Implementation note for the IOPS (2019) Supervisory guidelines on the integration of ESG factors in the investment and risk management of pension funds

May 2025

The document was prepared by the IOPS Secretariat. The Secretariat gratefully acknowledges the contributions of all Members and experts whose engagement and support were instrumental in the development of this project.

Contents

Boxes

Figures

Implementation note for the IOPS (2019) Supervisory guidelines on the integration of ESG factors in the investment and risk management of pension funds

Introduction

In 2019, IOPS published its "Supervisory guidelines on the integration of ESG factors in the investment and risk management of pension funds" (IOPS, 2019) to help pension supervisors respond to regulatory developments in the emerging ESG area. Subsequently, IOPS Members decided to develop guidance on ESG implementation by offering practical examples.

This IOPS Secretariat note on ESG implementation relates to all IOPS (2019) guidelines: investment and risk management (1-6), disclosure (7-9), and scenario testing (10). This note compiles practices and rules implemented by supervisory authorities from the pension sector and other sectors that might be helpful for the integration of ESG factors in the investment and risk management of pension funds or schemes[1]. Many of the examples closely reflect the IOPS guidelines, but it must be noted that some others are either more or less stringent and consistent. The objective of this document is not to add new guidelines but, rather, to provide a variety of existing practices and rules to facilitate the implementation of the IOPS guidelines.

General suggestions

1. IOPS (2019) guidelines are applicable to all investments by pension funds and are not intended to be limited to ESG-focused investment options.

2. ESG risks[2] are likely to materialise via "traditional" prudential risks such as credit, operational, market, underwriting, liquidity or reputational risks (c.f. NGFS, 2020a: 14; BaFin, 2020: 18). Pension funds (i.e., their governing body and/or asset managers) should be encouraged to analyse how ESG risks (in particular, the climate-related ones) can be drivers for each "traditional" risk category analysed within the risk management process: identify risk – measure risk – monitor risk – and control risk (DFS, 2023: 13-14):

> "Regulated Organizations should consider the effect of climate-related financial risk drivers on their current and future investments, including whether and how these risks could lead to potential shifts in supply and demand for financial instruments (*e.g.*, securities and derivatives), products, and services, with a consequent impact on their values or otherwise on the organizations' safety and soundness" (DFS, 2023: 16).

3. Therefore, ESG risks (and opportunities) should be integrated in the existing risk classification and into the existing risk management, rather than considered as a separate type of risks (c.f. FMA, 2025:62).

4. Supervisory authorities should express their expectations as to how pension funds should be managing ESG risks and disclosing sustainability related issues. For example:

> "A pension fund governing body or asset managers should demonstrate they have a thorough understanding of their fund-specific ESG risks and opportunities, as well as of its risk management process".

[1] For brevity, in the remainder of the text, the term *pension fund* is used.

[2] Increasingly, a term *sustainability risks* is also used. BaFin (2020: 13), in its "Guidance Notice on Dealing with Sustainability Risks", assumes that sustainability risks is a concept identical with ESG and defines them as "(…) environmental, social or governance events or conditions (…), which if they occur have or may potentially have significant negative impacts on the assets, financial and earnings situation, or reputation of a supervised entity (…)".

> "Set supervisory expectations to create transparency for financial institutions regarding the supervisors' understanding of a prudent approach to climate-related and environmental risks" (NGFS, 2020a).
>
> "Securities regulators and/or policymakers, as applicable, should consider setting regulatory and supervisory expectations for asset managers in respect of the: (a) development and implementation of practices, policies and procedures relating to material sustainability-related risks and opportunities; and (b) related disclosure" (IOSCO, 2021; Recommendation 1).

Supervisory authorities should communicate that these expectations are likely to evolve and become more granular over the time in line with improving quality and accessibility of ESG-related information. According to NGFS (2020a: 38-39), developing supervisory expectations may usually take 8-12 months, as it requires a round of consultations.

Supervisory authorities should expect pension funds to integrate ESG factors into their governance and risk management arrangements. To this end pension supervisory authorities may wish to adapt the NGFS Recommendation 4 (NGFS, 2020a) on setting supervisory expectations to pension funds (governing bodies of pension funds and/or their asset managers; Box 1). Whereas the original recommendation deals with climate-related and environmental risks, the approach by pension supervisors can be extended; i.e., their supervisory expectations can relate to relevant ESG risks and should account for data gaps that may exist.

Box 1 Supervisory expectations related to prudent approach to ESG risks

Supervisory expectations on how pension funds should prudently approach ESG risks relate to the following five key areas:

- **governance** - to effectively manage ESG risks

  Supervisory authorities should suggest, with some examples, modifications to business models and strategies (to increase awareness of potential changes in the business environment and, if needed, to adapt the pension fund's strategic approach to ESG risks;

- **strategy** – to adapt to ESG risks

  Supervisory authorities should suggest that pension funds adopt a strategic approach to accommodate to ESG risks by taking longer-term view than the typical business planning horizon of 3-5 years.

- **risk management** – to be able to integrate ESG risks in the process

  Supervisory authorities should suggest that pension funds have appropriate policies and procedures in place to identify, access, monitor, report on and manage all material ESG risks. Pension funds should incorporate ESG risks into their risk management process by developing appropriate metrics to use for internal monitoring, external reporting, and management,

- **scenario analysis** - to understand the size and potential impact of the ESG risks faced and to facilitate their management

  Supervisory authorities should suggest that pension funds develop methodologies and tools necessary to measure such exposures

- **disclosure** - to effectively communicate with stakeholders and supervisory authority as well as offer evidence of compliance

  Supervisory authorities should suggest that pension funds disclose information and metrics on their exposure to ESG risks, the potential impact of such risks on their safety and soundness, and the way in which they manage those risks.

Source: Adapted from NGFS (2020a), Guide for Supervisors Integrating climate-related and environmental risks into prudential supervision, Network for Greening the Financial System, May 2020, pages 38-46.

Supervisory guidance on investment governance may be updated to reflect expectations on how the governing body will consider material ESG risk factors as part of their overall investment risk management. The supervisory authority may wish to emphasise that ESG factors may be integrated with other risks that occur normally in the investment process (see APRA, 2023a).

Pension supervisory authorities can communicate their supervisory expectations via policy statements, supervisory statements, guidance, or good practices, etc.

5. The principle of proportionality is advised when implementing the IOPS (2019) Guidelines**.** In particular, proportionality is advised in implementing the guidelines for managing the integration of ESG factors (Guideline 5)[3] and stress testing (Guideline 10). This principle postulates that supervisory authorities should take into account the individual characteristics of supervised entities when determining appropriate measures, systems and processes in relation to the treatment of ESG risks. Relevant characteristics could include: the size[4], internal organisation, complexity of governance structure; the nature, scope and complexity of the activities; the geographical distribution, investment strategies, as well as the risk structure (FMA, 2025: 9; MPFA, 2021: 7; DFS, 2023: 9; BaFin, 2020: 11).

6. Supervisory authorities should emphasise that the integration of ESG factors entails some costs for pension funds that need to be considered. Therefore, pension funds should be encouraged to focus on the ESG factors that have material relevance to the financial risk-return profile of the pension fund, rather than the full set of ESG risk factors. Factors affecting asset and portfolio levels are likely examples. Note that the costs of integrating ESG factors should not be disproportionate to the potential benefits (see more in notes for Guideline 1).

7. Supervisory authorities may advise pension funds to draw on the existing work by international organisations (e.g., OECD, 2011; OECD, 2017), when conducting due diligence on their investment processes.

8. Supervisory authorities may similarly encourage pension funds to follow international standards on sustainability disclosure, as described in Section 3 of the IOPS ESG Guidelines.

9. Supervisory authorities may wish to set up minimum requirements for stress tests of investment strategies undertaken by pension funds. Such tests should incorporate a range of financial factors, including ESG factors, that can create extraordinary losses or impede the ability of funds to maintain risks within accepted tolerance levels.

10. Supervisory authorities should carry out implementation checks concerning the management of sustainability risks, during which supervised entities are required to respond to qualitative questions relating to sustainability and ESG matters (FMA, 2022: 44-46).

[3] For example, the Mandatory Provident Fund Schemes Authority of Hong Kong, China (MFPA, 2021:7) instructs that "[T]he granularity level of incorporation of ESG factors in the investment and risk management processes may be subject of proportionality".

[4] However, supervisory authorities should be wary of potential concentration of investments by small pension funds – which may call for increased supervisory requirements and monitoring (see more details under Guide 5).

Summary of the IOPS (2019) guidelines

No.	Key Action	Description
	I. ESG factors in the investment and risk management process	
1.	Require pension fund governing bodies to consider ESG factors	ESG factors should be treated as potentially substantial financial factors relevant to long-term retirement objectives. Addressed to governing bodies, emphasizing that prudent investor should integrate ESG into investment and risk processes.
2.	Clarify ESG integration is consistent with fiduciary duty	Supervisory authorities should provide legal certainty that integrating ESG is part of fiduciary duty. Especially important in common-law jurisdictions with trustee structures.
3.	Inform members if non-financial factors may affect returns	Where investment options involve non-financial (e.g. ethical) considerations potentially impacting returns, members must be clearly informed to allow informed decision-making.
4.	Ensure investment policies consider ESG alongside risk-return	ESG factors should be integrated into the investment policy, without compromising appropriate risk-return profiles. Includes default strategies.
	II. Integration of ESG factors in the investment and risk management process	
5.	Require documentation and explanation of ESG integration	Supervisors should require governing bodies to document ESG integration and explain if they are not considered. Applies proportionately based on fund size and complexity.
6.	Issue guidance on ESG analysis in investment policy	Authorities may issue non-prescriptive guidance on analysing financially material ESG factors, ensuring alignment with pension scheme liabilities and market context.
	III. Disclosure of ESG factors in the investment and risk management process	
7.	Require ESG reporting to supervisors	Governing bodies or asset managers must report how ESG factors are integrated in risk and investment processes. Can support supervisors in developing risk mapping and benchmarking.
8.	Issue member & stakeholder reporting guidance	Supervisors should develop rules on how ESG factors should be reported to members and stakeholders, taking into account international standards and local market maturity.
9.	Require disclosure of ESG-related investment policies and engagement with investees	Pension funds must disclose ESG investment policy, stewardship, and engagement (e.g. voting practices). Encourages transparency in ESG-related actions.
	IV. Scenario testing of investment strategies	
10.	Encourage ESG-inclusive scenario testing	Scenario testing of investment strategies should include ESG-related risks (e.g. climate). The scope should respect the principle of proportionality.

Source: IOPS.

Explanatory notes for IOPS ESG Guidelines

I. ESG factors in the investment and risk management process

Guideline 1

Supervisory authorities should require that a pension fund governing body consider environmental, social and governance (ESG) factors, along with all other substantial financial factors, that may contribute to achieving the long-term retirement objectives of pension fund members and their beneficiaries. In particular, such wider considerations should be taken into account in the pension fund's investment and risk management process.

Explanatory notes

1.1. The guideline does not recommend focusing on *all* possible ESG factors[5]. Supervisors should expect that a pension fund's investment policy considers those ESG factors that have *substantial relevance* to the financial risk-return of the pension fund's investment and asset and portfolio levels. In other words, supervisors should encourage pension funds to apply a cost-efficient risk management approach (costs of integrating ESG factors should not be disproportionate to potential benefits).

1.2. When determining what level of risk is substantial, pension funds may consider concepts of materiality. *Financial materiality* can be defined as the concept "(…) which implies focusing on information which – if omitted – could influence the decisions of investors or other users of the financial statements who are interested in the performance and long-term health of the reporting entity" (IFRS, 2020: 13). A governing body and/or asset managers should also be aware of the concept of *double materiality*, which assumes that – apart from the impact on financial risks and opportunities for the company - the impact of the reporting entity on the wider environment would also be reported (IFRS, 2020: 13). As observed in the EU Guidelines on reporting climate-related information (EC, 2019: 11): "The materiality perspective of the NFRD [Non-Financial Reporting Directive] covers both financial materiality and environmental and social materiality, whereas the TCFD [Task Force on Climate-Related Financial Disclosures] has a financial materiality perspective only."[6] The same applies to the International Financial Reporting Standards S1 and S2, which require an exclusively financial materiality assessment. Some other concepts may be used such as environmental and social materiality or dynamic materiality (Box 2).

[5] A useful list of ESG factors, understood as risks and opportunities, included in the most commonly used framework is provided by the European Banking Authority report (EBA, 2021: 26-27) in Table 1.

[6] Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD, 2017) are structured around four thematic areas that represent core elements of how organisations operate: governance, strategy, risk management, and metrics and targets. They are meant to be a framework to help public companies and other organisations to disclose climate-related risks and opportunities more effectively with the use of their existing reporting procedures. The TCFD disbanded in October 2023, passing the monitoring role to the International Financial Reporting Standards Foundation (see more in notes to Guideline 7 below).

Box 2 Concepts of materiality: Financial Superintendence of Colombia (FSC)

"Environmental and social materiality (or stakeholder) identifies material issues according to the impact that companies and their activities generate on the economy, the environment and society, which can imply both a positive and negative contribution to sustainable development. An example of this perspective is the environmental impact caused by a company in climate change, deforestation, loss of biodiversity or pollution of an ecosystem. In general, environmental and social materiality is of public interest and is relevant to a broad base of stakeholders, ranging from consumers, employees, suppliers, funders and investors to civil society organizations and communities, who are interested in understanding the impacts of companies on their environments.

Financial materiality recognizes the financial impacts generated by ESG issues on companies, in the broad sense of the generation/destruction of value and/or financial situation. An example of financial materiality is the implication that climate change causes or may cause in the future in the financial and operational performance of a company. This perspective is of particular interest to investors and other financial market participants, who require, for investment decision making, to know and understand the risks and opportunities that ESG matters generate in a business. Among the main considerations of financial materiality are the incorporation of this information in the financial statements and the need for prospective approaches that allow quantifying these risks and opportunities in medium- and long-term horizons.

There is **a close interrelationship between environmental and social materiality and financial materiality.** Information on the underlying impact of companies' activities on ESG matters is crucial to identifying, assessing and understanding the risks and opportunities of ESG matters in companies. Regarding climate-related information, for example, TCFD has emphasized that greenhouse gas emissions indicators are increasingly relevant for investors to understand not only the impact of companies on the climate but also the long-term value creation/destruction associated with climate opportunities and risks.

In this sense, the concept of **double materiality** has been developed and acquired preponderance to address both environmental and social materiality as well as financial materiality. The European Commission, a pioneer in adopting this dual perspective, has pointed out that, as markets and policies evolve, a company's positive/negative impacts on ESG issues will increasingly translate into material risks and opportunities financially.

