the climate transition and, at the same time, to take advantage of new opportunities that arise. One way the fund aims to do this is by investing in firms classified as green within the EU taxonomy and then growing this share of the portfolio.
- Use a 'best in class' strategy to select firms in sectors that are sensitive to climate issues. The fund selects firms that are well-positioned for a sustainable future within a given sector and have realistic climate action plans, rather than completely excluding certain sectors because of their high emissions.
- Reduce polluters in the portfolio. In line with the EU's Paris-Aligned Benchmark, among other guidelines, the fund plans to exclude firms whose revenue exceeds 1% from coal, 10% from oil and 50% from natural gas. Moreover, the fund will exclude highly polluting firms that lack a convincing climate strategy. Excluding these firms will mean significant emissions reductions while also reducing the risk of reputational damage. These firms are identified using the Global Coal Exit List (GCEL) and the Global Oil & Gas Exit List (GOGEL), public databases compiled by Urgewald with firms in the coal, oil and gas value chains.

- Make use of active share ownership by engaging with large energy consumers, firms, sectors and production chains with high climate impact with an emphasis on bringing targets in line with a 1.5-degree maximum. If the results are not satisfactory after two years, an escalation plan can be implemented in cooperation with other pension funds where possible. As part of active share ownership, the pension fund also has an engagement strategy aimed at carbon reduction through the asset managers of the institutions in which it invests.
- Contribute to setting standards. The fund contributes to setting standards and forming partnerships directly where possible, but in any case indirectly through the asset managers and/or engagement service providers. The fund has co-founded a number of initiatives such as CRREM and the Global Real Estate Engagement Network and is actively involved in other partnerships such as Climate Action 100+.

It monitors progress towards its targets by measuring the carbon footprint of its investments in scopes 1 and 2 (and scope 3 where relevant) according to the Partnership for Carbon Accounting Financials (PCAF) standard. The fund is aware that a lack of data and/or low-quality data may influence its calculations. The pension fund therefore closely follows PCAF guidelines in this area. The quality of firms' climate policies is assessed with data from the Science Based Targets and Transition Pathway Initiative (TPI).

With regard to investments in equities and corporate bonds, the objective is to follow the EU PAB (at least a 50% lower carbon footprint relative to the market by 2025, followed by an annual reduction of at least 7% for scopes 1, 2 and 3[37]) and invest in climate-sensitive sectors comparable to the market. By 2030, the target is for at least 90% of financed emissions to be Paris-aligned[38] or be subject to targeted engagement, as stated in the NZIF. The target for 2050 is net-zero emissions for all firms.

The fund's 2030 target for its real estate investments is for at least 90% of financed emissions in material sectors to meet CRREM (Carbon risk real estate monitor) criteria or be subject to targeted engagement. By 2050, the entire real estate portfolio should be net-zero. The fund explains that it is focusing its engagement on property managers whose properties are not in line with the 1.5-degree CRREM path. If a property manager fails to take adequate measures to reduce emissions, the fund may consider divesting and parting ways. In new investments, the fund checks whether the property manager has a sustainability plan aimed at achieving net-zero by 2050 and is implementing it. Progress is measured with the CRREM tool and the carbon monitor based on the PCAF methodology.

No concrete carbon targets have yet been set for investments in government bonds. By 2025, the goal is to measure climate risks and opportunities using the ASCOR framework (Assessing Sovereign Climate-Related Opportunities and Risks) and to set targets based on this framework. The fund is also considering climate-related exclusions based on the Germanwatch Climate Change Performance Index (CCPI), which monitors countries' climate efforts. Where the fund sees opportunities, it works with other funds to implement an engagement strategy in various jurisdictions.

37 Taking into account the phased approach to scope 3.
38 These are firms that are committed to the Paris Agreement and have aligned their decarbonisation strategy. See NZIF for all criteria.

It sets a similar target for investments in private equity and infrastructure. It uses the Net Zero Investment Framework Component for the Private Equity Industry and the Guidance for infrastructure assets, complement to the Net Zero Investment, to measure risks and opportunities and set targets. The fund intends to use these asset categories to contribute to the climate transition. It will do so in part by setting targets such as investing 40% of infrastructure assets in renewable energy and 15% of private equity assets in firms that verifiably contribute to the climate transition, with the aim of achieving these percentages by 2030.
The fund details the measures it is taking in its mortgage loan portfolio to reduce carbon emissions. The fund has set a target of bringing 50% of its mortgage loan portfolio in line with 1.5 degrees CRREM by 2030 and limiting 'stranded houses' and houses with the lowest energy ratings (E-F) to 10% of the portfolio. The fund has set a target of bringing 100% of houses in its mortgage loan portfolio in line with 1.5 degrees CRREM by 2050. Another target is that the portfolio will exclude houses with an energy rating of E or lower. Alongside slowly phasing out houses with the lowest energy ratings from the portfolio, the fund also actively works on greening its portfolio by making financing available for residential sustainability measures. Furthermore, through the fiduciary manager, the fund informs homeowners about opportunities to improve sustainability.

The fund's climate transition plan details the plan's governance, providing insight into the allocation of the various responsibilities such as how the management, executive and supervisory bodies are involved in drawing up and monitoring the plan. The fund indicates that it evaluates its climate transition plan annually to see whether adjustments are needed due to new developments and to assess the effectiveness of the implementation tools.

In the annual report, the fund reports on the progress on the climate plan, obstacles to reducing carbon emissions in the real economy and how the fund is dealing with these obstacles.

We consider this a good practice because:

- the fund draws up and implements concrete plans to manage climate-related risks and, where necessary, adjusts its strategy and governance.
- the fund uses this climate transition plan to identify which assets play a relevant role in the transition, collects relevant data and draws up strategies to reduce its exposure.
- the fund aligns with international guidelines and standards to facilitate risk identification and management.
- the fund sets concrete targets, including measurable interim milestones for each asset class and at portfolio level.
- although resources and data are still lacking to draw up a detailed plan for each asset class or measure it fully, the pension fund will continue to study the situation, allowing for the inclusion of missing aspects in the transition plan as new information becomes available.
- the board has an escalation plan if engagement efforts prove inadequate.
- the board periodically reviews the plan.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree.

Box Selected guidelines, standards and tools

When developing climate and nature action plans, institutions can use various guidelines, standards and tools. A selection can be found below.[39]

Paris-aligned firms
These are firms that are committed to the Paris Agreement and have aligned their decarbonisation strategy. See NZIF for all criteria.

EU Paris-Aligned Benchmark (EU PAB)
The EU-PAB aims to align portfolios with the IPCC's 1.5°C scenario and to transition to a sustainable economy. The standards are:

- A reduction of at least 50% of GHG intensity relative to the investable universe for scope 1, 2 and 3.[40]
- Annual reductions of at least 7% of GHG intensity relative to the fund itself.
- Exclusion of firms that derive a certain revenue from fossil fuels, controversial weapons, and tobacco, and violators of social standards such as the UNGC principles, OECD guidelines and the EU Taxonomy's environmental targets.
- Minimum exposure – at least comparable to the benchmark – to sectors that are highly vulnerable to climate issues.

Partnership for Carbon Accounting Financials (PCAF)
Partnership of financial institutions working together to develop and implement a harmonised approach to measuring and disclosing greenhouse gas emissions associated with their lending and investment activities.

Partnership for Biodiversity Accounting Financials (PBAF)
Partnership that enables financial institutions to assess and disclose the impact and dependencies on biodiversity of loans and investments.

EU Taxonomy
EU classification system that defines criteria for economic activities that are aligned with a net zero trajectory and broader environmental goals.

Global Coal Exit List (GCEL)
Urgewald created the publicly available database GCEL to identify firms along the entire thermal coal value chain that are expanding their coal business, have a coal revenue of at least 10% or are above a certain absolute coal production threshold.

Global Oil & Gas Exit List (GOGEL)
The GOGEL is a comprehensive publicly available database created by Urgewald to identify oil and gas firms active in the upstream, midstream or gas- and oil-fired power sectors. The database offers useful information for developing and implementing an oil and gas exclusions policy, for example on revenue shares in fossil fuels, expansion plans and unconventional production.

Carbon risk real estate monitor (CRREM)
A tool to test alignment based on carbon emissions and energy consumption in line with net zero paths.

39 These guidelines, standards and tools are included as examples and should not be seen as advice from DNB on their use.
40 Taking into account the phased approach to scope 3.

Assessing Sovereign Climate-Related Opportunities and Risks (ASCOR)
ASCOR is an investor framework and database that can be used to assess climate action and the extent to which sovereign bond issuers are aligned with the Paris climate targets.

Germanwatch Climate Change Performance Index (CCPI)
The CCPI evaluates and compares the climate mitigation performance of countries. As a monitoring tool it enables comparison of climate protection efforts and progress made by individual countries. This allows users to identify leaders and laggards in climate protection.

Science Based Targets initiative (SBTi)
SBTi is developing standards, tools and guidance to set carbon reduction targets in line the Paris climate targets.

Science Based Targets Network (SBTN)
SBTN develops methods and resources for setting science-based nature targets.

Taskforce on Nature-related Financial Disclosures (TNFD)
The TNFD has developed a set of disclosure recommendations and guidance that encourage and enable business and finance to assess and report on their nature-related dependencies, impacts, risks and opportunities.

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5 Step-by-step plan

GP20: Step-by-step plan
A pension fund board considers it important to have a good understanding of sustainability risks and opportunities. Alongside this intrinsic motivation, the board is aware that the Pensions Act explicitly calls for institutions to identify and monitor sustainability risks.

In response to this requirement, the board has drawn up a programme with a step-by-step plan in which the impacts of climate change and nature degradation are systematically analysed and integrated into the risk management process. To this end, the pension fund adheres to existing risk frameworks, including the risk appetite and risk tolerances as set in the Own Risk Assessment (*Eigen Risico Beoordeling – ERB*, in Dutch). The fund has started an action plan to bolster its management of climate and nature-related risks. This plan is evaluated annually and expanded.

In addition, the pension fund is taking steps to further strengthen its governance such as defining responsibilities and ensuring that board members and relevant officers are sufficiently knowledgeable. The fund is also examining its disclosures to stakeholders and refining them where necessary.

Action plan for improving risk management

Step 1: In-depth risk identification
a. Top-down approach through environmental analysis
The pension fund organises a working session with all board members and an external expert on climate and nature-related risks. The participants jointly explore the potential impact of climate change and nature-related issues, such as biodiversity loss. They also consider stakeholder expectations (employers, members, society), legislative and regulatory developments, and European climate targets such as those encompassed in the Green Deal.

The session culminates in an overview of key risks for the fund, which are integrated into a risk self-assessment with estimates of gross and net exposures. A distinction is made between:
- **Systemic risks**, such as effects on inflation and economic growth (GDP); and
- **Idiosyncratic risks**, specific to sectors or individual firms.

b. Bottom-up via risk analysis (materiality analysis)
The pension fund conducts a risk analysis focusing on the financial materiality of climate and nature-related risks in its investment portfolio. During this analysis, the pension fund seeks cooperation with other pension funds to boost efficiency and mutual comparability.

The pension fund starts with a high-level exposure analysis focusing on:
- **Transition risks**, such as stranded assets and exposure to transition-prone sectors and firms; and
- **Physical risks**, in which sectors and regions are identified that are vulnerable to physical impacts such as extreme weather events, drought, water and food scarcity and resource scarcity.

The impact is assessed by asset class as limited, moderate or significant. If insufficient data is available, expert judgement is used. Based on this, a decision is made for each asset class, and ultimately for the entire portfolio, as to whether the risks are material.
The next step is to use scenario analyses to improve the understanding of the risks identified.

Step 2: Evaluate the risk assessment
The pension fund reassesses its exposure to climate and nature-related risks based on new insights and existing mitigation measures. This involves assessing whether the current risk profile matches the fund's risk appetite. The fund also examines the extent to which climate and nature-related risks have been included in existing risk estimates. The outcomes are incorporated into the assessment of total financial risk.

