Application Paper on the supervision of climate-related risks in the insurance sector

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This document is available on the IAIS website (www.iais.org).

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Executive summary

Climate change and climate-related risks are a source of financial risk that can impact the resilience of individual insurers, as well as financial stability. It is therefore critical for insurance supervisors to strengthen their understanding of the type and magnitude of climate-related risks and the insurance sector's exposure to effectively identify, monitor and incorporate climate-related risk considerations in their supervisory responsibilities.

This Application Paper aims to support supervisors in their efforts to integrate climate-related risks in their supervision of the insurance sector. This paper also aims to promote a globally consistent approach to addressing climate-related risks.

This paper provides supporting material relevant to a range of IAIS Insurance Core Principles (ICPs).[1] It discusses the following key topics relevant for the supervision of climate-related risks:

- Qualitative and quantitative considerations related to insurers' corporate governance, risk management, valuation and investments;
- Supervisory reporting and public disclosure;
- Supervisory issues related to group supervision and macroprudential supervision;
- Scenario analysis; and
- Market conduct-related issues.

The paper makes the following key recommendations related to these topics:[2]

Qualitative and quantitative considerations

ICP 7 (Corporate governance)

- Given that climate risk is an evolving risk area, the relevant roles and responsibilities assigned to the board, senior management and control functions should continue to adapt. This includes the need to have greater clarity on information and reporting needs (quantitative and qualitative), resourcing, skill sets and budgets.
- There should be an appropriate understanding of, and opportunity to discuss, climate-related risks at the board and board committee levels.
- Insurers should incorporate and assess climate-related risks as part of their annual financial planning as well as the long- and short-term strategic planning processes. Insurers should also ensure that the impact of climate change is well-represented in existing risk categories.
- The board should have a role in maintaining effective oversight of climate-related risk management, including incorporating climate-related considerations into the insurer's risk appetite, strategies and business plans.

[1] The IAIS ICPs form the globally accepted framework for insurance supervision.

[2] In line with the objective of Application Papers (see page 2), these recommendations offer practical guidance and examples on how the IAIS ICPs may be implemented rather than introduce new requirements.

ICP 8 (Risk management and internal controls)

- When addressing climate-related risks, insurers should integrate these risks into the overall corporate governance framework, including their risk management and internal controls.
- In performing their duties, control functions should properly consider the impact of climate-related risks on the existing risk categories and have the appropriate resources and expertise to support that analysis.
- In order to identify, monitor, assess and manage climate-related risks, as well as their interaction with other identified risks, insurers should develop tools to collect reliable quantitative and qualitative data.

ICP 16 (Enterprise risk management for solvency purposes)

- Insurers should consider the potential impact and materiality of climate-related risks when assessing the existing risk categories.
- When material, supervisors should expect insurers to identify the relevant climate-related risks inherent in their business portfolios, assess the implications to their underwriting strategy, and develop policies and procedures to integrate the management of these risks within their enterprise risk management (ERM) framework. Their risk appetite statement should similarly reflect these risks.
- Insurers should consider including in their risk policy a description of how they monitor and manage material climate-related risks, in line with their risk appetite statement.
- Supervisors should expect insurers to consider all material physical and transition risks arising from climate change in their Own Risk and Solvency Assessment (ORSA) process and adopt the appropriate risk management actions to mitigate the identified risks accordingly.

ICP 14 (Valuation)

- It is important that insurers consider climate-related risk drivers in both asset valuations and when estimating the value of liabilities, as these risk drivers have the potential to impact valuations of the assets and liabilities of insurers.
- Supervisors should review insurers' valuation methodologies to determine whether known and reliably estimable information, including the impacts of climate risk on their investments, have been considered.
- Supervisors should review the sources of information used by insurers in their valuations.

ICP 15 (Investments)

- When establishing regulatory investment requirements on the investment activities of the insurer, the supervisor may consider the potential impact of climate change on the insurer's investments.
- It is important that insurers invest in assets in such a way that their portfolio as a whole considers the impact of their investments on the climate ("outward perspective"). It is also important that insurers consider their policyholders' preferences in relation to climate change considerations, where relevant.
- Insurers should consider climate-related risks as part of their asset-liability management (ALM), especially when liabilities have a long duration.

- Supervisors should assess how insurers take climate-related risks into account when identifying, assessing, monitoring, managing, controlling and reporting risks arising from their investments.

Supervisory reporting and public disclosure

ICP 9 (Supervisory review and reporting)

- Climate-related risk should be fully integrated into supervisory reporting where material, and supervisors should clarify how these risks will be monitored on an ongoing basis as well as the process for discussing findings from supervisory reporting.
- Supervisors should take a holistic view of what information needs to be disclosed to market participants and policyholders in public disclosure, and what information needs to be reported in supervisory reporting.

ICP 20 (Public disclosure)

- Supervisors should require that climate-related risks are effectively captured in public disclosure requirements, where material.
- Insurers should ensure connectivity between the information presented in their financial statements and their climate disclosures so that users can understand how climate-related risks can have an impact on insurers' business activities, risks, performance and financial position.
- Climate disclosures should include appropriate indicators (or metrics) that are relevant and meaningful for market participants and policyholders.
- Supervisors should consider revising expectations or providing guidance to clarify how material climate-related risk exposures should be disclosed to meet the ICP 20 requirements, as with any other material risk. Supervisors could choose to consider internationally agreed climate disclosure frameworks, such as the International Sustainability Standards Board, or frameworks developed by jurisdictional standard setters.

Issues related to group supervision and macroprudential supervision

ICP 25 (Supervisory cooperation and coordination)

- Supervisory colleges should consider including in their agenda and supervisory plan a discussion on climate-related risks, including how such risks may impact group-wide corporate governance frameworks, ERM, main risks, financial position, and regulatory capital adequacy and compliance with supervisory requirements.
- When defining climate-related data collection requests that affect insurance groups active in multiple jurisdictions, supervisors should consider coordinating with other involved supervisors and regional or global insurance standard setters.

ICP 24 (Macroprudential supervision)

- Supervisors should implement appropriate policies and processes to collect regular and systematic climate-related information from insurers, including both quantitative and qualitative data. Supervisors may also use data and analysis from other external sources, such as

jurisdictional statistics and academic research. Supervisors should first make use of the data sets that are available and consider the costs and benefits of obtaining additional data.

- Supervisors should establish an approach to aggregate, analyse and present available climate data to facilitate the monitoring of climate-related vulnerabilities and macroeconomic instability.
- Climate-related systemic risk could evolve over time, and supervisory responses therefore should be tailored to prevailing circumstances. Supervisors should also have the necessary flexibility to tailor their supervisory responses to the nature, scale and complexity of their insurance sector exposures and activities.

Scenario analysis

(Addressing ICPs 16 and 24 - related considerations)

- Given the complex nature of climate change, historical trends of climate risk drivers will not reliably predict their future trajectories; hence, it is important to assess the potential impact through scenario analysis and stress testing. It is important for supervisors to clearly define the objectives of such an exercise from the onset. The objectives of the exercise will depend on the supervisory mandate and may vary according to microprudential, macroprudential and/or market conduct considerations.
- Supervisors may include climate risk considerations through climate-related scenario analysis exercises as part of their quantitative analyses, considering both inward and outward risks. The output may help supervisors assess the impact and trends of climate-related risks on assets and liabilities, ultimately informing the overall assessment of the insurers' potential systemic importance.
- Supervisors should consider the extent to which climate risk is integrated into the insurer's ERM framework. The outcome of the scenario analysis may help define the resilience of the business strategy of the insurer, providing insights into material exposures and business risks as well as testing the robustness and adequacy of its solvency position.
- Given the systemic nature of climate risk, it is important for the climate risk scenario analysis used in ORSA to extend beyond typical business planning cycles of three to five years and take into account medium- and longer-term risk perspectives.

Market conduct related issues

ICP 19 (Conduct of business)

Greenwashing-related recommendations

- In their efforts to prevent greenwashing, supervisors may promote the development of common criteria to determine whether a product has sustainable features.
- Supervisors may review whether there is a risk of greenwashing throughout an insurer's product design process. For instance, supervisors should periodically assess whether insurers have adequate monitoring arrangements in place to ensure that a product, throughout its life cycle, remains aligned with its initial sustainability-related objectives.

- Supervisors should require that any advertising on the environmentally and socially friendly business operations is clear, fair and not misleading. Such representations should be precise, substantiated and accurately reflect the entities' sustainability practices to mitigate the risk of greenwashing.

Natural catastrophe (NatCat) related recommendations

- All communication materials related to NatCat coverage and exclusions should be presented and formulated in a clear and comprehensive manner.
- Supervisors should require that pricing is adequate, non-discriminatory and properly communicated to consumers. Supervisors should also require, without undue interference in commercial pricing practices, that pricing of NatCat products reflect adequate risk-based technical models, including in relation to the increasing frequency and intensity of NatCat events.
- Insurers should examine their claims handling operations and consider whether a demand surge plan or a permanent structural shift in their resourcing, systems and practices is required to ensure adequate and timely claims handling in the event of a major NatCat event.

ICP 21 (Countering fraud in insurance)

- To mitigate the risk of greenwashing leading to severe misconduct or even fraud, supervisors should remain mindful of the general reach and provisions of ICP 21 and the fraud frameworks within their own jurisdiction. Where relevant, supervisors should appropriately apply fraud-related enforcement actions in line with their jurisdiction's laws.

Acronyms

A2ii	Access to Insurance Initiative
ACPR	Autorité de Contrôle Prudentiel et de Résolution
ALM	Asset-liability management
BMA	Bermuda Monetary Authority
CCIR	Canadian Council of Insurance Regulators
ComFrame	Common Framework for the Supervision of Internationally Active Insurance Groups
DNB	De Nederlandsche Bank (Dutch Central Bank)
EIOPA	European Insurance and Occupational Pensions Authority
ERM	Enterprise risk management
ESG	Environmental, social and governance
EU	European Union
FSB	Financial Stability Board
GHG	Greenhouse gases
IAIS	International Association of Insurance Supervisors
IAIG	Internationally Active Insurance Group
ICP	Insurance Core Principle
IOS	International Organization of Securities Commissions
IPCC	Intergovernmental Panel on Climate Change
ISSB	International Sustainability Standards Board
MAS	Monetary Authority of Singapore
NGFS	Network for Greening the Financial System
OECD	Organisation for Economic Co-operation and Development
ORSA	Own Risk and Solvency Assessment
OSFI	Office of the Superintendent of Financial Institutions
POG	Product Oversight and Governance
TCFD	Task Force on Climate-related Financial Disclosures
UN	United Nations
US NAIC	United States National Association of Insurance Commissioners

Glossary

In this paper, all terms have the same meaning as set out in the International Association of Insurance Supervisors (IAIS) Glossary and the Introduction to the Insurance Core Principles (ICPs).[3] To facilitate the understanding of the paper, definitions of terms that are used frequently and are not part of the IAIS Glossary are shown in the table below.

Table 1: List of related terms

Term	Definition
Climate change	A long-term change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties.
Climate-related risk/climate risk	Risk posed by the exposure of an insurer to physical, transition and/or litigation risks caused by or related to climate change. These terms are used interchangeably in this paper.
Environmental risk	Factors related to insurers' exposure to activities that may potentially cause or be affected by environmental degradation.
Physical risk	Risks, including both longer-term changes in climate (chronic risk) as well as changes to the frequency and magnitude of extreme weather events (acute risk), that can cause direct damage to assets or property, changes to income and costs, and changes to the cost and availability of insurance.
Transition risk	Risks related to changes in domestic and international policy and regulatory settings, technological innovation, social adaptation and market changes, which can result in changes to costs, income and profits, investment preferences and asset viability.
Climate-related litigation risk	Cases brought before judicial and quasi-judicial bodies that raise issues of law or facts regarding the science of climate change and climate change mitigation and adaptation efforts.
Emerging risk	A new or unforeseen risk that has not yet developed or is continuously evolving.

[3] Accessible on the IAIS website.

1 Introduction

1.1 Context and objective

Climate change is recognised as an overarching global threat. It impacts human, societal, environmental and economic systems through rising temperatures and their consequences, including rising sea levels and an increasing frequency /severity of natural catastrophes and extreme weather events. Climate change, as well as the global response to the threats posed by climate change (eg the reduction of greenhouse gas (GHG) emissions and adaptation programmes) may have wide-ranging impacts on the structure and functioning of the global economy and financial system.

Climate change and climate-related risks are also a source of financial risk. Climate-related risks are material for the insurance sector as they potentially impact the insurability of policyholder property and assets as well as insurers' operations and investments. Climate-related risks may translate into prudential risks to insurers, as outlined in Table 2, and therefore impact the resilience of insurers as well as other financial institutions and financial stability.

GHG emissions continue to increase and are estimated to lead to global warming significantly above the target of 1.5°C[4]. Given this challenging situation, there is a likelihood of a delayed and divergent transition and/or global warming well beyond the current target. Either scenario will likely have a considerable impact on the insurance sector by increasing physical, transition, liability and reputational risks to the insurance sector. Therefore, climate change as a cause of an overarching global threat and a source of financial risk is increasing. It is critical for insurance supervisors to strengthen their understanding of the type and magnitude of climate-related risks and exposures of the insurance sector to effectively identify, monitor and reflect climate change risks in their supervisory responsibilities.

Climate change also presents opportunities for the insurance sector: the insurance industry plays a critical role in the management of climate-related risks in its capacity as an assessor, manager and carrier of risk, and as an investor. For example, insurers provide critical economic signals regarding the changing risk environment through risk-based pricing, and also help build resilience through risk mitigation efforts and insurance coverage.

Table 2: Climate-related risks and selected prudential risks

Prudential risks	Potential impact from climate change
Credit risk	Insurers should consider the effect of physical and transition risks on their counterparties' profitability and viability. For example, a reinsurer on which an insurer heavily relies for mitigating some of the underwritten risk could be adversely affected by physical risks from climate change and, as a result, could end up in a weaker financial position, posing a risk to the insurer.
Market risk	Insurers should consider the effect of physical and transition risks on their current and future investments, including whether and how these

[4] United Nations Emissions Gap Report 2024 (October 2024)

	risks could lead to potential shifts in supply and demand for financial instruments (eg securities and derivatives), products and services, with a consequent impact on their values, especially in those sectors and geographies that are most exposed to physical and transition risks.
Pricing and Underwriting risk	Insurers should consider the impact of climate change on their underwriting activities and pricing models. The increased frequency and severity of high-impact natural catastrophes due to climate change will result in more weather-related insurance claims for non-life insurers. However, pricing models may not properly reflect climate-related physical risks, which are not fully captured by the historical data. Life insurers, in particular, may face an increase in the mortality rate from climate events like heat waves (eg impact on term life products) or, in some areas of the world, an increase of longevity due to more moderate temperatures (eg impact on annuity products).
Liquidity risk	Insurers should consider the risk that a lack of reliable and comparable information on climate-sensitive exposures could create uncertainty and cause procyclical market dynamics, including fire sales of assets vulnerable to climate change, as well as reduced liquidity in these markets.
Operational risk	Insurers should consider how climate-related events could have an adverse impact on their assets (including property, equipment, information technology systems and human resources) and business continuity (including outsourced activities), leading to increased operational costs, and may also impact other risks such as reputational or litigation risks.
Reputational risk	Insurers should consider risks arising from negative publicity that may be triggered by underwriting, or investing in, sectors perceived as contributing to climate change. This is exemplified by social movements calling for divestment from fossil fuels and the cessation of underwriting of coal-fired power infrastructure. Moreover, reductions in affordability or availability of insurance cover as insurers respond to climate risk may also lead to negative reputational impact – for instance, if insurers are perceived to increase prices substantially or withdraw coverage to certain counterparties without there being an appropriate alternative.
Litigation risk	Insurers should consider risks resulting from potential changes in societal, litigation and judicial environments in response to climate change. Insurers offering claims-made policies should have an understanding of the potential impact on their liability risks as a result of increasing pressure on boards to manage their companies in a responsible manner, especially as it relates to the environment.
Strategic risk	Insurers should consider the challenges posed by physical or transition risks that could adversely affect insurers' competitive position and financial condition.

An adequate response from supervisors to both the risks and opportunities from climate change will support the objectives of insurance supervision of protecting policyholders, contributing to financial stability and promoting the maintenance of a fair, safe and stable insurance market (see ICP Standard 1.2).

In December 2024, the IAIS adopted limited changes to the ICPs to incorporate climate-related risks. This includes changes to the ICP Introduction to better explain how the ICPs are written to address a broad variety of risks and to highlight certain considerations around risks, using climate-related risks as an example and changes to ICP guidance material to assist supervisors in considering climate-related aspects of ICP 15 (Investments) and ICP 16 (Enterprise risk management for solvency purposes).[5]

This Application Paper aims to supplement the ICPs to further support supervisors in their efforts to integrate climate risk considerations into the supervision of the insurance sector. It provides background and guidance on how the IAIS supervisory material (ie the ICPs) can be used to manage the challenges and opportunities arising from climate-related risks. Application papers do not establish standards or expectations but instead provide additional guidance to assist implementation and provide examples of good practice. This paper thereby also aims to promote a globally consistent approach to addressing climate-related risks in the supervision of the insurance sector.

1.2 Proportionality

IAIS Application Papers should be read in the context of the proportionality principle, as described in the Introduction to ICPs,[6] "Supervisors have the flexibility to tailor their implementation of supervisory requirements and their application of insurance supervision to achieve the outcomes stipulated in the Principle Statements and Standards." When reading the advice, illustrations, recommendations and examples of good practice provided in this paper, it is important to keep proportionality in mind. Where appropriate, this paper provides practical examples of the application of the proportionality principle.