Dynamic materiality refers to the fact that what is material today may not be material tomorrow and what is not material today may be so tomorrow. Over time, "triggers" appear that make some issues become material, which can happen gradually, as has happened with climate change and gender diversity, or quickly, as with plastics in the oceans or Covid-19 itself. Consequently, defining which topics are material requires a long-term vision of the future and a proactive materiality approach."

Source: FSC (2020), Mejores prácticas para la gestión de inversiones de las administradoras del sistema general de pensiones (Best practices for the management of investments of the administrators of the general pension system), Financial Superintendence of Colombia (FSC), 4 November 2020 (updated 31 May 2021), Annex 3, own translation, emphases added.

1.3. The governing bodies and/or asset managers need to make sure that they do not just add the consideration of ESG factors to the investment or risk management processes but, rather, ensure that they (TPR, 2021, 2022; see also MPFA, 2021; and Box 3):

- have an adequate understanding of ESG factors and the impact the integration of ESG factors has on the fund's investment strategies, (MPFA, 2021: 8),
- adjust their governance arrangements to accommodate the consideration of ESG factors,
- work with their advisers and service providers to improve their understanding of ESG factors as well as to improve the data they receive to support their understanding,
- understand the investment managers' risk management process (i.e., identifying, assessing and managing ESG factors) and how these processes are integrated into the investment managers' overall risk management (MPFA, 2021: 9),

- have appropriate communication strategies to engage and communicate with all stakeholders.

1.4. Pension supervisors should expect to see evidence of how pension funds manage relevant ESG risks and opportunities, such as having clear roles and responsibilities for the governing bodies and relevant subcommittees in managing these risks (c.f. PRA, 2019: 7). A good example is found in Ireland, where the risk management also has to cover, subject to the proportionality principle and, if considered in investment decisions, ESG risks relating to the investment portfolio and its management (The Pensions Act, 1990: Section 64AI(5))). Pension funds should be able to identify, measure, monitor, manage, and report on their exposure to ESG risks and opportunities, along with all other substantial financial factors that have relevance for achieving their long-term objectives. This ability should be documented in the funds' written risk management policies and other documents, including, for example, reports to governing bodies (c.f. PRA, 2019: 5; BaFin, 2020: 11). Pension funds need to associate identified ESG risks with the existing risk categories, and measure and evaluate them (FMA, 2025: 63).

Box 3 General requirements for integration of sustainability risks into the risk identification, management and control processes: Federal Financial Supervisory Authority (BaFin), Germany

Supervised entities should:

- clearly define tasks, responsibilities and the timelines for their risk management actions (such as identifying, evaluating, managing, monitoring and reporting sustainability risks) and identified risk types (the way they translate into traditional risks) in the risk management system.
- review their methods and procedures for identifying, evaluating, managing, monitoring and reporting sustainability risks at regular intervals, including the quality of the data.
- consider sustainability risks as factors of identified risk types in the written risk management guidelines and establish processes for the early recognition of such risks, if this is justified by their characteristics.
- use (or modify) the existing escalation process to manage sustainability risks.

Note: *Escalation process* relates to the range of possible supervisory responses, from the softest to the most stringent ones. The severity of such responses (enforcement tools and the related sanctions) should correspond to the severity of the failure or weakness identified (c.f. IOPS Risk-based Supervisory Toolkit (IOPS, 2023)).

Source: Adapted from BaFin (2020), Guidance Notice on Dealing with Sustainability Risks, Federal Financial Supervisory Authority, January 2020, pages 26-32.

1.5. The UK Pension Regulator stipulates in its General Code of Practice that governing bodies should consider ESG factors, including shareholder engagement, and should have "sufficient processes in place to ensure compliance" (TPR, 2024: 80).

1.6. It is important to emphasise that the notion of "risk" represents not only threats but also opportunities (benefits) related to the exposure to ESG factors. For example, an exposure to transition risk, if effectively managed, may lead to increased returns.

1.7. *Environmental (E) factors* might be linked both to (NGFS, 2020a: 10):

- *climate-related risks* – understood as financial risks owing to the exposure to physical or transition risks caused by or related to climate change, and
- *environmental risks* – understood as financial risks owing to the exposure to activities that may potentially cause or be affected by environmental degradation.

1.8. There can be interactions between both categories of risks (e.g., climate-related risk may be reinforcing the probability of occurrence and/or impact of environmental risk). Also, climate-related risks are likely to give rise to transition risks (see EBA, 2021: 40-41). *Transition risks* relate to the impact on the institution owing to the transition to an environmentally sustainable economy. This transition could include changes in climate and environment-related policies, technological changes, or behavioural changes by consumers and investors in terms of their preferred products and services.

1.9. Climate risks encompass physical and transition risks[7], which can have an impact on a supervised entity or its investment portfolio via existing ("traditional") prudential risk categories such as credit/counterparty risk, market risk, liquidity risk, operational risk, legal and reputational risk (including litigation risks), underwriting risk, strategic and governance risk, and via systemic risk (Table 1)[8]. These prudential risks are already accounted for and managed within the existing risk management system.

Table 1 Examples of how climate risks may translate into existing risk categories: Austria Financial Market Authority (FMA)

Financial risks	**Physical risks**	**Transition risks**
Credit / Counterparty risk	- Natural catastrophes reduce the value of collaterals - Natural catastrophes reduce sustainability of debt - Increase in temperature / loss of biodiversity reduces productivity / income	- High write-offs on CO_2- intensive facilities - Low revenues from creditors/investments due to CO_2 tax - More investments in new higher risk technologies
Market risk	- Natural catastrophes increase price volatility - Natural catastrophes ravage entire regions - Increasing uncertainty about catastrophes - Natural catastrophes lead to rapid outflow of capital - Rising sea level increases country risks	- Changes in consumer behaviour as well as technologies - Missing the turnaround towards climate-neutral facilities - Increasing inflation expectations due to CO_2 taxes - Downgrading of country ratings for country causing a lot of CO_2 emission - Increased uncertainty about future technologies/laws
Liquidity risk	- Sudden outflows due to catastrophes - Sudden demand for emergency loans	- Stranded assets are no longer able to be traded
Operational risk	- Destruction of infrastructure required for the business activity - Increased insurance costs - Increased costs for adapting to climate change - Lack of available data and costs (esp. also for outsourcing)	- Price increases due to levying of CO_2 taxes - Increased reporting obligations about emissions
Legal and Reputational risk	- "Contagion" due to proximity to affected regions - Increase in judicial proceedings ("strategic/climate litigation")	- Lack of attention to sustainability risks - Consumer stigmatisation of companies - Selling of financial products that only pretend to be sustainable ("greenwashing")
Underwriting risk	- Increased damage costs from storms, flooding, frost or hail - Risk that increased damages are not adequately taken into consideration in the technical provisions of premium-based risks	- Changes to the underwriting risk esp. as a consequence of selection effects

[7] For definitions, see for instance IOPS (2019: 16). For a non-exhaustive list of observed primary physical and transition risk drivers, see ECB (2022: Table 3).

[8] See also examples of transmission channels of climate-related risks into prudential risks provided in IAIS (2025: Table 2).

Strategic and Governance risk	- Sustainability risks are either not taken into consideration or are only afforded insufficient consideration in the company's business continuity management (loss of an essential building, servers, access roads, connection to public transportation) - Absence of ESG strategy, or a strategy that is not far-reaching enough - Absence or lack of implementation of group-wide minimum standards - Absence or lack of monitoring of the ESG strategy by the compliance and internal audit functions.	- Lack of addressing of or incorrect pricing of sustainability risks - A company specialising in the financing of CO_2-intensive economic activities losing its business base as a result of CO_2 taxes
Systemic risk	- Abrupt climate change - Underestimation of effects in risk models	- Carbon bubble - Simultaneous selling of affected asset titles

Source: FMA (2025), FMA guide for managing sustainability risks, Austria Financial Market Authority, pages 71-72.

1.10. As observed by the Network for Greening the Financial System (NGFS), the concept that covers both climate and environmental-related risks is *nature-related financial risk*, defined as "[t]he risks of negative effects on economies, individual financial institutions, and financial systems that result from: (i) the degradation of nature, including its biodiversity, and the loss of ecosystem services that flow from it (i.e. physical risk); or (ii) the misalignment of economic actors with actions aimed at protecting, restoring, and/or reducing negative impacts on nature (i.e., transition risks)" (NGFS, 2023b: 18).

1.11. *Social factors* might be driven by environmental matters (as deteriorated environmental conditions increase the likelihood of incurring social risks, for example, issues related to access to water, exacerbated migration, or social and political unrest). These factors can also be the result of changes in social policies that are linked to social movements and/or social transformation towards a more sustainable economy. Such adjustments may have an impact on market sentiment regarding social factors (e.g., a higher standard of labour or social standards resulting in higher costs and ultimately a worse financial position). (EBA, 2020: 43-46). Social factors include, therefore, labour relations, diversity and inclusion, workplace health and safety, human rights, forced or child labour, or working conditions.

1.12. *Governance risks* may relate to governance practices or vulnerabilities (executive leadership, executive pay, board evaluations, succession planning, audits, internal controls, tax avoidance, board independence, shareholder rights, corruption, bribery). As such, they play a fundamental role in the inclusion of E and S factors, and consequently, the recognition of environmental and social aspects can be viewed as a sign of good governance (EBA, 2021: 48).

1.13. The actions of the directors and the most senior executives shape the business conduct of the entity. The Financial Accountability Regime (FAR) Act 2023 (Commonwealth of Australia, 2023)[9] is an example of regulation aimed at improving the operating culture of supervised entities and at increasing transparency and accountability for prudential and conduct-related matters. It imposes a strengthened responsibility and accountability framework for entities in the banking, insurance and pension industries in Australia and their directors and senior executives. The FAR sets out conduct standards and financial consequences for so-called "accountable persons" (such as directors and most of senior executives) in the event of failure of accountability and responsibility. Accountable persons have broad obligations to act with honesty and integrity and with due skill, as well as with care and diligence. The Act stipulates also deferred remuneration and notification obligations.

[9] https://www.legislation.gov.au/C2023A00067/latest/text

Guideline 2

Supervisory authorities should clarify to a pension fund governing body or the asset managers, possibly through regulations, rules or guidelines, that the explicit integration of ESG factors into pension fund investment and risk management process is in line with their fiduciary duties.

Explanatory notes

2.1. ESG factors represent information that may (or may not) have a substantial effect on an entity's investment risk-return profile. The primary purpose of a pension fund is to act in the best interest of its members and beneficiaries, by protecting pension savings and investing them to provide a means for retirement (e.g., in the form of a lifetime stream of retirement income). A governing body and/or asset managers must act prudently to identify risks and opportunities that may have a financial impact on the fund or its investment portfolio. Depending on the legislation in force, pension funds may or should incorporate ESG factors when taking investment and risk management decisions and this can be interpreted as meeting their fiduciary duty to maximise the financial benefit of pension fund/plan members. However, pension funds must take ESG factors into account when the latter can measurably affect the risk-return profile of investments. Such impacts may be analysed at both the asset and portfolio levels. Supervisory authorities should ensure that governing bodies or asset managers are fully aware of the potential impact that ESG factors may have on the financial performance of fund investments.

2.2. The communication examples below (Box 4) illustrate ways in which pension supervisory authorities can emphasise to pension funds that they *should* not only consider relevant ESG factors but, as need be, should integrate them (c.f. FSC, 2020: 5) into the risk management system and investment policies. In jurisdictions with less stringent requirements, supervisors may determine that the use or integration of such factors in investment and risk management processes is consistent with a governing body's or asset manager's fiduciary duty (c.f. CAPSA, 2024: 4; MPFA, 2021; DOL, 2022)[10].

2.3. The integration of ESG factors should be considered in a way that is consistent with the fund's consideration of other risk factors – i.e., they should not be managed separately or under a different standard of care (c.f. CAPSA, 2024: 26).

[10] As noted in the US Department of Labor 2022 Final Rule, "Paragraph (b)(4) of the final recognizes that, as with other factors, climate change and other ESG factors sometimes may be relevant to a risk and return analysis and sometimes not—and when relevant, they may be weighted and factored into investment decisions alongside other relevant factors, as deemed appropriate by the plan fiduciary". (DOL, 2022: 73833).

Box 4 Examples of supervisory communication asserting that the consideration of ESG factors is part of fiduciary duty

FSC of Colombia (2020: 5, emphases added):

"(…) ESG issues are considered to be relevant risk factors and **should be integrated** into decision-making processes. In that sense, in addition to **being part of its fiduciary duty**, the integration of ESG matters into the risk management of pension fund managers is considered good practice."

Financial Regulation Act 2017, Republic of South Africa (preamble to Regulation 28, emphases added):

"Prudent investing should give appropriate consideration to any factor which may materially affect the sustainable long-term performance of a fund's assets, **including factors of an environmental, social or governance character.** This concept applies across all assets and categories of assets and should promote the interests of a fund in a stable and transparent environment."

The Pensions Act (1990) of Ireland (1990; emphases added):

Under the Act, pension scheme trustees must carry out and document the 'own risk assessment' of the scheme. **Where ESG factors are considered in investment decisions, the 'own-risk assessment' must include an assessment of new or emerging risks** including risks related to climate change, use of resources and the environment, social risks and risks related to the depreciation of assets due to regulatory change" (The Pensions Act, 1990: Section 64AL(h)).

MPFA of Hong Kong, China (2021: 6, Principle 1, emphases added):

"**To be in line with their fiduciary duty**, MPF trustees **should be mindful** of all material financial risks impacting the interest of MPF scheme members. **ESG factors could be** a source of financial risk with long-term financial impact on the value of MPF investment portfolios."

CAPSA, Canada (2024: 24-25, emphasis added):

"When administering the pension plan and investing pension plan assets, plan administrators must act in accordance with their fiduciary duty in fulfilling the primary purpose of the plan – providing retirement income[3]. **Using ESG factors to provide financial insight is consistent with an administrator's fiduciary duty.** Conversely, ignoring or failing to consider ESG factors that might materially affect the fund's financial risk-return profile could be a breach of fiduciary duty."