Step 3: Evaluate risk mitigation measures
The pension fund uses the risk assessment to evaluate whether the existing mitigation measures – as included in the SRI policy – are sufficiently effective. Where necessary, policies are tightened or supplemented with additional controls.

Step 4: Fine-tuning risk monitoring
Climate and nature-related risks are a standard part of the pension fund's regular risk reports. The fund also develops and applies risk indicators where possible. In the case of risks for which insufficient data are available or for which no specific indicators or tolerances have (yet) been established, monitoring takes place based on expert judgement, qualitative estimates and observing external developments. This enables the fund to remain alert to emerging risks and respond to new insights in a timely manner.

Step 5: Evaluate and supplement components of the business model and strategy

a. Investment beliefs
The pension fund assesses whether current beliefs about return, risk and sustainability are still in line with the climate and nature-related risks identified.

b. Ambition and targets, including KPIs
The pension fund evaluates whether the sustainability ambitions, policy goals and associated performance indicators are sufficiently concrete and current, tightening or supplementing them were necessary.

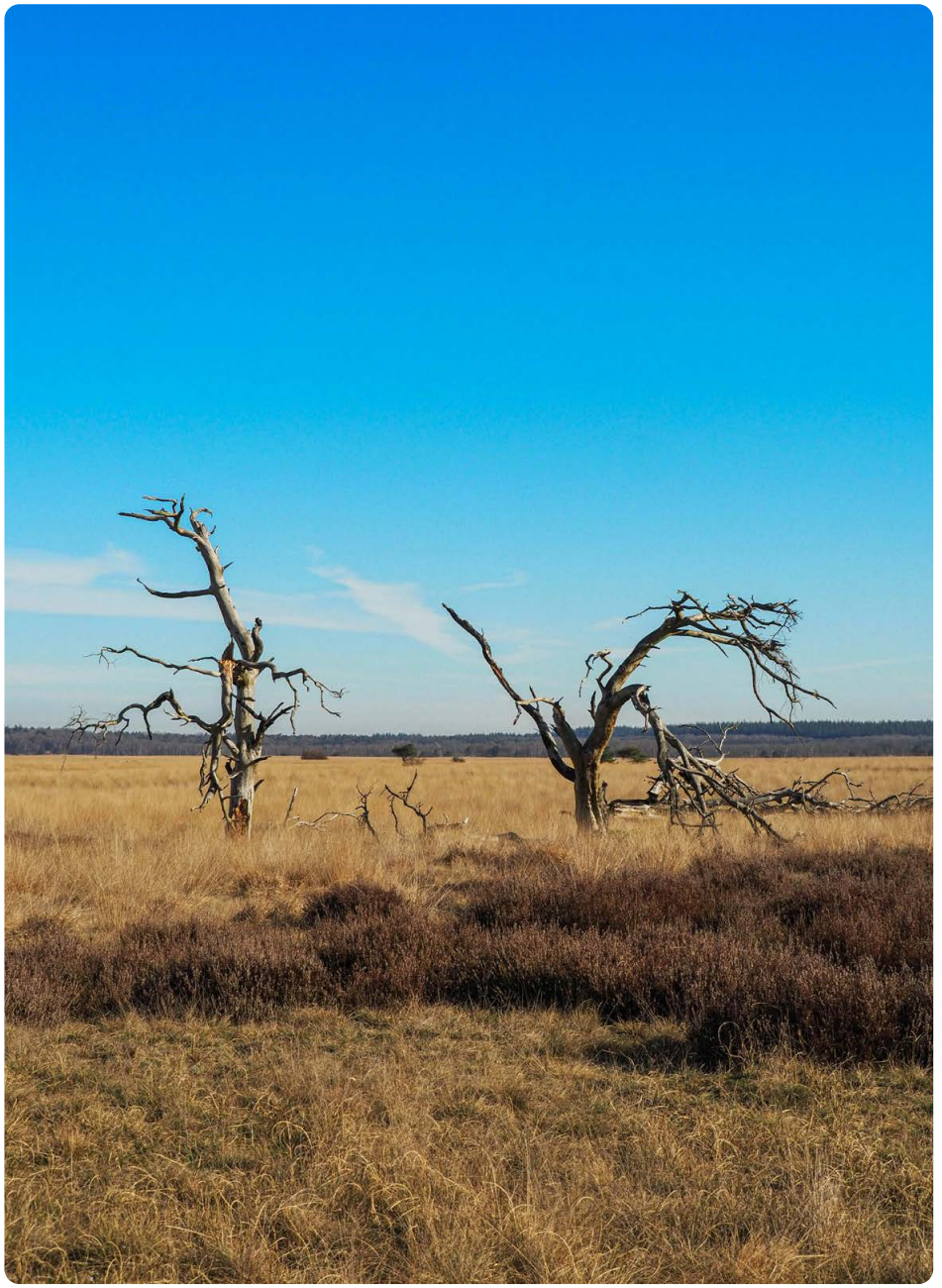
c. Strategic Asset Allocation (SAA) and climate scenarios

The pension fund analyses whether the current SAA is still appropriate in light of different climate scenarios, distinguishing between the expected impact of climate change on the underlying assumptions in the SAA such as long-term returns, inflation and growth expectations, and the impact of extreme (tail) scenarios, e.g. due to physical climate risks or an abrupt transition event. By including both perspectives, the fund avoids overestimating the expected pension results and it becomes more familiar with the 'bad weather' scenario. A pension fund states in its management report how its investment policy takes account of nature and climate, human rights and social relations.

We consider this a good practice because:

- the pension fund gains insight into sustainability risks and opportunities in a structured manner through environmental analysis, risk analysis and evaluation.
- the pension fund integrates into its Own Risk Assessment (*Eigen Risico Beoordeling– ERB*, in Dutch) an assessment of risks related to climate change, resource use and nature.
- the pension fund states in its management report how its investment policy takes account of climate and nature.
- the pension fund analyses whether the current components of its business model and strategy are still appropriate in light of climate scenarios.
- the board ensures that there is sufficient knowledge in the organisation to manage climate and nature-related risks.
- the board is aware of the data needed for climate and nature-related risk management.

Relevant laws and regulations: Section 18 of the Pension Fund (Financial Assessment Framework) Decree and Section 135 of the Pensions Act.



Insurers

Legislative framework for insurers

Below, we describe the legislative framework for managing climate and nature-related risks by insurers.[41] In addition to the Financial Supervision Act (*Wet op het financieel toezicht – Wft*), the Solvency II Delegated Regulation (SII DR) is relevant for insurers falling within the scope of the Solvency II Directive (SII Directive).[42] Limited-risk insurers (the Solvency II Basic insurers) are subject to a light national regime of prudential requirements, based on the system of the SII Directive. This guide only describes the legislative framework for managing climate and nature-related risks by Solvency II insurers. Below, we discuss the requirements relating to (i) risk management, (ii) the prudent person principle, (iii) governance and (iv) prudential reporting.

Risk management

Insurers must have sound and ethical operational management. The Solvency II framework requires insurance and reinsurance companies to integrate sustainability risks into their risk management systems. "Sustainability risk" in the SII DR means an ecological, social or governance event or condition that, if it occurs, could cause an actual or a potential negative impact on the value of the investment or on the value of the liability. As part of their risk management, insurers must consider these risks in their underwriting and reserve strategies. Sustainability risks can lead to incorrect pricing and provisioning assumptions. Insurers must therefore take measures to assess and manage the risk of loss or an adverse change in the value of liabilities arising from erroneous assumptions. The actuarial function must consider sustainability risks when advising on the overall underwriting policy.

Furthermore, insurers must take measures to correctly identify, assess and manage sustainability risks related to their investment portfolio. Where relevant, insurers must also integrate sustainability risks in their management of other risks, such as operational risks.[43]

In addition, they are required to prepare an Own Risk and Solvency Assessment (ORSA) as part of their risk management. This assessment must quantify their overall solvency needs, taking into account the risks they (may) be exposed to, including sustainability risks.

Prudent person principle

Insurers must invest all their assets in accordance with the prudent person principle. Briefly put, this means they are only allowed to invest in assets and instruments whose risks they can identify, assess and manage well. In doing so, insurers must consider sustainability risks, including the potential long-term impact which their investment strategy and decisions have on sustainability factors (including ecological factors). Where relevant, their strategy and decisions must reflect their customers' sustainability preferences.

Other governance requirements

Day-to-day policymakers (such as management board members) and persons who oversee the policy and general affairs of the insurer (such as supervisory board members) must be fit to occupy their position. Second-tier management officials such as key function holders should also be fit for their jobs. DNB's fitness requirements are defined and detailed in the Policy Rule on Suitability 2012. This states that policymakers must be fit

41 Here, this includes only the statutory provisions falling under DNB's prudential supervision. Provisions falling under DNB's integrity supervision or supervised by the AFM are excluded.

42 The revised Solvency II Directive (Directive (EU) 2025/2) entered into force on 29 January 2025. This directive must be implemented in national legislation by 29 January 2027. The revised SII Directive requires insurers to determine whether they are materially exposed to sustainability risks. The Solvency II Delegated Regulation is currently in the process of revision. This document does not yet anticipate the revised Solvency II Directive or the revision of the Delegated Regulation, but is based on the laws and regulations in force at the time of publication of this Guide.

43 As mentioned in Article 260(1) SII DR.

with regard to the sound and ethical conduct of their business operations. This includes the undertaking's risk management. Given that sustainability risks must be integrated into risk management, managing these risks is a relevant aspect in our fitness assessments. The individuals assessed must also be fit in terms of governance, organisation and communication. This includes having insight into and driving for long-term value creation. The explanatory notes to the policy rule clarify that the management body must possess sufficient knowledge and experience with regard to the impact of climate change and the sustainability regulations relevant to the financial sector. In our fitness assessments we take into account the candidate's proposed position, the insurer's nature, size, complexity and risk profile, and the composition and functioning of the board as a whole.
Furthermore, an insurer's remuneration policy must contribute to robust and effective risk management. The SII II DR requires that an insurer's remuneration policy explains how remuneration practices are aligned with the overall management of sustainability risks.

Prudential reporting

Insurers must publish an annual Solvency and Financial Condition Report (SFCR). The SFCR provides a public disclosure of compliance with insurer governance system requirements, including the design and operating effectiveness of the risk management system. The report must also address sustainability risks, as the management of such risks is part of insurers' risk management system. Insurers must also include information on their risk profile and, among other things, material risks they face. This means sustainability risks must also be disclosed if they are material to an insurer. In addition, the SFCR must outline the procedure an insurer uses to conduct its ORSA.

Insurers must also submit periodic supervisory reports to DNB, including information on the ORSA prudential report. In the ORSA prudential report, insurers must disclose, among other things, the qualitative and quantitative results of their risk and solvency assessment, as well as the conclusions they have drawn from these results. Sustainability risks are also part of the ORSA. In addition, insurers must report on their system of governance in periodic prudential reports, including disclosure on risk management strategies and material risks they face. Insurers must also report on their risk profile, including disclosure on material risks they face. Accordingly, if sustainability risks are material, insurers are required to disclose them.