1.3 Scope and structure

The following ICPs are covered in this Application Paper:

- ICP 7 (Corporate governance);
- ICP 8 (Risk management and internal controls);
- ICP 9 (Supervisory review and reporting);
- ICP 14 (Valuation);
- ICP 15 (Investments);

[5] Insurance Core Principles and Common Framework for the Supervision of Internationally Active Insurance Groups (December 2024)

[6] "Implementation - proportionality allows the ICPs to be translated into a jurisdiction's supervisory framework in a manner appropriate to its legal structure, market conditions and consumers. Application - proportionality allows the supervisor to increase or decrease the intensity of supervision according to the risks inherent to insurers, and the risks posed by insurers to policyholders, the insurance sector or the financial system as a whole. A proportionate application involves using a variety of supervisory techniques and practices that are tailored to the insurer to achieve the outcomes of the ICPs. Such techniques and practices should not go beyond what is necessary in order to achieve their purpose."

- ICP 16 (Enterprise risk management for solvency purposes);
- ICP 19 (Conduct of business);
- ICP 20 (Public Disclosure);
- ICP 21 (Countering fraud in insurance);
- ICP 24 (Macroprudential supervision); and
- ICP 25 (Supervisory cooperation and coordination).

These ICPs are not covered in numerical order, instead, the paper is organised by topic. Some ICPs are covered in more than one section (such as, ICP 24).

The following topics are covered:

- Section 2 is a short introductory section discussing the role of the supervisor;
- Sections 3 to 7 discuss issues that are related to ICPs that set out qualitative and quantitative considerations for insurers, starting with corporate governance (ICP 7), then risk management (ICPs 8 and 16) and financial risk management topics of valuation and investments (ICPs 14 and 15);
- Section 8 covers supervisory reporting and public disclosure (ICPs 9 and 20);
- Section 9 and 10 discuss supervisory issues related to group supervision and macroprudential supervision (ICPs 24 and 25);
- Section 11 discusses climate risk scenario analysis (ICPs 16 and 24); and
- Section 12 discusses market conduct - related issues (ICPs 19 and 21).

1.4 Other related work by the IAIS

The IAIS' work on climate change spans across many activities such as financial stability risk assessment, development of supervisory and supporting material and capacity building. For more details, see the IAIS website.[7]

Another important – and related - area of IAIS' work relates to the availability and affordability of insurance in light of the increase in frequency and severity of weather-related events and natural catastrophes, often referred to as "protection gaps". Although not directly in scope of this paper, this issue is referenced in several sections, such as those on scenario analysis and market conduct. In November 2023, the IAIS released a report focused on the role of supervisors in addressing NatCat protection gaps.[8]

[7] https://www.iais.org/activities-topics/climate-risk/

[8] A call to action: the role of insurance supervisors in addressing natural catastrophe protection gaps (November 2023)

2 Role of the supervisor

As noted in the introduction, climate-related risks are a source of financial risk, which may translate into prudential risks to insurers – ie they may affect the resilience of insurers (see Table 2 in the introduction).

It is recommended that supervisors assess the extent to which climate-related risks are likely to be material to insurers operating in their jurisdiction and to determine how these risks may be transmitted to their economies and financial sectors more broadly. Supervisors should identify how climate-related risks are relevant to their supervisory objectives. In recent years, some supervisors have expanded their objectives to include sustainability.

2.1 Preconditions and supervisory resources

As highlighted in the ICP Assessment Methodology,[9] an effective system of insurance supervision requires a number of preconditions to be in place. Although normally outside the control or influence of the supervisor, such preconditions can be taken into account in the development of supervisory practices as they relate to climate-related risks. The following categories of preconditions may be of particular relevance:

- Sound and sustainable macroeconomic and financial sector policies, eg the introduction of a globally agreed carbon pricing system;
- A well-developed public infrastructure, eg the existence of levees against rising sea levels as part of adaptation programmes, or the existence of strong building codes that facilitate sustainable structures;
- Efficient financial markets, eg the adoption of a globally accepted framework for sustainability standards; or
- Effective market discipline in financial markets, eg the extent to which non-financial private sector participants have implemented climate-related disclosures, and the existence of independent sustainability ratings that are comparable, reliable and accessible.

As indicated in paragraph 55 of the Assessment Methodology, where shortcomings exist, the supervisor should make its government aware of these and their actual or potential repercussions for the achievement of supervisory objectives and seek to mitigate the effects of such shortcomings on the effectiveness of supervision.

Sufficient resources are important to enable effective supervision (see ICP 2 (Supervisor)). In terms of a rapidly evolving risk, such as climate risk, this entails providing adequate training opportunities for supervisory staff. As capability to assess climate risk is still developing, supervisors may find it of assistance to use external resources, including materials produced by international organisations (eg NGFS, A2ii, IAIS and the Sustainable Insurance Forum) or collaborate with external stakeholders (eg non-governmental organisations, thinktanks, government departments, environmental and climate science experts and/or financial sector participants).

[9] https://www.iais.org/activities-topics/standard-setting/icps-and-comframe/

Different approaches may be used to embed climate risk into the organisation of the supervisor. The NGFS distinguishes between three approaches that could be considered, depending on the circumstances:

- Internal network approach: establishing flexible structures such as internal networks, which can promote knowledge sharing and improve coordination. This structure would typically involve staff from different departments for which climate risk is only part of their responsibilities, and hence is least resource intensive;
- Hub and spoke approach: putting in place a central team or unit working full-time on climate-related risks and one or more contact persons in each of the relevant departments to facilitate feedback loops and dissemination of information across the supervisory authority; or
- Dedicated unit approach: creating a dedicated unit as the main source of general expertise on climate risk, with the mandate to coordinate issues related to climate and/or sustainability across all departments.

3 Corporate governance (ICP 7)

ICP 7 (Corporate governance) sets out requirements for the establishment and implementation of a corporate governance framework. This section looks at oversight and management responsibilities, business objectives and strategies, the role of the board, duties related to risk management, and internal controls, as well as remuneration through a climate risk lens (ICPs 7.1, 7.2, 7.5 and 7.6).

3.1 Appropriate allocation of oversight and management responsibilities

Given that climate risk is an evolving risk area, the relevant roles and responsibilities assigned to the board, senior management and control functions should continue to adapt. This includes the need to have greater clarity on information and reporting needs (quantitative and qualitative), resourcing, skill sets and budgets. By assigning responsibility, there is greater accountability for mapping, monitoring and controlling the risk. In this way, an insurer obtains a more accurate picture of how climate-related risks affect its business and how these might evolve. That might lead insurers to adapt their risk management (and potentially governance) in light of new information. The Application Paper on Proactive Supervision of Corporate Governance can help supervisors identify governance-related issues in terms of the management of climate-related risks.[10]

One way some insurers address evolving risks, including climate risk, is to have an internal risk committee that has the objective of identifying the changing risk landscape as well as potential ways to address these risks. Supervisors may want to encourage insurers to establish such a committee or other suitable structure with appropriate expertise, if they do not have one already.

3.2 Business objectives and strategies of the insurer

Insurers should incorporate and assess climate-related risks as part of their annual financial planning as well as the long- and short-term strategic planning processes. Insurers should also ensure that the impact of climate change is well-represented in existing risk categories. It is important for insurers' strategic planning periods to build on the risks identified in their insurance portfolio.

3.3 The role of the board

The board has a role in maintaining effective oversight of climate-related risk management, including incorporating climate-related considerations into the insurer's risk appetite, strategies and business plans. In executing this responsibility, the board should consider the potential threat to the insurer's own business risks, the fair treatment of customers and the duty of the insurer to conduct its business in a socially responsible manner.

There should be appropriate understanding of, and opportunity to discuss, climate-related risks at the board and board committee levels, including within the audit committee and the risk committee. Appropriate understanding means that the competence of the board and its committees should remain adequate considering the specific nature of climate-related risks and their evolution over time. This may involve, for example, having a good understanding of the risks and business activities associated with physical and transition risks for the insurer.

[10] Application Paper on Proactive Supervision of Corporate Governance (February 2019)

In order to enhance the skillset amongst its board members, insurers should take actions to facilitate the understanding and discussion of climate risks at board and board committee levels, and, where necessary, provide appropriate training for board members. Additionally, the board succession or board renewal plans could be used as a way to help upskill and improve understanding of climate risk, if needed.

ICP 7.3 states: “The supervisor requires the insurer’s board to have on an ongoing basis, an appropriate number and mix of individuals to ensure that there is an overall adequate level of competence at the board level commensurate with the governance structure”.

Accordingly, insurers should demonstrate that the board (or part of the board) has an adequate level of competence and experience to understand the challenges and business activities associated with climate-related risks, and that the board is able to act and express itself on these subjects. However, as indicated in ICP 7.3.12, if the board does not have internal climate-related expertise, it should obtain it externally. The board should review the qualifications and background (for example, competence and experience) of proposed external experts in order to make an informed decision as to whether their retention would benefit the insurer. The board should demonstrate how those climate-related experts will provide information and guidance, all in an independent and impartial manner, and how it will assess that the information and guidance is appropriate.

In accordance with ICP 7.1.4, the board should ensure that senior management’s knowledge and expertise regarding risks and business activities associated with climate change remain appropriate and up to date.

3.4 Duties of senior management

Senior management is responsible for implementing policies related to climate risk and/or incorporating climate risk - related elements into relevant operational and business policies. The board relies on senior management to provide advice on organisational objectives, plans, strategic options and policies as they relate to climate risk, including the establishment and use of relevant tools, models and metrics to monitor exposures to climate-related risks. Senior management should set out information, options, potential trade-offs and recommendations to the board in a manner that enables the board to focus on key climate risk-related issues and make informed decisions in a timely manner.

3.5 Duties related to remuneration

Guidance under ICP 7.6 describes how an insurer’s remuneration policy may include variable remuneration components. An insurer may use variable remuneration to reflect progress made in managing and mitigating climate-related risks. Guidance under ICP 7.6.9 and 7.6.10 sets out recommendations for variable remuneration. Aligning variable remuneration with reaching climate-related (or broader sustainability) goals can be a helpful tool to support meaningful integration of good sustainability practices into management’s decision-making, particularly those related to climate risk mitigation.

Variable remuneration may be used as one of several incentives to integrate climate-related risks in the risk management system. As part of this, criteria used to calculate the amount of variable remuneration could include, amongst others, climate-related risk management within the insurer (eg through staff training or asset categorisation and performance). Although more difficult to assess, non-financial criteria should also be considered. The evolution of the non-financial criteria of investee

companies could be a relevant indicator for variable remuneration. Such financial and non-financial criteria should be predetermined and documented, and include achievable objectives and measures to avoid variable remuneration being arbitrary. These may be linked to the decisions made by the relevant staff member. When this individual does not meet these criteria, the consequence on the pay-out of variable remuneration should be described. Financial and non-financial criteria should be appropriately balanced.

Such remuneration should not create incentives for inappropriate risk taking and should be proportionate, clearly linked to factors within the control of the individual, weighted appropriately against other factors, and with a clear focus on impact rather than process. There should be no reward for taking steps that are only superficial and have no measurable effect on the mitigation of climate-related risks.

The alignment of remuneration of senior management and the board with prudent risk-taking should take into consideration all risk types relevant to the insurer, including the sound management of climate-related risks.

Moreover, if insurers include information about remuneration in public disclosures and supervisory reporting, then these should contain a clear description of how remuneration arrangements (including any variable components) consider the risk management strategy for climate-related risks.

4 Risk management and internal controls (ICP 8)

ICP 8 (Risk management and internal controls) sets out requirements on systems of risk management and internal controls, including for the control functions. This section provides guidance on how supervisors may integrate climate-related risks into their supervisory expectations of the risk management system (ICP 8.1), and for each of the control functions (ICPs 8.3-8.6). Finally, it discusses the supervision of outsourced functions in relation to climate risks (ICP 8.8).

When addressing climate-related risks, insurers should integrate these risks into the overall corporate governance framework, including their risk management and internal controls. Insurers who still use an approach that mainly addresses climate change from a reputational risk perspective[11] should adopt a more fully integrated approach that considers the risks more holistically (including not only the reputational aspect but also the impact on assets, liabilities and the overall business model). When addressing climate-related risks, insurers should be aware of, and consider, how these risks have the potential to affect their long-term strategy and their assets and liabilities through different channels (including physical, transition and reputational/litigation risks). In turn, insurers should also be aware of, and consider, how their investment strategy and overall business model can impact climate change, as it could have impacts on insurers through the aforementioned channels.

4.1 Integrating climate-related risks into the scope of the risk management system

Climate risk drivers relate to existing risk categories and affect the valuation of an insurer's assets and liabilities as well as its business plan and strategic objectives. Life insurers, in particular, may incur increased losses due to an increase in the mortality rate from climate events such as heat waves (eg impact on term life products) or, in some areas of the world, increased longevity due to more moderate temperatures (eg impact on annuity products). Non-life insurers may be affected by the increased frequency and severity of natural catastrophes on their products, such as property insurance, transport insurance or liability insurance. Transition risks manifest, for instance, through a decrease in the value of assets affected by ecological transition and may result in "stranded assets". Stranded assets relate to sectors that are likely to shrink due to measures taken to transition to a low-carbon economy (eg increase in carbon pricing) or to a shift in consumer or investor preferences (eg away from air transport). In addition, climate change may affect the correlation between different risk categories (eg insurance and investment risk), which can lead to gaps between the actual and expected risk exposure. It may also be important for insurers to consider whether pricing bubbles will appear as investors move into green assets.

Given the potential impact of climate-related risks on an insurer's solvency position, it would be expected that such an impact is considered within the existing categories of risks and leads to a review of the risk management system in case of material change in these risks. This means that the insurer should assess and document in its risk management policies how climate-related risks could materialise within each area of the risk management system – in particular, in the investment and underwriting policies, taking into account potential risk mitigation measures and the speed at which risks may manifest over time. Insurers should consider not only the impact of climate-related

[11] Often referred to as a "Corporate and Social Responsibility" approach.

risks on individual risk categories but also the potential for amplified or cascading effects, thereby requiring a more integrated and dynamic approach to risk management.

In order to identify, monitor, assess and manage climate-related risks, as well as their interaction with other identified risks, insurers should develop tools to collect reliable quantitative and qualitative data. This also allows the insurer to perform aggregated analysis of various elements of climate-related risks. The measurement of climate-related risks is an evolving science with challenges in the quality and availability of data. In some cases, there may be challenges to translating climate change (scenarios) into financial risks (eg translating a change in temperature into certain natural catastrophe risks). Nevertheless, there is an expectation that insurers' quantitative and qualitative analysis will continue to develop and evolve along with the science and improvements in data quality. Historical data and past trends are unlikely to fully capture the dynamic nature of climate-related risks. Historical time series data, notably, might not be able to reflect a potential materialisation of physical and transition risks. Therefore, insurers should consider adopting a more integrated approach and risk modelling, which better captures the complexity and uncertainty of climate-related risks. Insurers should develop forward-looking assessments under different time horizons in order to complement available historical data and readjust their risk assessment and management system. Where insurers leverage external sources to enhance the data, metrics and risk management tools to manage climate-related risks, insurers should ensure that there is adequate understanding of the procured external data, metrics and risk management tools. This includes a sound understanding of the capabilities of external providers, associated methodologies, the validation process, and limitations, as well as relevance and appropriateness to the insurer's own portfolio characteristics.

4.2 Consideration of climate-related risks by the control functions

In performing their duties, control functions should properly consider the impact of climate-related risks on the existing risk categories and have the appropriate resources and expertise to support that analysis. As the measurement of climate-related risks is an emerging science, and risk modelling continues to develop and evolve, control functions will need to continue developing appropriate tools and approaches.

Control functions should identify, measure, and report on the insurer's risks, assess the effectiveness of the insurer's risk management and internal controls and determine whether the insurer's operations and results are consistent with its risk appetite as approved by the board.

4.2.1 Risk management function

The potential impact on business continuity due to climate change should be considered by the risk management function.

More specifically, the risk management function should monitor and facilitate the proper identification, assessment and management of climate-related risks. This should be integrated into the existing risk management system and be in line with the board-approved risk appetite statement. The following risk management areas may be particularly affected by climate-related risks: asset-liability management (ALM), investment risk management, underwriting and reserving, reinsurance and other risk-mitigating techniques, operational risk and reputational risk management.

The risk management function should use a range of quantitative and qualitative methods and metrics to monitor progress against the insurer's overall business strategy and risk appetite and promote consistency within the insurer. For instance, the underwriting and investment functions should consider where they could benefit from aligned criteria when identifying sectors that are more

exposed to climate change. The methods and metrics should be updated regularly to support decision making by the insurer's board and/or relevant committees. It is important that such methods and metrics do not rely solely on historical data and trends but also incorporate forward-looking assessments. These forward-looking assessments can help set clearer risk appetite statements, limits and key risk indicators for climate risk exposures, translating into actionable monitoring and steering metrics for senior management and the board.

An example of a method for managing the risk associated with climate change is defining investment limits to specific companies, sectors, regions, jurisdictions, etc. This may be based on certain criteria, such as the percentage of income stemming from mining, processing or burning fossil fuels. Furthermore, insurers could incorporate environmental and climate change considerations when evaluating a proposed investment. On the liability side, risk limits could also be defined – for instance a maximum exposure for policyholders in coastal areas in order to limit the risk exposure to flood risk. The use of "heat maps" or environmental, social and governance (ESG) scoring that highlights climate-related risks may also be helpful to better understand and monitor the impact of these risks.