"Principle 1: Pension plan administrators (either directly or through their delegates) **should consider whether and how ESG characteristics may be material** to assessing the financial risk-return profile of their pension fund and take appropriate action"

RBA, Kenya (2018: art. 51(2) and 51(3)):

"(2) The board of trustees **shall oversee and monitor** the scheme's workplace and economic behaviour, and environmental, social and governance matters related to the activities of the scheme. (3) The board of trustees **is encouraged to adopt socially responsible investing** including by considering the financial returns of investment and social or environmental benefits of investment for the members and the community in which the scheme invests"

DOL, the US (2022: paragraph (b) (4), emphases added):

"A fiduciary's determination with respect to an investment or investment course of action must be based on factors that the fiduciary reasonably determines are relevant to a risk and return analysis, using appropriate investment horizons consistent with the plan's investment objectives and taking into account the funding policy of the plan established pursuant to section 402(b)(1) of ERISA. **Risk and return factors may include the economic effects of climate change and other environmental, social, or governance factors on the particular investment or investment course of action.** Whether any particular consideration is a risk-return factor depends on the individual facts and circumstances. The weight given to any factor by a fiduciary should appropriately reflect a reasonable assessment of its impact on risk-return."

Source: CAPSA (2024), CAPSA Guideline No. 10. Guideline for Risk Management for Plan Administrators, Canadian Association of Pension Supervisory Authorities, 9 September 2024; DOL (2022), Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights, Final Rule, Department of Labor, US; FSC (2020), Mejores prácticas para la gestión de inversiones de las administradoras del sistema general de pensiones (Best practices for the management of investments of the administrators of the general pension system), Financial Superintendence of Colombia, 4 November 2020 (updated 31 May 2021), own translation; MPFA (2021), Principles for Adopting Sustainable Investing in the Investment and Risk Management Processes of MPF Funds, Mandatory Provident Fund Schemes Authority, Hong Kong, China; Republic of South Africa (2017), Financial Sector Regulation Act 2017; RBA (2018), Legal Notice 193: Good Governance Practices in the Management of Retirement Benefits Schemes, Guidelines, 2018, Retirement Benefits Authority of Kenya; The Pensions Act (1990), Republic of Ireland.

2.4. *Stewardship* activities relate to actions by a pension fund's governing body to lever its position as owner or creditor to influence the activity or behaviour of investee companies, asset owners and market participants in ways that reflect the body's views about risks and opportunities and their management[11]. The stewardship expectations of owners are often reflected in a set of voting principles or policies. (CAPSA, 2024: 20). Inasmuch as stewardship activities have been increasing in prevalence in the pension industry, supervisors can recognise and support stewardship where it can be demonstrated that it serves as an instrument for supporting the financial returns to members, as well as delivering an assumed positive sustainability impact (guidance by APRA, 2023b; see Box 5). Stewardship activities can be a prudent way to exercise influence to minimise ESG risks (CAPSA, 2024: 28) and maximise ESG opportunities. The Common Stewardship Code of the Pension Fund Regulatory and Development Authority, India, emphasises that institutional investors, including pension funds, should monitor their investee companies (Principle 3), including the quality of a company's management, governance structures (e.g. remuneration, board diversity, independent directors) and risks, including ESG factors and shareholder rights (PFRDA, 2018: 3). Accordingly, pension funds may encourage companies in which they invest to publish corporate reports indicating the ESG criteria and practices used (PREVIC, 2019: 19).

2.5. From the perspective of the governing body and/or asset managers of pension funds, active ownership relates to prudent fulfilment of responsibilities relating to a fund's ownership of, or an interest in, an asset. Supervisors may expect that the governing body and/or asset managers: a) have in place guidelines to identify sustainability concerns in an asset/company; b) established mechanisms to intervene and engage with the responsible persons in respect of the assets when sustainability concerns have been identified; c) mechanisms to be used by the pension fund – as an asset holder or owner – in the event these concerns cannot be resolved; and d) plans to vote at meetings of shareholders/owners or holders of an asset, including setting the criteria used to reach voting decisions and the methodology for record voting (the list of actions based on FSCA, 2019: 2).

[11] In its November 2024 consultation on the (voluntary) UK Stewardship Code, the Financial Reporting Council (FRC) proposes a definition that emphasizes long-term and sustainable value creation: "Stewardship is the responsible allocation, management and oversight of capital to create long-term sustainable value for clients and beneficiaries.' (FRC, 2024: 7), whereas in response to this consultation, the Pension Protection Fund suggests that the definition refer more explicitly to the systemic risks and therefore clarifies that such allocation has regard to "dependencies and impacts on the economy, the environment and society." (https://www.ppf.co.uk/-/media/PPF-Website/Files/Resource-library/Response-to-FRC-on-Stewardship-Code.pdf)

Box 5 Stewardship activities: Australian Prudential Regulation Authority (APRA) and Pension Fund Regulatory and Development Authority (PFRDA), India

APRA Prudential Practice Guide (2023b: 18, emphases added):

> "Where an RSE licensee[i] engages in stewardship activities as part of its prudent management of investments, APRA expects an RSE licensee would be able to demonstrate how these activities:
>
> a) contribute to value creation/preservation over different time horizons and **support delivering financial returns to beneficiaries**;
>
> b) are appropriate in the context of the RSE licensee's business operations, resources and investment mix and complexity;
>
> c) are **undertaken on a cost-effective basis**, including where undertaken by way of a collective approach; and
>
> d) are aligned with **publicly disclosed statements on stewardship**."

PFRDA Common Stewardship Code (2018):

> Principle 1:
>
> "Institutional investors should formulate a comprehensive policy on the discharge of their stewardship responsibilities, publicly disclose it, review and update it periodically."
>
> Principle 2:
>
> "Institutional investors should have a clear policy on how they manage conflicts of interest in fulfilling their stewardship responsibilities and publicly disclose it."
>
> Principle 3
>
> "Institutional investors should monitor their investee companies."
>
> Principle 4:
>
> "Institutional investors should have a clear policy on intervention in their investee companies. Institutional investors should also have a clear policy for collaboration with other institutional investors, where required, to preserve the interests of the ultimate investors, which should be disclosed."
>
> Principle 5:
>
> "Institutional investors should have a clear policy on voting and disclosure of voting activity."
>
> Principle 6:
>
> "Institutional investors should report periodically on their stewardship activities."

Source: APRA (2023b), Prudential Practice Guide SPG 530 Investment Governance, integrated version, Australian Prudential Regulation Authority, July 2023; PFRDA (2018), Common Stewardship Code, Pension Fund Regulatory and Development Authority, May 2018.

[i] An RSE [registrable superannuation entity] licensee is a constitutional corporation, body corporate, or group of individual trustees, that hold an RSE licence granted by APRA under section 29D of the Superannuation Industry (Supervision) Act 1993 to manage a regulated superannuation fund or an approved deposit fund or a pooled superannuation trust (but not a self-managed superannuation fund), c.f. https://www.apra.gov.au/register-of-superannuation-institutions.

Guideline 3

When pension funds offer members investment options that partly take into account non-financial factors, such options may possibly result in sacrificing some return as compared to options that are defined on purely financial grounds. In this case, supervisory authorities should require that the potential and actual members be properly informed so that they can make an informed choice in selecting their investment options.

Explanatory notes

3.1. Supervisory authorities should make sure that a prudent approach is preserved by a pension fund when selecting and offering investment options that incorporate non-financial factors. For example, the Australian Prudential Regulatory Authority provides guidance that:

> "Where investments are linked to objectives, such as environmental or social impact related objectives, APRA expects and RSE licensee would be able to demonstrate how it monitors the objectives, using recognised industry criteria." (APRA, 2023b: SPG 530, art. 50)

It should not be assumed, however, that incorporating non-financial factors into investment decisions automatically results in sacrificing returns.

3.2. Potential members should be informed about the characteristics of the offered investment option, with a particular focus on informing them about the expected risk-return features, costs, and – if relevant and allowed by regulations – the potential return sacrifice that may be incurred as compared to an investment option that takes into account purely financial factors and has the same expected risk level.

3.3. Supervisory authorities should require that members wishing to choose such an option have been informed in writing (with documentation of such actions taking place), have been offered – if relevant – a suitability test, and have expressed their explicit written agreement. Members who have already joined such an option should receive periodic information about the ongoing investment performance. Members should have the right to withdraw from the investment option at any time without undue delay and without any additional costs or fees charged.

3.4. An investment option characterised by potential return sacrifice should not be offered as a default option.

Guideline 4

Supervisory authorities should require that, when offering investment arrangements, the pension fund's investment policy should consider ESG factors with no prejudice for the objective of obtaining an appropriate risk-return profile on purely financial grounds.

Explanatory notes

4.1. The integration of ESG factors in the investment policy should aim to improve the risk-return characteristics of a fund's pension portfolio. This is in line with acting in the best interest of members to provide retirement income or assets that will be used to secure such income.

4.2. When deemed appropriate, supervisors may communicate to governing bodies or asset managers that it is in line with their fiduciary duty to consider ESG risks and opportunities as tiebreakers, i.e., as a deciding factor in choosing between otherwise equivalent investment options in terms of expected risk-return. Such decisions may relate not only to investments, but also to disinvestments or stewardship activities (engagement, proxy voting).

II. Integration of ESG factors in the investment and risk management process

Guideline 5

Supervisory authorities should require that a governing body and the asset managers involved in the development and implementation of a pension funds' investment policy integrate ESG factors, along with all substantial financial factors, into their investment strategies (analysis and decision-making process). Supervisory authorities should avoid being overly prescriptive on how governing bodies should deal with ESG factors but rather emphasize the need to document the ways a particular governing body is treating such factors. Supervisory authorities should also request that in case these factors are not integrated in investment and risk management process, a governing body and the asset managers provide explanations. Integration of ESG factors may be subject to the principle of proportionality, i.e. the scale of the pension funds and complexity of its governing structure.

Explanatory notes

5.1. (Framework) Governing bodies and/or asset managers of pension funds should have their own internal methods or risk indicators in place, so that they are able to identify, measure, assess, control, monitor, and limit risks, including ESG factors (FMA, 2025: 53-54). Ideally, the arrangements will be specific to individual pension funds, as the process of integration of ESG factors should recognise each pension funds' specific circumstances, including its asset allocation and the availability of investment options in the market (MFPA, 2021:7). For example, the Canadian Association of Pension Supervisors provides general guidance on the implementation of ESG factors (Recommendation 2) that states:

> "Plan administrators, as part of their standard of care, **should design their plan governance, risk management and investment decision-making practices to identify and respond to material ESG risks and opportunities in a manner appropriate for their plan's circumstances and investment beliefs.** A review should be conducted regularly and whenever there is a material change in the risks facing the plan or governance processes." (CAPSA, 2024: 25; emphasis own).

5.2. Supervisory authorities may recommend to governing bodies and/or asset managers of pension funds that they organise the management of ESG risks within a framework that is aligned to its business strategy, governance and risk management (see examples in Boxes 6 and 7). Such frameworks might be subject to gradual implementation, depending on the information available.

Box 6 Supervisory expectations on a framework for ESG risks integration: European Banking Authority

Business strategy: ensure the resilience of business models

- incorporate ESG risks in business strategies, extend the time horizon for strategic planning (e.g. 10 years), conduct at least qualitative analyses, test their resilience to different scenarios;
- set, disclose and implement ESG risks-related strategic objectives and/or limits in line with risk appetite;
- engage with investee companies and other stakeholders;
- assess the need to develop sustainable products or adjust the existing ones.

Governance: integrate ESG risks in governance structures

- establish procedures and allocate responsibilities, internal control functions, the relevant committee(s) and management bodies;
- ensure change management from the top and create adequate risk culture;
- assure internal awareness and capacities;
- establish remuneration policies aligned with the long-term objectives of the entity.

Risk management: integrate ESG risks, account for their materiality over different time horizons

- account for material ESG risks when setting up the risk appetite;
- manage ESG risks as drivers of financial risks;
- identify the data and methodology gaps, take remedial actions;
- set out appropriate policies that take into account ESG risks when assessing financial robustness of counterparties;
- develop risk monitoring metrics at exposure, counterparty and portfolio levels;
- develop methodologies to test business model and investment strategy regarding their resilience to ESG risks (c.f. also FMA, 2025: 77-78).

Source: Adapted from EBA (2021), EBA report on management and supervision of ESG risks for credit institutions and investment firms, European Banking Authority, EBA.REP/2021/18, pages 10-12 and Chapter 4.

5.3. For example, governing bodies and/or asset managers of pension funds should, where possible, define (PREVIC, 2019: 19):

- the purpose and scope of integrating ESG factors into investment analysis;
- the ESG integration criteria for the selection and monitoring of investment portfolio management;
- the person responsible for monitoring and following up on the defined ESG criteria;
- the frequency of updating information regarding investees' compliance with the required ESG criteria;
- the format and frequency of monitoring information to verify compliance with the required ESG criteria; and
- the way to monitor, in the case of outsourced management, compliance with the ESG requirements as defined in the management mandate.

Box 7 Supervisory expectations on a framework for ESG risks integration: insurance and pension sectors

Governance

- Have greater clarity on information and reporting needs, resourcing, skill sets and budgets.
- Allocate oversight and management responsibilities – assign responsibility to improve accountability for mapping, monitoring, and controlling the ESG risks and opportunities.
    - An Internal risk committee may be one of the ways to address evolving risks, having the function to identify such risks and seek potential ways to address them, or
    - Consider establishing a Sustainability Management Function or a Sustainability Organisational Unit (FMA, 2025: 78).
    - Another example is the creation of a risk function in the supervised entity to address the risks and opportunities.
- Incorporate and assess ESG risks and opportunities as part of financial planning and short- and long-term strategic planning processes.
- Governing body (e.g. board) should have appropriate understanding of, and opportunity to discuss, ESG risks and opportunities. Use training if necessary.
- Senior management should support the governing body's decision-taking by providing it with information, options, potential trade-offs, and recommendations relating to ESG risks and opportunities.
- Align remuneration with prudent risk-taking to promote integration of ESG factors in the investment and risk management processes.

Risk management and internal controls

- Integrate ESG risks into the risk management and internal controls systems:
    - assess and document ESG risks in risk management policies.
    - identify, monitor, assess and manage ESG risks and their interactions with other identified risks, by developing tools to collect reliable quantitative and qualitative data.
    - disclose the methodologies for measuring, monitoring and controlling ESG risks in the pension fund's investment policy.
    - use a range of quantitative and qualitative methods and metrics.
- Control function
    - take proper consideration of the impact of ESG risks and opportunities, including the need for evolution of risk measuring and risk modelling in the course of developing new data and methods.
    - identify, measure, and report on the entity's risks; assess its effectiveness of risk management and internal control; determine whether the entity's operations and results are consistent with the risk appetite as approved by the entity's governing body.
- Compliance function
    - monitor the liability and reputational risks by ensuring that internal policies and internal control procedures are compliant with the relevant standards the entity is obliged or committed to respect.

Outsourcing

- Retain an ability to manage risks of outsourced processes.
- Ensure business continuity in case of a failure of the outsourcing provider (by creating business continuity plans).