Overview of laws, regulations and policy statements

The following laws and regulations are particularly relevant:

- Section 1:118 of the *Wft*
- Section 3:8 of the *Wft*
- Section 3:10 of the *Wft*
- Section 3:17 of the *Wft*
- Section 23 of the *Bpr*
- Section 26.2 of the *Bpr*
- Article 258(1)(b) of the SII DR
- Article 259(1) of the SII DR
- Article 260(1)(a)(i), (1a) and (c)(vi) of the SII DR
- Article 262(1)(a) of the SII DR
- Article 269(1)(e) and (1a) of the SII DR
- Article 272(6)(b) of the SII DR
- Article 273(1) and (2) of the SII DR
- Article 275(4) of the SII DR
- Article 275a of the SII DR
- Article 294(3) of the SII DR
- Article 295 of the SII DR
- Article 304(1) of the SII DR
- Article 306 of the SII DR
- Article 308 of the SII DR
- Article 309 of the SII DR

The following other policy statements are of particular interest:

- Good Practice Integrating climate-related risks in the ORSA
- EIOPA Report on the prudential treatment of sustainability risks
- EIOPA Opinion on climate change risk scenarios in the ORSA
- EIOPA Application guidance on climate change materiality assessments and climate change scenarios in ORSA
- Policy Rule on Suitability 2012
- DNB Fact sheet Climate-related risks are now a part of fit and proper assessments
- IAIS publishes comprehensive Application Paper on the supervision of climate-related risks in the insurance sector - International Association of Insurance Supervisors

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Impact of climate and nature-related risks on insurers

The table below shows an example of how climate and nature-related risk factors can affect an insurer's existing financial or non-financial risk areas. The same risk factor can affect several risk areas simultaneously. The table is intended purely as an illustration to provide a starting point for the materiality analysis. The ultimate impact depends among other things on the scale and distribution of physical and transition risks, and on the insurer's business model. The institution will have to determine this impact and its materiality in its materiality analysis.

Table Examples of how climate and nature-related risks feed through into an insurer's risk profile (non-exhaustive)

Risk	Subtype	Market risk	Underwriting risk	Operational risk	Business model & strategy
Physical risk	Acute or chronic	Prolonged droughts and floods can result in loss of value of investments and can increase volatility in commodity markets, for example.	Extreme rain and hailstorms or flooding of secondary flood defences can result in insurance claims.	Extreme weather can pose a threat to insurers' premises and operations.	Climate change may cause large price increases for non-life insurance and possibly lead to risks becoming uninsurable. This may affect the viability of the insurer.
Transition	Policy, technology, market sentiment, reputation	Changes in climate and nature-related policies, disruptive technologies and changing market sentiment may lead to stranded assets in carbon-intensive industries and other turmoil in financial markets.	Additional claim risk due to over-representation of liability insurance in carbon-intensive industries, for example.	Reputational risk and social pressure if climate targets are not sufficiently specific or ambitious and do not match actual practice.	New regulations may affect the range of products or services an insurer offers, which may affect its revenues.

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Overview of good practices for insurers

Focus area 1: Business model and strategy

- GP1: Using scenario analysis in strategic planning
- GP2: Non-life insurer integrates climate and nature-related risks into its strategy

Focus area 2: Governance

- GP3: Insurer's policymakers embed material climate and nature-related risks in existing governance and policy frameworks
- GP4: Ensuring that policymakers are fit to manage climate and nature-related risks
- GP5: Allocating responsibilities for climate and nature-related risk management within the organisational structure
- GP6: Promoting awareness of climate and nature-related risks
- GP7: Integrating climate and nature-related risks into its remuneration policy

Focus area 3: Risk management

- GP8: Explicitly including climate and nature-related risks in its existing risk appetite
- GP9: Conducting materiality analysis as the starting point of its risk management cycle
- GP10: Including scenario analyses of relevant sustainability risks in annual ORSA
- GP11: Using ORSA results to determine impact and opportunities of climate risks
- GP12: Conducting nature-related impact and dependency analysis
- GP13: Assessing transition risk using stress tests
- GP14: Mitigating climate- and nature-driven operational risks
- GP15: Frequently evaluating the climate and nature-related risk management cycle

Focus area 4: Information provision

- GP16: Implementing data infrastructure for sustainability data
- GP 17: Reporting externally on non-financial information
- GP18: Preparing climate transition plan showing how it will achieve its ambitions

Step-by-step plan

- GP19: Step-by-step plan for insurers

Good practices for management of climate and nature-related risks by insurers

The good practices are practical examples that, in our view, are good examples of integrated climate and nature-related risk management. These serve as inspiration for how institutions can address cross-sectoral focus points. The good practices are organised according to the aforementioned focus areas. To assist institutions that are in the early stages of embedding climate and nature-related risks into their core processes, we conclude with an example of step-by-step implementation of risk mitigation measures.

1 Business model and strategy

GP1: Using scenario analysis in strategic planning
The management board of the insurer wants better insight into the material negative impact and opportunities of climate change and biodiversity loss in order to incorporate them in its strategy. The board needs to have this insight into its business model in the short as well as the medium and long term. Some possible impacts are likely to materialise in the long term (>10 years). Scenario analysis is used as part of strategic planning. The institution opts for scenarios based on global qualitative and quantitative changes, drawing inspiration from the scenarios of the IPCC and the International Energy Agency.

The institution opts for the orderly transition scenario (in line with the Paris Agreement) of less than 2°C of global warming by 2050 and compares that with the NGFS's business-as-usual scenario (6°C of global warming) and with the soft decarbonisation scenario (3°C of global warming) as described in EIOPA's Application guidance. To streamline the discussion, external experts with diverse backgrounds are invited. For each scenario, the board considers the strategic position for the company as a whole and, for each market segment, considers how to deal with it in terms of premium setting and product development.

We consider this a good practice because:
- the insurer identifies specific risks in a scenario analysis.
- the insurer takes climate and nature-related risks into account in its strategy setting and not only identifies the risks, but also determines the associated actions.
- scenario analysis is a useful exploratory tool given the uncertainties and complexities associated with climate and nature-related risks. Scenarios also make it possible to identify the impact of climate and nature-related risks for the institution over a longer period than the usual horizon of three to five years.
- the insurer uses available documents such as EIOPA's Application guidance on climate change materiality assessments and climate change scenarios in ORSA (2022).

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 259, 260 and 262 of the SII DR.

GP2: Non-life insurer integrates climate and nature-related risks into its strategy

The management board of an insurer draws up a company-wide strategy for the medium to long term. Addressing the impact of climate change and biodiversity loss on the organisation and its environment is high on its priority list. The insurer assesses whether its product range and investments should be adjusted accordingly. After analysing existing frameworks and initiatives, the insurer chooses to conform to a number of frameworks. The sustainability principles are derived from the United Nations Global Compact (UNGC). For its investments, the insurer bases itself on the Net-Zero Asset Owner Alliance, the Sustainable Development Goals (SDGs) and the Dutch financial sector's Climate Commitment.

For the pricing of insurance products, the insurer aims to take into account climate adaptation measures such as toughened glass in greenhouses. In its ESG strategy, the insurer has set a goal of reducing the carbon footprint of its investments to net zero by 2050. This goal is translated into climate performance indicators, linked to SDG 13 "Climate Action", among others, which the board uses to monitor progress and determine whether the strategy needs to be adjusted.

We consider this a good practice because:

- the insurer incorporates the opportunities and risks resulting from climate and nature-related changes into its strategy on the basis of frameworks and initiatives.
- strategic goals are translated into specific, measurable performance indicators (KPIs) that make it easy to monitor progress.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 259, 262,269 and 275a of the SII DR.

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2 Governance

GP3: Insurer's policymakers embed material climate and nature-related risks in existing governance and policy frameworks

The management board and supervisory board of an insurer have assigned the risks and opportunities related to climate and nature to the portfolio of a management board member and a supervisory board member. The portfolio holders are supported by a task force consisting of a management board member, a supervisory board member, a senior manager and an external advisor.

Both boards consider it imperative to further integrate climate and nature-related risks and opportunities into the institution's existing frameworks and processes. To further this process, they have established dedicated management and supervisory board committees on climate and nature-related risks and opportunities. Management and supervisory board members, managers with expertise in managing these risks, and external experts in the field participate in these committees. This committee informs the management board and the supervisory board of the results of its deliberations and considerations.

We consider this a good practice because:

- the members of the management and supervisory bodies (management board and supervisory board) provide a working method, structure and division of tasks aimed at ensuring that climate and nature-related risks and opportunities are appropriately taken into account in decision-making and supervision.
- the commitment from "the top" to climate and nature-related risks is then visible.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 258 and 260 of the SII DR.

GP4: Ensuring that policymakers are fit to manage climate and nature-related risks

An insurer has drawn up knowledge requirements for management board and supervisory board members with regard to risks and opportunities associated with climate change and nature degradation. In so doing, it has adopted the principle that management board and supervisory board members should have insight into, and understanding of, the most important developments in the field of climate and nature, the legislation and regulations in this area, what society and stakeholders expect from the institution and what that means for business operations. These minimum knowledge requirements have also been incorporated into the job profiles.
In order to maintain the level of knowledge, the insurer periodically organises knowledge sessions on climate and nature themes for the management board and supervisory board members and for key function holders in actuarial and risk management. Topics include the causes of climate change, laws and regulations, national and international climate policies, ESG ratings, and the use of models and scenario analyses for climate and nature-related risks. For even better awareness, insight is also provided into the risks the institution faces, for example through the use of risk heat maps, an overview of climate-related damage and of possible stranded assets. External experts are regularly invited to these knowledge sessions, to train and challenge session participants on climate and nature-related risks and opportunities for the institution. The management board and the supervisory board periodically assess whether the knowledge standards are being met and in which areas there is a need for training and education.

We consider this a good practice because:
- in this way, the insurer ensures that sufficient expertise is present within the executive and supervisory bodies to assess its exposure to climate and nature-related risks, respond appropriately to risks, identify opportunities, arrive at informed and balanced decisions and maintain effective second line supervision.
- the insurer makes sure there is a continuous focus on the importance and development of expertise and experience in climate and nature-related risks and opportunities.

Relevant laws and regulations: Section 3:8 of the *Wft*, the Policy Rule on Suitability 2012, Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 258, 260 and 273 of the SII DR.

GP5: Allocating responsibilities for climate and nature-related risk management within the organisational structure

The management board of an insurer realises that the institution wishes to catch up in terms of climate and nature-related risk management. After adopting the policy, strategy and controls, the board has decided to set up a temporary department headed by a sustainability manager. This department is responsible for implementing the strategy and managing climate and nature-related risks, seeking close alignment with existing processes and structures in the organisation. The board receives periodic reports to monitor progress. In the organisational structure, the tasks and responsibilities of key function holders are clearly assigned and documented. They cooperate closely and coordinate on a regular basis to ensure a coherent approach to climate and nature-related risks. This contributes to effective implementation.

1. First line: The roles and responsibilities for climate and nature-related risk management have been assigned and documented. This includes taking climate and nature-related risks into account when developing insurance products.
2. Risk management (second line): As required by law, the risk manager assesses first-line sustainability risk management and attends management board meetings when necessary. This includes identifying climate and nature-related risks in each area of the risk management system, measuring and quantifying risk exposure, and using methodologies, tools, metrics and KPIs for risk monitoring.
3. Compliance function: The compliance function assesses legal risks related to ESG, informs on risk areas in the institution, and develops, implements and maintains the institution's compliance policy. In addition, it drafts compliance plans and enforces compliance.
4. Actuarial function: This function is responsible, as required by law, for assessing the integration of sustainability risks in underwriting, technical provisions and reinsurance.
5. Internal audit: Internal audit verifies that climate and nature-related risks are managed adequately, in accordance with adopted policies and procedures.

We consider this a good practice because:
- the insurer thus ensures that the strategy, policy and management of climate and nature-related risks are appropriately incorporated into the governance and risk management systems.
- in line with the 'three lines of defence model', the insurer thereby facilitates strong governance for the management of climate and nature-related risks and this theme is embedded and applied in all areas of its operational management.
- this enables management board and supervisory board members to take sound and informed decisions and manage the institution effectively.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 260, 269, 270, 271 and 272 and the general governance requirements set out in Article 258 of the SII DR.