4.2.2 Compliance function

The compliance function should identify the compliance risks that the insurer faces and the steps taken to address them. In performing this task, the compliance function should take into account the liability and reputational risks (eg from a failure to appropriately disclose information on climate-related exposure) stemming from climate change. Accordingly, the compliance function should ensure that internal policies and control procedures are compliant with the relevant standards, directives, charters or codes of conduct related to climate change that the insurer is obliged or committed to respect.

4.2.3 Actuarial function

It is expected that the actuarial function takes into account climate-related risks because they can potentially have an impact on the valuation of assets, ALM, underwriting, risk mitigation and the calculation of insurance liabilities and capital requirements. To assess physical risks, the actuarial function could, for example, consider the impact of wind and storm pattern shifts, increased frequency of hot weather, hail, high winds, extreme precipitation, drought and flooding. To assess transition risks, the actuarial function could consider the insurer's exposure to companies that are likely to be affected by the transition to a carbon-neutral economy.

In performing its duties, the actuarial function should pay particular attention to the assessment of the quality and completeness of underlying data. Due to climate change, historical analysis may not be sufficient and may need to be supplemented to enable the appropriate calibration of premiums or reserves to reflect climate-related risks. Expert teams, such as catastrophe modelling teams, can reinforce the actuarial function's role, as these teams are often already using analytical tools that go beyond pure historical analysis.

4.2.4 Internal audit function

The internal audit function should review the risk management process to ensure it is adequate and effective. As part of this review, it should assess whether all material risks, including climate risk, that may have an impact on insurer's resilience, are being considered and, where relevant, mitigated.

4.3 Fitness and propriety of control functions on climate-related issues

To ensure sufficient knowledge of the control functions while identifying, assessing, monitoring, managing and reporting climate-related risks, insurers should adapt their internal policies and implement training programmes on climate-related issues and their impact on the risk-profile of the entity. Insurers should ensure that persons who perform control functions have experience, as appropriate to their respective duties, in understanding the risks of climate change.

As an example, the European Insurance and Occupational Pensions Authority (EIOPA) deems that "depending on their (the insurer's) specific investment strategy, their risk profile and their size, the recruitment of dedicated experts may be needed for some undertakings. In any case, insurance and reinsurance undertakings should be requested to build in the necessary expertise with particular consideration of the proportionality principle".[12] Furthermore, in the Netherlands, De Nederlandsche Bank (DNB) issued guidance on including climate-related risks into the fit and proper assessments of management or supervisory board members and other policymakers.

Within the various control functions involved, a person with appropriate skills and knowledge in climate-related risks, or a dedicated unit, may be identified as primarily responsible for climate-related aspects in order to ensure that climate-related risks remain in scope and the necessary attention is allocated. However, this does not remove the need to integrate the risks from climate change into all relevant parts of the business.

4.4 Integrating climate-related risks in outsourcing decisions

Insurers that decide to outsource any material activity should preserve the ability to manage risks and ensure the continuity of their activities in case of a failure of the outsourcing provider[13]. One example is physical damage that could disrupt the insurer's operations, should severe weather events affect the premises of their outsourced business functions. To manage such physical risks, business continuity plans should incorporate the risks from climate change, where material. It may also be useful for insurers to conduct scenario analyses –for instance, considering a scenario in which several outsourced business functions are affected at once. In practice, some insurers with outsourced functions have used physical risk scenarios such as those published by the Intergovernmental Panel on Climate Change (IPCC). Insurers may increasingly include insured loss data as part of this analysis, as well as examining recent historical climate trends in key locations.

[12] EIOPA's Technical Advice on the integration of sustainability risks and factors in the delegated acts under Solvency II and IDD (April 2019)

[13] Issues Paper on Insurance Sector Operational Resilience (May 2023) and Draft Application Paper on Operational Resilience and Objectives [and Toolkit] (August 2024)

5 Enterprise risk management for solvency purposes (ICP 16)

Under ICP 16, the supervisor requires the insurer to establish within its risk management system an ERM framework for solvency purposes to identify, measure, report and manage the insurer's risks in an ongoing and integrated manner. In December 2024, the IAIS adopted limited changes to ICP 16 to incorporate climate-related risks with the following guidance, including explicit references to climate risks: ICPs 16.1.1, 16.1.3 (new), 16.1.6, 16.2.2, 16.2.16, 16.2.19, 16.6.6, 16.12.1 and 16.16.9.

This section discusses how climate-related risks may be integrated into an insurer's ERM framework. It covers most topics of ICP 16, except those related to liquidity risk (ICPs 16.8 and 16.9) and recovery planning (ICP 16.15). Issues related to ICP 16 are also covered in section 11, on scenario analysis.

5.1 Risk identification and measurement (ICPs 16.1 and 16.2)

Climate change poses wide-ranging and material risks to the financial system. This is especially true for the insurance industry, where the physical and transition risks resulting from climate change affect both sides of insurers' balance sheets – assets and liabilities – as well as their business models. This, in turn, can materially impact the ability of insurers to meet their obligations to policyholders as well as their operations and investments.

Climate-related risks present unique challenges and require a strategic approach to financial risk management. Climate risks are:

- Far-reaching in breadth and magnitude: Not only does climate change affect all aspects of our economy globally but also its impact may be non-linear, correlated and irreversible.
- Uncertain but inevitable: Climate-driven change is inevitable, even though its exact manifestations and timing are uncertain. The concentration of GHG in the atmosphere will continue to increase in the short-term, leading to more extreme and chronic weather events. Over time, certain physical risks could become extreme if the low-carbon transition happens too slowly or too late. Governments and private corporations are responding by ramping up efforts to mitigate climate change. The low-carbon transition could be orderly, with minimum negative impact on the economy, or disorderly, which would disrupt the economy and financial markets.
- Dependent on short-term actions: The ultimate impact of climate change depends in large part on the nature and extent of the actions taken in the near-term by governments, corporations, individuals and communities around the world to fight climate change.
- Hard to predict based on past experience: Certain physical and transition risks are unlikely to be adequately captured in historical data. Or the pricing model may have to be reconsidered due to the evolution of climate risks (and their interactions), given their unprecedented and long-term nature and depending on the nature and duration of the underlying liability. Given the forward-looking nature of climate risks and the inherent uncertainty of both the physical impact of climate change and the resulting societal responses, past experience may not be a good indicator of future conditions.

Climate-related risks are drivers of existing risk categories. Therefore, insurers should consider the potential impact and materiality of climate-related risks when assessing the existing risk categories, as outlined in the introduction.

5.2 Risk concentrations (ICP 16.2)

Potential systemic risk concentrations should be assessed by supervisors to check whether, due to possible financial sector and market interlinkages, adverse movements in value of larger positions in certain assets or larger market shares in certain underwritten insurance liabilities could lead to spillover effects into the real economy, specific sectors and/or other assets.

Although climate change is universal, risk factors can be jurisdiction specific. The physical impacts of climate change can be regional or local, but transition risks can be driven by a range of jurisdictional factors (eg ambition of governments for net zero transition and certain attributes of a jurisdiction's legal system). Insurers with significant investment exposures to assets that are vulnerable to climate-related risks are potentially more exposed to systemic risk. Supervisors will, therefore, need to understand these dynamics and ensure they are factored into risk assessments done by insurers.

5.3 Corporate strategy and time horizons (ICP 16.3)

Climate-related risks are expected to have a material impact on the business environment in which insurers operate. Insurers should be aware of such potential changes to their business environment and the impact on their corporate strategy. Insurers should consider questions such as: which business areas are exposed to physical or transition risks; the materiality of the risks; whether affected areas should be continued, scaled back or adapted; and whether climate-related risks require consideration across all business areas and processes based on their materiality, or only those business areas and processes that are particularly exposed.

Supervisors should encourage insurers to consider climate-related risks based on a time horizon that is tailored to their business and activities. For example, a non-life insurer's consideration of climate-related risks in underwriting and pricing policies, or determining an appropriate risk transfer strategy, may be based on a relatively short time horizon (one to five years). By contrast, given the long-dated nature of life insurers' liabilities, the impact of climate change on their investment portfolios could materialise over a longer period and, therefore, could impact the value and expected cash flows from their financial assets only in the long-term.

In general, the time horizon for considering how climate-related risks affect business strategy should go beyond the standard (three to five years) to a medium term (five to 10 years) and ultimately long term (30 to 50 years) time horizon, depending on the business line. Certain physical and transition risks are unlikely to be adequately captured in historical data given their unprecedented and long-term nature. Therefore, supervisors should be checking if insurers are considering forward-looking risks in developing their business strategy.

5.4 Risk appetite and limits (ICP 16.4)

Insurers should consider including in their risk policy a description of how they monitor and manage material climate-related risks, in line with its risk appetite statement. The policy should include the insurer's risk tolerance levels and limits for financial risks, and consider factors beyond market conditions, regulatory changes and technological advancements, such as:

- Long-term financial interests of the insurer and how decisions today affect future financial risks;
- Results of scenario analysis and potentially stress testing for short-, medium- and long-term horizons;
- Uncertainty around the timing and channels through which climate-related risks may materialise;
- Sensitivity of both sides of the balance sheet to changes in key climate-related risk drivers and external conditions; and
- The impact of climate change on the insurer's risk tolerance levels and limits, which can be reflected through existing risk categories.

5.5 Asset liability management (ICP 16.5)

Under ICP 16.5, "The supervisor requires the insurer's ERM framework to include an explicit asset-liability management (ALM) policy which specifies the nature, role and extent of ALM activities and their relationship with product development, pricing functions and investment management." This can help insurers assess the ability to pay policyholders or creditors in a timely fashion. Climate change can negatively affect the matching of assets and liabilities, primarily through transition risk, as insurers with long duration products use longer-term bonds to match the liability cash flows. Due to the long-term nature of the bonds, when constructing their investment portfolios, insurers should consider the potential for individual firms, or an entire sector, to be significantly impaired over the matching period. Correlation between different asset classes would also be an important consideration. Additionally, correlation between assets and liabilities when holding both a bond of an entity and insuring that entity for risks related to climate change should be considered.

Both assets and liabilities on an insurer's balance sheet could also be impacted by the same risk categories. For example, the real estate portfolio of a non-life insurer could have exposure to the same natural catastrophe perils through underlying collateral as that of its underwritten insurance liabilities. A life and annuity insurer might be underwriting minimum guarantee riders for its variable annuity liabilities. The underlying funds for these liabilities could be exposed to climate-vulnerable sectors. The insurer might also own assets from these sectors in its general account portfolio. In aggregate, this could lead to overweight transition risk exposure from similar climate-vulnerable sectors on both sides of the balance sheet. The possibility of such correlated exposures can eventually be detrimental to the solvency of the insurer.

5.6 Investment policy (ICP 16.6)

Both physical and transition risks can have complex and non-linear impacts on insurers' investments. They both have the potential to affect investments via credit risk, market risk, reputational risk and strategic risk as well as liquidity risk. Both physical and transition risks can also lead to second-order effects such as indirect losses in insurers' investments due to the devaluation of financial counterparties that have high exposures to climate-vulnerable sectors, or the impact of changing investor sentiments on market values. Where material, these risks should be taken into account regardless of whether the insurer invests directly or through a third-party asset manager or an investment advisor.

Climate-related risks can manifest at any time but the likelihood that a physical or a transition event will occur increases significantly over longer time horizons. For this reason, longer maturity assets

are more vulnerable to climate-related risks, and insurers should pay special attention to these assets when conducting risk assessments.

Climate-related risks have the potential to materially impact an insurer's returns from its asset portfolio. Supervisors should pay close attention to the climate-related risk assessments done by insurers on their asset portfolio.

5.7 Underwriting policy (ICP 16.7)

Physical, transition and litigation risks arising from climate change can impact the business risk profile, underwriting strategy and underwriting processes of insurers. When material, supervisors should expect insurers to identify the relevant climate-related risks inherent in their business portfolios, assess the implications to their underwriting strategy, and develop policies and procedures to integrate the management of these risks within their ERM framework as well as their risk appetite statement.

Insurers should consider both the short term and longer term (including both business planning horizon and duration of the policies) when assessing the impact of such risks. How insurers consider the climate-related risks within underwriting risk is likely to be dependent on various elements (eg duration of the contract, frequency and severity of climate events, localisation of the goods and persons covered, impact of perils on their policies, reinsurance agreements, terms and conditions).

5.7.1 Consideration of climate-related risks in the underwriting policy

Insurers should have internal guidance on how the assessment and monitoring of such risks are embedded in the underwriting process. Hence, supervisors should require insurers to incorporate the consideration of climate-related risks in the underwriting policy as appropriate, given the exposure of their individual products to those risks. This may include the description of:

- Geographical areas, economic sectors[14] or lines of business that are assessed to have higher climate-related risks;
- Processes to identify and assess material climate-related risks inherent in new business applications and in the in-force portfolio; and
- The use of climate research reports, climate risk models and other analytics tools in the underwriting decision-making process, where applicable.

5.7.2 Consideration of climate-related risks in the underwriting assessment

Insurers strive to understand the potential losses from natural catastrophe events through their use of natural catastrophe modelling and analytical tools. It is possible that over time, insurers will also have a more precise understanding of the physical risks of climate change. However, this requires that sufficient data become available to incorporate climate change scenario analysis into their catastrophe models, which would allow for the estimation of both the likelihood of events as well as the associated potential losses.

[14] The evaluation criteria for such sectors may include the level of GHG emissions, vulnerability to extreme weather events, and linkages to unsustainable energy practices, deforestation and pollution. For example, the UN IPCC has noted that sectors such as agriculture, chemicals, forestry and mining may face material challenges due to either their impact on the environment or as a result of the impacts related to climate change.

The integration of climate-related risks in the underwriting assessment may involve the enhancement of underwriting practices due to the need to consider the relevant liability, transition and reputational risks. For material risks associated with climate change, supervisors should encourage insurers to include, as relevant, their assessment as part of their overall underwriting assessment for each policyholder. Where relevant, the underwriting assessment should be enhanced to consider:[15]

- The track record and commitment of the policyholder in managing climate-related risks;[16]
- The ability and willingness of each policyholder to mitigate the identified climate-related risks associated with the transaction;
- The duration of the policy; and
- The need to impose underwriting conditions for certain types of products[17] to require policyholders that are assessed to pose higher risks due to their climate impact to take steps to mitigate those risks.

Insurers may choose to use ratings developed by external parties or develop their own risk assessment methodology to incorporate climate-related risks in the underwriting assessment. If an insurer relies on external ratings, it should ensure that the rating methodology is sufficiently transparent to allow understanding of the ratings provided. For transactions that are assessed to involve higher climate-related risks, it may be appropriate for supervisors to expect insurers to perform additional due diligence procedures[18] to obtain a more informed understanding of the risks associated with the transaction. It may also be appropriate for insurers to incorporate climate-related risk exposures into their underwriting authority grid, such that transactions that are assessed to involve higher climate-related risks require internal escalation for approval.

5.7.3 Monitoring of underwriting exposure to climate-related risks

Climate change is already causing changes to the frequency and severity of loss events for some perils, which in turn may increase the risk profile of an insurer's business portfolio. For instance, climate change could result in changes in weather patterns that may impact non-life products as a result of the increase in physical risks of certain geographical areas but will also increase the air temperature that could result in a longer-term impact through the increase in mortality and morbidity risks. Additionally, certain non-life policies may face increased litigation risks as a result of evolving legal approaches and increased litigation linked to climate-related risks.

Hence, supervisors should encourage insurers to develop appropriate tools and metrics to monitor their underwriting exposures to climate-related risks. Such tools and metrics may be used to, for example, monitor underwriting exposures to and concentrations in geographical areas or sectors that are assessed to pose higher climate-related risks (such as peril regions). This would enable insurers to take appropriate mitigating measures to manage any potential build-up in concentration of exposures to geographical areas or sectors with higher climate-related risks.

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[15] Both historic and forward-looking considerations should be taken into account in underwriting assessments.

[16] Especially in case of material exposure to liability as well as reputational risk and where the terms and conditions of the insurance policy do not set out mitigating obligations on the policyholder, to manage climate-related risks or the fulfilment of such contractual obligations would be difficult to verify after a claim.

[17] Such conditions may include the development of a sustainable transition strategy and the adherence to relevant environmental certification standards.

[18] Such procedures may include on-site visits to the policyholder or risk location, or an external expert review.

5.8 Own Risk and Solvency Assessments (ICPs 16.10-16.13)

The unique business strategy, investment portfolio and risk profile of each insurer will affect the degree of impact arising from climate-related risks. The nature and materiality of the relevant insurance, credit, market, concentration, operational and liquidity risks will vary depending on the exposure to climate-related risks of each insurer. Hence, the Own Risk and Solvency Assessment (ORSA) is a particularly useful tool for insurers to assess the adequacy of their ERM function and their solvency position. Supervisors should expect insurers to consider all material physical and transition risks arising from climate change in their ORSA process and adopt the appropriate risk management actions to mitigate the identified risks accordingly. Insurers may consider the risks on both a qualitative and quantitative basis, with the understanding that quantitative capabilities should improve over time as the ability to access the necessary data improves.