Source: Adapted from IAIS (2025), Application Paper on the supervision of climate-related risks in the insurance sector, International Association of Insurance Supervisors, April 2025, pages 17-23; FMA (2025), FMA guide for managing sustainability risks, Austria Financial Market Authority, page 78); FSC (2021), External Circular 007/2021, Instructions related to the investment processes of the mandatory pension funds, and of the reserves of the insurance companies, Financial Superintendence of Colombia. NB: IAIS (2025) focus on climate-related risks only.

5.4. (Responsibilities) Governing bodies of pension funds are responsible for monitoring ESG risks (FMA, 2025: 77-78; RBA (2018: art. 51(2)), and should oversee the integration of ESG factors into the investment risk management process. The management must have a clear role in reporting against established goals (MFPA, 2021: 6). The governing body (e.g. trustees) of a pension fund may delegate to asset managers the task of assessing the relevance and materiality of various ESG factors, while retaining ultimate accountability for, and adhering to, the requirements described in the following section).

5.5. (Understanding the risks) Governing bodies of pension funds must demonstrate an understanding of ESG factors (risks and opportunities) and the extent to which they may have a material impact on the financial risk-return profile (c.f. APRA 2023b, art. 46). They should also demonstrate that they understand "how risk considerations connected to ESG factors are integrated into investment analysis, decision making and oversight, ensuring that the appropriate resources are available to identify and respond to material ESG factors" (APRA 2023b, art. 47). The governing body retains the responsibility for actions of the third party. In case of outsourcing, the governing body must understand how ESG risks are managed and be able to assess the current risks (FMA, 2025: 76). Third-party (external) managers should provide sufficient information, in a timely manner, to enable the governing body of a pension fund to effectively monitor, administer and control the entire investment portfolio (PREVIC, 2019: 13)

5.6. Supervisory authorities may consider requiring or encouraging the governing bodies of pension funds to provide their key staff (functions) with ESG training programmes or certifications[12] or capacity building programmes.

5.7. (Setting investment strategy) Supervisory authorities might expect that the governing body and/or asset managers of pension funds will undertake appropriate analysis in order to assess ESG investment opportunities (APRA, 2023b: art. 61; see also Box 8) and demonstrate how the investee entity adheres to the minimum standards set by the pension fund, including the ESG considerations (APRA, 2023b: art. 62). In the context of issuers, the governing bodies of pension funds should analyse their adherence to ESG principles and their place in ESG rankings (CONSAR, 2019: art. 31).

5.8. Governing bodies and/or asset managers of pension funds should apply credibility checks when using external ESG ratings or ESG-related data obtained from external providers (FMA, 2025: 68). This check should verify the suitability of individual factors used for developing the rating. It has to be noted that such checks, made in a meaningful way, will entail costs for pension funds and their members (at least at the initial stage, until the credibility of such ESG ratings/data providers can be fully established).

5.9. When appointing asset managers, the governing body of pension funds should consider whether these managers have incorporated ESG factors into their investment and risk management process. The governing body should therefore set out its expectations on an appropriate level of integration of ESG factors by the asset managers (MPFA, 2021: 6-7).

5.10. In the case of passive investment, the governing body may be required to convey its expectations to index-fund investment managers regarding stewardship practices, including, for example, how they should exercise ownership rights or engage with investee companies. (MPFA, 2021:8).

[12] For example, in Mexico, at least an investment officer and a risk officer must obtain certification through international ESG training programmes so that the operations conducted and projects financed by pension funds meet the requirements of the 21st Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (c.f. CONSAR, 2019: art. 70 & Annex J, numeral 5).

Box 8 Requirement to account for ESG factors: Austria Financial Market Authority (FMA)

"Pensionskassen (pension companies) where ecological, social and governance-related factors are taken into account in investment decisions, **must assess risks that have recently arisen or that are to be expected**, *inter alia* risks in relation to climate change, the use of natural resources and the environment, as well as social risks and risks in conjunction with a reduction of the value of assets as a result of regulation being amended.

Pensionskassen must use methods that are appropriate in relation to the magnitude, nature, scope and complexity of the *Pensionskasse's* activities and to describe them in its Own Risk Assessment (ORA) (…) where, **under the prudent person rule, the potential long-term effects of the investment** of an asset allocated to an investment and risk-sharing group **may be taken into account with regard to the relevant environmental, social and governance factors**). The written declaration on the investment policy principles for every investment and risk-sharing group shall cover **the selection of assets in accordance with ethical, ecological and/or social criteria** (…)."

Source: FMA (2022), FMA's Report on the state of Austrian pension funds (in German), Austria Financial Market Authority, https://www.fma.gv.at/en/pensionskassen/disclosure/the-state-of-austrian-pensionskassen/, pages 44 et seq.; FMA (2025), FMA guide for managing sustainability risks, Austria Financial Market Authority, pages 55-56, emphasis added. Note: the quoted Guidance Notice assumes sustainability risks to be identical with the ESG risks; see also footnote 2.

5.11. It may be the case that not all pension supervisory authorities have jurisdiction over certain asset managers and not all of these asset managers may be involved in the development or implementation of a pension fund's investment policy. Therefore, supervisory authorities should expect a governing body that relies on third-party asset managers to have processes in place to select asset managers that align with their pension funds' investment policy[13].

Box 9 Common approaches to managing sustainability risks and opportunities

Sustainability risks management methods should be consistent with the business and risk strategy of a pension fund and enable proper management of ESG risks.

- **Exclusion criteria/limits** (single companies, sectors, regions, countries) established internally by a pension fund based on specific ESG criteria, with potential use of heat maps. Example: "Exclusion of companies generating at least x% of sales from mining, processing, or burning fossil fuels";
- **Positive lists** of companies, regions, jurisdictions preferred for investment as a result of minimum compliance with certain sustainability criteria (norms or standards defined and recognised at international or national level);
- **Best-in-class** companies within a given economic sector that outperform the peers with regard to sustainability criteria chosen by pension fund (NB: be aware of greenwashing risk);
- **ESG integration** or the systematic and explicit inclusion of ESG factors in the traditional financial analysis of risk-return; this may be done on the basis of internationally recognised standard setters – c.f. standards-based screening;
- **Standards-based screening** whereby criteria are established externally by internationally recognised standard setters;
- **Sustainability-themed investment** or investment focused on activities or assets directly related to ESG issues (e.g. clean energy, green technology, sustainable agriculture);
- **Engagement (stewardship, active ownership)** with pension funds exercising voting rights, engaging in dialogue with investee companies;
- **Impact investment** aimed to solve social or environmental problems.

[13] The remark offered by the Mandatory Provident Fund Schemes Authority, Hong Kong, China.

Source: Adapted from FSC (2020), *Mejores prácticas para la gestión de inversiones de las administradoras del sistema general de pensiones* (Best practices for the management of investments of the administrators of the general pension system), Financial Superintendence of Colombia, 4 November 2020 (updated 31 May 2021), Annex 2, own translation; BaFin (2020), Guidance Notice on Dealing with Sustainability Risks, Federal Financial Supervisory Authority, January 2020, pages 27-28; and PREVIC (2019), *Guia Previc de Melhores Práticas em Investimentos na previdência complementar fechada* (PREVIC's Guide to Best Practices in Investments in Closed Supplementary Pension Funds), Brazilian Pension Funds Authority (PREVIC), September 2019, page 18, own translation. Note: the quoted Guidance Notice assumes sustainability risks to be identical with the ESG risks; see also footnote 2.

Note: *Greenwashing* relates to "behaviour or activities that make people believe that a company is doing more to protect the environment than it really is" (Source: https://dictionary.cambridge.org/dictionary/english/greenwashing). See also other definitions in Section III (annotations to Guideline 8).

5.12. The governing body and/or asset managers of pension funds should be expected to periodically evaluate the impact of integrating ESG factors on the risk profile of their investment portfolio, in alignment with the policies and procedure manuals defined by the fund (SBS, 2021: 12).

5.13. (Planning for and managing transition risks) Pension funds, like any other financial institutions, need to be aware of potential risks to their safety and soundness from climate change and related transition and physical risks. This may call for establishing a formal document (transition plan) by the governing body and/or asset managers describing their transition towards a low-carbon economy and how they will manage related transition risks. According to the NGFS (2023a: 8) definition, *transition plans* to a low emission economy could be understood as "an articulation of a financial institution's approach to climate change and the transition to a low emission world". In this context, such an approach covers both transition and physical risks. Financial institutions make use of plans prepared by the investee companies as well as produce their own (NGFS, 2023: 9). Section 4.2 of the NGFS report provides examples of jurisdictional approaches to transition plans. The process of developing such plans can be called "*transition planning*". Figure 1 shows elements of both the process and the resulting document that in view of the NGFS can be relevant to micro prudential authorities.

Figure 1 The NGFS proposal on elements of credible transitions planning and plans that are relevant to micro-prudential authorities

	Process: Transition Planning	**Output: Transition Plan**
Governance	- Oversight from board and senior management for developing, implementing, monitoring and updating transition plans.	- Governance structure outlines the process for authorization, implementation, monitoring and updating transition plans.
Engagement	- Active engagement with clients and investees, assessing the credibility of the transition plans of those that could be exposed to heightened climate risks.	- Engagement strategy identifies the key clients and investees and outlines the process for collecting relevant information from them.
Risk Analysis	- Robust setting of risk appetite and risk assessment process to measure and profile all relevant climate risks.	- Risk assessment result: • of clients and investees and • of the financial institution.
Viable Actions	- Maintaining credible actions, including for financing clients and investees, with clear documentation and alignment with the overall strategy.	- Action plans are developed by multi-disciplinary teams and are aligned with the risk management frameworks.
Monitoring and Reviewing	- Establish a monitoring and review process: • to measure the effectiveness of mitigation and adaptation actions. • for periodic review of transition plans.	- Monitoring structure and metrics track the progress on a periodic basis.

Source: NGFS (2024b), NGFS: Transition Plan Package, Network for Greening the Financial System, April 2024, Figure 3, page 9, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_transition_plan_package.pdf

5.14. (Documenting procedures) The governing body and/or asset managers of pension funds must document how the ESG risks that have been deemed to be financially material are being managed. For example, how are such risks reflected in the investment strategy (APRA, 2023b: art. 47) and how can this strategy be implemented (MPFA, 2021: 7).

5.15. Supervisory authorities may choose to encourage the governing body of pension funds to observe voluntary sustainability standards, thereby supporting the verification of the quality of internal risk management process. As regards ESG factors, the governing body can use globally recognised principles and standards[14] as a reference point for considering ESG factors (MPFA, 2021: 8).

5.16. (Principle of proportionality) Compared with large pension funds, smaller pension funds may not have the same level of resources to manage ESG risks and may be at different points in the process of incorporating them into their governance, strategy, and risk management (c.f. DFS, 2023: 10). The principle of proportionality may, for simpler structures, processes and methods, be deemed sufficient for smaller pension funds or funds with lower risk profiles; however, small-sized funds might still require extensive structures, processes and methods if ESG risks are significant (BaFin, 2020: 11). For example, small pension funds may be exposed to strong sustainability risks (FMA 2025: 9), as their investments may be much more concentrated in a particular market, sector, or geography exposed to climate change risks (NGFS, 2020a: 39). As a result, such pension funds would have to adhere to increased risk management requirements and greater supervisory scrutiny.

5.17. A proportionate approach might also be related to data gaps, which are particularly relevant when performing stress tests and scenario analysis, and when calculating metrics on asset classes (such as derivatives) or disclosing information on greenhouse gas emissions– implying that the supervisory expectations might evolve in the future (Box 10).

Box 10 Data gaps: the UK "as far as they are able" approach

The UK Pension Regulator (TPR, 2021) and The Department for Work and Pensions (DWP, 2021: 8-10) suggest use of an approach called "as far as they are able" to address the issue of data gaps. This terminology is used to acknowledge that not everything is possible as yet.

Therefore, the DWP and TPR state that a governing body and/or asset managers may confront high costs involved in accessing data or compiling data in a format that is usable for analysis. Where there are persistent data gaps, engagement in these areas needs to be prioritised. Where data are not available or a decision is made that it is too costly to access, this could be explained in the disclosed material (c.f. DWP, 2021: 9, 18, 41).

Source: TPR (2021), Governance and reporting of climate-related risks and opportunities, The Pensions Regulator, UK, December 2021 & DWP (2021), Governance and reporting of climate change risk: guidance for trustees of occupational schemes, Department for Work & Pensions, the UK, June 2021.

[14] The European Banking Authority (EBA,2021: 23-25) provides a useful list on international frameworks that are addressing ESG factors. A non-exhaustive list of observed international treaties and certifications on environmental protection, that often serve as the exclusion criteria in the context of environmental risk management, can be found in ECB (2022: Table 34). Standards relating to social factors can include UN human rights (UN, 2011, and https://www.ohchr.org/en/what-are-human-rights/international-bill-human-rights) as well as ILO labour standards (https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12030:0::NO) or OECD due diligence instruments (OECD, 2017; OECD 2018). See more in FMA (2025: 25, footnote 212).

Guideline 6

Supervisory authorities may wish to issue regulations, rules, or guidelines on how a pension fund's governing body or the asset managers, should analyse ESG factors when setting up their investment policy.

Explanatory notes

6.1. When publishing guidance, pension supervisors may consider provision of explicit instructions to the governing body or asset managers of pension funds concerning which of the requirements or activities described in their guidance are categorised as "must" (i.e. imposed by legislation), "should" (i.e., expected by supervisors) and "may" (i.e., for decision by pension funds, but very often with the need to explain the reasons for non-compliance) (c.f. DWP, 2021: 6).

6.2. (Example of guidance). The Canadian Association of Pension Supervisors (CAPSA) expects that identified ESG risks "should be considered together with other types of risks that are already incorporated into the entity's risk profile or when evaluating and making [pension] plan investment decisions" (CAPSA, 2024: 26). The identification, evaluation, management and monitoring of ESG risks can prove to be difficult, in part, because ESG risks may take longer to fully emerge as compared to other risks. Moreover, ESG risks can be correlated with or manifested via other risks (such as market, credit, operational, reputational or legal risks), and information on ESG risks might be scarce or incomplete, depending on asset classes (CAPSA, 2024: 26).