GP6: Promoting awareness of climate and nature-related risks
In addition to the knowledge sessions and training courses aimed at increasing knowledge of climate and nature-related risks, the management board of an insurer has appointed 'ambassadors' in parts of the organisation where climate and nature-related risks arise. These ambassadors are tasked with raising climate awareness within the organisation. The ambassadors discuss sustainability initiatives on a quarterly basis to update each other on developments in their part of the organisation. This ensures an integrated approach to climate and nature-related aspects. The sustainability manager chairs these discussions. The results of the discussions are shared with the board member whose portfolio includes sustainability and the management of climate and nature-related risks.

We consider this a good practice because:
- this promotes a culture encouraging awareness and behaviour that contributes to the management of climate and nature-related risks.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Article 258 of the SII DR.

GP7: Integrating climate and nature-related risks into its remuneration policy
An insurer has developed a remuneration policy that fosters sustainable, long-term value creation. Besides financial targets, it also sets non-financial targets.
The remuneration policy is based on a balanced mix of financial, climate-related, nature-related and social targets. For example, carbon reduction and energy efficiency are explicitly rewarded, along with improvements in inclusiveness and working conditions. A specific target is to reduce fossil fuels in the investment portfolio by 35% by 2030. This target is integrated into the remuneration policy for the management board, making remuneration of its members partly dependent on performance in this area. One specific KPI for board members is annual 5% reductions in fossil fuel investments to meet the 35% target by 2030.

By linking these targets to relevant remuneration with an appropriate (annual) time horizon, the insurer seeks to encourage board members' behaviour that remains commensurate with the ambition for long-term value creation.

We consider this a good practice because:
- the insurer has included non-financial KPIs in the remuneration policy that are in line with strategic targets and has made them measurable. The aim is to encourage appropriate activities, including with regard to the climate and nature.
- these KPIs have been established and made measurable, meaning they can be accounted for externally.

Relevant laws and regulations: Section 1:118 of the *Wft* and Articles 258 and 275(1)(l) of the SII DR.

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3 Risk management

GP8: Explicitly including climate and nature-related risks in its existing risk appetite
An insurer has translated the defined risks due to climate and nature-related change into existing risk categories. For example, the physical and transition risk of investments has been assigned to 'market risk' and the 'reputational risk' category has been expanded to include the reputational risk associated with a failure to adhere to climate commitments.

Since the insurer has a large representation in the agro sector and the risk of biodiversity loss has not yet been adequately identified, additional research will be conducted in the next few years on the specific impact on this sector and the possible consequences for the insurer. The current nitrogen pollution problems and the impact they are having on the agro sector are taken as an example.

The insurer has defined as its strategic principle that it wants demonstrable social value through its insurance and investment activities, with the interests of stakeholders (particularly the policyholder) having high priority. The insurer therefore decides to monitor the sustainable portfolio over the next three years against a benchmark in accordance with the recent Strategic Asset Allocation (SAA) / Asset Liability Management (ALM). The insurer then assesses progress towards sustainability targets, and undertakes possible actions based on this assessment.

The insurer is giving thought to the investment issue in relation to the transition risk. Are we going to exclude investments, or are we going to try to get companies to 'go green' through our investments (engagement)? The insurer also considers the potential social consequences of exclusion. It is agreed to present this choice to the highest decision-making body at its next meeting.

To determine the SAA, the insurer analyses multiple plausible deterministic scenarios to visualise the expected impact of climate change. In addition, it analyses stress scenarios to identify any (tail) risks. These analyses help the insurer estimate long-term expected returns more realistically and avoid overestimating the outcome, including the adverse scenario. A scenario with a temperature rise of 3°C provides insight into the expected impact of climate change. As adequate stress scenarios are still unavailable, the estimation of tail risks is based on expert judgement for the time being.

The risk appetite is specified in the strategy as follows:
- the insurer aims to have a direct positive impact on climate change with a significant percentage of its investments by 2030 (impact investing). Impact investing means investing in Sustainable Development Goals (SDGs) 7 (Affordable and clean energy), 13 (Climate action) and 15 (Life on land – restoring ecosystems and biodiversity). It has been agreed that a percentage of assets will be invested in line with SDGs 7, 13 and 15 by the end of the year. The insurer defines the 'impact investing' KPI for this purpose.

- the insurer analyses the differences in returns and volatility between green and non-green investments in order to monitor the strategy. For this purpose, the 'green investment' share KPI is defined based on data from an ESG data provider.
- the insurer wants to specify and delineate its willingness to accept physical climate risks. Upper limits are therefore set for exposures in certain climate-sensitive regions and industries (partly based on postcode and NACE code[44]).
- the insurer wants to safeguard its reputation for corporate responsibility. The indicators used for this purpose are the benchmark of the Dutch Association of Investors for Sustainable Development and the practical research by the Fair Insurance Guide (*Eerlijke Verzekeringswijzer*).

We consider this a good practice because:
- the insurer has taken an initial step in adjusting its risk appetite framework (also referred to as the risk appetite statement – RAS).
- the insurer has sought to make the emerging risks concrete, translate them into targets within the existing risk appetite framework and link measurable indicators to its targets.
- this enables the insurer to communicate both internally and externally on progress regarding the transition of the investment portfolio, thereby reducing reputational risk and bringing it within its own risk tolerance.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 259, 260 and 269 of the SII DR.

GP9: Conducting materiality analysis as the starting point of its risk management cycle

An insurer conducts a materiality analysis, identifying the sustainability themes that are material (of great importance) to the insurer and warrant additional attention. The 'climate' and 'biodiversity and ecosystems' themes were identified as material, potentially posing a prudential risk for the insurer. The analysis was based on the key principles of the CSRD and an internal data delivery template that uses the 10 waypoints of the Dutch Authority for the Financial Markets (AFM) (Ten waypoints for CSRD).

The analysis distinguishes between two types of materiality: the impact the insurer has on its environment (impact materiality) and the impact the environment has on the insurer (financial materiality).

For each material theme, the insurer indicates whether the impact materiality is positive or negative and whether this impact is currently felt (existing) or could arise in the future (potential). For financial materiality, the insurer indicates whether there is a risk (potential negative impact) or an opportunity (potential positive impact).

We consider this a good practice because:
- it gives the insurer insight into the risks associated with climate change and how these risks affect the institution through the knock-on effect on conventional risks.
- the insurer takes action to address identified material risks where necessary.
- See also Box 3: Focus points for materiality analysis on page 13.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 259, 260 and 269 of the SII DR.

44 The NACE code is a code assigned by the European Union and its member states to a certain class of commercial or non-commercial economic activities. It is used to aid in the preparation of economic statistics and statements.

GP10: Including scenario analyses of relevant sustainability risks in annual ORSA
The insurer conducts annual ORSAs, providing insight into the relationship between strategy, material risks and their potential impact on the insurer's solvency position and what the insurer can do to avert or mitigate the risks. After identifying material risks, they are translated into scenario analyses.
The insurer deliberately opts for extreme but plausible scenarios so as to understand the medium-term risks. The insurer has formulated a generic sustainability scenario based on the strategic risk analysis sessions held for each business unit. This scenario was developed for a 10-year period instead of the usual 5-year ORSA horizon. The insurer expects the longer 10-year horizon to better capture climate change risks.

The 10-year scenario considers both the investment side (assets) and the liability side (liabilities). The investment side uses a scenario in which the transition to a climate-neutral economy has dramatically failed. This results in a devaluation of investments in firms susceptible to the physical effects of climate change and a write-down of the property portfolio. The longer 10-year horizon ensures that physical risks to the investment portfolio are more accurately accounted for.

Long-term investment scenarios
Several long-term scenarios for investments are elaborated, such as a disorderly transition in which transition costs are suddenly priced in, or a failed transition in which physical risks in particular increase relatively sharply in the medium term.

A total of four scenarios have been selected for which the impact on the SII ratio and return on Solvency Capital Requirement (SCR) is considered with a 30-year time horizon. Both the overall impact and the transmission channels differ for each scenario. In a disorderly transition, investments in high-emission firms are quickly devalued.

In a failed transition, transition risks are relatively more limited initially, although the risk of delayed and abrupt government policy changes remains. At the same time, temperatures rise further and physical risks increase. The consequences are an overall drop in productivity and write-downs of investments susceptible to physical climate damage, such as residential and office properties.

Underwriting
Scenarios for the insurance portfolio are developed to help calculate the expected claims burden for the coming decades that are due to extreme weather events such as severe drought, floods and wind storms. The physical damage to insured objects will boost claims to non-life insurers, changing their risk profiles.

To project physical climate risks, the insurer gathers data on the geographical distribution of its insurance portfolio. Modelling is used to estimate the probability of damage and its extent in each location. Several IPCC climate scenarios are used to estimate future damage.

The sustainability scenario also takes into account the increased risk of a pandemic due to climate change that will drive up healthcare costs and disability benefits. In addition, the sustainability scenario estimates additional costs due to bacterial infections that may be caused by biodiversity loss. Likewise, inflation could increase financial pressures, driving up healthcare costs, e.g. in relation to mental conditions.

We consider this a good practice because:
- in line with the Q&A on including climate risks in the ORSA, the insurer distinguishes between short-, medium- and long-term risks in the ORSA and analyses the impact of climate-related risks on both the asset side and the technical provisions.

- through scenarios, the insurer also analyses medium- and long-term impact, deliberately opting for an extreme but plausible scenario for its different business units (e.g. life, non-life property and casualty, income protection, healthcare), taking into account both physical and transition risks.
- for the probability and impact of the risks it uses a scale with four levels: low, medium, high and very high.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 262 and 269 of the SII DR.

GP11: Using ORSA results to determine impact and opportunities of climate risks

An insurer sets up a working group made up of first- and second-line members to develop a feeling for the probability of climate risks as well as their impact.

In line with the outcomes of the ORSA, the working group assesses the likelihood and impact of physical and transition risks and reputational damage if climate or nature-related targets are not met.

Probability	**Impact**
Low: interval greater than 10 years	*Low*: financial loss (<€10k) and reputational damage; no actions by supervisory authority
Medium: interval 5 to 10 years	*Medium*: financial loss (€10-100k); some reputational damage; single measure by supervisory authority
High: interval 1 to 5 years	*High*: financial loss (>€100k) or reputational damage; more severe measure by supervisory authority
Very high: interval less than 1 year	*Very high*: financial loss (>€1m) or major reputational damage; severe measures by supervisory authority

The risk matrix is then used to estimate the gross risk.

Gross risks	**Probability**			
Impact	*Low*	*Medium*	*High*	*Very high*
Low	Low	Low	Low	Medium
Medium	Low	Medium	High	High
High	Medium	High	High	Very high
Very high	Medium	High	Very high	Very high

Mitigation depends on the gross risk score.

Low	Acceptable risk; normal attention
Medium	Tolerable risk; additional monitoring
High	Worrying risk; short-term management
Very high	Unacceptable risk; direct management

The exercise results in a matrix of probability and impact, and the final scores for the gross risks, see table 1. The gross risk for extreme weather scores medium. In the actions in this example, we see that the investment risk associated with carbon taxes in the short term and the reputational risk in the case of deviations between ambition and practice need to be mitigated immediately.

We consider this a good practice because:

- the insurer examines the probability of climate risks as well as their impact.
- the insurer uses simple, practical scales for the probability and impact to qualify the risks.
- the insurer uses the risk scores to determine whether and how climate risks should be mitigated.

Relevant laws and regulations and other policy statements: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr*, Articles 262 and 269 of the SII DR, and Q&A Climate risks and insurers.

Table 1

Climate risk	Consequences	Affected risks	Probability	Impact	Gross risk	Action
Extreme weather	Losses due to damage to insured properties and damage to investment properties	Insurance liabilities and investments	Medium	Medium	Medium	Additional monitoring
Increase in carbon tax	Losses in carbon-intensive assets	Investments	High	Medium	High	Short-term management
Implementation contrary to (widely) advertised ambitions	Negative publicity and stakeholder dissatisfaction	Operational (reputation)	Medium	Very high	Very high	Direct management

GP12: Conducting nature-related impact and dependency analysis
The management board of a large insurer found compelling evidence that nature-related risks could be material to the institution.
It therefore maps its investments' impact and dependencies on nature (including biodiversity), and how risks could potentially manifest themselves. To do so, the board uses an appropriate risk framework, such as the LEAP approach developed by the Taskforce on Nature-related Financial Disclosures (TNFD). The board's analysis looks at both direct and indirect chain impacts. In this way, the insurer identifies nature-related risks in a carefully documented process.