As part of the ORSA, the insurer assesses its risk management and financial resources over a longer time horizon than used to determine regulatory capital requirements. The time horizon should be consistent with the nature of the insurer's risks and business planning. Some climate-related risks may take longer to fully materialise and, therefore, it would be expected that the ORSA also include appropriate scenarios that use a more extended time horizon, where relevant. When assessing the appropriateness of time horizons used by insurers, supervisors should consider the nature and types of business written by the insurer.

ICP 16.14 requires insurers to perform a continuity analysis as part of the ORSA ("to analyse its ability to continue in business, and the risk management and financial resources required to do so over a longer time horizon than typically used to determine regulatory capital requirements") and, in doing so, an insurer is required to "address a combination of quantitative and qualitative elements in the medium and longer-term business strategy of the insurer and include projections of its future financial position and analysis of its ability to meet future regulatory capital requirements". In other words, an insurer is required to assess its ability to manage its risks and meet its capital requirements under a range of plausible adverse scenarios with a forward-looking perspective in mind. When material, this analysis should include the identification and assessment of the direct and indirect impact of climate-related risks. For instance, it could be included as part of the scenario analysis or a (reverse) stress testing process (see ICPs 16.14.3 and 16.14.14). This would enable insurers to assess their resilience to financial losses with respect to climate change. This process should incorporate an assessment of physical, transition and litigation risks, for example:

- Assessment of physical risks includes the use catastrophe modelling with a number of different scenarios (eg 1-100 to 1-500 or 1-1000 year events). This may also include the identification of a climate-related risk scenario that could potentially cause insolvency;
- Assessment of transition risks may cover how increases in carbon taxes, stricter environmental regulations and a low-carbon economy would impact both assets and technical provisions; and
- Insurers offering claims-made policies should have an understanding of the potential impact on their liability risks as a result of increasing pressure on boards to manage their companies in a responsible manner, especially as it relates to the environment, and should consider appropriate exclusions and/or limits.

Parameters and assumptions for climate-related stress testing scenarios may be adopted from modelling work performed by meteorological agencies, regulators or other external experts. For example, there are statistical models to determine the frequency of flooding events, and modified economic models to estimate the economic or financial impact of various climate shocks. Alternatively, insurers may have developed internal models for the impacts of climate risk.

Supervisors should encourage insurers to use models that are pertinent to their geographical scope and nature of business. It is important for insurers to fully understand these models, the uncertainties of the results, and their underlying assumptions and methodologies when deciding on their relevance.

Climate-related risks are material to the insurance industry and are expected to potentially have an impact on all insurers; therefore, these risks should be considered for inclusion in the ORSA. If climate-related risks are assessed to be immaterial by an insurer over the time horizon considered for climate-related risks in the ORSA, the insurer should document the reason for the assessment. The rationale for immateriality could be included in the documentation that summarises the risks that the insurer considered for incorporation in the ORSA and may be concise.

6 Valuation (ICP 14)

This section provides guidance on how supervisors may integrate climate-related risks into their requirements for the valuation of assets and liabilities for solvency purposes. ICP 14 provides standards and guidance for asset and liability valuation. More specifically, ICP 14.3 requires that the valuation of assets and liabilities is undertaken in a reliable, decision-useful and transparent manner.

Climate-related risk drivers have the potential to impact valuations of both the assets and the liabilities of most types of insurance business. Therefore, it is important that insurers consider these risk drivers in both asset valuations and when estimating value of liabilities.

As the ICPs address risks more broadly, ICP 14 does not directly discuss how climate risk - related risk drivers could impact valuation and how insurers should consider the impacts on those drivers in valuation. This section intends to assist with climate risk assessments.

6.1 Valuation of assets

On the asset side, climate risk has the potential to diminish the value of investments through both transition and physical risk.

The impact of climate risk could materialise through the expectation of diminished ongoing future cash flows and/or through decreases in the terminal or recovery value assumptions. It could also have implications if an investor is unable to sell an asset due to physical or reputational climate-related damage or a disruption in markets due to a disorderly transition. The ultimate potential loss for insurer investments is due to either the deterioration in credit quality for bonds, or the fall in prices and cash flows for equity and real estate.

For instance, some equity and bond prices could be impacted as a result of an issuer not transitioning their business model, which may no longer be viable as the global economy moves away from fossil fuels or adopts other climate-related initiatives.

For other assets, such as real estate and mortgages, the probability and severity of physical events can impact the asset value either directly or indirectly. When an event impacts a property, the cost to rebuild might be more than the insured value (if insured) due to building code changes to mitigate climate risk, which can result in an unaffordable increase in costs. This can have a negative impact on the asset value.

Climate risk can impact the prices of investments in equities, bonds, loans, real estate and mortgages.

There is also the potential for decreases in asset prices from climate risks due to a large loss event occurring in an area that negatively impacts business or government services, or the expectation of future events increasing significantly in an area. For investment valuations tied to real estate, these impacts could also include decreases in property insurance availability or significant increases in insurance costs, or transition measures to meet energy efficiency requirements for various types of properties, which could increase stranded assets risks.

As all of these risks can significantly decrease investment value, supervisors should evaluate whether insurers take these risks sufficiently into account.

6.2 Impacts on types of valuations

Valuation may be based on different levels of market information. Regardless of the method or level of market information, valuations should reflect known reliable information, including any financially material impacts from climate change.

If assets are valued based on amortised cost, impairment evaluations should consider reliably estimable potential cash flows including any reduction in future cash flows due to transition and physical risk. As discussed above, these risks can manifest differently for different types of assets, and it is important that insurers consider the reliably estimable impacts on asset value. The time horizon of the investment (holding period and/or asset duration) as well as the speed of transition are also relevant factors for valuation.

When insurers are valuing assets based on quoted market prices, the price reflects the market consensus. When the market is dysfunctional, generally due to the lack of sufficient trading volume or information flows, insurers should use a more reliable method based on more normal conditions. The valuation should still maximise market inputs to the extent possible with the objective of the valuation being an economic valuation. Likewise, insurers' valuation models should consider relevant factors that reliably estimate the impact of the uncertainty of the amount and timing of the cash flows, which should include the uncertainty resulting from climate risk.

Supervisors should review insurers' valuation methodologies to determine whether known and reliable estimable information, including the impacts of climate risk on their investments, have been considered. The expectation is that although these impacts may not be significant and reliably estimable at this time, this will change in the future as more becomes known about the global transition to a low-carbon economy and the impacts from increasing frequency and/or severity of climate-related events.

6.3 Time horizons of investments

The time horizon of an insurer's investments will be an important consideration for supervisors. The risk to insurers' investment portfolios is expected to increase over time, particularly for insurers with a longer duration portfolio (eg life insurers).

Supervisors should review the sources of information used by insurers in their valuations. The amount and quality of available information related to climate risk is expected to increase in the future, allowing for better consideration of these risks. Changes in policy, technology and physical risks could prompt a reassessment of the values of a large range of assets as costs and opportunities become apparent (transition risk). Supervisors should also assess whether insurers are using the most current and reliable information available.

6.4 Valuation of liabilities

In valuing insurance liabilities, expected future development is generally taken into account in the assumptions underlying the valuation. Furthermore, the data and assumptions are reconsidered at each valuation period to ensure they are up to date and remain appropriate. Insurers should change previous assumptions when they have sufficient reliable information to support a change. Insurers should ensure that the assumptions underlying the valuation of insurance liabilities are consistent with the assumptions underlying the valuation of assets, where applicable. Additionally, for discount

rates that are impacted by future asset returns, insurers should consider potential impacts on the portfolio due to climate change when reliable and estimable.

In practice, it is not straightforward for insurers to account for climate change-related developments in the valuation of liabilities. There can be difficulties in valuation for life and health insurance as well as for certain types of non-life insurance.

Generally, the value of short duration liabilities is less impacted by climate risk than the value of long duration liabilities (claims' occurrence or settlement periods). Nevertheless, climate change is already impacting policies today, so there is an impact even on short duration liabilities. Even with annual repricing/recalibration, historic data may not accurately predict short-term trends in the context of climate change (as unprecedented events become more likely over time) and there can be delays in changing rates. In addition, there can be latent risks in some types of contracts that cover prior years or would cover current litigation exposure (Director and Officer liability insurance).

Therefore, prudent consideration should be given to appropriate climate trend analysis for the short term (eg catastrophe modelling in underwriting) and to implemented risk prevention measures (eg educating the public on how to react in case of heat waves or the introduction of building materials that decrease this risk).

6.4.1 Life and health liabilities

The valuation of life insurance liabilities can cover long periods of time and can be subject to significant assumption changes over time. Climate change can impact the current estimate valuation through its effect on health and mortality assumptions. More extreme weather events, such as heatwaves and flooding, could lead to higher mortality rates.

For (longer-term) life business, the long horizon for cashflows also means that there may be room to consider the impact of climate change in the calculation of the current estimate, if the impacts are financially material and reliably estimable. Climate change-related risks may affect life insurance liabilities through increased expenses, changes in mortality and morbidity assumptions or changes in the value of contractual options. Regarding the latter, projections based on economic scenario generators should be calibrated to current market prices. Expense assumptions should reflect all reliably estimable known cash flows, including those due to climate change and related legislation. Mortality and morbidity assumptions should reflect the latest known trends.

6.4.2 Non-life insurance

Current estimate liability for incurred claims

Generally, for most non-life insurance liabilities, the current estimate is based on incurred events. Although increases in the frequency and severity of events due to climate change can impact future profitability, they do not impact the current estimate as only expected cash flows from incurred events are taken into account. As a result, expected cash flow changes under non-life contracts due to climate-related events are not factored into the current estimate.

Where the current estimate includes both incurred and future events (eg IFRS 17 for some contracts), the current estimate would include both incurred losses and the amount expected to be incurred for policies still on risk. In this case, changes in expected future losses that can be reliably estimated (such as changes in expected catastrophe losses and other weather-related losses due to climate change) should be included in the valuation. Due to the short duration of such policies, there may not be sufficient development to change the initial loss estimate.

Premium allocation approach (eg unearned revenue reserve)

Similar to the current estimate valuation that includes both incurred and future events, it is possible that under a premium allocation approach (eg IFRS 17), when expected losses might change after the issuance of the policy, this typically does not occur due to the short duration of the policy. If the expected cash flows, including from climate risk, have changed from the initial estimate and can be reliably estimated, a premium deficiency reserve may need to be established.

Other considerations for non-life reserves

Setting the initial reserve estimates for the current estimate or the premium allocation reserve is generally based on the pricing of non-life products. Therefore, it is important that insurers incorporate the most current information on expected losses, including those related to weather and catastrophe risk due to climate change, into rate setting and the initial reserve estimates. Supervisors should consider if data used in these processes reflect current climate risk exposure. Supervisors should also consider if insurers are supplementing historical loss experience with current trends or other information that would indicate that the future claims settlement could be different from past settlements.

Insurers exposed to climate risks should consider catastrophe/climate modelling or stress-testing methods. Where relevant, insurers could develop forward-looking modelling approaches. One area of non-life insurance coverage that has the potential to be adversely impacted is where the insured is exposed to climate litigation and holds an occurrence policy that does not have exclusions. It is possible that these policies cover the insured in a climate liability lawsuit if it were deemed that the "loss" occurred from actions during the period of coverage. It is a possibility that insurers should consider when calculating current estimates.

Insurers should consider, where appropriate and in a proportionate manner, good practices for ensuring that historical loss data are up to date. Insurers should consider events potentially not captured by historical loss dataset, such as changes in claims cost or litigation and other factors that would impact liabilities, and also conduct forward-looking catastrophe modelling.

7 Investments (ICP 15)

ICP 15 sets out regulatory investment requirements for solvency purposes in order for insurers to make appropriate investments taking account of the risks they face.

In December 2024, the IAIS adopted limited changes to ICP 15 to incorporate climate-related risks with the following guidance including explicit references to climate risks: ICPs 15.2.3, 15.2.6 (new), 15.3.1, 15.4.9 and 15.4.10. This section discusses how climate-related risks may be integrated into regulatory investment requirements for solvency purposes. It covers most topics of ICP 15, except those related to quantitative and qualitative requirements (ICP 15.5).

7.1 Climate change factor for investment requirements (ICP 15.1)

A factor for the supervisor to consider when establishing regulatory investment requirements on the investment activities of the insurer may include the impact of climate change on the insurer's investments (ICP 15.1.3, "inward perspective").

Climate-related risks can have complex and non-linear impacts on insurers' investments. Climate-related risks can translate into physical and transition risks, both of which can have a material impact on the insurer. Furthermore, insurers should be aware that climate-related risks have the potential to affect investments through traditional risk categories such as credit risk, market risk, reputational risk and strategic risk. For example, both transition and physical risks have the potential to affect investments via credit/counterparty default risk (eg an increase in the probability of default or loss given default), market risk (eg a change in the value, trend, or volatility of an asset or derivative, in particular equity, property or spread risk) as well as liquidity risk (eg as a result of sudden cash outflows due to a natural disaster event). Transition risk and physical risk can also include second-order effects such as indirect losses in insurers' investments due to the devaluation of financial counterparties that have high exposures to climate-sensitive sectors, or the impact of changing investor sentiments on market values.

The quality and characteristics of an insurer's asset portfolio and the interdependence between the insurer's assets and liabilities are central to the assessment of an insurer's solvency position and, therefore, are an important aspect to be addressed by the supervisor and for an insurer to manage. In assessing the risks attached to the asset portfolio, and, depending on the duration and quality of the portfolio and ALM, it may be relevant for supervisors to assess and take necessary action as to how the impact from climate change on the insurer's investment may affect the risk-return characteristics of a portfolio. The longer the duration of the asset portfolio, the more important it is for the insurer to understand the risk. At the same time, transition risk and physical risk can happen at any time and in a sudden manner, and thus require insurers to review their investment strategy regularly. Given the potential impact on the assets side of insurers' balance sheets, insurers are expected to monitor this risk on an ongoing basis, address this risk when it becomes, or is in the process of becoming, material and potentially mitigate climate-related risks. Developing an approach to monitoring and addressing the financial risks arising from climate change, and responding to the transition to a climate-resilient economy, should be done regardless of whether the insurer invests directly or through a third-party asset manager or investment advisor and should form part of an insurer's strategy.

7.2 Investment of assets for the portfolio as a whole (ICP 15.2)

It is important that insurers invest in assets in such a way that their portfolio as a whole considers the impact of their investments on the climate ("outward perspective"). It is also important that insurers consider their policyholders' preferences in relation to climate change considerations, where relevant. The climate-related impact of investments may be taken into account by insurers' stakeholders. Should insurers' stakeholders view investments negatively, due to their climate impact, this could lead to reduced investments or a change in policyholder support which, in turn, may lead to a reduced competitive position and financial strength of the insurer.

Consequently, insurers could decide to engage with investees, divest of certain assets or change their investment strategy. Such engagement can steer the activities of the issuers to which insurers are exposed to through the assets they hold in the investment portfolio. Such stewardship would influence the strategy and business of the firm in which insurers are investing to progress towards sustainable economic activities, and contribute to reducing climate-related risks. Divestment and other investment strategies (for example, exclusions (negative screening), norm-based screening, integration of ESG factors, best-in-class (positive screening), sustainability-themed investment or impact investment) could be relevant when considering this approach.

With regard to external credit ratings (ICP 15.2.3), insurers should have enough information to understand the rating methodology, and where necessary, could engage with credit rating agencies to obtain such information. Insurers should also consider the extent to which climate-related risks have been factored into the rating and over what time horizon. Furthermore, insurers should carry out diligent plausibility checks of the ratings they use. Insurers may also consider developing their own internal climate credit risk assessment framework to consistently evaluate the exposure of their investments to climate-related risks. This could include sector-specific actions, emissions profiles and adaptation plans. Such frameworks should not only consider how climate change may impact credit risks through probability of default, but also possible impacts on loss-given default, exposure at default and correlations between counterparties.

7.3 Asset liability management (ICP 15.3)

Insurers should consider climate-related risks as part of their ALM, especially when liabilities have a long duration. This may include, for example, the potential impact of climate-related risks on the insurer's reinvestment strategy. This is relevant for the impact of climate change on insurers' investment portfolios, which may fully materialise over an extended period of time and, therefore, impact either the value or expected cashflows from financial assets in the mid- or long-term.

Climate change can negatively affect the matching of assets and liabilities, primarily through transition risk, as insurers with long-duration products use longer-term bonds to match the liability cash flows. Due to the long-term nature of these bonds, insurers should consider when constructing their investment portfolios that individual firms, or an entire sector, could potentially be significantly impaired over the matching period. Correlation between different asset classes would also be an important consideration, as would the correlation between assets and liabilities when holding a bond of an entity and insuring that same entity for risks related to climate change.

7.4 Risk assessment and management of investments (ICP 15.4)

ICP 15.4 states "the supervisor requires the insurer to invest only in assets where it can properly assess and manage these risks". The insurer should understand the risks involved and determine

how material the risk from a proposed investment is before undertaking any investments. Similarly, insurers should continuously monitor the risks linked to their investments (eg use of emissions data, possible transition plans[19] and ESG ratings).

In this regard, supervisors should assess how insurers take climate-related risks into account when identifying, assessing, monitoring, managing, controlling and reporting risks arising from their investments. Supervisors should pay attention to the insurer's due diligence of investments with possible climate adaptation or mitigation objectives. Furthermore, insurers should consider the impact of climate-related risks on the security, quality, liquidity and profitability of the investment portfolio.