6.3. The Pensions Regulator of the UK provides guidance "(TPR, 2024: 90) that, in regard to ESG matters, when preparing and maintaining their statement of investment policy (SIP), the governing body should:

> "(…) j. assess the financial materiality of environmental, social and governance (ESG) factors and allow for them when developing and implementing the investment strategy
>
> (…) k. ask their investment manager(s) and investment adviser for help with assessing the financial materiality of ESG factors, if they do not have the necessary expertise in-house
>
> (…) m. carefully consider whether potential ESG issues may affect the risk-adjusted return members may receive
>
> n. take account of risks affecting the long-term financial sustainability of the scheme investments
>
> o. understand the ESG approach of the available funds and consider this in the selection criteria for new funds, including where a pooled fund is chosen
>
> p. monitor how investment managers take into account ESG factors in practice, including where a pooled fund is chosen q. consider the risks and opportunities of climate change. (…)"

6.4. The Financial Conduct Authority of the UK in its consultation paper on diversity and inclusion (D&I) proposes to introduce a minimum standard requirement on non-financial misconduct (including behaviour such as bullying, harassment and discrimination) for regulated firms regardless of their size, with additional requirements for firms with 251 or more employees. Regarding the latter, such larger entities would have to (FCA, 2023: Table 1):

- report their average number of employees,
- collect, report and disclose certain D&I data (such as disability status and ethnicity, with optional reporting on socio-economic background and gender identity),
- establish, implement and maintain a D&I strategy,
- determine and set appropriate diversity targets,
- recognise a lack of D&I as a non-financial risk.

6.5. (Examples of industry practice) Examples of the integration of ESG factors in investments observed in the Australian pension funds industry include: a) ESG investment-level analysis (e.g. investment alignment with climate targets, company carbon intensity, fossil fuel exposure, attributed emissions); b) ESG portfolio-level analysis (e.g. weighted-average carbon intensity by class or portfolio, carbon exposure, financed emissions, portfolio contributions to SDGs); and c) climate scenario analysis to understand the impact on the fund's investment performance under varying physical and transition risk climate risk scenarios[15]. In Colombia, the main approach in use by pension funds is to incorporate ESG criteria when determining the issuers' credit scores[16]. Colombian pension administrators have been redesigning their organisational structure to integrate ESG factors into risk management. Elsewhere, the Responsible Investment and Ownership (RIO) Guide[17], issued in 2013 by the Council of Retirement Funds for South Africa (Batseta) and updated after 2019, aims to assist boards of pension funds to integrate ESG factors into investment decisions. The cited guide is predominantly based on the Principles for Responsible Investment (PRI)[18]. It provides practical steps on how to integrate ESG in the investment policy statement, investment decisions and reporting by offering guidance on the following steps: 1) developing the policy, 2) setting targets, 3) establishing ESG committees & training, 4) selecting service providers, 5) monitoring, 6) disclosure & reporting, 7) review.

6.6. Pension supervisors might also consider whether their guidance should address the following aspects:

a) Whether pension funds are expected to consider investment impacts in light of their exposure and contribution to system-level risk (such as climate change, loss of biodiversity and inequality)?

b) Whether and how pension funds may establish and pursue sustainability impact/outcome objectives and what would be the minimum requirements for such targets?

c) Whether pension funds are expected to develop transition plans (including governance, strategy, stewardship and products) to achieve such targets? If so, what key elements should be covered?

d) In cases of outsourcing, what are the expectations for pension funds to consider ESG factors in selecting, appointing and monitoring asset managers?

e) Whether and how progress and outcomes of transition plans would be assessed against sustainability impact/outcome objectives?

---

[15] The examples offered by the Australian Prudential Regulation Authority (APRA).

[16] The example offered by the Financial Superintendence of Colombia (FSC).

[17] https://rioguide.batseta.org.za/

[18] https://www.unpri.org/about-us/what-are-the-principles-for-responsible-investment

III. Disclosure of ESG factors in the investment and risk management process

Guideline 7

Supervisory authorities should require that a governing body or the asset managers involved in the development and implementation of the pension fund's investment policy will report to supervisory authorities how they integrate ESG factors in their investment and risk management process.

Explanatory notes

7.1. The governing body and/or the asset managers of pension funds should clearly articulate their investment strategy, including the extent to which ESG factors are used for its formulation (APRA, 2023b: art. 26; TPR, 2024: 81). This should give a clear view to fund members and other stakeholders on the rationales for a fund's long-term investment decision-making. The reported information should correspond to the contents suggested in Section II of this note (i.e., to cover information on business strategy, governance, risk management and investment management) with the disclosure based upon widely recognised standards (see below). In Chile, the general rule 276 of 23 November 2020 (SP, 2020), requires that pension fund administrators publish an annual report for fund members and stakeholders, that includes financial factors, climate risk, and ESG matters. The report has to reflect the importance of these factors and detail the actions taken to promote best practices in risk management and information disclosure by issuers and investment vehicles.

7.2. The Sustainability Accounting Standards Board (SASB) provides a tool that can help a governing body of an entity select material sustainability topics that should be reported. The five-factor materiality test takes into account (RBS, 2024: 26):

- direct impacts and risks related to the entity's performance on each topic
- legal, regulatory and policy drivers
- industry norms, best practices and competitive drivers
- stakeholder concerns and social trends
- opportunities for innovation

7.3. (Transition plans) The reported information may also include transition plans by pension funds. As mentioned in annotations to IOPS ESG Guideline 7:

> "(…) pension funds may wish to present their plans for the transition towards a low-carbon economy and the ways they manage risks related to changes to sentiment, new financial or environmental regulations or the emergence of new technologies".

7.4. (International standards) Based on the feedback from the IOPS Members and recent developments in establishing global standards for sustainability reporting, the following initiatives might be suggested to the governing bodies of pension funds for the implementation of IOPS ESG Guidelines 7-9:

- Recommendations by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD),
- Standards by the International Sustainability Standards Board (ISSB) on climate-related disclosures and general sustainability-related disclosures (IFRS S1 and IFRS S2 standards),
- The European Sustainability Reporting Standards (ESRS) for companies reporting under the Corporate Sustainability Reporting Directive (CSRD) (EU 2022/2464),

- The Global Reporting Initiative (GRI) Standards applicable to any organisation to publicly report on a range of its economic, environmental and social impacts.

7.5. (TCFD recommendations) The recommendations by the Task Force on Climate-related Financial Disclosures are widely adoptable and applicable to organisations across sectors and jurisdictions. They are structured around four thematic areas: governance, strategy, risk management, metrics and targets (Figure 2). In line with the 2023 status report published on 12 October 2023, the TCFD has fulfilled its remit and disbanded. The International Financial Reporting Standards Foundation, as requested by the Financial Stability Board, took over the monitoring of the progress of companies' climate-related disclosures[19]. As stated by the International Financial Reporting Standards Foundation, "companies applying IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures will meet the TCFD recommendations as the recommendations are fully incorporated into the ISSB Standards"[20].

Figure 2 TCFD Recommendations and Supporting Recommended Disclosures

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
Recommended Disclosures	**Recommended Disclosures**	**Recommended Disclosures**	**Recommended Disclosures**
a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Source: TCFD (2017), Recommendations of the Task Force on Climate-related Financial Disclosures, final report June 2017, Task Force on Climate-Related Financial Disclosures

7.6. (IFRS standards) The International Sustainability Standards Board (ISSB) of the International Financial Reporting Standards Foundation (IFRS) published its two reporting standards, IFRS S1 and IFRS S2 (see Box 11 for description) in June 2023. IFRS S1 (General Requirements for Disclosure of Sustainability-Related Financial Information), and the IFRS S2 (Climate-Related Disclosures) became effective for annual reporting periods beginning on or after 1 January 2024. These standards were endorsed by the International Organisation of Securities Commissions in July 2024, confirming they

[19] https://www.fsb-tcfd.org/recommendations/

[20] https://www.ifrs.org/sustainability/tcfd/

would serve as an "effective and proportionate global framework of investor-focused disclosures on sustainability- and climate-related risks and opportunities"[21, 22].

7.7. In August 2022, the ISSB assumed responsibility for the Sustainability Accounting Standards Board (SASB) standards and committed to maintain, enhance and evolve them. The SASB became part of the IFRS Foundation. The ISSB encourages entities to use the SASB Standards. As mentioned in the IOPS Supervisory guidelines, the SASB standards are industry-specific sustainability accounting disclosure standards and include measurement metrics[23].

7.8. (ESRS standards) The European Sustainability Reporting Standards are intended to be interoperable with the International Sustainability Standard Board (ISSB). The Corporate Sustainability Reporting Directive expands and replaces the Non-Financial Reporting Directive (2014/95/EU). The standards cover the full range of ESG issues, including climate change, biodiversity, human rights, and help investors to understand the sustainability impact of the companies in which they invest. The CSRD uses the concept of double materiality.[24]

7.9. The European Sustainability Reporting Standards will consist of the following standards[25]

Cross-cutting standards:

- ESRS 1 General requirements
- ESRS 2 General disclosures

Standards on Environmental, Social and Governance matters:

- ESRS E1 Climate change
- ESRS E2 Pollution
- ESRS E3 Water and marine resources
- ESRS E4 Biodiversity and ecosystems
- ESRS E5 Resource use and circular economy
- ESRS S1 Own workforce
- ESRS S2 Workers in the value chain
- ESRS S3 Affected communities
- ESRS S4 Consumers and end-users
- ESRS G1 Business conduct

7.10. When developing their standards, both the International Sustainability Standards and the European Commission have been working towards achieving a high degree of alignment of the respective standards. A detailed description of the interoperability between these two standards is

[21] https://asic.gov.au/regulatory-resources/sustainability-reporting/historical-development-of-climate-related-financial-disclosures/

[22] As of September 2025, 20 jurisdictions have finalised decisions on adoption or other use of ISSB Standards, effective by the end of 2029, https://www.ifrs.org/content/dam/ifrs/supporting-implementation/issb-standards/progress-climate-related-disclosures-2024.pdf

[23] http://materiality.sasb.org/

[24] https://finance.ec.europa.eu/news/commission-adopts-european-sustainability-reporting-standards-2023-07-31_en

[25] Commission Delegated Regulation (EU) of 31 July 2023 supplementing Directive 2013/34/EU of the European Parliament and of the Council as regards sustainability reporting standards, C(2023) 5303, https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=PI_COM%3AC%282023%295303

available in the recent publication ESRS-ISSB Standards. Interoperability Guidance (EFRAG & IFRS, 2024).

Box 11 IFRS S1 and IFRS S2 standards

> The standards developed by the International Sustainability Standards Board (ISSB) are anticipated to serve as the foundation for forthcoming reporting obligations on sustainability to be imposed by regulatory bodies worldwide.
>
> Two first standards (IFRS S1 and IFRS S2) were issued on 26 June 2023 and were effective for annual reporting periods beginning 1 January 2024. They fully incorporate the recommendations of the Task Force on Climate-related Financial Disclosures.
>
> **IFRS S1 sets out the requirements for disclosing information about an entity's sustainability-related risks and opportunities.** In particular, an entity is required to provide disclosures concerning:
>
> a. the governance processes, controls, and procedures the entity uses to monitor, manage, and oversee sustainability-related risks and opportunities;
>
> b. the entity's strategy for managing sustainability-related risks and opportunities;
>
> c. the processes the entity uses to identify, assess, prioritise, and monitor sustainability-related risks and opportunities; and
>
> d. the entity's performance in relation to sustainability-related risks and opportunities, including progress towards any targets the entity has set or is required to meet by law or regulation
>
> "The objective of IFRS S2 is to require an entity to disclose information about its climate-related risks and opportunities that is useful to users of general-purpose financial reports in making decisions relating to providing resources to the entity.
>
> **IFRS S2 requires an entity to disclose information about climate-related risks and opportunities that could reasonably be expected to affect** the entity's cash flows, its access to finance or cost of capital over the short, medium or long term (collectively referred to as 'climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects').
>
> IFRS S2 applies to:
>
> a. climate-related risks to which the entity is exposed, which are:
>
> i. climate-related physical risks; and
>
> ii. climate-related transition risks; and
>
> b. climate-related opportunities available to the entity.
>
> IFRS S2 sets out the requirements for disclosing information about an entity's climate-related risks and opportunities. In particular, IFRS S2 requires an entity to disclose information that enables users of general-purpose financial reports to understand:
>
> a. the governance processes, controls, and procedures the entity uses to monitor, manage, and oversee climate-related risks and opportunities;
>
> b. the entity's strategy for managing climate-related risks and opportunities;
>
> c. the processes the entity uses to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process; and
>
> d. the entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation.

Source: The International Financial Reporting Standards Foundation (IFRS) (https://www.ifrs.org/news-and-events/news/2023/06/issb-issues-ifrs-s1-ifrs-s2/, https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s1-general-requirements/, https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures/), emphases own.

7.11. (GRI standards) The GRI Standards can be used by any organisation, regardless of its size and type. They are organised into three series: the Universal, the Sector, and the Topic Standards. A reporting organisation uses all Universal Standards, certain Sector Standards that relate to the sectors in which they operate and selected Topic Standards that represent their material topics (defined as "the most significant impacts of the organisation on the economy, environment, and people, including impacts on their human rights" [26]).

7.12. The World Bank (2020) report provides some best practices on sustainable investment disclosure and a checklist for pension funds by proposing key disclosures concerning: the organisation (core information on the fund, including its size, investments, objectives, and mandate), its governance and strategy (investment beliefs, strategy, policies, objectives, targets, and governance), its sustainable investment by asset class (decision-making, active ownership), its delegated investment (outsourced investment management) and its approach to climate change in its investment process.

Guideline 8

Supervisory authorities should issue regulations, rules, or guidelines on how a pension fund's governing body or the asset managers, when setting up their investment policy, should report to its members and stakeholders on substantial financial factors, including ESG factors.

Explanatory notes

8.1 (Examples of supervisory guidance on disclosure) The Australian Prudential Regulation Authority (APRA) Prudential Practice Guide CPG 229 Climate Change Financial Risks (APRA, 2021: par. 47-51) contains prudential guidance in relation to disclosure of climate risks (Box 12).

Box 12 Prudential guidance in relation to disclosure of climate risks: Australian Prudential Regulation Authority (APRA)

"47. The disclosure of decision-useful, forward-looking climate risk information allows interested stakeholders to assess an institution's resilience to climate risks.

48. With increasing demand from investors and other stakeholders for disclosure on climate-related risks, a lack of absolute certainty in relation to climate risks' future impacts should not be considered a reason to avoid disclosure of exposure to these risks.

49. Beyond any statutory or regulatory requirements, **a prudent institution would consider whether additional, voluntary disclosures could be beneficial** in enhancing transparency and giving confidence to the wider market in the institution's approach to measuring and managing climate risks.

50. **APRA considers it better practice for any disclosures to be produced in line with the framework established by the TCFD**[13].