For an initial analysis of the investments' potential nature-related impacts and dependencies, the board prepares a longlist of sectors and activities that may have a high impact or dependence on nature and biodiversity. At a sector level, for example, the top 10 sectors from the Finance for Biodiversity report are considered. The board uses the ENCORE database for a sub-sector-level impact and dependency scan. Based on this analysis, it identifies the investments which potentially face the greatest nature-related risks. These investments are prioritised for further study.

In prioritised investments, the board then examines how impacts and dependencies translate into specific nature-related physical and transition risks based, among other things, on the WWF biodiversity risk filter. To capture the highly location-specific nature-related risks, the board uses the most granular possible location data for its investments. The board implements appropriate controls to mitigate the identified risks. This process is supported by continuous monitoring and updated analyses based on new data and regulations.

For example, in the selected investments, the board identifies the Dutch firms the insurer invests in, subsequently singling out those firms that are based within a 1-kilometre radius of a Natura 2000 site.

The insurer then examines how this can translate to specific physical and transition risks.

- Physical risks can arise due to nature loss. For example, an arable farm that relies on dry land may suffer damage from flooding, preventing it from cultivating its land and reducing its output.
- Transition risk can arise due to additional government measures to protect Natura 2000 sites.

Based on the insights gained, the insurer chooses nature-related targets and indicators, in part using the Science-Based Targets for Nature (SBTN). In addition, the insurer adopts ambitions in line with the Global Biodiversity Framework (GBF), both for the medium term (by 2030) and the long term (by 2050).

We consider this a good practice because:
- the large insurer uses insights gained from the above analysis to set concrete targets and monitors their achievement.
- the large insurer conducts a granular analysis of its investment portfolio.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 259, 260, 269 and 275a of the SII DR.

GP13: Assessing transition risk using stress tests

To gain an idea of the impact of transition risk associated with climate change, the institution draws up a transition scenario that translates the changing climate and nature into conventional risks such as market and underwriting risk. The scenario is modelled on scenarios from the DNB energy transition stress test.
The scenario involves an abrupt, disorderly transition to a climate-neutral economy. Government intervention causes the carbon emission price to surge and the value of carbon-intensive investments to fall. This scenario is applied to the entire balance sheet to determine the impact on the financial position.

We consider this a good practice because:
- the analysis reveals which conventional risks are affected by climate change and nature degradation.

Relevant laws and regulations and other policy statements: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr*, Articles 259, 260 and 269 of the SII DR and DNB's Q&A.

GP14: Mitigating climate- and nature-driven operational risks

The risk analysis shows that extreme precipitation poses an operational risk because one of the insurer's two data centres is in a location susceptible to flooding. Moreover, the probability of flooding at this location is increasing over time. This risk falls outside the risk tolerance and needs to be managed. To mitigate the short-term consequences of flooding, the institution decides to make additional backups of data in the data centre. In order to mitigate this risk sustainably, it explores options to relocate the data centre to another, higher location.

We consider this a good practice because:
- the institution conducts a targeted risk analysis and, on that basis, controls the risk (including the flood risk) that falls outside the risk tolerance.
- it shows that mitigation consists not only of final solutions, but can also be an initial rapid action aimed at a temporary solution to directly contain potential damage.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 259, 260 and 269 of the SII DR.

GP15: Frequently evaluating the climate and nature-related risk management cycle
An insurer integrates the climate and nature-related risks in its risk management cycle. To understand the steps needed to improve its risk management, the insurer conducts scenario analyses and a gap analysis. The differences between the current and desired state lead to a number of actions.

The table below contains examples from this action list.

We consider this a good practice because:
- the insurer sets a desired maturity level for climate and nature-related risks and identifies differences between the current and desired state.
- the insurer defines concrete actions, with milestones and timelines to achieve the desired maturity level.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 259, 260 and 269 of the SII DR.

Table 2

Cycle	Description	Risk	Risk level	Action	Time limit
Identification	ESG data from two sources is used. The ESG data can be improved by adding additional sources.	Reputational damage due to a possibly incomplete picture of ESG risks.	Low	Investigate expansion of sources for ESG data.	1 year
Identification	No attention is paid to the social or 'S' component of ESG.	Reputational damage because stated ambition of being an ESG insurer does not match reality.	Low	Expand scope of risks to include 'S'. Start with exploratory research.	3 years
Risk attitude	There are no scenarios for biodiversity loss; this must be remedied rapidly.	Financial risk due to investments dependent on animal pollination.	Medium	Develop risk attitude, (qualitative) risk appetite and biodiversity loss scenario.	6 months
Assessment	Available data on insured properties is insufficient for flood risk.	Underwriting risks due to incomplete picture of insured risks.	High	Expand location and vulnerability data.	1 year
Mitigation	Asset manager's exclusion policy does not match the desired exclusions.	Reputational damage caused by difference between stated ambitions and practice.	Low	Examine role of exclusions in climate risk mitigation. Coordination with asset manager and exploration of alternatives.	2 years
Mitigation	The exclusion policy in one scenario allows losses that are greater than the risk tolerance.	Reputational damage due to non-fulfilment of ambitions and financial risk due to unknown large exposure.	Very high	Further specify exclusions policy.	3 months

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4 Information provision

GP16: Implementing data infrastructure for sustainability data
In anticipation of the impending changes from the Solvency II review and the advent of the CSRD, an insurer decides to critically review and, where necessary, modify its data infrastructure to enable collection of the right information, now and in the future, for its internal and external reports (both prudential and CSRD reports). The insurer is aware that risk concepts and data quality requirements never cease to evolve. It is therefore committed to ensuring the best possible understanding of risks, prioritising meaningful strategy-aligned reporting.

As a first step, the insurer lists its data needs. To do so, the insurer considers its strategy and the KPIs it sets. It also takes stock of data needs arising from Solvency II (including the ORSA and the review) and the double materiality analysis under the CSRD. These include indicators on material impact, risks and opportunities (IROs), control over these IROs, policies and targets, and governance. It also checks whether additional data is needed for internal reporting to senior management and/or risk management.

Data and ESG experts from across the organisation go through this list of required data to see what data is already available and whether their quality is sufficient. An approach is established for collecting any missing data. This includes considering to what extent its availability depends on external parties, such as suppliers, data providers and investee firms. The insurer also explores the possibilities offered by the EIOPA Climada app[45] in terms of mapping climate-related events.

ESG data collection is linked to existing models and processes to ensure ESG data easily finds its way into internal reports to e.g. senior management and external reports and prudential reporting. Governance is also embedded in existing structures, and process and model owners are clearly designated.

We consider this a good practice because:
- the insurer is preparing for upcoming (reporting) changes arising from the Solvency II review.
- the insurer forms an accurate picture of its needs for data on climate and nature risks.
- the insurer links the ESG data infrastructure to existing processes and models.
- a high-quality infrastructure for climate and nature-related risk data allows the insurer to have a proper understanding of these risks, make strategic decisions and manage risks accordingly.
- even though data quality may not be optimal and regulations on data requirements are subject to change, the insurer ensures an appropriate infrastructure for climate and nature-related risk data, allowing it to have a proper understanding of these risks and make strategic decisions accordingly.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 258-260 and 269 of the SII DR.

45 Open-source tools for the modelling and management of climate change risks - EIOPA

GP 17: Reporting externally on non-financial information
In its annual report, in addition to financial information, an insurer also discloses non-financial information. While the insurer is not yet required to comply with the CSRD, it seeks to align its annual report with the relevant requirements as much as possible. The insurer therefore reports according to the 'double materiality principle', which describes both the impact of ESG themes on the insurer's financial risks and the insurer's impact on these themes. The insurer also reports on its progress in complying with the Principles for Sustainable Insurance, to which it has committed. The insurer is transparent about the potential impact and effect, and about the way in which the management has taken these results into account.

We consider this a good practice because:
- the insurer provides insight to stakeholders on its management of climate and nature-related risks.
- the insurer's information provision is in line with EU-standards, avoiding blind spots as much as possible.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Article 269 of the SII DR.

GP18: Preparing a climate transition plan showing how it will achieve its ambitions
The box following this good practice explains various terms in more detail.

An insurer prepares and publishes a climate transition plan, disclosing its climate ambitions and explaining how it will achieve them. The insurer is aware of the important role it has as a financial institution in the transition to a climate-neutral society. It has set two strategic objectives: 1) having a climate-neutral investment portfolio by 2040 and 2) having a climate-neutral insurance portfolio by 2050.

To put its ambitions into practice, the insurer uses the guidance issued by the Dutch Association of Insurers and the whitepaper published by the Net-Zero Insurance Alliance (NZIA). The insurer has also joined the successor to the NZIA, the Forum for Insurance Transition to Net Zero (FIT).

A roadmap shows the key interim and ultimate milestones for 2025, 2030 and 2050. The insurer is clear about the asset classes that will be excluded in whole or in part for the time being, and why. It also describes the methodologies used to set emission reduction targets. It subsequently explains what actions will be taken to achieve these targets and how progress will be monitored. The insurer is transparent about the assumptions underlying the plan and the extent to which achieving the targets depends on external factors.

For instance, the insurer aims to reduce investee firms' carbon emissions by 25% by 2025, 55% by 2030 and 100% by 2040. It explains how it will achieve this through, for example, engagement, active shareholder voting policies and exclusion for its investments in firms. It also sets out its contributions to the energy transition by investing in renewable energy projects, such as solar and wind farms.

As a non-life insurer, it aims to offer products and services that help customers mitigate climate-related damage, adapt to climate change and reduce carbon emissions. For this purpose, it has set concrete short-, medium- and long-term goals, with associated actions such as sustainable damage repair and flood risk insurance with respect to climate adaptation. It also supports various sector initiatives assisting corporate customers, for example aimed at carbon reduction in agriculture.

The transition plan also describes governance arrangements, specifying the organisation units that bear specific responsibilities.

We consider this a good practice because:

- the insurer uses this climate transition plan to identify which assets play a relevant role in the transition, collects relevant data and draws up strategies to reduce its exposure.
- the insurer aligns with international guidelines and standards to facilitate risk identification and management.
- the insurer has translated its ambition into concrete strategic objectives that include milestones (roadmap) to measure progress in achieving its objectives.
- the insurer formulates concrete objectives, including measurable milestone results for each asset class and at portfolio level.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 258-260, 269 and 275a of the SII DR.

Box Selected guidelines, standards and tools

When developing climate and nature action plans, institutions can use various guidelines, standards and tools. A selection can be found below.[46]

Paris-aligned firms
These are firms that are committed to the Paris Agreement and have aligned their decarbonisation strategy. See NZIF for all criteria.

EU Paris-Aligned Benchmark (EU PAB)
The EU-PAB aims to align portfolios with the IPCC's 1.5° C scenario and to transition to a sustainable economy. The standards are:

- A reduction of at least 50% of GHG intensity relative to the investable universe for scope 1, 2 and 3.[47]
- Annual reductions of at least 7% of GHG intensity relative to the fund itself.
- Exclusion of firms that derive a certain revenue from fossil fuels, controversial weapons, and tobacco, and violators of social standards such as the UNGC principles, OECD guidelines and the EU Taxonomy's environmental targets.
- Minimum exposure – at least comparable to the benchmark – to sectors that are highly vulnerable to climate issues.

Partnership for Carbon Accounting Financials (PCAF)
Partnership of financial institutions working together to develop and implement a harmonised approach to measuring and disclosing greenhouse gas emissions associated with their lending and investment activities.