At the same time, insurers should have sufficient information about their investments to ensure that their asset risks can be properly managed. In the case of climate-related risks, this could mean facing the challenge of data limitations. Collecting a combination of qualitative and quantitative information could be useful in assessing climate-related risks. Insurers may also consider reviewing publicly available information such as their investee's climate risk disclosures and/or transition plans. Also, insurers should start working with available data, and look at different scenarios based on available data, in order to ensure that their investments are able to withstand the effects of climate change. Where insurers use proxy data from ESG data or rating providers, they should evaluate, inter alia, the assessment criteria, the relative weighting of the criteria and the extent of qualitative judgment.

[19] IFRS S2: Climate-related disclosures define climate-related transition plans as "An aspect of an entity's overall strategy that lays out the entity's targets, actions or resources for its transition towards a lower-carbon economy, including actions such as reducing its GHG emissions".

8 Supervisory reporting and public disclosure (ICPs 9 and 20)

8.1 Context and objective

Public disclosure and supervisory reporting of material climate-related risks can be particularly challenging given the multidimensional nature of climate-related risks. Yet, as the risks from climate change increase, it becomes increasingly important for insurers to effectively disclose material climate-related risks and for supervisors to integrate these risks into supervisory reporting requirements. This section provides advice to supervisors on how ICP 9 and ICP 20 may be applied in the context of climate-related risks.[20]

Under ICP 20.2.5, insurers' disclosures should enable policyholders and market participants to form well-rounded views of their financial condition and performance, business activities and the material risks related to those activities. In the case of climate-related risks, it is therefore important that climate-related risk disclosures be well explained so that they are meaningful and useful for policyholders and market participants in making decisions on insuring risks with, and providing resources to, respectively, the insurer. For instance, insurers may analyse and disclose the way in which climate risk may impact their operations, value chains and demand for their products.

8.2 Scope

This section sets out a pathway for addressing these issues and considers how supervisors may use the developments in climate disclosure standards and frameworks to ensure that the disclosure and supervisory reporting regimes they develop and use in their own jurisdictions are fit for purpose, align with the ICPs and properly incorporate climate-related risks.

Given the impact of growing climate-related risks, it is important for supervisors to consider the issues of financial disclosure and the supervisory reporting of these risks holistically to ensure that adequate information is shared with policyholders, market participants and supervisors. This section therefore considers these issues together and helps supervisors consider how approaches to addressing these matters may be tailored to the individual needs of their respective jurisdictions. Circumstances will vary by jurisdiction depending, amongst other things, on the characteristics of the insurance business written, how material financial risk from climate change is to insurers, and existing or planned climate disclosures in financial reporting.

The issue of disclosure of climate-related risks is one that is developing quickly, with action in a number of different forums. As understanding of these issues develop, there will necessarily need to be further evolution of disclosure practices to more effectively capture this risk, similar to the way in which more traditional disclosure practices have developed. The IAIS will continue to provide a platform for supervisors to share knowledge and best practice on these issues, develop the capacity of supervisors to understand existing climate disclosure regimes, and, where and when they deem necessary, supplement those regimes or develop their own supervisory reporting regimes.

Section 8.3 provides context on the development of climate-related risk disclosures; section 8.4 is focused on public disclosure of climate-related risks; section 8.5 is focused on supervisory reporting

[20] In subsequent references, "disclosure" relates to the public disclosure of climate-related risks. Where a reference is to supervisory reporting, this is explicitly noted.

of these risks; section 8.6 explores issues related to governance of disclosures; and section 8.7 highlights the steps supervisors can take to address issues with these disclosures.

8.3 Developing a disclosure regime

Context

8.3.1 Climate-related risk financial disclosures: materiality and relevance

ICP 20 provides the global insurance supervisory requirements for effective disclosure to enhance market discipline. The principle states that "the supervisor requires insurers to disclose relevant and comprehensive information on a timely basis in order to give policyholders and market participants a clear view of their business activities, risks, performance and financial position". Since climate change is a driver of risks for insurers and these climate-related financial risks should be integrated with existing risk management practices, there is also a need for climate-related financial risks to be integrated into disclosures consistent with ICP 20. This section shows how climate-related financial disclosures are consistent with ICP 20 and the extent to which emerging climate disclosure standards can be used to meet the requirements set out in ICP 20.

Supervisors have provided feedback that insurers find some aspects of disclosure of climate-related financial risks difficult (see section 8.7 for more details). This section seeks to provide advice to support effective disclosure of climate-related financial risks, in line with ICP 20, internationally agreed climate disclosure frameworks, and frameworks developed by jurisdictional standard setters.

Climate-related disclosures are relevant for insurers as they play a number of different roles:

- Preparers of climate-related disclosures where required by stock exchange listing rules and/or jurisdictional disclosure regulations;
- Preparers of product-level climate-related disclosures, such as in the design of investment-linked life insurance policies for retail customers where climate-related risks and opportunities are integrated into the investment strategies of underlying sub-funds;[21] and/or
- Primary users of general-purpose financial reports including climate-related disclosures, as asset owners.

8.3.2 Link to international standards

Given the many links between the insurance, capital markets and banking segments of the global financial services system, the Financial Stability Board (FSB), IAIS[22] and International Organization of Securities Commissions (IOSCO) have supported an international framework for climate-related financial disclosures.

International standards can provide a framework that meets the requirements set out in the ICPs and can provide greater convergence and comparability over time so that climate-related risks are effectively reflected in disclosures in line with ICP 20.0.2. The IAIS recognises that international standards for climate disclosures are nascent, and a period of time will likely be needed before comparability can be achieved. ICP 20.0.7 also highlights the benefits of disclosing the methods and

[21] See ICP 20.12.19: "For many life insurance policies, returns that policyholders receive are either directly or indirectly influenced by the performance of an insurer's investments. Disclosure of investment performance is, therefore, essential to policyholders and market participants".
[22] IAIS welcomes global climate-related financial disclosure standards (August 2022)

assumptions used for preparing information to aid comparability between insurers. This is especially useful in the case of climate-related disclosures given the data and modelling uncertainties.

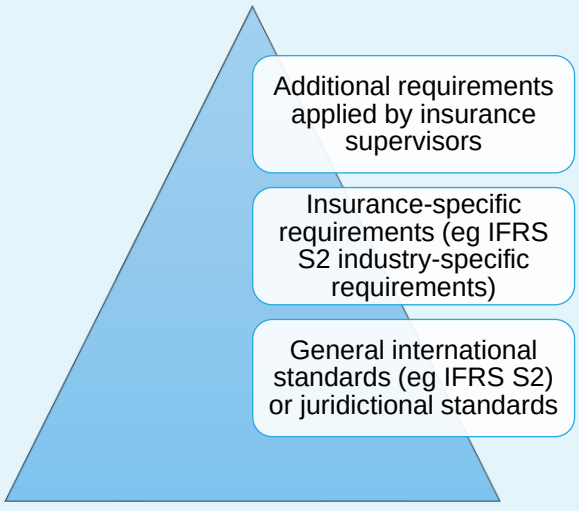
Box 1: The need for a specific climate-related risk disclosure regime for insurers

Disclosure is a policy area that is not the sole preserve of supervisors. General corporate disclosure regimes are typically developed by authorities such as accounting authorities, markets regulators or ministries of finance. Therefore, consistent with ICP 20, supervisors should consider the needs of market participants and policyholders and whether the existing disclosure framework in their jurisdiction is sufficient.

Supervisors should explicitly consider whether they need to supplement existing disclosure requirements with sector-specific measures. This may be relevant where:

- General disclosure regimes do not adequately capture climate-related risks or prove to be too generic to adequately meet the needs of users of insurers' disclosures under ICP 20;
- Regimes with sectoral requirements fall short of meeting the requirements set out in ICP 20 to some extent and can be augmented by the supervisor; or
- Where insurers are not making sufficient clear disclosures such that they are consistent with ICP 20 and/or where users are unclear about the points being disclosed by insurers.

The International Sustainability Standards Board (ISSB) has developed a global baseline that provides a good basis for a framework consistent with ICP 20.0.2. The framework could include the following elements:



If jurisdictions decide not to apply any additional disclosure requirements on top of the international standards, supervisors can still consider conducting thematic work to assess the disclosures by insurers and to ensure they are meeting the needs of market participants and policyholders (together known as "users").

8.3.3 Fundamental principles of a climate-related risk disclosure framework

This section considers the extent to which elements of ICP 20 are relevant for the development of climate-related financial disclosure frameworks.

8.3.4 Materiality approach based on the information needs of users

ICP 20.0.1 defines the users of disclosures as market participants[23] and policyholders who make decisions on providing resources to, and insuring risks with, the insurer. Information should be meaningful, useful, relevant and comprehensive to provide a clear view on the insurer's business activities, risks, performance and financial position. ICP 20.0.10 cautions against unnecessary volumes of disclosure, which may obscure useful information. This principle applies equally for disclosures covering climate-related risks.

This approach to materiality assessment applies the materiality threshold to information needed by the users of the reporting entity's general purpose financial reports, rather than to a wider stakeholder audience.

8.3.5 Connectivity to financial reporting standards and extending reporting to a longer-term horizon

ICP 20.2 requires disclosure of "appropriately detailed information" on a range of items, including financial performance, investment risk exposure and ALM. ICP 20.5 cash flow assumptions and ICP 20.6 stipulate disclosures should be made for reasonably foreseeable and material insurance risk exposures. Climate-related risk disclosures should seek to address how climate-related risks and opportunities may affect the resilience of an entity's profit margins, operating cash flows and balance sheet for the current period as well as across the short-, medium- and long-term horizons. Forward-looking climate-related financial disclosures may help users understand reasonably foreseeable and material risks that may extend beyond the typical horizon as well as the recognition criteria of financial reporting due to the longer time horizons, non-linear nature and complex transmission channels through which climate effects may manifest. This is particularly relevant for insurers whose liabilities and assets tend to be longer in duration.

8.3.6 Application of the proportionality principle

ICP 20.0.5 requires supervisors to apply disclosure requirements in a manner that reflects the "nature, scale and complexity of insurers"[24] while promoting market discipline and meeting user information needs. In-built proportionality mechanisms within a climate disclosure framework/standard will help avoid a one-size-fits-all approach that unduly burdens small private insurers, which have limited capabilities and resources for climate-related disclosures compared with larger publicly listed industry players. Supervisors will need to balance overriding principles of proportionality against several other considerations. For instance:

- Concentration risk: Consistent with ICP 20.6.6, where smaller insurers have concentrated exposures to certain climate perils due either to geographical or economic sector concentrations,

[23] Market participants are defined to include existing and potential investors, lenders and other creditors.

[24] See ICP 20.0.5: "The supervisor's application of disclosure requirements will depend on the nature, scale and complexity of insurers. For example, it may be overly burdensome for a small, private insurer to meet the same requirements developed for large, publicly traded insurers. While disclosure requirements may vary, the outcome should promote market discipline and provide policyholders and market participants with adequate information for their needs".

which would be considered material by users, they will need to be disclosed. Equally, supervisors will want to assess whether such concentrated risks are relevant and should be disclosed.

- Different disclosure costs: Existing climate disclosure regimes acknowledge the fact that the costs and burden associated with providing disclosures on different climate-relevant topics may vary. For instance, governance disclosures that set out how climate-related risks are integrated into governance frameworks are less costly to implement than those that require disclosure of scenario analysis results. Supervisors will want to consider these issues as they assess what disclosure is necessary and proportionate.

This is particularly the case for climate disclosure items that are (i) likely to have higher levels of measurement or outcome uncertainty due to the longer-term horizon, non-linear effects and feedback loops of climate change; and (ii) more complex and less familiar at this juncture, for example scenario analysis and anticipated financial effects of climate-related risks and opportunities. ICP 20.0.10 cautions against excessive disclosure requirements that will be burdensome for insurers without leading to effective disclosures, and this is pertinent to these climate items. ICP 20.2.4 also notes the need to "balance the interests of reliability against those of relevance or usefulness", in, for example, preparing and disclosing information with a high degree of inherent estimation uncertainty. This may be particularly relevant for some climate-related disclosures.

Box 2: Example of an international climate disclosure standard: ISSB

In June 2023, the ISSB, formed in November 2021 under the auspices of the IFRS Foundation, issued its inaugural sustainability standards IFRS S1 (General Requirements for Disclosure of Sustainability-related Financial Information) and IFRS S2 (Climate-related Disclosures). IFRS S1 provides general requirements for the disclosure of sustainability-related risks and opportunities that could reasonably be expected to affect an entity's cash flows, access to finance, or cost of capital over the short, medium and long term. It includes requirements for content and presentation to ensure decision-useful information is produced. IFRS S2 specifies climate-related disclosures and is designed to be used with IFRS S1. IFRS S2 is structured around four areas: governance, strategy, risk management, and metrics and targets.

Materiality approach based on information needs of users

The ISSB definition of materiality is set out in IFRS S1. Appendix A notes that "in the context of sustainability-related financial disclosures, information is material if omitting, misstating or obscuring that information could reasonably be expected to influence decisions that primary users of general-purpose financial reports make on the basis of those reports, which include financial statements and sustainability-related financial disclosures and which provide information about a specific reporting entity."

Connectivity to financial reporting standards and reporting over a longer-term horizon

The concept of connected information is embedded within the ISSB standards as a conceptual foundation, including as it relates to connections between sustainability-related financial disclosures and the related financial statements. Although the ISSB standards do not require the related financial statements to be prepared using IFRS accounting standards, those doing so

benefit due to the design of the ISSB standards which includes shared concepts and terms. The ISSB standards (i) use common underlying concepts, such as materiality, and financial terms, such as carrying amounts of assets and liabilities, used in the IFRS accounting standards; (ii) require disclosures on the current and anticipated quantitative impacts of climate on an entity's financial performance, financial position and cash flows over the short, medium and long term; and (iii) require disclosures to be made such that users can understand the connections between climate-related financial disclosures and related financial statements.

Application of the proportionality principle

The ISSB standards incorporate proportionality mechanisms that apply to specific requirements[25] that respond to the range of capabilities and preparedness of companies around the world to apply the requirements including allowing for the consideration of preparers' skills, capabilities and resources. This includes that a preparer is only required to consider "reasonable and supportable information that is available at the reporting date without undue cost or effort" for specific requirements with high levels of measurement or outcome uncertainty and to ensure requirements are proportionate to an entity's circumstances. The concept of supportable information aligns with ICP 20.2.4's point on reliability vs relevance or usefulness of information disclosed. In addition, IFRS S2 includes reliefs in the first year of applying the standard such as permitting a company to: continue to measure its GHG emissions with a method other than the Greenhouse Gas Protocol, to not provide scope 3 disclosures, and to not provide comparatives.

Adoption of the ISSB standard

The ISSB is tracking the implementation of the global climate disclosure standard and supporting jurisdictions with capacity building to help them effectively implement the standard. It provides regular updates on implementation progress on its website.[26]

IOSCO has assessed that the ISSB standards are aligned with corporate reporting norms and include "sufficient precision and application of definitions and concepts to form a robust foundation for interoperability with jurisdiction-specific requirements".[27]

Box 3: Example of a jurisdictional climate-related supervisory reporting: National Association of Insurance Commissioners

For the US insurance sector the National Association of Insurance Commissioners (NAIC) in 2022 approved a revised Climate Risk Disclosure Survey (first adopted in 2010) aligning it to the Task Force on Climate-related Financial Disclosures (TCFD) framework. Currently, 29 states/territories participated, representing approximately 85% of direct written premiums annually in the US. States

[25] Disclosures related to on determination of anticipated financial effects, climate-related scenario analysis, assessment of Scope 3 GHG emissions, identification of risks and opportunities, determination of the scope of the value chain and calculation of metrics in some cross-industry categories.

[26] www.ifrs.org/ifrs-sustainability-disclosure-standards-around-the-world/jurisdiction-consultations-on-sustainability-related-disclosures/

[27] IOSCO endorsement assessment of the ISSB Standards for sustainability-related disclosures (July 2023)

participating in the survey require insurers licensed to do business within the state and annually writing at least $100 million direct written premium to complete the survey. The individual insurer reports can be found on the California Insurance Department's website.[28]

The survey is structured around the four TCFD recommendations (governance, strategy, risk management, and metrics and targets) that are also key elements for how insurers operate. The four areas are supported by key climate-related financial disclosures, referred to as recommended disclosures, that build out the framework with information that will help regulators and others understand how reporting organisations assess and approach climate-related issues.

Recommendations

Consistent with ICP 20, supervisors should require that climate-related risks are effectively captured in public disclosure requirements, where material.

Insurers should ensure connectivity between the information presented in their financial statements and their climate disclosures so that users can understand how climate-related risks can have an impact on insurers' business activities, risks, performance and financial position. Over time, insurers should consider integrating climate-related financial disclosures and financial statements, including management discussion and analysis/commentary where possible and in line with jurisdictional reporting requirements. This holistic approach can provide a more comprehensive view of the risks facing insurers.

Consistent with existing disclosure, climate disclosures should include appropriate indicators (or metrics) that are relevant and meaningful for market participants and policyholders. Materiality assessments should be applied to determine whether climate-related information is considered material to users' decision-making processes, including voting and stewardship.

8.4 Public disclosure of decision-useful climate information

8.4.1 Climate information

Context

ICP 20.2 requires that insurers disclose "appropriately detailed information on their: company profile; corporate governance framework; technical provisions; insurance risk exposure; financial instruments and other investments; investment risk exposure; asset-liability management; capital adequacy; liquidity risk; and financial performance". This should include climate-related risks where material, and, as a good practice, the insurers' assessment of materiality.