51. APRA anticipates the demand for reliable and timely climate risk disclosure will increase over time, and **for institutions with international activities there is a need to be prepared to comply with mandatory climate risk disclosures in other jurisdictions.** APRA considers that a prudent institution would continually look to evolve its own disclosure practices, and to regularly review disclosures for comprehensiveness, relevance and clarity, to ensure it is well-prepared to respond to evolving expectations in relation to climate-related disclosures."

Source: APRA (2021), Prudential Practice Guide CPG 229 Climate Change Financial Risks, emphasis own.

[26] GRI Standards Glossary 2022 in the Consolidated Set of the GRI Standards, page 906, https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/

8.2 In 2024, the Corporations Act was amended to introduce climate-related financial disclosure requirements set up by the Australian Accounting Standards Board (AASB). The AASB S1 standard[27] "General Requirements for Disclosure of Sustainability-related Financial Information" is voluntary, whereas the AASB S2 standard[28] "Climate-related Disclosure" applies to large business and financial institutions in Australia. These entities are required to prepare a sustainability report in accordance with the AASB standard, using IFRS S2 as a baseline[29]. The Australian climate-related financial disclosure requirements are based on financial materiality; i.e., they focus on the actual or expected financial impacts of climate-related risks and opportunities.

8.3 In some other jurisdictions, the mandatory requirement to disclose applies more generally across institutions. For example, the external circular issued by the Financial Superintendence of Colombia (FSC, 2021) requires pension fund managing companies to disclose in their investment policy:

(i) organisational structure for investment and risk management, including for ESG and climate risks,

(ii) general description of the risks to which the different portfolios are exposed, including ESG and climate risks,

a. mechanisms to identify, measure, control, and monitor risks, including ESG and climate-related risks,

b. the conditions that alternative investments may accomplish to be eligible for the portfolio, including ESG considerations, and

c. how the integration of ESG and climate-risk factors responds to the objectives of the pension fund portfolios.

8.4 The "Regulation on the Application of Sustainable Finance" (No. 51/POJK.03/2017) issued in 2017 by the Indonesia Financial Services Authority (OJK) requires financial institutions, including pension funds, to implement Sustainable Finance. Institutions must submit their Sustainable Finance Action Plan to the supervisor and such plans need to be disclosed in their Annual Business Plan. The Supervisor will monitor the business plan implementation every six months and comment on the planning execution of Sustainable Finance. The Sustainable Finance Action Plan will describe a short-term (one year) and a long-term (five year) business activity plan, along with a work program that is in consistent with the above Sustainable Finance principles, including strategies for realising the Plan and work program in accordance with the stipulated targets and timelines, with due regard to compliance with prudential provisions and the implementation of risk management[30]. The implementation of Sustainable Finance for pension funds in Indonesia must be based on principles as follows[31]:

a) Responsible Investment

b) Sustainable Business Strategy and Practice

c) Social and Environmental Risk Management

d) Good Governance

---

[27] The description of AASB S1 standard is available at https://standards.aasb.gov.au/aasb-s1-sep-2024

[28] The description of AASB S2 standard is available at https://standards.aasb.gov.au/aasb-s2-sep-2024

[29] Source: https://asic.gov.au/regulatory-resources/sustainability-reporting/historical-development-of-climate-related-financial-disclosures/

[30] Source: Forestsandfinance.org, unofficial translation of the OJK Regulation No. 51/2017, https://forestsandfinance.org/wp-content/uploads/2017/09/POJK-51-Unoffical-English-Translation-2017.pdf

[31] Article 2, point 2 of the OJK Regulation on the Application of Sustainable Finance, https://keuanganberkelanjutan.ojk.go.id/keuanganberkelanjutan/BE/uploads/peraturanuu/files/file_494d7b44-9408-4c17-85c3-549cc2457d5f-16022024231938.pdf (in Indonesian)

e) Informative Communication

f) Inclusivity

g) Priority Leading Sector Development

h) Coordination and Collaboration

8.5 In August 2022, the Mandatory Provident Fund Schemes Authority (MPFA) of Hong Kong, China requested the trustees of the Mandatory Provident Fund Schemes (MPF) to publish an annual governance report (see Box 13) for every MPF scheme. Trustees are required to make assessments of their sustainable investing strategy and implementation progress, and disclose their results in the annual governance report which include[32]:

- Views of the MPF trustee regarding the impact of ESG factors on the value of MPF investment portfolios;
- ESG integration strategy for the scheme formulated by the MPF trustee;
- Description of how the MPF trustee puts the strategy into practice;
- Description of how the board of directors of the MPF trustee monitors the ESG integration progress;
- Description of how ESG factors are factored into relevant investment strategies/policies to demonstrate a clear intent of ESG integration by the investment managers;
- Description of how the identification, assessment, and management of ESG risks are incorporated and established in the investment process of investment managers and backed by evidence and examples;
- Description of the investment managers' policies on engagement activities; and
- Description of how investment managers report their ESG integration.

Box 13 Template of governance report with ESG reporting components: Mandatory Provident Fund Schemes Authority (MPFA), Hong Kong, China

[Name of MPF scheme] Governance Report For the year ended DD MM YYYY	
Table of Content	Page
Section 1: Trustee's governance framework	X
Section 2: Assessment areas:	
(i) Value for money assessment;	X
(ii) Sustainable investing strategy and implementation progress	X
(iii) Other assessment areas [where appropriate]	X
A statement confirming that the Scheme's Governance Report has been endorsed by the trustee's board of directors.	
<u>Section 1: Trustee's Governance Framework</u>	
• A description of the MPF trustee's governance framework put in place to demonstrate that the governance structure is defined, responsibilities are assigned, and a reporting mechanism is established. • Key elements of the trustee's governance framework may include:	

[32] Source: the Mandatory Provident Fund Schemes Authority, Hong Kong, China.

◦ role of its board of directors; ◦ objective and composition of investment governance body (e.g. investment committee); and reporting mechanism.
<u>Section 2: Assessment areas:</u>
(i) <u>Value for Money Assessment</u>
An explanation of the process and considerations of MPF trustee in assessing value for MPF scheme members. • Key considerations in assessing value for MPF scheme members may include: ◦ overall performance of constituent funds (e.g. comparison of expected return vs actual return); ◦ level of fees and other charges; ◦ quality of services provided to MPF scheme members; ◦ range of MPF funds and suitability of MPF products as part of the retirement solutions offered to MPF scheme members; ◦ investment manager selection, ongoing review and monitoring; and ◦ conflict of interest monitoring. • Resulting actions/changes to improve value for MPF scheme members. Review of effectiveness of the recommended actions made in the last assessment.
(ii) <u>Sustainable investing strategy and implementation progress</u>
• A description of the environmental, social, and governance (ESG) integration strategy of the MPF scheme and the implementation progress according to the recommendations set out in the "Principles for Adopting Sustainable Investing in the Investment and Risk Management Processes of MPF Funds". • Key elements may include: ◦ views of MPF trustee regarding the impact of ESG factors on the value of MPF investment portfolios; ◦ ESG integration strategy for the scheme formulated by the MPF trustee; ◦ description of how the MPF trustee puts the strategy into practice; ◦ description of how the board of directors of the MPF trustee monitors the ESG integration progress; ◦ description of how ESG factors are factored into relevant investment strategies/policies to demonstrate a clear intent of ESG integration by the investment managers; ◦ description of how the identification, assessment and management of ESG risks are incorporated and established in the investment process of investment managers and backed by evidence and examples demonstrated to MPF trustees; ◦ description of the investment managers' policies on engagement activities; and ◦ description of how investment managers report their ESG integration.
(iii) <u>Other Assessment Areas [where appropriate]</u>
<u>[A statement from trustee's board of directors (Board) confirming that the Scheme's Governance Report has been endorsed by the Board.]</u>

Source: MPFA (2022), Circular Letter: PR/CTR/2022/002 Initiative to Enhance Transparency of Governance Reporting of MPF Schemes, 3 August 2022, the Mandatory Provident Funds Schemes Authority, https://www.mpfa.org.hk/en/-/media/files/information-centre/legislation-and-regulations/circulars/mpf/20220803/cir-20220803.pdf

8.6 The Rwanda Bankers Association's (RBA) voluntary "ESG Guidelines for Banks" (RBA, 2024) provide a useful template on how entities can report ESG matters (Box 14).

Box 14 ESG reporting template for banks: Rwanda Bank Association

Governance	• Describe the structure and processes in place for board oversight of sustainability-related risks and opportunities.
Management of Sustainability	• Describe how sustainability risks and opportunities are managed by the organisation.
Strategy and Resource Allocation	• Describe the process of assessing the impact of sustainability for the business model, strategy development, targets setting, and financial planning. • Disclose the material impacts of sustainability on the organisation's strategy.
Risk Management	• Describe the processes used to identify, assess, prioritize, and monitor sustainability-related risks and their impact on the risk profile of the bank. • Disclose material impacts of sustainability on the organization's risk profile and management.
Metrics and targets	• Describe the process of identifying and measuring metrics and targets. • Disclose the metrics and targets used to assess and manage material sustainability-related risks and opportunities.
Performance	• Disclose the performance of the organisation on material sustainability issues, in qualitative and quantitative terms, including results relative to targets set during the strategic planning process. • Provide an analysis of trends or significant changes in performance. • Describe the effect of sustainability-related risks and opportunities on the entity's financial position, financial performance, and cash flow.
Material sustainability issues for banks	• Report on the process to identify materiality issues for management, governance, and reporting. • Disclose the specific sustainability risks and opportunities that were identified as material for the organization (using the double materiality concept), including: ○ Sustainability issues in operations and the supply chain (e.g., Environment and climate, employees, customers, ethics); and ○ Sustainability impact in financing activities (e.g., managing sustainability impact in banks' lending and investments portfolio, financing sustainability, and financial inclusion)

Source: RBA (2024), ESG Guidelines for Banks, Rwanda Banks Association (RBA), 26 November 2024, Annex 1 (pages 28-29), https://rba.rw/wp-content/uploads/2024/12/ESG-Guidelines-for-Banks-in-Rwanda-November-26-2024.pdf

8.7 Some examples of metrics related to climate change and their uses are provided by the Actuarial Society of South Africa (ASSA, 2025: 28). The Maldives Sustainability Reporting Framework applicable to financial institutions, envisages an introduction of mandatory and voluntary sustainability reporting metrics (CMDA, 2024: chapter 6)[33] The Framework is mandatory to public companies (listed

[33] A set of 36 indicators will encompass 11 environmental, 12 social, 7 governance and 5 general information metrics. Most of them (29) will be mandatory, whereas other seven will be voluntary, primarily focusing on environmental and governance factors.

on the Maldives Stock Exchange) or any public company that has issued debt instruments. It is voluntary for non-listed companies, state-owned enterprises and private companies[34].

8.8 (Greenwashing) As part of the guidance on disclosure, pension supervisors may consider educating the governance bodies of pension funds on how to avoid disclosing misleading information or how to identify investee companies that may be engaged in such a practice. *Greenwashing*, as defined by the three European Supervisory Authorities (ESAs)[35], is "a practice where sustainability-related statements, declarations, actions, or communications do not clearly and fairly reflect the underlying sustainability profile of an entity, a financial product, or financial services. This practice may be misleading to consumers, investors, or other market participants" (ESMA, 2023a: 11). In the investment context, the International Organization of Securities Commissions (IOSCO) defines "greenwashing" as "the practice of misrepresenting sustainability-related practices or the sustainability-related features of investment products" ((IOSCO, 2021: 11). Similarly, the Australian Securities and Investments Commission (ASIC) defines it as "the practice of misrepresenting the extent to which a financial product or investment strategy is environmentally friendly, sustainable or ethical" (ASIC Information Sheet 271). This practice, according to ASIC, may erode investors' confidence in the market of sustainability-related products and negatively impact the fairness and efficiency of financial systems.

8.9 Pension supervisors might wish to indicate the potential risk of greenwashing in the use of ESG terms in fund names and documents. A recent study by ESMA (2023b) shows that:

1) Fund names that use the ESG terms significantly increased between 2013 and 2022 (from 3% of funds to 14%);
2) There was an increase of broad, more generic ESG terms in the names (as opposed to specific names that focus on one of the letters E, S, or G) which may suggest that some managers might be offering misleading descriptions of the fund portfolios to benefit from the growing interest of investors for ESG products;
3) Some of the existing funds (1 356) have added ESG terms, which may suggest that some managers are using name changes to attract investors who are interested in ESG products (while possibly leaving the underlying investment strategy unchanged);
4) Retail investment funds appear to use more ESG terms in regulatory documents than professional-only funds, whereas this trend does not apply to other types of documents that are not standardised or regulated. This may suggest that some types of investors (retail ones in particular) might be more exposed to greenwashing;
5) ESG terms are more common in documents relating to equity funds and newer funds.

8.10 In 2021, the International Organization of Securities Commissions (IOSCO) issued the "Recommendations on Sustainability Related Practices, Policies, Procedures and Disclosure in Asset Management" (IOSCO, 2021) for securities regulators. IOSCO recommends setting supervisory expectations for financial institutions regarding ESG integration and related disclosure (Recommendation 1), as well as considering or issuing guidance to improve product-level disclosure (Recommendation 2) with a view towards helping investors better understand sustainability-related products and material sustainability-related risks. Industry participants should be encouraged to develop common sustainable finance related terms and definitions (Recommendation 4):

> "Recommendation 2: Product Disclosure. Securities regulators and/or policymakers, as applicable, should consider clarifying and/or expanding on existing regulatory requirements or guidance or, if necessary, creating new regulatory requirements or guidance to improve product-level disclosure in order to help investors better understand: (a) sustainability-related products; and (b) material sustainability-related risks for all products. (…)

[34] Source: the Capital Market Development Authority (CMDA) of Maldives.

[35] I.e., the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA).

> Recommendation 4: Terminology. Securities regulators and/or policymakers, as applicable, should consider encouraging industry participants to develop common sustainable finance related terms and definitions, including relating to ESG approaches, to ensure consistency throughout the global asset management industry."