46 These guidelines, standards and tools are included as examples and should not be seen as advice from DNB on their use.
47 Taking into account the phased approach to scope 3.

Partnership for Biodiversity Accounting Financials (PBAF)
Partnership that enables financial institutions to assess and disclose the impact and dependencies on biodiversity of loans and investments.

EU Taxonomy
EU classification system that defines criteria for economic activities that are aligned with a net zero trajectory and broader environmental goals.

Global Coal Exit List (GCEL)
Urgewald created the publicly available database GCEL to identify firms along the entire thermal coal value chain that are expanding their coal business, have a coal revenue of at least 10% or are above a certain absolute coal production threshold.

Global Oil & Gas Exit List (GOGEL)
The GOGEL is a comprehensive publicly available database created by Urgewald to identify oil and gas firms active in the upstream, midstream or gas- and oil-fired power sectors. The database offers useful information for developing and implementing an oil and gas exclusions policy, for example on revenue shares in fossil fuels, expansion plans and unconventional production.

Carbon risk real estate monitor (CRREM)
A tool to test alignment based on carbon emissions and energy consumption in line with net zero paths.

Assessing Sovereign Climate-Related Opportunities and Risks (ASCOR)
ASCOR is an investor framework and database that can be used to assess climate action and the extent to which sovereign bond issuers are aligned with the Paris climate targets.

Germanwatch Climate Change Performance Index (CCPI)
The CCPI evaluates and compares the climate mitigation performance of countries. As a monitoring tool it enables comparison of climate protection efforts and progress made by individual countries. This allows users to identify leaders and laggards in climate protection.

Science Based Targets inititative (SBTi)
SBTi is developing standards, tools and guidance to set carbon reduction targets in line the Paris climate targets.

Science Based Targets Network (SBTN)
SBTN develops methods and resources for setting science-based nature targets.

Taskforce on Nature-related Financial Disclosures (TNFD)
The TNFD has developed a set of disclosure recommendations and guidance that encourage and enable business and finance to assess and report on their nature-related dependencies, impacts, risks and opportunities.

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5 Step-by-step plan

GP19: Step-by-step plan

The management board of a non-life insurer agrees that the theme of sustainability can have an impact on the business. Although the board estimates that the impact will likely be only minor, it considers it important to have a good understanding of sustainability risks and opportunities. Alongside this intrinsic motivation, the board is aware of the August 2022 Solvency II regulations on integrating sustainability risks in operational management. The board also stands behind the financial sector's commitment as set out in the Climate Agreement of April 2021, which was co-signed by the Dutch Association of Insurers.

Accordingly, some time ago the board drew up a programme with a step-by-step plan/action plan to raise internal awareness and improve monitoring of physical and transition risk developments. The board then decided that climate change and nature degradation impacts should be examined for the following business topics: 'business model and strategy', 'internal governance', 'risk management' and 'information provision'. Responsibility for the programme is vested in one of the board members.

Step-by-step plan internal transition

Business model and strategy	
Step 1a	The insurer wants to understand the potential impact of climate change and nature degradation on its business model and strategic direction. To this end, it carries out an environment analysis and a materiality analysis, focusing on the physical and transition risks that may affect different parts of the organisation. These analyses provide insight into the nature and extent of risks, and the extent to which new risks must or could be insured, including the implications for the insurer's aggregate risk profile. The results inform the recalibration and possible fine-tuning of both strategy and risk management.
Step 1b	**Own organisation:** Partly to promote internal awareness, the board wants to gain insight into the organisation's physical risk and nature footprint, along with the environmental impact associated with its operations, such as energy consumption. In consultation with staff, an action plan (including a cost estimate) is drawn up to reduce the nature impact and carbon footprint so that the insurance firm can be climate-neutral by 2050 and have zero nature impact.
Step 1c	**Product range and existing commitments:** The board then looks at the insurance portfolio. In addition to the (environmental) analysis, the board discusses the ORSA climate scenarios, also looking at the potential impact of these scenarios on the business model and strategy. These scenarios include one involving severe weather events and one in which the carbon tax suddenly doubles. In addition, the fire portfolio is screened for flood-prone areas and the potential impact of forest fires. Areas that require more analysis, for example due to lack of risk information, are looked at in greater detail. As an example, a relevant question in this context is whether an insured house is in a forest or is just beyond the forest edge. Furthermore, the product range is scrutinised in a discussion of the company's risk appetite. This raises questions such as "Do we need to adjust policy conditions now or in the near future to avoid certain risks?", "Can we continue to insure properties in flood-prone areas?" or "Are there preventive measures that can be taken to mitigate certain risks?". The customer base is also analysed by activity (e.g. exposure to the agricultural sector). The insurer also examines the extent to which new risks must or could be insured and the implications this has for the insurer's aggregate risk profile. Certain sectors are likely to be hit harder by climate change than others. The insurer therefore wants to understand whether this also applies to its own customer base. Moreover, it examines whether it faces additional risk due to possible 'over-exposure' in the various sectors that are at risk from climate change. The results of the analysis are also discussed with the reinsurers to get clarity on the potential risks, and to check whether additional reinsurance is needed now or will be needed later for certain risks, or whether it might become difficult to get reinsurance for certain risks in the future. The insurer does not intend to make any immediate changes with regard to its liabilities. It is decided to conduct more internal research into the product range and customer profile. It is agreed to collect data to answer the questions about exposure. Since the non-life insurance products have short terms, acute risks are unlikely to arise.

Business model and strategy	
Step 1d	**Investments:** Although the investment portfolio is small, the insurer still considers whether the investment policy should be adjusted now or in the near future. Many assets are liquid, but a small proportion is invested in sectors that could be affected by transition risks. The board consults with the asset manager and other stakeholders (customers, staff) on the best investment strategy: "Are we going to exclude certain (types of) companies (with possible social consequences), or should we try, possibly in collaboration with other financial institutions, to influence voting on sustainability issues at the companies we invest in?" Another question that arises is whether it is desirable to invest more explicitly in sectors that make a positive contribution to sustainability. Eventually, it is agreed with the asset manager that the insurer will cooperate with the manager's other clients when it comes to voting in shareholder meetings on sustainability-related issues, where appropriate. In this way, despite the modest investment portfolio, they can exert more influence. The aim is to have an investment portfolio that is at least 50% climate-neutral or climate-positive by 2030.
Internal governance	
Step 2a	**Knowledge and responsibility:** Responsibility for the sustainability theme is assigned to a board member. As resources are limited, the insurer relies as much as possible on in-house knowledge and experience. The employees involved in sustainability attend meetings and seminars to boost their knowledge of the topic. The (external) actuary and risk manager are also asked to submit sustainability proposals. A number of meetings on the sustainability theme are planned to get the rest of the staff on board. These meetings will not only look at national or global developments, but also focus on the insurer's civic role.
Step 2b	**Embedding in Policy frameworks:** Board-level commitment is also expressed in a special sustainability section in the strategy document, in which the insurer expresses the ambition of having carbon-neutral operations by 2030. It further includes a goal of making its insurance products climate-neutral as much as possible by 2030. This aspiration is translated into specific policy by stating that damage repair should take this ambition into account. The aim is to have an investment portfolio that is at least 50% climate-neutral or climate-positive by 2030. In addition to this strategy adjustment, sustainability is included in the existing policy frameworks, and the mandates of the asset manager and the terms of reference of the actuarial and risk management functions are adjusted.
Risk management	
Step 3	Based on the risk assessment for the purpose of the strategy, the insurer also looks at whether the risk management process needs to be adjusted. Questions that then need to be answered include: "Are there new risk indicators we should monitor?", "What additional information do we need when making commitments?" and "What information should be available when making investment decisions?" Based on this inventory, the insurer, in consultation with the risk management function holder, adapts the risk framework so that, when assessing 'traditional' risks such as market and underwriting risk, particular emphasis is placed on how risks associated with climate change and nature degradation affect these traditional risks. Where possible, standard data are enriched with indicators and data relevant to sustainability risks, such as detailed information on location and use of insured properties. Climate and nature-related risks are explicitly identified in the periodic risk monitor. The aforementioned scenarios are evaluated at least annually, examining both the impact and likelihood of different natural disasters. Based on this risk monitor, risk management priorities are set for the coming period and, if necessary, actions are initiated to mitigate risks that exceed the risk appetite, e.g. by purchasing additional reinsurance cover or by adjusting (underwriting) conditions. Data collection is prioritised.
Information provision	
Step 4	The board decides to update the website as it wants to feature the company's sustainability ambitions. The board is aware that doing so carries a reputational risk if the ambitions are not in line with the company's actual sustainability activities. The insurer intends to provide insight into its progress on its strategic ambitions both in its annual reports and on its website. It also intends to publish relevant indicators as part of its disclosure initiatives. For instance, in consultation with the asset manager, it intends to disclose information on its voting record at shareholder meetings and on the 'green/grey' ratio of its investment portfolio.

We consider this a good practice because:

- the insurer pays serious attention to emerging risks due to climate and nature change that may also impact its business model or strategy.

Relevant laws and regulations: Sections 3:10 and 3:17 of the *Wft*, Section 26.2 of the *Bpr* and Articles 258-260, 269 and 275a of the SII DR.

Investment firms and institutions

Legislative framework for investment firms and institutions

Below, we describe the legislative framework for managing climate and nature-related risks by investment firms, investment fund managers and managers of undertakings for collective investment in transferable securities (UCITS). Besides the Financial Supervision Act (*Wet op het financieel toezicht – Wft*) and the Decree on Prudential Rules for Financial Undertakings under the Wft (*Besluit prudentiële regels Wft – Bpr*), the institutions referred to above are subject to several more legislative frameworks. The Investment Firm Regulation (IFR) (2019/2033) and Investment Firm Directive (IFD) (2019/2034) are particularly relevant for investment firms. Managers of UCITS are subject to the UCITS Directive (2009/65/EU) and its implementing directive (2010/43/EU), as implemented in the *Wft* and the *Bpr*. The Alternative Investment Fund Managers Directive (AIFMD) (2011/61/EU) and Delegated Regulation (EU) No 231/2013 apply to investment fund managers. We set out the requirements for risk management and prudential reporting and do not address the statutory provisions whose compliance the Dutch Authority for the Financial Markets (AFM) supervises.

Investment firms

The European Central Bank (ECB) is the licensing authority for IFR Class 1 investment firms and exercises direct supervision. This Guide covers only Class 2 and 3 investment firms.[48]

Risk management

Investment firms must have policies in place to identify and manage relevant risks. Class 2 investment firms are also required to consider risks arising from the macroeconomic environment in which they operate, and those which are related to their business cycle and the risks they (may) pose to others. The policies must be laid down in procedures and measures to manage relevant risks and be integrated into their operating processes. As climate and nature-related risks can be a source of both financial and non-financial risks, investment firms must identify and manage them.[49] Class 2 investment firms are further required to have sound governance arrangements in place, including a clear organisational structure, an effective risk management process and appropriate internal control mechanisms.

The management body of a Class 2 investment firm must be involved in the risk management policies. In certain Class 2 investment firms, the management body must be assisted by a risk committee.[50] Furthermore, the management body must have sufficient information at its disposal on the firm's risk position, its risk management function and the opinions of external experts.

A Class 2 investment firm must also have policies, procedures and measures in place that identify and manage the causes and impact of risks to customers, the market and the firm itself. Class 3 investment firms must also have such policies and procedures in place as far as the causes and impact of risks to customers and the firm itself are concerned. ESG risks can also give rise to risks to customers, the market and the firm itself, so these risks must also be covered by the policies.[51]

48 Class 3 investment firms are defined as 'small and not interconnected investment firms' if they meet the requirements of Article 12 of the Investment Firm Regulation (IFR). Class 2 investment firms are those that do not meet these requirements.
49 See also the EBA IFD Guidelines on Internal Governance, which state that ESG risks must be included in the risk management of investment firms.
50 This applies to investment firms whose on- and off-balance-sheet assets average at least €100 million over a four-year period.
51 EBA Report On Incorporating ESG Risks In The Supervision Of Investment Firms, Report Complementing EBA/REP/2021/18, (EBA/REP/2022/26).