ICP 20.0.1 states that public disclosure is intended to provide "meaningful and useful information" to users. Including climate data and indicators[29] in disclosures is consistent with this objective and ensures that disclosure is sufficiently comprehensive and therefore decision-useful.

ICP 20 includes both qualitative and quantitative disclosures to help users understand an insurer's risk exposures. Given the challenges of estimating the impacts of climate-related risks due to their forward-looking and unprecedented nature, insurers may consider using qualitative disclosures for

[28] https://www.insurance.ca.gov/0250-insurers/0300-insurers/0100-applications/ClimateSurvey/

[29] The ICPs generally refer to the use of indicators; however, the term is broadly interchangeable with metrics.

reasonably foreseeable and material risks and should disclose the assumptions used for quantitative risk estimates.

Climate-related risks should be integrated into disclosures of existing risk categories. Supervisors recognise that climate disclosures will necessarily differ between insurers that offer health/life and non-life products, and they will differ based on the insurer's operational location, materiality aspects, overall products offered to policyholders, and how the disclosures are reported (group/consolidated or single insurer). Over time, and subject to the caveats set out in the previous section, supervisors should expect climate-related risks to become increasingly reported and accounted for by insurers. Table 3 sets out examples of how climate risk can be integrated into the disclosures that are already required under ICPs 20.2-20.12:

Table 3: Applying ICP 20 disclosure standard to climate risk

ICP	Links to climate-related risk
20.2	The standard requires disclosure of various areas of information, including insurer profile, insurance/investment risk exposure, capital adequacy and corporate governance framework. Supervisors should consider how insurers are incorporating climate-related risks into these disclosures and ascertain that insurers have a robust process in place for making a proper and comprehensive assessment of risks for the purpose of these disclosures.
20.3	The standard requires disclosures on the "external environment" and "main trends" and "factors" (ICP 20.3.4) that will influence the business of the insurer. Supervisors should consider how insurers assess and disclose climate-related risks to the extent it is one of various factors that may influence insurers in the coming years.
20.4	The standard requires disclosures on the insurer's corporate governance framework, including key features of internal controls and risk management. Supervisors should consider how insurers integrate climate-related risks into their ERM systems.
20.6	The standard requires disclosures on "reasonably foreseeable and material insurance risk exposures" and their management, including models and techniques. Supervisors should examine how insurers assess and disclose the extent to which climate-related risks form such exposures, as well as the use of climate models, relevant risk concentrations and reinsurance where relevant. For instance, they may wish to set out an assessment of their ability to cede risk to reinsurers in light of climate-related risks and how this mitigates their own risk exposure.
20.7	The standard requires disclosures about insurers' financial instruments and investments. Supervisors should consider how insurers assess and disclose the extent to which their financial instruments may be exposed to climate-related risks at the individual instrument level and across their wider portfolio. Assessments of risks by sector and by geographic area may be needed. For example, insurers should disclose how they manage risks related to longer-dated instruments with significant exposure to carbon-intensive sectors or to jurisdictions with a higher geographic concentration of physical risks.
20.8	The standard requires disclosures on the insurer's material investment risk exposures and their management. Investment risks are likely to increase because of the impact of physical climate-related risks on the collateral value, useful life and price of assets.

	Similar risks may also be posed by transition risks. Insurers should disclose how their investment risk exposure may change over time as climate change becomes an increasing driver of risks, using climate-risk scenario analysis where appropriate. The underlying assumptions and results of such analysis should be disclosed, in line with ICP 20.8.7.
20.10	The standard highlights the need to clearly disclose details about the insurer's capital adequacy. This should include the impact of climate-related risks on capital adequacy if it is reasonably possible that their solvency could be materially affected.
20.11	The standard requires the insurer to disclose sufficient qualitative and quantitative information about its liquidity risks. Supervisors should consider how insurers assess and disclose the impact on liquidity risks as climate-related risks crystallise over time and markets respond accordingly, where material.
20.12	The standard requires disclosures on the insurer's financial performance. Supervisors should consider how insurers disclose the extent of any material impact of climate change on earnings, claims experience, pricing or investment performance. To address uncertainties regarding the assessment of such impacts, insurers should disclose underlying assumptions and climate scenarios used.

Box 4: Climate-related risk indicators for public disclosure and supervisory reporting

Consistent with their use in public disclosure and supervisory reporting of non-climate-related risks, indicators can provide relevant and reliable information on climate-related risks and how these risks are integrated into existing risk frameworks. Consistent with ICP 20.6, indicators can help insurers to more effectively communicate their exposures. Consideration should be given to using the most relevant indicators for different business lines.

Climate-related risk indicators are measures used to quantify and communicate the nature, scale and complexity of specific risks posed by climate change to an insurer. They can be designed to capture various dimensions of climate-related risks and can be helpful for internal risk management, supervisory reporting, and external reporting and compliance.

Ultimately, the aim should be to integrate climate-related risks into the financial indicators used by insurers to disclose information on material risks. In the near to medium term, a range of other indicators will likely be used, often as proxies, to highlight insurers' climate-related risk exposures due to the difficulties set out in section 8.7.

Indicators enable users to compare and benchmark the climate-related risk exposure and performance of different insurers within and across sectors over different time horizons. Additionally, as noted in ICP 20.0.7, "meaningful comparisons can be made only where there is adequate disclosure of how information is prepared", so that market participants understand the methods and assumptions underlying indicators and their inherent limitations.

Consistent with broader financial indicators, climate-related risk indicators can be used by insurers to set measurable risk management targets and track and communicate their progress.

Climate-related risk indicators may enable insurers to demonstrate their ability to mitigate climate-related financial risks and maintain the resilience of their business models, including in their

product development, customer distribution and information sharing with customers, insurance intermediaries and reinsurers.

Climate-related risk indicator typology

In integrating climate-related risks into existing risk taxonomies, it is important to consider how physical and transition risks have an impact on both assets and liabilities. Indicators currently used typically relate to physical, transition or governance risks. The following examples, although not comprehensive, are illustrative of indicators that could be useful and will likely evolve over time.

Examples of physical risk indicators

These indicators help to evaluate the potential impact of physical climate-related events on insurer assets and underwriting:

Asset and underwriting risks

- Frequency and severity of natural disasters and chronic weather-related changes: indicators measuring the incidence and impact of events like hurricanes, floods, wildfires and droughts as well as the incidence and impact of weather-related changes such as heat stress, humidity and an increase in vector-borne diseases;
- Geographical risk exposure: assessing the vulnerability of geographic areas to climate events for life and non-life exposures;
- Different physical risk scenarios that can be used to produce a range of potential impacts on insurance liabilities and investments; and
- Projected financial impact of an increase in frequency and severity of weather events: estimating how frequent and how severe weather-related events (like hurricanes, floods and droughts) might become under different warming scenarios and how they may affect financial outflows for insurers for life and non-life business, as well as necessary premium changes for business continuity.

Examples of physical risk indicators used by insurers are the annual average loss (AAL) and probable maximum loss (PML) metrics.

The AAL is commonly used to estimate the average expected loss in any year due to catastrophic events like floods, or storms. The basic formula for the Annual Average Loss is:

$$AAL = \sum (Pi \text{ X } Li)$$

Where:

Pi = Probability of a particular event occurring in a given year (eg, a flood of a certain severity)

Li = Losses associated with that event if it occurs (eg the cost of damage from the flood)

The PML is commonly used to estimate the worst loss at different return periods (eg 1 in 100) from catastrophic events like floods or storms. The basic formula for the PML is:

$$F(L) = Probability\ (l \leq L)$$
$$PML\ (1\ in\ 100) = F^{(-1)}\ (0.99)$$

Where:

F(L) is the cumulative distribution of losses (l) – ie the probability that the maximum loss from an event in a given year will be less than L. The PML at a defined return period (eg 1 in 100) is then the largest loss than one could expect at the defined percentile (eg 99th percentile).

Asset risks

Asset-specific risk assessments: evaluating the susceptibility of individual assets, asset categories (eg equities, corporate or sovereign debt) and/or economic sectors to climate-related risks (eg real estate exposure).

Examples of transition risk indicators

These focus on the risks associated with the transition to a low-emission economy. Key indicators may include:

Asset and underwriting risks

- Legal and regulatory risks: assessing the potential for litigation or regulatory penalties associated with the transition;
- Exposure to high-carbon industries: assessing the proportion of the investment portfolio (eg financed emissions) or underwriting activities (eg insurance-associated emissions) linked to fossil fuels or other high-carbon sectors;
- Different scenarios: analysing the potential impact of various transition risk scenarios (eg orderly transition vs delayed response) on insurance liabilities and investments, particularly those in carbon-intensive industries, as well as the sensitivity of impacts to different carbon prices; and
- Technological developments: for example, the projected financial impact of technological improvements or innovations and shifts in supply and demand for certain commodities, products, and services, and estimating how these changes might occur under different transition scenarios and how they may affect financial outflows for insurers for life and non-life business.

Asset risks

- CO2e emissions footprint or intensity of investments: measuring the current and forecast GHG emissions (absolute or intensity) associated with an insurer's investment portfolio;

- Portfolio alignment indicators, such as alignment to the Paris Agreement, which may be relevant in some jurisdictions especially where this transition is embedded in statutory provisions;
- Stranded asset risk: evaluating unforeseen loss of asset value due to abrupt changes in market dynamics, regulation or technological advancements; and
- Investments in climate resilience: measuring the extent of investments in climate adaptation, as well as the adequacy of portfolio companies' capital expenditure on adaptation measures.

8.4.2 Disclosure of scenario analysis results

Scenario analysis can be a useful tool for assessing the impact of climate-related risks. Scenario analysis exercises are not intended to present a definitive assessment of the extent to which climate will be a driver for risks faced by insurers; rather, they are intended to be used by supervisors from both a micro and/or macroprudential perspective and by insurers to understand the impacts of climate change on insurers' strategy and the medium- and longer-term risks an insurer faces.

Where a scenario analysis is conducted and the conclusions from the exercise are material, consistent with ICP 20 and with legal requirements in general, supervisors should consider requiring the disclosure of these results and how scenario analysis is used in governance and senior management decision-making processes. Insurers that perform climate-related scenario analysis on their activities should disclose a description of the climate-related scenarios used, including the critical input parameters, assumptions and considerations, analytical choices and coverage (eg the percentage of assets captured in the scenario analysis). Indications of the quality of the scenario analysis should also be provided. Insurers should indicate how the assumptions and parameters align with their risk appetite and strategic business direction. Insurers should also convey the uncertainty in the assumptions or scenarios so that users understand how they should consider the disclosures. Existing guidance from ISSB and the TCFD provides a general approach to the disclosure of scenario analysis exercises. However, where existing disclosure frameworks being used by supervisors do not include guidance, supervisors may consider using the following indicators:

Climate scenario-conditional projections over the medium and long-term:

Asset-related indicators (impact of transitional only, physical only and both)

- Credit ratings by sector and region;
- Equity valuation by sector and region;
- Value of real estate that could be uninsurable or only at an unusually high premium level;
- Real estate valuation by region; and
- NatCat climate-adjusted investors' appetite/level.

Underwriting-related indicators

- NatCat losses by peril and region;
- NatCat climate-adjusted premium level by peril and region;

- Proportion of market becoming uninsurable by peril and region;
- Mix of technologies in given sectors (eg electric vs internal combustion engine vehicles);
- Expected legal liability claims by region; and
- Life and health reserve strengthening by region and line of business.

Corporate indicators

- Earnings impact by line of business; and
- Capital impact.

Supervisors requiring disclosures on the use and extent of scenario analysis exercises may consider implementing "comply or explain" approaches. In a number of jurisdictions, scenario analysis requirements are driven by a materiality assessment, which is especially important in the area of indicators and targets. Supervisors should consider the extent to which insurers are required to disclose their approach to climate-related scenario analysis and how it drives internal decision-making, and whether qualitative and/or quantitative outputs are required. Supervisors may also consider other scenario analysis specifications such as using specific scenarios and risks, how scenario analysis outcomes can be disclosed, and scenario analysis limitations. Due to confidentiality concerns, supervisory reporting may be more appropriate for quantitative outputs, method specifications, outcomes and decision-making derived from scenario analysis, with only a high-level but still meaningful and useful summary required for public disclosures.

8.4.3 Key criteria to improve the decision usefulness of indicators

Consistent with the definition set out in ICP 14 (Valuation), decision usefulness means the usefulness in making judgments about climate-related risks to which insurers are exposed.

The selection of indicators may be driven by the regulator (through requirements imposed on corporates in general or insurers in particular), the supervisor (in the context of supervisory reporting or ad hoc requests made for the identification of idiosyncratic or systemic risks), the markets (influence of third parties such as rating agencies and data providers) or the insurers themselves (voluntary disclosures).

When choosing which indicators insurers should be asked to disclose, supervisors may use the following criteria:

- Relevance and reliability: Relevance implies that the information can influence the decision-making process by helping users assess past, present or potential future events. Reliability means the information accurately reflects the insurer's performance and strategy, and that the underlying data used to generate indicators is reliable.
- Timeliness: Timeliness refers to the disclosure of the most up-to-date information as well as the promptness and frequency of the disclosure to enable users to factor information into decision-making processes.
- Fair presentation: Public disclosures should present a fair view of the insurer's performance and financial position. This includes not only adhering to accounting standards but also ensuring that the overall presentation does not obscure the true nature of financial activities.
- Understandability: Information should be presented in a clear, concise and coherent manner.

- Transparency: Disclosures should extend to the key components of data (eg source, limitations, proxies, assumptions) and method (eg scope, formula) used to compute the indicators.
- Comparability: Comparability encourages indicators/metrics that are comparable across insurers, and, over time, is useful for benchmarking and tracking progress in climate risk management.
- Forward-looking perspective: Forward-looking information may be more relevant for climate-related financial risks than for other types of risk, given the unprecedented nature of climate risks and the longer time horizon over which they manifest. Providing insights into future prospects and reasonably foreseeable and material risks and management's plans can significantly enhance the decision usefulness of disclosures.
- Cost-benefit considerations: Decision usefulness should encompass an element of cost-benefit assessment consistent with the ICP principles on proportionality so as to account for the cost and accessibility of data.

8.4.4 Climate adaptation

Climate adaptation refers to actions to prepare for, and adjust to, the current and future impacts of climate change – for instance, the increased use of flood barriers, or different building codes to reduce the impact of wildfires. Insurers can require that repairs carried out in response to a claim – for instance, for flooding–be designed to reduce exposure from future perils (often referred to as "building back better"). These measures have the potential to significantly reduce exposure to climate risks. Insurers should clarify whether the information presented takes into account adaptation measures, and should disclose the impact of these adaptation measures where they result in a material difference to risk exposures.

Recommendations

Integrating climate considerations into disclosure regimes: supervisors should consider revising expectations or providing guidance to clarify how material climate-related risk exposures should be disclosed to meet ICP 20's requirements, as for any other material risk. Supervisors could choose to consider internationally agreed climate disclosure frameworks, such as the International Sustainability Standards Board, or frameworks developed by jurisdictional standard setters.

Due to differences in legal and regulatory frameworks, comparability of jurisdictional disclosure regimes may not be easily achieved. Nonetheless, supervisors should encourage the development and adoption of standardised indicators and disclosure formats for climate-related risks, which will need to recognise different business models. When supported by robust disclosure of the methods and assumptions used, a more standardised set of indicators will help users to better understand insurers' disclosures on the elements in ICP 20 (see Table 3) and enhance the comparability of information between insurers as well as with other financial institutions.

- Transparency and consistency of indicators: Supervisors should guide insurers to be transparent and consistent in their use of data sources and methods to calculate climate indicators (ICP 20.0.7). This includes disclosure of clear explanations of the methods used and any changes thereof.
- Forward-looking information: Supervisors should encourage the use of forward-looking indicators to capture reasonably foreseeable and material risks, set either by authorities, where

relevant, or by individual insurers to ensure insurers disclose decision-useful information that reflects the evolving nature of climate-related risks.

- Regular updates and reviews: Supervisors should review and update processes for climate-related indicators to ensure that the most updated and robust climate-related data, methods and indicators are integrated into reporting.

8.5 Considerations for supervisory reporting of climate-related risks

Context

ICP 9 sets out broad requirements for supervisors to use off-site and on-site inspections to examine the business of each insurer; evaluate its financial condition, conduct of business, corporate governance framework and overall risk profile; and assess its compliance with relevant legislation and supervisory requirements. Since climate-related risks are drivers of risks within existing risk categories, it is important that this risk also be disclosed in supervisory reporting. Although many elements of ICP 9 are relevant, this section in particular highlights how:

- ICP 9.1 (with a focus on ICPs 9.1.6, 9.1.7 and 9.1.8) and ICP 9.4 (including ICP 9.4.3), which set out specific supervisory reporting requirements, should be interpreted in order to integrate climate-related financial risks; and
- ICPs 9.5 and 9.7 are relevant to the extent that climate-related risks need to be integrated into governance processes for supervisory reporting.

Regarding supervisory reporting, ICP 9.4 sets out the framework supervisors should have in place to gather relevant quantitative and qualitative information from insurers in order to understand the risks to which they are exposed. Since climate-related risks are drivers of existing risk categories (eg underwriting, reserving, credit, market, liquidity risk etc) it is important that issues related to climate change be adequately captured as part of supervisory oversight of the insurer's approach to managing risk, where material.