8.11 The following examples provide guidance issued by pension supervisors or regulators about avoiding greenwashing. The Financial Services Commission (FSC) of Mauritius issued on 10 March 2025 "Disclosure and Reporting Guidelines for ESG Funds" (FSC of Mauritius, 2025)[36]. The guidelines:

- apply to authorised Collective Investment Schemes and Closed-end Funds that use or include ESG factors as their key investment focus and strategy (at least 2/3 of their net assets value is ESG focused at all times);
- do not apply to schemes that use only negative screening or merely incorporate or integrate ESG considerations into their investment process to seek financial returns;
- stipulate proper fund labelling to avoid greenwashing (i.e., funds that are not ESG focused cannot use ESG-related or green-related terms in their names);
- require that the offering document discloses
  - investment objectives (including a description of the ESG focus, such as climate change and carbon emission, sustainability, gender, and diversity), the relevant ESG criteria, methodologies or metrics (e.g. ratings, labels, certifications) that allow for verification of the scheme's compliance with the ESG focus;
  - investment strategy (with a description of the strategy used to achieve the scheme's ESG focus, and how this strategy is implemented in the investment process) and the relevant ESG criteria, metrics or principles considered in the investment selection process (e.g., metrics related to carbon footprint, intensity or emissions);
  - asset allocation (what percent of assets are used to achieve ESG investment objectives and how the remaining assets are invested);
  - reference benchmark (for index funds – details of the benchmarks used and their composition to measure the fund's ESG focus – how the benchmark is relevant to the scheme);
  - risks associated with the scheme's ESG focus and applied investment strategy (e.g. investment concentration risks, limitations of methodology and data, lack of standardised taxonomy, reliance on third-party information);
- require that a fund's sustainability report disclose how the scheme's ESG focus has been met during the reporting period, as compared to previous period(s); the comparison of the performance against the reference benchmark, if any, and actions taken by the scheme to achieve its ESG focus (e.g. stakeholder engagement activities); if applicable, an explanation for failure to meet the ESG focus; and any changes in the methodologies or processes;
- stipulate that the fund must disclose on its website to investors information on how the ESG focus is measured and monitored, how due diligence is carried out in respect to the ESG-related attributes of the scheme's underlying assets, and describe the engagement (including the proxy voting) policies, as well as the sources and processing of ESG data, including any assumptions made where relevant data are not available;
- stipulate that governing body can be assured that the investment scheme is and continues to be managed in line with its constitutive documents; as well as stipulate an on-going monitoring and sanctions with regard to the scheme's board or asset managers;

[36] These guidelines are aligned with recommendation 2 as made by IOSCO (2021). There are available at https://www.fscmauritius.org/media/198694/disclosure-and-reporting-guidelines-for-esg-funds.pdf

- require that an investment scheme ensures it has adequate resources for the implementation and/or oversight of ESG investment;
- stipulate that the offering document has third-party certification or a self-certification to confirm that the investment objective and strategy are aligned with the United Nations Sustainable Development Goals (UN SDGs), requiring that, in the event of any changes in the scheme's investment objective, the scheme provides evidence of the alignment of the new investment objective and strategy with such Goals;
- require that a fund's sustainability report is accompanied by independent third-party certification, confirming that any investments made are compliant with the scheme's offering document;
- identify who serves as an independent external reviewer or certifier.

8.12 In 2023, the Chilean Ministry of Finance developed a preliminary project "Structure of the Taxonomy of Environmentally Sustainable Economic Activities for Chile" (T-MAS) (Ministerio de Hacienda, 2024)[37], which consolidates the work done since 2021 with the collaboration of the Central Bank, the Financial Market Commission (CMF), the Superintendence of Pensions and the Ministry of Environment, based on the best practices of international experience.

8.13 It is also important to note that some pension funds may be hesitant to integrate ESG-related assets into their disclosure practices to avoid the risk of greenwashing litigation[38]. This behaviour is sometimes termed "*greenhushing*"; i.e., a situation whereby an organisation deliberately underreports their sustainable practices[39].

Guideline 9

Supervisory authorities should require that, in their investment policy statement, a governing body or the asset managers of a pension fund disclose to members and stakeholders information about the pension fund's investment policies in relation to long-term sustainability, including ESG factors, stewardship and non-financial factors. Where appropriate, pension funds should also regularly provide reports on their engagement with investees as well as request companies in which they invest to disclose their ESG-related policies.

Explanatory notes

9.1 (Example of communication/guidance on related disclosure) Regulation 28 under the Pension Funds Act (1956) in South Africa, requires all pension funds to have an investment policy statement (art. 28(2)(b)) and boards of pension funds to consider ESG factors before investing and when invested in an asset (art. 28(2)(c)(ix). The Guidance Notice 1 on Sustainability of Investments and Assets in the Context of a Retirement Fund's Investment Policy Statement expects that, to meet requirements of Regulation 28 of Financial Sector Regulation Act 2017, a pension fund should (FSCA, 2019: 4):

---

[37] https://cms.hacienda.cl/ciudadana/assets/documento/descargar/df6620edf2776/1735646399 (draft project for 2025 public consultation)

[38] For example, ASIC issued infringement notices to two RSELs (Divers Trustees Ltd and Mercer Superannuation (Australia) Ltd) for greenwashing. This resulted in other pension funds removing various public documents and reports relating to ESG (information from APRA, 19 July 2023).

[39] Another behaviour, the deliberate underplaying of sustainability investments to avoid the risk of additional scrutiny is termed "*green bleaching*". Source: "Greenwashing to greenhushing - key takeaways", 26 July 2023, https://blog.macfarlanes.com/post/102ikax/greenwashing-to-greenhushing-key-takeaways

"(…) reflect in its investment policy statement how its general investment philosophy and objectives seeks to ensure the sustainability of its assets[40], including (but not limited to) the following: (…)

(c) how the fund intends to monitor and evaluate the ongoing sustainability of the asset which it owns and which it is indenting to acquire, including the extent to which ESG factors have been considered by the fund, and the potential impact thereof on the assets of the fund; and

(d) its active ownership policy"

9.2. In line with the above note, if a pension fund holds assets that "limit the application of ESG factors, sustainability criteria or the full application of an active ownership policy", it should explain in its investment policy statement why such "limitation is to the advantage of both the pension fund and its membership" (FSCA, 2019, art 4.2).

9.3. The UK General Code of Practice requires that governing bodies should include in their statement of investment principles (SIP): "their policies in relation to financially material ESG considerations, and how they are taken into account in the selection, retention and realisation of investments" (TPR, 2024: 81). This requirement relates also to the SIP describing default arrangements. Governing bodies must also include in the SIP their policies with regard to how they take into account non-financial matters, including the views of members and beneficiaries on non-financial and on ESG matters (TPR, 2024: 81)

9.4. As an example, in its Sustainability Investment Policy, the Japanese Government Pension Investment Fund (GPIF) notes that (GPIF, 2025:1, emphasis own):

"(…) to earn stable income over a long period of time, the longtime growth of the corporate value of individual companies, which leads to the sustainable and stable growth of capital markets and the overall economy, is crucial. In addition, capital markets are not free from sustainability-related risks, such as environmental and social issues in the long run. Therefore, **reducing the negative impacts of sustainability-related issues on capital markets is essential for a universal owner like GPIF to pursue long-term investment returns**".

The Policy informs about the purpose of the management of GPIF pension reserves and GPIF perception of sustainability-related risks (GPIF, 2025: 2, emphasis own):

"GPIF manages assets in accordance with the purposes of the Employees' Pension Insurance Act and of the National Pension Act, which state that '(the management of pension reserves) is to be undertaken with the purpose of contributing to the sound management of employees' pension insurance services for years to come, and is to be undertaken safely, efficiently, from a long-term perspective, and for the sole benefit of insureds covered under employees' pension insurance.' **GPIF regards the reduction of sustainability-related risks and the creation of impact related to sustainability as an essential factor in achieving long-term performance of the entire portfolio.** It should be noted, however, that GPIF does not make investments solely for the purpose of creating impact, which would deviate from the purpose of providing for the 'sole benefit of insureds.'

[40] According to the quoted Guidance Notice, *sustainability* is "the ability of an entity to conduct its business in a manner that primarily meets existing needs without compromising the ability of future generations to meet their needs." whereas *sustainability of an asset* depends on the long-term sustainability of the entity that creates its underlying value (FSCA, 2019, page 3).

IV. Scenario testing of investment strategies

Guideline 10

Supervisory authorities should encourage a governing body or the asset managers of a pension fund to develop appropriate scenario testing of its investment strategy. Such tests should consider all substantial financial factors, including ESG factors. The scope and complexity of stress tests should be subject to the principle of proportionality.

Explanatory notes

10.1 Scenario testing that considers all substantial financial factors should help governing bodies of a pension fund or its asset managers to confirm whether a particular investment strategy is appropriate. The pension supervisory authority may consider setting some requirements for investment stress testing (see Box 15). Similar to the approach taken by APRA (2023a), pension supervisory authorities may specify that, as a minimum, such scenarios "must cover a range of factors that can create extraordinary losses or make the control of risk within an accepted tolerance range in the investment strategy difficult"

Box 15 Requirements for investment stress testing programme: Australian Prudential Regulation Authority (APRA)

- Stress testing programme must be approved by the governing body and integrated into the investment governance framework
- Adverse stress scenarios must be developed for each investment option
- Stress testing programme must
  - be taken before the implementation of the investment strategy
  - ensure scenarios used remain appropriate on at least an annual basis
  - assess the performance of each investment option based on the actual asset allocation on at least an annual basis
- Stress testing programme must include at a minimum
  - clearly articulated objectives, methodology, assumptions, frequency, risk factors, the rationale for scenarios used
  - the roles and responsibilities of individuals involved in the design, implementation, review, reporting and oversight of investment stress testing, including the role of the governing bodies and relevant committees and senior management
  - investment stress testing output or metrics related to performance of each investment option under the adverse stress scenarios
  - process for the regular review of stress testing methodology and assumptions
  - circumstances that might lead to ad hoc investment stress testing, including triggers to indicate when ad hoc investment stress testing would be undertaken
- A process exists for ensuring that relevant and reliable data are used in investment stress testing

Source: APRA (2023a), Prudential Standard SPS 530 Investment Governance, Australian Prudential Regulation Authority, January 2023, Australian Prudential Authority, SPS 530 arts. 30-33, pages 7-8.

Note: specific guidance on these requirements is provided in APRA (2023b, par. 76-82).

10.2 Pension supervisors may also consider providing guidance on how to proceed with scenario analysis – c.f. guides for central banks (NGFS 2024b; ECB 2020: 42-43), asset management companies (AMF, 2017), insurance (IAIS, 2025: chapter 11), pension funds (APRA 2023b; DNB 2023, Box 16 below). EIOPA (2022) provides some guidance on stress testing of climate change components by insurers.

10.3 (Climate scenarios) Developing climate scenarios and drawing conclusions from them can be more complex than in the case of analysing standard risks. Traditional risk approaches are calibrated on backward-looking data, but this approach is not sufficient to forecast the impact of climate change, as global temperature increases have not yet surpassed critical levels (NGFS, 2024a: 3). There can be significant trade-offs between adopting a long-term perspective to fully capture climate change impacts and the growing uncertainty over time. Conversely, financial risks may require shorter horizons. From this standpoint, most – if not all – climate scenarios should be viewed not as forecasts but as possible pathways shaped by specific assumptions. Additionally, climate scenarios may involve substantial tail risks owing to the potential catastrophic effects of climate change, if critical tipping points are crossed. They might also overlook nature-related risks. (c.f. NGFS, 2024a: 4).

Box 16 Focal points for preparing and conducting climate scenario analysis: De Nederlandsche Bank

Stage 1: Define goal

- **Understanding** long-term risks to the business model or short-term financial risk.
- **Input** for risk management or strategic policy discussions.

Stage 2: Choose scenarios

- **Type** (dependent on purpose): qualitative or quantitative trend, exploratory or stress
- **Number:** two or more, including 1.5-degree temperature rise

Stage 3: Assumptions, measure and parameters

- **Assumptions:** internal or aligned with recognised third parties (NGS, KNMI, et al.).
- **Measure:** choice of emissions, temperature rise.
- **Parameters:** type of transition (orderly and timely, disorderly or no transition).

Stage 4: Time horizon

- **Short** (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.

Stage 5: Method and procedure

- **Method:** calculation model or storyline behind the scenarios.
- **Procedure:** include stakeholder engagement, workshops with experts.

Source: DNB (2023), Guide to managing climate and environmental risks, De Nederlandsche Bank, Box 3, https://www.dnb.nl/media/devh2uet/76226_dnb_ia_klimaat-en-milieurisico-s-sectoren-2023_eng_web.pdf,

Note: KNMI stands for Royal Netherlands Meteorological Institute, which provides weather and climate models.

10.4 (Purposes of climate scenarios) According to the NGFS (2024a: 7), financial companies develop climate scenarios primarily to meet regulatory requirements, but they may also use them for i) risk identification, ii) financial risk assessment or, in some cases, iii) evaluating how their portfolio aligns with a specific temperature pathway. Financial authorities use climate scenarios most often to i) assess climate risks to financial stability, ii) develop internal scenario analysis capabilities, iii) assess climate impacts on individual financial firms, iv) facilitate dialogue with industry on climate-related financial vulnerabilities (NGFS, 2024a: 6).

10.5 (Providers of climate scenarios) Apart from the NGFS's climate change scenarios, pension funds and pension supervisors might also consider the ones developed by the Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA). Pension supervisors should emphasise that any predefined scenario might need to be adapted by the users to their particular circumstances and the situation of the jurisdiction(s) in which they operate. For example, the following climate scenario elements might need to be further calibrated (NGFS, 2024a: 8, Table 1): i) tipping points (by extending time horizon of the analysis), ii) physical impacts of climate change, iii) societal impact of climate change (including violent conflicts and mass migration), iv) compound risk (from various climate risks occurring simultaneously or sequentially), v) damage function (i.e. calibration of physical damages), vi) technological assumptions (on technological progress and clean energy deployments, potential future carbon capture mechanisms), vii) government policy change, viii) financial sector (potential impact of capital availability or credit crunches).