ICAAP, ILAAP and SREP

In addition, a Class 2 investment firm must have in place sound, effective and comprehensive strategies and procedures by which it monitors and ensures, on an ongoing basis, that the amount, composition and distribution of its regulatory capital and liquid assets match the magnitude and nature of the risks to which it is or might be exposed and which it may pose to others. Class 2 investment firms are required to conduct an Internal Capital and Liquidity Adequacy & Risk Assessment (ICAAP and ILAAP) of how they have structured their operational management and manage business risks. As climate and nature-related risks can be a source of both financial and non-financial risks, investment firms must include these risks, where relevant, in their ICAAP and ILAAP. DNB also imposes this obligation to conduct an ICAAP and ILAAP on certain Class 3 investment firms.[52]
We consider the ICAAP and ILAAP of Class 2 investment firms in the Supervisory Review and Evaluation Process (SREP), testing and assessing whether they adequately manage their risks. Among other things, we test whether Class 2 investment firms have identified and managed liquidity risk as well as risks to customers, the market and the firm itself. In assessing the SREP, we take into account the EBA's report on integrating ESG risks into the supervision of investment firms, as well as the SREP guidelines.[53]

Class 3 investment firms are not subject to the SREP, unless we deem an assessment necessary given the size, nature, scale and complexity of its activities. However, they must identify and manage liquidity risk and material causes and impacts of the risk on customers and themselves.

Prudential reporting

Class 2 investment firms must disclose their risk management objectives and policies for each individual risk category, including a summary of the strategies and processes aimed at managing those risks, as well as a concise risk statement approved by the management body setting out their overall risk profile in light of their business strategy. As climate and nature-related risks can be a source of both financial and non-financial risks, their disclosures must also cover these risks.

Managers of UCITS

Managers of UCITS must have policies in place to identify and manage relevant risks. The policies must be laid down in procedures and measures to manage relevant risks and be integrated into their operating processes. As climate and nature-related risks can be a source of financial risks, managers of UCITS must identify and manage them. In addition to financial risks, pursuant to Section 23.0a of the *Bpr*, managers of UCITS must explicitly address sustainability risks[54] in their investment policy. This includes ESG events or conditions that, if they occur, could cause an actual or a potential negative impact on the value of the investment.

The UCITS manager's risk management function must also report regularly to the persons who determine the manager's day-to-day policies and, if present, to the persons who oversee the manager's policies and general affairs (such as supervisory board members) on the subjects referred to in Section 20 of the *Bpr*. For instance, the risk management function must report on the soundness and effectiveness of the risk management procedures, indicating in particular whether appropriate action has been taken in case of identified deficiencies. In addition, the risk management function must report to a UCITS' day-to-day policymakers on the current level of risk faced by the UCITS.

52 IFR/IFD – ICAAP and ILAAP.
53 Article 35 of the IFD and EBA Report on incorporating ESG Risks In The Supervision Of investment firms, report complementing EBA/REP/2021/18, (EBA/REP/2022/26) and Guideline on common procedures and methodologies for the supervisory review and evaluation process (SREP) under Directive (EU) 2019/2034 (EBA/GL/2022/09).
54 As referred to in Article 2(22) of the Sustainable Finance Disclosure Regulation (SFDR).

In addition, managers of UCITS providing investment services implement several risk management measures that apply to investment firms. Also, in common with certain investment firms, managers of UCITS providing investment services are required to conduct an ICAAP and ILAAP and are subject to the same SREP assessment by DNB.[55]

Investment fund managers

Investment fund managers must have policies in place to identify and manage risks relevant to the institutions they manage that may affect their soundness. As climate and nature-related risks can be a source of financial risks, investment fund managers must identify and manage them.

In addition, investment fund managers providing investment services must implement several risk management measures that apply to investment firms. In addition, they must conduct an ICAAP and ILAAP. They must comply with the same obligations as investment firms and are subject to the same SREP assessment by DNB.[56]

Overview of laws, regulations and policy statements

The following laws and regulations are particularly relevant:

- Section 3:17 of the *Wft*
- Section 3:18aa of the *Wft*
- Section 23 of the *Bpr*
- Section 23a of the *Bpr*
- Section 23b(1) of the *Bpr*
- Section 23.0a of the *Bpr*
- Section 24a1 of the *Bpr*
- Section 25b of the *Bpr*
- Article 3.1 of the Regulation on specific provisions in the IFR and IFD (*Regeling specifieke bepalingen IFR en IFD*)
- Article 47 of the IFR

The following other policy statements are of particular interest:

- EBA Report on management and supervision of ESG risks for credit institutions and investment firms (EBA/REP/2021/18)
- EBA Report on incorporating ESG risks in the supervision of investment firms, report complementing EBA/REP/2021/18, (EBA/REP/2022/26).
- Guideline on common procedures and methodologies for the supervisory review and evaluation process (SREP) under Directive (EU) 2019/2034 (EBA/GL/2022/09).

55 EBA/REP/2022/26 and EBA/GL/2022/09.
56 EBA/REP/2022/26 and EBA/GL/2022/09.

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Impact of climate and nature-related risks on investment firms and institutions

The table below shows an example of how climate and nature-related risk factors can affect existing financial and non-financial risk areas of an investment firm or institution. The same risk factor can affect several risk areas simultaneously. The table is intended purely as an illustration to provide a starting point for the materiality analysis. The ultimate impact depends among other things on the scale and distribution of physical and transition risks and on the investment firms or institution's business model. This impact and its materiality will have to be determined by the institution itself in its materiality analysis.

Examples of how climate and nature-related risks feed through to the risk profile of an investment firm or institution (non-exhaustive)

Risk channel	Subtype	Market risk	Operational risk	Other risks
Physical	Acute or chronic	Serious climate and nature-related events and/or long term effects of climate change and nature degradation can result in loss of value of investments and increase volatility in, for instance, commodity markets.	Serious climate and nature-related events can damage a firm or fund's premises, data centres and operations, among other things.	Serious climate and nature-related events leading to macroeconomic shocks can increase liquidity risks.
Transition	Policy, technology, market sentiment, reputation	New climate and nature policies, new technologies and changing market sentiment may result in stranded assets in carbon-intensive industries, which in turn will result in abrupt price changes in, for instance, equity and/or bond markets.	New climate and nature policies, new technologies and changing market sentiment may lead to reduced demand for services and, consequently, affect a firm or fund's revenues if it is unable to meet the set requirements.	New climate and nature policies, new technologies and changing market sentiment may exacerbate the negative impact of greenwashing on the business model, resulting in reputational damage and claims.

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Overview of good practices for investment firms and institutions

Focus area 1: Business model and strategy

- GP1: Customer strategy
- GP2: Strategic asset allocation
- GP3: Real estate investments

Focus area 2: Governance

- GP4: Including a sustainability manager in the governance structure
- GP5: Setting up special committees headed by the board

Focus area 3: Risk management

- GP6: Mapping the impact of physical climate-related risks
- GP7: Scenario analysis – determining the impact on revenues, ICAAP, ILAAP/capital requirements
- GP8: Assigning physical risk scores at company level
- GP9: Index to assess environmental risk of soil degradation
- GP10: Traffic light model using scenario analysis and dashboard
- GP11: Scenario analysis and Paris alignment
- GP12: Portfolio composition
- GP13: Engaging in dialogue with investee companies
- GP14: Indicators and targets for a real estate portfolio
- GP15: Carbon footprint, water consumption and waste streams

Focus area 4: Information provision

- GP16: Reporting in line with the TCFD framework
- GP17: Reporting on carbon-intensity reduction targets and a water-neutral portfolio

Good Practices for management of climate and nature-related risks by investment firms and institutions[57]

The good practices are practical examples that, in our view, are good examples of integrated climate and nature-related risk management[58]. These serve as inspiration for how institutions can address the cross-sectoral focus points. The good practices are organised according to the aforementioned focus areas.

1 Strategy and business model

Investment firms and institutions need a sustainable business model to ensure their long-term survival and minimise risks to customers and/or investors. This means they must take into account climate and nature-related risks to which they are exposed. It also means they must meet the growing demands of customers and/or investors in this area. Customers and/or investors of investment firms and institutions are increasingly aware of, and make demands with respect to, the social and ecological impact of their investments. As a result, they are also imposing more and more requirements on the activities of investment firms and institutions in this area. In some cases, these are already underpinned by statutory requirements. Lastly, investment firms and institutions must be aware of the potentially negative impact which greenwashing can have on their business model, resulting in a loss of customers and/or investors and, potentially, liability claims.

GP1: Customer strategy

Several investment firms and institutions have committed to educating customers and/or investors on how to build a more sustainable portfolio to be less vulnerable to climate and nature-related risks. For instance, one of them says it considers this vital to deepening the strategic partnership with the pension fund. Other investment firms and institutions with institutional customers also consider education a part of their fiduciary role. Lastly, an institution said that, partly at the request of its customers and/or investors, it sets specific climate-related targets, such as:

- measuring the (absolute or relative) carbon footprint of the portfolio;
- aiming for a relative share (in percentage terms) and an absolute share (in monetary terms) of assets invested in certain Sustainable Development Goals;
- mapping the shares of energy sources (coal, gas, oil, nuclear and renewable) in energy-related investments;
- measuring the size of the portfolio invested in carbon-intensive sectors;
- measuring the sustainability of real estate and infrastructure investments (Global Real Estate Sustainability Benchmark).

57 These good practices were developed in 2021 as guidelines for the sector and have only been updated to a limited extent.
58 In addition to these good practices, we also refer to the AFM's exploratory study into management of sustainability risks by management companies of Dutch collective investment companies, see here, and the recent AFM explorative study into the use of ESG data by Asset Managers, see here.

GP2: Strategic asset allocation
Several investment firms and institutions say they include sustainability in all their (strategic) investment decisions by default. One firm assesses all potential investment objects and ideas against the following elements: integration of ESG factors, stewardship, responsible behaviour, sector-based exclusions and future prospects.

Some firms assess all investments against (external) ESG benchmarks or link all investments to a measure of carbon emissions. This allows investments to be valued and certain investments to be excluded.

One firm uses the expected impact of climate change as a risk measure in its risk appetite statement. To this end, it develops climate scenarios and incorporates them into the annual strategic asset allocation study (SAA). In addition, it quantifies the impact of climate change on relevant economic variables.

GP3: Real estate investments
An investment firm investing in real estate expresses its responsible asset management in its strategy by defining risk factors and by taking specific measures related to its investment policy that contribute to climate adaptation. For all real estate products, it weighs climate risks deliberately against appropriate and feasible controls. It added "Climate change and energy transition" as an investment theme to its strategic investment policy.

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2 Governance

Investment firms and institutions must have a solid governance structure in place that enables them to identify, manage and report potential risks to which they are exposed. The governance structure that is suitable for managing climate and nature-related risks depends on the nature and complexity of the firm or institution's activities and the risks to which it is exposed.
We consider the following examples that we have observed to be good practices as they combine a clear organisational structure with unambiguous responsibilities all the way up to board level, as well as transparent reporting lines. This enables the board to make informed decisions regarding climate and nature-related risks and monitor them effectively.

GP4: Including a sustainability manager in the governance structure
An investment firm or institution assigned ultimate responsibility for setting climate targets and identifying ESG and climate risks to the board. The management team and fund managers coordinate and monitor these targets and their implementation by the first-line, in collaboration with a sustainability manager and business risk management. They report to the board on a quarterly basis.

GP5: Setting up special committees headed by the board
An investment firm or institution has established an ESG Council, which is responsible for defining ESG risks and opportunities in line with the ESG policy it has formulated. The Chief Investment Officer participates in the ESG Council. Another firm or fund has set up a Sustainability Strategy Committee to develop a climate strategy. Lastly, a firm or fund has established an overarching Sustainability Committee tasked with developing policies, targets and reports. One of the board members sits on this committee.