Supervisory reporting is complemented by insurers' public disclosures. In both instances, information provided could be qualitative and/or quantitative depending on the nature of the risk and the intended audience. Additionally, public disclosure and supervisory reporting often include metrics, to the extent these are useful, and comparable indicators of risks.

With climate-related risks, the creation of the TCFD was a forerunner to broad adoption of supervisory reporting. Although the IAIS has welcomed the work of the TCFD, which culminated with the June 2023 publication of the ISSB standards,[30] this does not negate the need to consider whether – and, if so, what – information should be collected as part of supervisory reporting. Additionally, there is the potential for an iterative process on supervisory reporting to highlight what data and/or metrics may be used for disclosure (recognising the fact that the audiences for supervisory reporting and disclosure are different).

[30] IFRS Foundation welcomes culmination of TCFD work and transfer of TCFD monitoring responsibilities to ISSB from 2024

8.5.1 Understanding different climate-related risks

Supervisors should ensure that climate-related risks are adequately captured in the information they receive from insurers, where material. Depending on their mandate, supervisors should look to undertake supervisory reporting that captures micro/macroprudential risks and conduct risks.

- Prudential: Supervisory reporting can help supervisors understand whether insurers have embedded sufficiently robust risk management, compliance and governance processes that are consistent with regulatory requirements and provide for the effective assessment of climate-related risks. Equally, supervisory reporting enables supervisors to assess the adequacy of insurers' capital resources to cover these risks, consistent with ICP 9.1.7. It can also be helpful to gain insights into how insurers promote climate resilience amongst policyholders, which in turn could enhance the financial resilience of the insurance sector.
- Conduct: Supervisory reporting can help supervisors understand the extent to which policyholders may be exposed to greater risks. Conduct regulators should seek to understand how these risks can negatively affect consumer outcomes if coverage is removed. ICP 9.4 requires insurers "to report on any material changes or incidents that could affect their condition or customers". Consumer outcomes may be affected if climate change results in changes in pricing, perils underwritten or the geographic availability of coverage. Insurers should be reporting premium, claims and policy movement (eg cancellations) information at a sufficiently granular level so that supervisors can analyse the loss trends and evaluate the affordability and access to insurance. One use of this data would be to enable supervisors to receive information prior to insurers pulling out of a market, so that they can understand the reasons behind these changes and assess the likely market impact, as well as have more time to determine supervisory actions within their respective mandates. Rational decisions by insurers to reduce their exposures from a prudential perspective could have a negative impact on the market in general (ie collective action problems).[31]

8.5.2 Supervisory reporting examples

This section considers approaches supervisors should consider when developing their reporting framework. Consistent with ICP 9.4, there are three broad categories of reporting:

- Quantitative: Consistent with the need to determine the insurer's overall risk profile (ICP 9.1.6), supervisors should ensure they capture available data points on the exposure and likely risk profile of certain assets/underwriting exposed to climate-related risks.
- Qualitative: Supervisory reporting should also consider qualitative elements about exposure to climate-related risks, for instance a narrative description on how the risks the insurer underwrites are expected to change over time and how these are managed.
- Governance: the extent to which climate-related risks are being embedded in governance processes and oversight provided by the board. ICP 9.1.6 notes that the supervisory reporting framework should include reporting on "the systems of risk management and internal controls; organisational structure; and compliance with supervisory requirements". This applies equally for climate-related risks and should include the extent to which risk committees have discussed and

[31] Conduct issues related to issues such as greenwashing are explored in an earlier Application Paper.

integrated climate-related risks into risk governance frameworks, as well as the expertise in place to address any gaps in skills and capabilities. Equally, ICP 9.1.6 flags the need for disclosure to reflect changes to "business objectives and strategies and business models", which should capture any climate change-driven changes – for instance, the extent to which insurers will no longer underwrite certain perils (eg flooding) or provide cover in certain geographic locations (eg coastal properties).

8.5.3 Supervisor-level data issues

ICPs 9.5 and 9.7 taken together highlight the need for supervisors to monitor insurers by using "analysis [of] information provided through supervisory reporting" to take "preventive or corrective" actions to address identified issues. Supervisors should engage with insurers to better understand their climate-related risk exposures and discuss how these disclosures and/or supervisory reporting barriers can be addressed.

Table 4: Solutions to address disclosure challenges

Issue	Supervisory solutions
Lack of granularity of exposures: In some cases, reported information on climate-related risks lacks the required granularity to translate the reported data into risks as set out in ICP 9.1.6 to understand the insurer's risk profile.	To address these issues, supervisors could require the following information as part of supervisory reporting: • More granular information on insured losses for weather-related perils, attributed to specific catastrophes; • More detailed information for classification of investments into sectors (eg four-digit NACE codes); • Geolocation data for assets and liabilities to understand physical risks to a much higher spatial resolution; and • Information on how prevention measures affect risks such as through risk exposures, insured losses and modelling.
Inability to translate collected data into risks: Gaps in data, unclear assumptions, unclear relationships between climate-related risk data and financial data, and many other data issues can also prevent translation of reported information into risks. For example, supervisors note that there is no established way to translate GHG emissions into prudential risks to insurers, as climate scenario analysis and stress testing methods are still evolving.	Although climate-related risk data gaps exist, supervisory reporting regimes can at least identify the gaps and what insurers are doing to address them so supervisors can assess insurers' overall risk profile (ICP 9.1.6). Initial qualitative reporting on the gaps and difficulties in understanding climate-related risks will help supervisors engage with these issues, understand cross-sector trends, identify best practices and set a clear path to removing barriers to assessing climate-related risks. Supervisors may also explore scientific approaches studied in the financial industry to

	assist with the translation of collected data into risks and thus further refining supervisory data collections.
Assessing climate-related risks has notable differences to the approaches that insurers use to assess other risks. For instance, assessments need to be longer-term to capture the full effects of climate-related risks, historical data is considerably less reliable for assessing risks, and risk measurement methods are evolving quickly. In addition, there is often a lack of reliable forward-looking data to assess these longer-term risks.	Supervisors should ensure that uncertainties in disclosure and supervisory reporting are effectively communicated by insurers where issues are identified. Such uncertainties already exist in relation to traditional modelling (eg on economic variables), so insurers can integrate climate-related risk elements into existing disclosures on such uncertainties.

8.5.4 Group vs entity-level reporting

In setting expectations, it is important to explore: (i) if supervisory reporting will be required at the local entity level; (ii) if consolidated reporting encompassing a number of local and foreign entities will be permitted; and (iii) in instances where the local entities follow the expertise and guidance of a group domiciled in another jurisdiction, if the group's reporting may be deemed as an adequate substitute. In assessing such possibilities, it is important to consider whether such requests would still ensure compliance with local regulatory requirements and provide sufficient insights into local entities.

For internationally active insurance groups, a consolidated approach to disclosure is likely to lead to a more holistic approach to understanding climate risk and to be most useful for the users of the disclosure. Therefore, to the extent possible, supervisors should look at how consolidated disclosures (eg group-level disclosures) can be used – for example, by cross-referencing disclosures in the same reporting period – to satisfy any local requirements for entities and avoid the need for additional reporting.

8.5.5 Supervisory actions in response to information received

Given the rapid evolution of climate-related risk management and consistent with ICP 9.7, clear two-way communication between supervisors and supervised entities is essential. This will help supervisors to assess an insurer's "enterprise risk management framework for the identification and quantification of risks" consistent with ICP 9.1.7. Such communication enables supervisors to better understand and develop long-term solutions to overcome the challenges faced by insurers. Supervisors typically use a combination of sector-wide and insurer-specific communication approaches to increase awareness and promote transparency around the supervisor's expectations of the insurer's approach to climate-related risks. The supervisor may also host workshops for the financial and/or insurance sector to exchange information and promote awareness.

Consistent with supervisory reporting requirements more generally, supervisors should consider how to enhance the utility of climate risk-related supervisory reporting as well as their own ability to analyse the reported climate-related risk data.

Use of data

- Supervisory discussions: Supervisory reporting will allow for tailored discussions with insurers about their climate-related risk exposure and the prioritisation of supervisory resources. For

instance, consistent with proportionality principles, supervisors may wish to engage in the first instance with insurers that have material exposure to carbon-intensive industries to understand the extent to which this might pose a financial risk.

- Benchmarking and emerging practices: Supervisory reporting can be used to benchmark insurers and to share examples of emerging best practice, which can be useful for advancing the sector's capabilities. In some cases, where relevant and appropriate, these best practice examples may inform future supervisory requirements and/or processes.
- Data gaps: Supervisory reporting can be used to identify data gaps across the insurance sector and enable supervisors to facilitate or encourage efforts to address these gaps.

Resourcing

- A wide range of experts can contribute to better understanding climate-related risks. Climate scientists, economic modellers and others could be engaged to the extent they can provide a useful challenge for climate-related risk assessments in a manner that may not be required for other analysis of supervisory reporting. Supervisors should consider how they can engage and develop such expertise and in-house knowledge to improve their supervisory reporting capabilities.

Recommendations

8.5.6 Clearly communicate the supervisory reporting strategy

Climate-related risks should be fully integrated into supervisory reporting where material, and supervisors should clarify how these risks will be monitored on an ongoing basis (ICP 9.5) as well as the process for discussing findings (ICP 9.7) from supervisory reporting.

Supervisors should take a holistic view of what information needs to be disclosed to market participants and policyholders in public disclosure, and what information needs to be reported in supervisory reporting. These expectations should be clearly communicated to all users. This might include the following considerations:

- Use for assessing risk: Climate-related risk disclosures have traditionally been largely qualitative in nature, although jurisdictions are starting to develop climate disclosure frameworks that capture quantitative data. Supervisors will need more detailed, granular quantitative information to fully understand insurers' risk exposures and adequately meet the expectations in ICP 9.4. Such information is best provided on a confidential basis to supervisors to address insurers' concerns around commercial sensitivity and client confidentiality. Additionally, climate disclosure has mostly focused on proxies for financial risk such as GHG emissions (absolute and intensity). Over time, there will be significant benefits in developing and focusing on the integration of these risks into existing financial metrics – ie those aligned with ICP 9.4.
- Scope of disclosure: TCFD reporting in the insurance sector remains relatively low, especially in key areas such as disclosures on scenario analysis results. Where disclosure is low, supervisors may wish to seek additional information in supervisory reporting. Disclosure levels will increase in a number of jurisdictions in the coming years, given the move towards mandatory climate reporting.

8.5.7 Undertake gap analysis

If climate-related risks are not integrated into supervisory reporting, supervisors may receive an incomplete and misleading impression of insurers' risk exposures and struggle to meet the requirements set out in ICP 9.

Supervisors can consider adding a specific question or attestation into supervisory reporting in order to ascertain the extent to which climate-related risks have been integrated into the submitted data, ie the extent to which climate-related risks have been explicitly factored in. Consistent with ICP 9.5, as part of business as usual supervision, supervisors should communicate with insurers about their findings on climate risk integration. Where there are common issues that emerge in supervisory reporting across insurers, the supervisor may wish to engage with the sector as a whole to understand the relevant issues.

Supervisors should undertake a gap analysis of the information available to understand insurers' exposure to climate-related risks. Information needs will vary by jurisdiction, not least since the impact of physical and transition climate-related risks will vary by jurisdiction. Supervisors should consider whether existing disclosure, supervisory reporting or other mechanisms such as ORSAs) or ad hoc scenario analysis exercises are providing them with the information they need to assess climate-related risks.

8.5.8 Evolving supervisory reporting frameworks

Existing supervisory reporting frameworks reflect decades of experience in processes to identify established risks. As climate-related risk measurement methods are rapidly changing in line with scientific advancements, and consistent with ICP 9.1.12, supervisory reporting requirements for climate-related risks are expected to evolve over time. This could mean that it might be difficult to collect longitudinal data, that the costs of reporting regimes to assess this risk may be relatively high, and that supervisors and insurers should look to develop a relatively agile and flexible/adaptable reporting framework.

8.5.9 Supervisory training

Like any risk assessment, the reporting of climate-related risks requires the use of some assumptions. Supervisors may be less familiar with the assumptions used for assessing climate-related risks (eg how evolving climate change will affect certain perils). Consistent with ICP 9.0.2, supervisors should, when necessary, provide their staff with the tools and training to understand how to interpret and challenge assumptions presented in the reporting of climate-related risks.

For instance, supervisors will need to acknowledge the time lag between emerging climate science and how quickly this is integrated into economic and financial models and used by insurers. Therefore, in analysing data, supervisors will need to be alert to the impact such lags may have on the accuracy of risk assessments and the risks from these lagging indicators.

In providing relevant training to staff, supervisors may engage relevant experts such as climate scientists and modellers. It may also be important for supervisors to train staff on climate risk data and models developed by third party providers to the extent that these are used by insurers in their jurisdictions.

Box 5: Supervisory reporting in Canada

In Canada, the Office of the Superintendent of Financial Institutions (OSFI) has implemented a set of climate risk regulatory returns to collect institution-specific climate risk data to enable evidence-based policy development, regulation and supervision. Reporting is expected to start from fiscal year 2024. OSFI conducted a data gap analysis to assess the availability of climate-related data within its regulatory data inventory. The analysis determined that direct data collection from financial institutions using specialised templates was essential to address existing data gaps. Deposit-taking institutions and insurers are required to provide physical risk and transition risk data through four separate data returns. Each sector (ie deposit-taking institutions and insurers) must provide a physical risk and transition risk return. For insurers, the physical risk returns focus on financial assets and underwritten exposures subject to physical risk by geophysical location. The transition risk returns focus on financed GHG emissions (ie Scope 1, 2 and 3 GHG emissions).

8.6 Governance for climate-related risk disclosure

Context

This section focuses on the expectations and requirements supervisors should consider in setting (i) disclosure requirements for governance of climate-related risks, and (ii) expectations around governance processes for climate-related risk disclosures.

ICP 20.4 sets out requirements for the disclosure of an insurer's corporate governance framework. Aligned with these requirements, this section provides advice for supervisors and insurers on the extent to which such disclosure should describe how climate-related risks are integrated into governance processes.

To contextualise governance processes around climate-related risks, supervisors should also consider requiring the disclosure of ERM processes used in identifying, measuring, monitoring and managing climate-related risks. This will enable insurers to offer a comprehensive view of their corporate governance framework.

8.6.1 Setting regulatory governance expectations and exploring governance structures

In setting regulatory requirements for climate-related risk governance disclosures, supervisors should consider any existing expectations around governance (such as dedicated rules, guidance or insurance codes) and risk management (such as standalone or climate-specific risk management guidelines or rules), and advise on how they relate and are meant to be factored into any new disclosure expectations, if those are drafted separately.

Disclosures on governance provide information on the oversight and management of climate-related risks and how climate-related risks are incorporated into insurers' risk management frameworks and decision-making processes. Supervisors assessing the adequacy of an insurer's corporate governance framework should refer closely to ICP 7 (Corporate governance) and ICP 8 (Risk management and internal controls) in deciding which components to include in climate disclosure requirements.

Supervisors should consider establishing disclosure requirements for how climate-related risks and/or opportunities are overseen and managed, including the responsibilities of the board, senior management and internal committees, as well as setting expectations around the governance processes for climate-related risk disclosures.

At a minimum, governance disclosures should demonstrate the adequacy and effectiveness of an insurer's corporate governance framework as it relates to climate-related risks and should indicate how responsibility for climate-related risks has been incorporated into the risk management system by the board and senior management. This may include information on the involvement of individual roles and functions, inclusive of committees; how adequacy of oversight is ensured and measured; and how climate-related issues are internally reported and escalated. Where climate-related considerations are embedded into existing risk processes, this needs to be distinctly highlighted in disclosure. Users should have information to understand whether and how climate-related risks affect or change insurers' risks.

Insurer senior management may enhance climate-related risk management and disclosure capabilities by embedding climate-related risk management and information systems across the different functions of the business. They may allocate responsibilities to operating units and process and control owners while ensuring that training, guidance and education are provided across the organisation. Disclosure requirements should be set for how various senior management roles and functions are overseeing the process of identifying, assessing and managing climate-related risks that are "reasonably foreseeable and material", in line with ICP 20.6.

The various roles that control functions can play in producing climate-related risk disclosures, although not exhaustive, are listed below:

Table 5: Role of control functions in developing climate-related risk disclosure

Control function	Role in climate-related risk disclosure
Risk management	The risk management function is responsible for ensuring an effective risk management framework is in place for climate-related risks and for ensuring that relevant risk owners comply with the framework. Disclosures should make clear how climate risks are integrated into ERM.
Actuarial	The actuarial function plays a vital role in identifying, measuring, managing and reporting on climate risks, including but not limited to areas such as technical provisions, insurance risk exposures and ALM; thus, it can accelerate the development and production of high-quality disclosures.
Internal audit	As the internal audit function has a holistic view of risks across an organisation, it has a vital role in ensuring the effectiveness and efficiency of underlying process and operations relating to disclosures.
Compliance	The compliance function has a multi-faceted role to play in monitoring and assessing regulatory risk associated with climate risk disclosures, as well as bringing independent challenges to the various business units' and control functions' operational integrity and governance. It should ensure that all relevant legal and regulatory disclosures are being made.

Recommendations

Supervisors should assess the essential climate governance elements that necessitate public disclosure and the level of detail and granularity of the disclosures necessary to provide meaningful

and useful information to users. They should integrate climate-related risk governance disclosure requirements with existing local requirements for corporate governance.