References

AMF (2017), The use of stress tests as part of risk management. Guide for asset management companies, Autorité des marches financiers, February 2017, https://www.amf-france.org/en/news-publications/publications/professional-guides/guide-use-stress-tests-part-risk-management-within-asset-management-companies

APRA (2023a), Prudential Standard SPS 530 Investment Governance, Australian Prudential Regulation Authority, January 2023, https://www.apra.gov.au/sites/default/files/2022-07/Prudential%20Standard%20SPS%20530%20Investment%20Governance.pdf

APRA (2023b), Prudential Practice Guide SPG 530 Investment Governance, integrated version, Australian Prudential Regulation Authority, July 2023, https://www.apra.gov.au/sites/default/files/2023-07/Prudential%20Practice%20Guide%20SPG%20530%20Investment%20Governance%20Integrated%20version.pdf

APRA (2021), Prudential Practice Guide CPG 229 Climate Change Financial Risks, Australian Prudential Regulation Authority, November 2021, https://www.apra.gov.au/sites/default/files/2021-11/Final%20Prudential%20Practice%20Guide%20CPG%20229%20Climate%20Change%20Financial%20Risks.pdf

ASSA (2025) Climate Change Toolkit for Retirement Fund Actuaries, January 2025, Actuarial Society of South Africa, https://www.actuarialsociety.org.za/download/climate-change-guidance-for-retirement-fund-actuaries/

BaFin (2020), Guidance Notice on Dealing with Sustainability Risks, Federal Financial Supervisory Authority (BaFin), January 2020, https://www.bafin.de/ref/19593916

Batseta (undated), The Responsible Investment and Ownership (RIO) Guide, online guide, The Council of Retirement Funds for South Africa, https://rioguide.batseta.org.za/

CAPSA (2024), Guideline No. 10. Guideline for Risk Management for Plan Administrators, Canadian Association of Pension Supervisory Authorities, 9 September 2024, https://www.capsa-acor.org/Documents/View/2101

Commonwealth of Australia (2023), Financial Accountability Regime Act No. 67, 20 October 2023, https://www.legislation.gov.au/C2023A00067/latest/text

CONSAR (2019), *Circular Única Financiera*. Disposiciones de carácter general en materia financiera de los sistemas de ahorro para el retiro (General provisions on financial matters of the pension system. Financial circular by the National Commission of the Retirement Savings System), 18 August 2019 (with further updates, including on ESG from 27 September 2022), https://www.gob.mx/cms/uploads/attachment/file/775164/CUF_COMPILADA__20221108_104700.pdf

CMDA (2024), Maldives sustainability reporting framework, Capital Market Development Authority, October 2024, https://cmda.gov.mv/storage/uploads/QoQQQ1ov/hqr955hx.pdf

DOL (2022), Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights, Final Rule, Department of Labor, US, https://www.govinfo.gov/content/pkg/FR-2022-12-01/pdf/2022-25783.pdf

DNB (2023), Guide to managing climate and environmental risks, De Nederlandsche Bank, March 2023, https://www.dnb.nl/media/devh2uet/76226_dnb_ia_klimaat-en-milieurisico-s-sectoren-2023_eng_web.pdf

DFS (2023), Guidance for New York State Regulated Banking and Mortgage Organizations Relating to Management of Material Financial and Operational Risks from Climate Change, 21 December 2023, the New York State Department of Financial Services, https://www.dfs.ny.gov/industry_guidance/-climate_change/guidance_banking_mortgage_orgs_202312

DWP (2021), Governance and reporting of climate change risk: guidance for trustees of occupational schemes, Department for Work & Pensions, the UK, June 2021, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1006024/statutory-guidance-final-revised.pdf

EBA (2021), EBA report on management and supervision of ESG risks for credit institutions and investment firms, European Banking Authority, EBA.REP/2021/18, https://www.eba.europa.eu/sites/default/documents/files/document_library/Publications/Reports/2021/1015656/EBA%20Report%20on%20ESG%20risks%20management%20and%20supervision.pdf

EC (2019), Guidelines on reporting climate-related information, European Commission, https://ec.europa.eu/finance/docs/policy/190618-climate-related-information-reporting-guidelines_en.pdf

ECB (2022), Good practices for climate-related and environmental risk management. Observations from the 2022 thematic review, European Central Bank, November 2022, https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.thematicreviewcercompendiumgoodpractices112022~b474fb8ed0.en.pdf

ECB (2020), Guide on climate-related and environmental risks. Supervisory expectations relating to risk management and disclosure European Central Bank, November 2020, https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.en.pdf

EFRAG & IFRS (2024), ESRS-ISSB Standards Interoperability Guidance, European Financial Reporting Advisory Group and International Financial Reporting Standards Foundation, May 2024, https://www.ifrs.org/content/dam/ifrs/supporting-implementation/issb-standards/esrs-issb-standards-interoperability-guidance.pdf

EIOPA (2022), Methodological principles of insurance stress testing – climate change component, EIOPA-BOS-21/579, 27 January 2022, https://www.eiopa.europa.eu/document/download/d244041a-8e2a-4363-ad48-2a4912f732e9_en?filename=Methodological%20Principles%20of%20Insurance%20Stress%20Testing%20-%20climate%20change%20component.pdf

EU (2020), Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (the "Taxonomy Regulation"), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32020R0852

ESMA (2023a), Progress Report on Greenwashing. Response to the European Commission's request for input on "greenwashing risks and the supervision of sustainable finance policies, European Securities and Markets Authority , ESMA30-1668416927-2498, 31 May 2023, https://www.esma.europa.eu/sites/default/files/2023-06/ESMA30-1668416927-2498_Progress_Report_ESMA_response_to_COM_RfI_on_greenwashing_risks.pdf

ESMA (2023b), ESG names and claims in the EU fund industry, ESMA50-524821-2931, European Securities and Markets Authority , 2 October 2023, https://www.esma.europa.eu/sites/default/files/2023-10/ESMA50-524821-2931_ESG_names_and_claims_in_the_EU_fund_industry.pdf

FCA (2023), Consultation Paper CP23/20: Diversity and inclusion in the financial sector – working together to drive change, September 2023, Financial Conduct Authority, https://www.fca.org.uk/publications/consultation-papers/cp23-20-diversity-inclusion-financial-sector-working-together-drive-change

FRC (2024), UK Stewardship Code Consultation, The Financial Reporting Council Limited, November 2024, https://media.frc.org.uk/documents/Stewardship_Code_Consultation_2024_FsOfVwb.pdf

FMA (2022), FMA's Report on the state of Austrian pension funds (in German), Austria Financial Market Authority, https://www.fma.gv.at/en/pensionskassen/disclosure/the-state-of-austrian-pensionskassen/

FMA (2025), (updated) FMA guide for managing sustainability risks (in German), Austria Financial Market Authority, https://www.fma.gv.at/wp-content/plugins/dw-fma/download.php?d=7275&nonce=cfe935c2493d74b4

FSC (2020), Mejores prácticas para la gestión de inversiones de las administradoras del sistema general de pensiones (Best practices for the management of investments of the administrators of the general pension system), Financial Superintendence of Colombia, 4 November 2020 (updated 31 May 2021) https://www.superfinanciera.gov.co/loader.php?lServicio=Tools2&lTipo=descargas&lFuncion=descargar&idFile=1049063

FSC (2021), External Circular 007/2021, Instructions related to the investment processes of the mandatory pension funds, and of the reserves of the insurance companies (in Spanish), 26 April 2021, Financial Superintendence of Colombia, https://www.superfinanciera.gov.co/loader.php?lServicio=Tools2&lTipo=descargas&lFuncion=descargar&idFile=1052296

FSC of Mauritius (2025), Disclosure and reporting guidelines for ESG funds, Financial Services Commission of Mauritius, 10 March 2025, https://www.fscmauritius.org/media/198694/disclosure-and-reporting-guidelines-for-esg-funds.pdf

FSCA (2019), Guidance Notice 1: Sustainability of Investments and Assets in the Context of a Retirement Fund's Investment Policy Statement, Financial Sector Conduct Authority, 14 June 2019, https://www.fsca.co.za/Regulatory%20Frameworks/Guidance%20Notes/Sustainability%20of%20investments%20and%20assets%20(retirement%20fund).zip

GPIF (2025), Sustainability Investment Policy, Government Pension Investment Fund (GPIF), Japan, 31 March 2025, https://www.gpif.go.jp/en/investment/26487392gpif/sustainablity_investment_policy_en.pdf

IAIS (2025), Application Paper on the supervision of climate-related risks in the insurance sector, International Association of Insurance Supervisors, April 2025, https://www.iais.org/uploads/2025/04/Application-Paper-on-the-supervision-of-climate-related-risks-in-the-insurance-sector.pdf

IFRS (2020), Consultation Paper on Sustainability Reporting, The International Financial Reporting Standards Foundation, https://www.ifrs.org/content/dam/ifrs/project/sustainability-reporting/consultation-paper-on-sustainability-reporting.pdf

IOPS (2019), Supervisory guidelines on the integration of ESG factors in the investment and risk management of pension funds, International Organisation of Pension Supervisors, http://www.iopsweb.org/IOPS-Supervisory-guidelines-integration-ESG-factors.pdf

IOSCO (2021), Recommendations on Sustainability-Related Practices, Policies, Procedures and Disclosure in Asset Management, November 2021, International Organization of Securities Commission, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD688.pdf

Ministerio de Hacienda (2024), Anteproyecto. Sistema de Clasificación o Taxonomía de Actividades Económicas Medioambientalmente Sostenibles de Chile (T-MAS) (Preliminary Draft. Classification System or Taxonomy of Environmentally Sustainable Economic Activities in Chile (T-MAS)), December 2024, Ministry of Finance, Chile, https://cms.hacienda.cl/ciudadana/assets/documento/descargar/df6620edf2776/1735646399

MPFA (2022), Circular Letter: PR/CTR/2022/002 Initiative to Enhance Transparency of Governance Reporting of MPF Schemes, 3 August 2022, Mandatory Provident Funds Schemes Authority, https://www.mpfa.org.hk/en/-/media/files/information-centre/legislation-and-regulations/circulars/mpf/20220803/cir-20220803.pdf

MPFA (2021), Principles for Adopting Sustainable Investing in the Investment and Risk Management Processes of MPF Funds, Mandatory Provident Fund Schemes Authority, Hong Kong, China, https://www.mpfa.org.hk/-/media/files/information-centre/legislation-and-regulations/circulars/mpf/20211126/cir-20211126.pdf

NGFS (2024a), NGFS scenarios: Purpose, use cases and guidance on where institutional adaptations are required. An explanatory note, Network for Greening the Financial System, January 2024, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guidance_note_on_the_scenarios.pdf

NGFS (2024b), NGFS: Transition Plan Package, Network for Greening the Financial System, April 2024, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_transition_plan_package.pdf

NGFS (2023a), Stocktake on Financial Institutions’ Transition Plans and their Relevance to Micro-prudential Authorities, Network for Greening the Financial System, May 2023, https://www.ngfs.net/en/stocktake-financial-institutions-transition-plans-and-their-relevance-micro-prudential-authorities

NGFS (2023b), Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors, Network for Greening the Financial System, September 2023, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_conceptual-framework-on-nature-related-risks.pdf

NGFS (2020a), Guide for Supervisors Integrating climate-related and environmental risks into prudential supervision, Network for Greening the Financial System, May 2020 https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guide_for_supervisors.pdf

NGFS (2020b), Guide to climate scenario analysis for central banks and supervisors, Network for Greening the Financial System, June 2020, https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guide_scenario_analysis_final.pdf

OECD (2018), The OECD Due Diligence Guidance for Responsible Business Conduct, http://mneguidelines.oecd.org/OECD-Due-Diligence-Guidance-for-Responsible-Business-Conduct.pdf

OECD (2017), Responsible business conduct for institutional investors. Key Considerations for Due Diligence under the OECD Guidelines for Multinational Enterprises, https://mneguidelines.oecd.org/RBC-for-Institutional-Investors.pdf

OECD (2011), OECD Guidelines for Multinational Enterprises: Responsible Business Conduct Matters, http://mneguidelines.oecd.org/MNEguidelines_RBCmatters.pdf

PFRDA (2018), Common Stewardship Code, Pension Fund Regulatory and Development Authority, May 2018, https://www.pfrda.org.in/writereaddata/links/circular-%20common%20stewardship%20code%2004-05-186ec9a3b4-566b-4881-b879-c5bf0b9e448a.pdf

PRA (2019), Enhancing banks' and insurers' approaches to managing the financial risk from climate change, April 2019, Prudential Regulation Authority, the Bank of England, Supervisory Statement SS3/19, https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/supervisory-statement/2019/ss319

PREVIC (2019), Guia Previc de Melhores Práticas em Investimentos na previdência complementar fechada (PREVIC's Guide to Best Practices in Investments in Closed Supplementary Pension Funds), Brazilian Pension Funds Authority (PREVIC), September 2019, https://www.gov.br/previc/pt-br/publicacoes/guias-de-melhores-praticas/novo-guia-previc-melhores-praticas-de-investimentos.pdf/@@download/file

RBA (2018), Legal Notice 193: Good Governance Practices in the Management of Retirement Benefits Schemes, Guidelines, 2018, Retirement Benefits Authority, Kenya, http://kenyalaw.org/kl/fileadmin/pdfdownloads/LegalNotices/2018/LN193_2018.pdf

SBS (2021), Resolution S.B.S.N. 1657-2021, 3 June 2021, Superintendence of Banking, Insurance and Pension Funds Administrators of Peru, https://intranet2.sbs.gob.pe/dv_int_cn/2084/v1.0/Adjuntos/1657-2021.R.pdf

SP (2020), Norma de Caracter General N° 276, 23 November 2020, Superintendence of Pensions (SP), Chile, https://www.spensiones.cl/apps/GetFile.php?id=003&namefile=NCG-SP/NP0000276.pdf

TCFD (2017), Recommendations of the Task Force on Climate-related Financial Disclosures, final report June 2017, Task Force on Climate-Related Financial Disclosures, https://www.fsb-tcfd.org/recommendations/

The Pensions Act (1990), Republic of Ireland, consolidated version: https://pensionsauthority.ie/wp-content/uploads/2023/07/the_pensions_act_1990_as_amended_no_25_13_june_2023.pdf

TPR (2024), General Code of Practice, The Pensions Regulator, UK, March 2024, https://www.thepensionsregulator.gov.uk/en/document-library/code-of-practice

TPR (2022), Appendix to Governance and reporting of climate-related risks and opportunities, The Pensions Regulator, UK, 23 February 2022, https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/climate-related-governance-and-reporting/appendix-a-step-by-step-example

TPR (2021), Governance and reporting of climate-related risks and opportunities, The Pensions Regulator, UK, December 2021, https://www.thepensionsregulator.gov.uk/en/document-library/scheme-management-detailed-guidance/funding-and-investment-detailed-guidance/climate-related-governance-and-reporting

RBA (2024), ESG Guidelines for Banks, Rwanda Banks Association, 26 November 2024, https://rba.rw/wp-content/uploads/2024/12/ESG-Guidelines-for-Banks-in-Rwanda-November-26-2024.pdf

Republic of South Africa (2017), Financial Sector Regulation Act 2017, Act No. 9, Government Gazette, Vol. 626, No. 41060, https://www.gov.za/sites/default/files/gcis_document/201708/4106022-8act9of2017finansectorregulationa.pdf

UN (2011), Guiding principles on business and human rights, the United Nations, https://www.ohchr.org/sites/default/files/documents/publications/guidingprinciplesbusinesshr_en.pdf

World Bank (2020), Sustainable Investment: Best Practice Disclosure Checklist for Pension Funds, https://documents1.worldbank.org/curated/en/485741587445830636/pdf/Sustainable-Investment-Best-Practice-Disclosure-Checklist-for-Pension-Funds.pdf