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3 Risk management

The cycle investment firms and institutions use to manage conventional financial risks provides a good starting point for managing climate and nature-related risks. For risk management to be effective it is crucial that firms and institutions understand how climate and nature-related risks translate into conventional financial risks for the firm or institution. Due to their specific characteristics, climate and nature-related risks may warrant adjustment of current risk management practices. In addition, updating risk models and methods requires ongoing attention because knowledge and experience in this field are continuously evolving.

The good practices we have observed provide insight into how investment firms and institutions can integrate climate and nature-related risks into their risk management cycle. Risk management is an ongoing process. Monitoring current risks can lead to identification of new risks.

3.1 Risk identification

GP6: Mapping the impact of physical climate-related risks
Based on climate data, a firm has mapped physical climate-related risks and opportunities in the Netherlands. It then identified the climate-related risks to which its current investments were exposed, broken down into short-, medium- and long-term risks. This firm is working to further (in a combined manner) quantify these risks and develop analyses to mitigate the impact on the financial soundness of the firm. Quantifying risks and developing analyses to inform decision-making on purchases, sales and management of individual investments by an investment firm or institution falls under the supervision of the AFM.

3.2 Risk assessment

GP7: Scenario analysis – determining the impact on revenues, ICAAP and ILAAP/capital requirements
Several investment firms and institutions have used scenario analyses, such as the transition to a climate-neutral economy and the economic impact of carbon taxes, to quantify how their fee income could suffer from a fall in the value of their investments. They compared the financial outcomes of the different scenarios with their current business risk scenario to determine the implications for their ICAAP and ILAAP.

GP8: Assigning physical risk scores at company level
An institution uses external indices and data providers to assess the physical climate-related risks at the level of the individual companies in its investment portfolios. It establishes a normalised score for each company, consisting of three components: 1) operational risks, 2) supply chain risks and 3) market risks. For the latter component, it mainly considers where companies realise their sales and how the relevant sector has thus far anticipated the impact of climate change.

GP9: Index to assess nature-related risks of soil degradation
Soil degradation is a nature-related risk that can adversely affect the production capacity – and thus the financial position – of farms and other businesses, as well as reduce the value and marketability of agricultural land. An institution with investment products in farmland has therefore co-developed a soil index. This index indicates current soil quality as well as potential for improvement. The institution expects the index to increase knowledge and understanding of soil quality and simplify quality monitoring.

Sector-level risk assessment

GP10: Traffic light model using scenario analysis and dashboard
For the purpose of its investment strategy, an investment firm or institution used a generic scenario with stress tests to identify the potential short-, medium- and long-term impact of climate change on economic growth, inflation and different asset classes in different sectors. It has also developed and annually updates a dashboard that provides insight into the speed of the transition to a low-carbon economy.

Portfolio-level risk assessment

GP11: Scenario analysis and Paris alignment
Several firms and institutions use scenario analysis to assess the impact of climate-related events at portfolio level. Some do this with the help of data providers. To assess transition risks, some measure the extent to which their funds are in line with the Paris Agreement and benchmark their funds against peer funds.

3.3 Risk mitigation

GP12: Portfolio composition
Several firms and institutions apply one or more of the following measures to manage climate and nature-related risks in their portfolios:

- *Concentration limits*
  Revenues from different forms of fossil fuels may not exceed a certain percentage of total revenues.
- *Exclusion policy*
  Companies, sectors or practices negatively associated with ESG factors are excluded. Concrete examples include companies that depend on coal for more than a specific percentage of their revenues, companies with significant coal reserves and power companies whose carbon intensity is not in line with the Paris Agreement.
- *Unwinding investments*
  Companies in mining and coal that do not meet a number of criteria are divested to bring portfolios in line with the Paris Agreement.
- *Investments with positive impact*
  Deliberate investments are made in companies that have specific positive characteristics, score high on ESG criteria or are making clear progress in this respect. Another example is the deliberate acquisition of homes and offices with green energy labels (A, B and C).

GP13: Engaging in dialogue with investee companies
Several firms and institutions approach investee companies that, for example, lack clear carbon emission reduction targets or do not report on them transparently. They engage with these companies on potential climate and nature-related risks associated with their operations and on how to mitigate those risks. Firms and institutions also engage in discussions with companies that need or are heavily dependent on fossil fuels for their revenues to determine whether they have a strategy to reduce this dependence.

3.4 Risk monitoring

GP14: Indicators and targets for a real estate portfolio
An investment firm or institution has identified the physical and transition risks that affect its investments. It has adopted a number of indicators for these risks, such as carbon emissions, and monitors them on a quarterly basis. It has set specific targets at fund level, such as improving the energy index of residential investments and the percentage of the portfolio meeting green energy labels for Dutch retail and office buildings. To achieve these targets, current investments are made more sustainable through carrying out renovations that reduce energy consumption, making investments in renewable energy sources and/or acquiring highly sustainable new properties.

GP15: Carbon footprint, water consumption and waste streams
Several investment firms and institutions measure the carbon footprint of their portfolio and set related targets. Multiple metrics are used, such as absolute carbon emissions of investment portfolios and carbon intensity, or carbon emissions per million euros of invested capital (this is the weighted average emission intensity of the portfolio/benchmark). A firm also monitors actual energy consumption in managed property portfolios as well as water consumption, waste streams and carbon emissions to set reduction targets.

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4 Information provision[59]

Making climate and nature-related disclosures creates the transparency that is vital if climate and nature-related risks are to be managed effectively. It increases understanding of the risk profile and resilience of financial institutions. It also helps financial institutions gain insight into their exposure to climate and nature-related risks, and it enables them to manage the financial consequences of these risks.

We acknowledge that it is important to develop consistent and widely applied standards for measuring and disclosing climate and nature-related risks. This requires effort from various parties, including the financial sector. Many Dutch financial institutions, including investment firms and institutions, have committed to helping achieve the goals of the Dutch Climate Agreement in 2019. By signing, they pledged to take stock of their climate impacts and communicate them transparently. A number of firms and institutions have integrated other international initiatives in their publications, such as the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). The aforementioned Sustainable Finance Disclosure Regulation (SFDR) also applies to investment firms and institutions.[60]

We consider the following examples that we have observed to be good practices as they build on the above-mentioned industry-developed agreements while also providing new ways of reporting relevant climate and nature-related information.

59 This refers to financial disclosure; it must not be interpreted as disclosure to customers or participants.
60 With the introduction of the Sustainable Finance Disclosure Regulation (SFDR), investment firms and institutions must provide information on the extent of sustainability of the (sub)funds they manage. The AFM supervises compliance with obligations under the SFDR.

GP16: Reporting in line with the TCFD framework
A number of investment firms and institutions publicly disclose all or part of their climate-related risk information in line with the TCFD framework. They describe how they address climate-related risks in terms of their governance, strategy, risk management and targets. For example, several firms and institutions report on targets relating to carbon emissions (scope 1 and 2) in their investment portfolios and on their own carbon emissions. Only a few also report on scope 3.

GP17: Reporting on carbon-intensity reduction targets and a water-neutral portfolio
A firm or institution has set a climate change target of at least a 30% reduction in carbon intensity by 2030 compared to 2010. This target is in line with IPCC calculations of the carbon emission reductions needed to limit global warming to 2 degrees Celsius. The total carbon intensity is a weighted average based on the relative importance of companies in the portfolio. This firm or institution aims to achieve a water-neutral portfolio by 2030. It measures this by the amount of water consumption in areas of scarcity expressed per million euro invested. As with carbon intensity, this is adjusted for any growth in enterprise value, and it is a weighted average of all investments.

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Electronic money and payment institutions

Legislative framework for electronic money institutions and payment institutions

Below, we describe the legislative framework for managing climate and nature-related risks by electronic money institutions and payment institutions. We set out the requirements for risk management and governance.

Risk management

Payment institutions and electronic money institutions must have sound and ethical operational management. This also means they must manage operational risks, financial risks and other risks that may affect their soundness. Since climate and nature-related risks can give rise to such risks, payment institutions and electronic money institutions must also manage these risks. Payment institutions and electronic money institutions must have policies in place aimed at managing relevant risks, including concentration risk, market risk and operational risk. Since climate and nature-related risks can give rise to such risks, payment institutions and electronic money institutions must also manage these risks. They must systematically monitor compliance with risk management policies to remedy identified shortcomings and deficiencies.

Furthermore, payment institutions and electronic money institutions must have an independent risk management function that systematically identifies, measures and evaluates risks to they face.

Payment service providers, including payment institutions and electronic money institutions providing payment services, are also required to have business continuity assurance procedures that cover critical business operations and include contingency plans. Climate and nature-related risks can affect their business continuity, for example if a major flood severely damages their premises and data centres. Their business continuity assurance procedures must therefore consider climate and nature-related risks.

As climate and nature-related risks as described above can give rise to operational risks, payment service providers must also identify and manage these risks. In addition, they must have risk mitigation measures and control mechanisms in place to prevent operational security risks.

Governance

The persons who determine day-to-day policies and the persons who oversee policies and general affairs (such as supervisory board members) of payment institutions and electronic money institutions must be fit to occupy their position. The fitness requirements are defined and detailed in the Policy Rule on Suitability 2012. This policy rule requires persons to be fit in terms of sound and ethical operational management, among other things. An institution's risk management also falls into this category. Given that sustainability risks must be included in the risk management of payment institutions and electronic money institutions, the management of these risks also plays a role in the fitness assessment of the persons who determine day-to-day policies and the persons who oversee policies and general affairs of a payment institution or electronic money institution. The individuals assessed must also be fit in terms of governance, organisation and communication. This includes having insight into and driving for long-term value creation. The explanatory notes to the policy rule clarify that the management body must possess sufficient knowledge and experience with regard to the impact of climate change and the sustainability regulations relevant to the financial sector. In our fitness assessments we take into account the candidate's proposed position, the payment institution or electronic money institution's nature, size, complexity and risk profile, and the composition and functioning of the board as a whole.

In addition, payment institutions and electronic money institutions are required to adopt remuneration policies that are consistent with, and contribute to, sound and effective risk management.

Overview of laws, regulations and policy statements

The following laws and regulations are particularly relevant:

- Section 1:118 of the *Wft*
- Section 3:8 of the *Wft*
- Section 3:10 of the *Wft*
- Section 3:17 of the *Wft*
- Sections 23(1), (3) and (6) of the *Bpr*
- Section 24(1) of the *Bpr*
- Section 26d of the *Bpr*
- Section 26f(1) and (3) of the *Bpr*.

The following policy statements are of particular interest:

- Policy Rule on Suitability 2012

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Impact of climate and nature-related risks on electronic money institutions and payment institutions

The table below shows an example of how climate and nature-related risk factors can affect existing financial and non-financial risk areas of an electronic money or payment institution. The same risk factor can affect several risk areas simultaneously. The table is intended purely as an illustration to provide a starting point for the materiality analysis. The ultimate impact depends among other things on the scale and distribution of physical and transition risks and on the electronic money or payment institution's business model. This impact and its materiality will have to be determined by the institution itself in its materiality analysis.

Examples of how climate and nature-related risks feed through to the risk profile of an electronic money or payment institution (non-exhaustive)

Risk channel	Subtype	Operational risk
Physical	Acute or chronic	Serious climate and nature-related events can damage the premises, data centres and operations, among others, of an electronic money or payment institution.
Transition	Policy, technology and market sentiment	New policy/technology and changing market sentiment with regard to climate and nature may put pressure on the reputation of an electronic money or payment institution, for example with regard to the fulfilment of climate targets such as aiming for climate-neutral operations by 2050.

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De Nederlandsche Bank N.V.
PO Box 98, 1000 AB Amsterdam
+31 (0) 20 524 91 11
dnb.nl/en

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