In setting climate governance disclosure expectations, supervisors should consider that the market may benefit from further details on the governance processes of insurers for identifying, measuring, monitoring and controlling climate-related risks. Supervisors may further consider how these have been incorporated into the broader risk management framework and processes of insurers, as well as how climate-related risk considerations affect insurers' business, strategy and financial performance.

8.7 Data issues and limitations in climate-related risk disclosures

Disclosing climate-related risk information involves collecting, processing and reporting data and information beyond traditional financial reporting. Supervisors could support the disclosure and supervisory reporting of climate-related risks given the important role this has to play in reducing risks to the insurance sector. The quality and usefulness of climate-related reporting and disclosures can be significantly affected by issues in the sourcing and presentation of the data. Disclosure of "traditional" risks has also had to evolve over time as the ability of insurers to better assess risks has developed. Although it is important to recognise the limitations of disclosure, it is also important to continue to support efforts to improve climate-related risk disclosure.

Should any of the data issues and limitations expounded below compromise the decision usefulness of climate-related disclosures, supervisors should consider the extent to which disclosure requirements should be retained to prevent incorrect information or assessments. If disclosure requirements are retained, insurers should be required to disclose the data challenges to aid users of the climate-related disclosure (see also section 11.8.2). Supervisors can also consider the use of supervisory reporting to address data issues (see Table 4: Solutions to address disclosure challenges).

8.7.1 Data issues in climate-related risks

Climate-related risk disclosures and supervisory reporting are affected by data issues that limit their utility for supervisors. These issues can occur because of the lack of granularity, confidence or usability of the underlying data, and they can equally affect the insurer preparing and the supervisor using the disclosures. In other cases, the format, level and/or comparability of disclosures differ across insurers, which affects the usability for supervisors but does not represent an issue with the underlying data. The former cases are characterised as "insurer-level data issues" and the latter cases are categorised as "supervisor-level data issues".

8.7.2 Insurer-level data issues

Data gaps and quality issues at the insurer level may arise for a variety of reasons, such as:

- Insufficient capacity or resources: Smaller insurers may not have sufficient personnel, expertise or resources to collect and process climate-related risk data.
- Expense to purchase data: Much of the data required to develop climate-related disclosures, especially financial data, is expensive to purchase, which may limit use by insurers, especially small insurers. Insurers may need to rely on proxy data or incomplete data sets.
- Incomplete value chain information: Data in certain categories, including indirect (Scope 3) emissions and detailed property information, relies on information from various stakeholders in

the value chain who may not be subject to the same climate-related disclosure regulations and may not record and report the necessary information. These gaps in data lead insurers to use assumptions that may be inaccurate or unreliable. Limited geospatial and asset-level information may restrict the ability of insurers to assess and disclose the extent of physical risk exposure.

- Incomplete information from national governments: Jurisdiction-specific data is required for effective disclosure. In certain jurisdictions, limited national data, such as incomplete information on national carbon footprints or energy mix projections, can amplify uncertainties for insurers that are disclosing forward-looking information.
- Limited information to quantify exposure: Insurers may be aware of exposure to climate-related risks but lack sufficient information and reliable methods to quantify the extent of the exposure and translate the exposure into financial impact. Insurers may be hesitant to publicly disclose quantifications due to uncertainties.
- Differences between data providers/taxonomies: Data sets from different providers vary in quality and are not necessarily consistent with one another. Insurers may acquire relevant data but have limited confidence in its accuracy – for instance, estimates on projected GHG emissions by different methods may affect a range of metrics.
- Lack of data flow governance: Insurers may lack the necessary governance structures and data infrastructure to ensure the flow of credible data and information to those within the organisation responsible for reporting.
- Uncertainty of forward-looking information and modelling issues: Forward-looking information has inherent uncertainties since long-term projections must account for assumptions on GHG emissions, policy changes and socioeconomic development. Insurers may have conducted forward-looking scenario analysis or projections but lack sufficient confidence to publicly disclose such information until climate science, modelling precision and physical understanding of climate improve (see section 11).

8.7.3 Disclosure constraints

The ability to prepare and use disclosures on climate-related risks is subject to several constraints and concerns.

8.7.4 Volume of disclosure

Supervisors should consider the extent of disclosure required to ensure that the volume does not hinder the ability to have a clear understanding of an insurer's climate-related risks and impact. ICP 20.0.10 explicitly cautions against excessive disclosure requirements. Not all jurisdictions require disclosure of certain elements, such as governance, risk management, scenario analysis, and Scope 1, 2 and 3 GHG emissions, regardless of materiality. How materiality is considered and related thresholds, if applicable, will affect the volume of disclosures.

Commercially sensitive information

Inputs and assumptions on climate-related risks can be commercially sensitive. Supervisors should consider ICPs 20.0.12 and 9.1.3 when establishing reporting and disclosure requirements.

Disclosure litigation risk

Climate disclosures can be subject to litigation risks, which can influence how transparent insurers want to be. Although an upward trend in general climate litigation has been observed in recent years, it is important to recognise that litigation may occur with too much or too little disclosure, as well as with disclosures that give false or unrealistic representations.

Interoperability/alignment with jurisdictional disclosure initiatives

ICPs 20.0.2, 20.0.7 and 20.2.1 highlight the importance of policyholders' and market participants' ability to compare disclosures between insurers. Achieving consistency and comparability within and between jurisdictions will take time, but this can be enhanced to the extent there is interoperability or alignment between jurisdictional and international climate-related disclosure standards and IAIS' standards. This will avoid creating an excessive reporting burden, especially for insurers operating across multiple jurisdictions who may be subject to different prudential disclosure regimes.

8.7.5 Possible actions from supervisors to address data issues

Some supervisors are mandated to increase reporting from financial institutions and non-financial corporates, provide open source information and models, ensure adequate data governance, standardise scenarios or timeframes, build capacity within companies and across supervisor peers, and provide guidance on areas of uncertainty. Supporting insurers to address data gaps can be relevant in certain jurisdictions.

Supervisors may seek to further reduce data gaps at the insurer level by making data more usable and accessible. In Japan, the Financial Services Agency, together with other ministries, plays a facilitation role between governmental organisations (as data owners) and financial institutions, as well as non-financial companies (as data users), for discussions to enhance the utilisation and user-friendliness of specialised data for the assessment of risks and opportunities, disclosures and adaptation measures. Supervisors could also work with government to ensure that data, such as geolocation information, is easily accessible for insurers. In addition, supervisors could work to standardise data sets, where appropriate (eg IOSCO has developed good practices designed to reduce inconsistencies between information published or sold by data providers).

In addition, supervisors can play a greater role in ensuring that insurers adopt the governance structures and lines of reporting for data flows that will contribute to improving the quality of information reported.

Supervisors can further address data gaps by improving capacity and industry expertise through industry forums, public-private partnerships, sharing of best practices, and distribution of models to support smaller insurers. For example, the EIOPA is seeking to improve collaboration with and between stakeholders, including insurers, supervisors in other jurisdictions, academics, risk modelers and research centres.

8.7.6 Possible actions from supervisors to address disclosure constraints

In the light of the climate-related litigation risks, supervisors should:

- Monitor cases that either have or could set important legal precedents (eg establishing that insurers and their directors can be sued and held liable for climate-related disclosures or failure of disclosure);

- Understand how litigation/reputation risk is being incorporated into insurers' risk management functions; and
- Take data quality concerns along with litigation risk into account when designing climate-related risk disclosure requirements.

Disclosure issues are likely to vary, with certain elements specific to individual insurers, their business models and their disclosures. It is therefore helpful for supervisors to understand these issues and how they affect the insurers they supervise.

One example of how litigation risk is taken into account with disclosure requirements is the use of safe harbour provisions, where certain jurisdictions provide limited protections for (i) forward-looking disclosures; (ii) scenario analysis disclosures; and (iii) transition plan disclosures. Such protections are limited to enforcement actions (eg the California Climate Corporate Data Accountability Act (SB-253))[32] and do not protect against lawsuits from investors or customers. As such, concerns over potential negative repercussions based on climate-related disclosures are valid, and supervisors should appropriately balance the need for disclosures by ensuring that only verifiable and relevant disclosures are required publicly. Supervisors should also consider applying safe harbour rules to these disclosures.

Additionally, securities law in some jurisdictions includes provisions that provide exemptions for good faith disclosures. In instances where an insurer can show it has disclosed in good faith and taken appropriate steps to ensure, to the best of its ability, appropriate disclosure, then it would not be legally liable. Supervisors, working with securities regulators, should consider whether such legal provisions exist in their jurisdiction in order to encourage climate-related disclosures.

Finally, regulations that require insurers to assess and disclose their exposure to litigation are currently established across various jurisdictions. Supervisors should leverage existing regulations when reviewing insurers' disclosure of contingencies and litigations and evaluate whether the current regulations should be subject to revision to incorporate nuances related to climate-related litigation.

8.7.7 Assurance of climate-related risk disclosures

Climate-related risk disclosures are increasingly subject to assurance, but mostly to limited assurance rather than reasonable assurance, which is where the engagement risk is reduced to an acceptable level.[33] This level of assurance is different than that which would be required under an audit. The value of third-party assurance is to ensure that disclosures are presented fairly and in conformity with the applicable disclosure standards. Without assurance, it might be difficult for users to rely on disclosures to assess the potential exposure from climate change. However, the nature and the quality of available underlying data relating to climate-related risk disclosures might differ from those in financial statements. This should be taken into account when deciding on the value and the need for third-party assurance. Although recently finalised or proposed climate disclosure frameworks have points of alignment, there are differences across these frameworks that may be

[32] In October 2023, California climate disclosure bill SB-253 was signed into California legislation. It also provides safe harbour for Scope 3 emission disclosures, but the scope of the safe harbour is only limited to protection from penalties imposed by the state.

[33] The IAASB defines a reasonable assurance engagement as "an assurance engagement in which the practitioner reduces engagement risk to an acceptably low level in the circumstances of the engagement as the basis for the practitioner's conclusion." See p.10 IAASB, ISSA 5000 General Requirements for Sustainability Engagements (November 2024)

challenging to navigate for preparers and users of these disclosures as well as assurance providers. Examples of possible challenges include:

- Deciding which disclosure frameworks insurers need to comply within a given jurisdiction;
- Assessing who is qualified to provide assurance on the disclosures and the engagement standards they are required to follow;
- Differences in the location of disclosures under different reporting frameworks, including possible disclosure in financial statements and notes to the financial statements or other reports; and
- Assessing the sufficiency of data quality and availability for preparers to produce reliable estimates for disclosure and for assurance providers to opine on the disclosures.

Climate-related risk assurance

Although there may be some overlap with audit firms, it is likely that non-audit professionals will also provide assurance on climate-related risk disclosures. It remains an open question as to what qualifications will be deemed necessary in order to be considered sufficiently qualified to opine on the disclosures as well as what standards will apply when providing assurance. Qualifications for providing assurance services will likely be jurisdictionally based, while new assurance standards are being developed by the International Auditing and Assurance Standards Board (IAASB), which sets international standards for auditing and assurance. In coordination with IAASB, the International Ethics Standards Board for Accountants IESBA is also finalising standards to provide (i) a clear framework of expected behaviours and ethics provisions for use by all sustainability assurance practitioners; and (ii) an ethical framework to guide practitioners in evaluating the suitability of external experts. It is important for assurance practitioners to have expertise in climate-related risks, although there may be a higher level of reliance on external experts in the short-term while assurance practitioners build up in-house expertise.

The location of climate-related risk disclosures could affect how assurance would be accomplished as well as the type of opinion that could be issued. If climate-related risk disclosures are required to be included in the notes to the financial statements, they would be subject to the same audit requirements as general financial reporting. If disclosures are outside the financial statements, they may or may not be subject to assurance requirements.

A reasonable assurance engagement conveys the practitioner's opinion on the outcome of the measurement or evaluation. A limited assurance engagement conveys the practitioner's conclusion on whether a matter has come to their attention to cause them to believe the information is misstated. In a limited assurance engagement, the nature, timing and extent of policies and processes applied would be less than that necessary for a reasonable assurance. The ability of insurers to have sufficient evidence to support disclosures affects the ability of assurance providers to opine on those disclosures. This can have an impact on the type of opinion that can be provided. If disclosures are required in the audited financial statements but there is not sufficient evidence to support the disclosures, the auditor may be forced to issue a qualified opinion on the financial statements. If the disclosures are difficult to support in reports outside the financial statements, limited assurance may be necessary or it may not be possible to provide assurance. Local regulations may need to consider phasing in any assurance requirements to allow time for insurers to develop better supporting audit evidence. Limited assurance engagements are more likely in the near term due to challenges with data availability.

Supervisors should understand the different types of assurance. For supervisors whose authority includes requiring public disclosure, careful consideration will be needed to determine how insurers should report climate-related disclosures (eg financial statements vs outside financial statements).

There are several issues that poor data, inconsistencies between data providers and lack of transparency can create. First, in most jurisdictions, insurers' management is responsible for the accuracy of the information that it publicly discloses. Any data from non-transparent providers makes it difficult for management to understand the data and ensure it is reliable. Similarly, if multiple data providers offer significantly different results, that will also create difficulties for management to support its disclosures. It then becomes difficult for the assurance provider to determine how reliable the disclosures are unless it can replicate the result through information it has or validate using other data providers. Significant inconsistencies between data providers increases the complexity for the assurance provider in assessing the reliability of the information and determining if the disclosure is fairly stated. As discussed above, disclosures will need to be of sufficient quality in order to obtain assurance.

Recommendations

Supervisors should understand how data quality issues can affect the reliability of the information in disclosures and how that affects assurance. This will help supervisors better assess climate-related risks for insurers.

Supervisors should understand the applicable assurance and ethics standards for climate disclosures in their jurisdiction in order to consider whether those providing assurance to insurers are qualified and subject to appropriate standards.

Supervisors should understand the process in their jurisdiction to obtain assurance on insurers' disclosures. Supervisors should also be aware that it may be some time before some disclosures are of sufficient quality for assurance providers to issue more than a limited opinion.

Supervisors should be aware of the implications of poor or inconsistent data on the ability of assurance providers to provide an opinion. Supervisors may want to work with insurers to develop sources for accurate data to aid the assurance process, where possible.

9 Group supervisory issues (ICP 25)

This section discusses issues that are particularly relevant in the context of insurance group supervision. Considerations discussed in this section may be relevant for group supervision more generally and, in particular, in cases where the group has been identified as an internationally active insurance group (IAIG). In these cases, ComFrame standards will apply and the group-wide supervisor coordinates with other involved supervisors through the supervisory college (see CF 25.6.a). Supervisory colleges should consider including in their agenda and its supervisory plan a discussion on climate-related risks, including how such risks may impact group-wide corporate governance frameworks, ERM, main risks, financial position, and regulatory capital adequacy and compliance with supervisory requirements (see CF 25.6.a.4).

9.1 Group considerations for data collection

When defining climate-related data collection requests that affect insurance groups active in multiple jurisdictions, supervisors should consider coordinating with other involved supervisors and regional or global insurance standard setters. This should reduce the number of overlapping requests that insurers receive, help to build a greater understanding across the insurance group's supervisors of the climate risks to which it is exposed and help build capacity amongst the supervisory community. However, group-wide climate risk integration into the corporate governance framework, enterprise risk management and financial position may not be properly covering what is required of an individual insurance legal entity in a specific jurisdiction.

Also, as is the case for traditional risks, data could be collected from other supervisors when an insurer operates in multiple jurisdictions (see ICP 25 (Supervisory cooperation and coordination)).

Furthermore, supervisors should coordinate when performing an assessment of an insurer's exposure to climate-related risks and whether any supervisory response may be considered necessary following such an assessment.

10 Macroprudential supervision (ICP 24)

ICP 24 sets out standards for supervisors to "identify, monitor and analyse market and financial developments and other environmental factors that may impact insurers and the insurance sector, use this information to identify vulnerabilities and address, where necessary, the build-up and transmission of systemic risk at the individual insurer and at the sector-wide level". As noted in the introduction, climate change is not only a source of financial risk for individual insurers; it may also have wider implications for financial stability. Therefore, within their application of macroprudential monitoring and supervision requirements, supervisors should also consider climate-related risks and the potential wider financial stability implications.

This section highlights, where applicable, existing supporting material, notably the Application Paper on macroprudential supervision,[34] for assessing and addressing climate-related risks from a financial stability lens. In that Application Paper, climate risk is considered implicitly similarly to any other risk. The purpose of this paper is to provide specific considerations and recommendations related to climate risk.

10.1 Climate change and financial stability risks

Adverse climate risk events could spread through transmission channels beyond the insurance sector and impact the wider financial system. Initial impacts on the financial system could also trigger reactions with other participants within the financial system (including insurers) trying to mitigate the impact of the events on their balance sheet. These reactions could generate feedback loops within the financial system and, ultimately, through macroeconomic and social effects, also have an impact on the real economy. Not all climate risk-related events generate a significant impact or turn into systemic risks if they materialise, but insurers could contribute to the generation or amplification of systemic risk induced by climate risk events.

The wide-ranging nature of climate-related risks may limit market participants' ability to accurately assess and manage their investments, potentially resulting in increased risk premiums across various asset classes. Furthermore, the lack of consistent methodologies, standardised metrics and comparable disclosures around climate risk may also limit the effective market pricing of investments. Additionally, market and credit risks may be concentrated in specific geographic regions and sectors of the real economy. In some regions, insurers' investment portfolios, especially mortgage loans and real estate holdings, are particularly susceptible to climate-related risks, leading to heightened default risk.

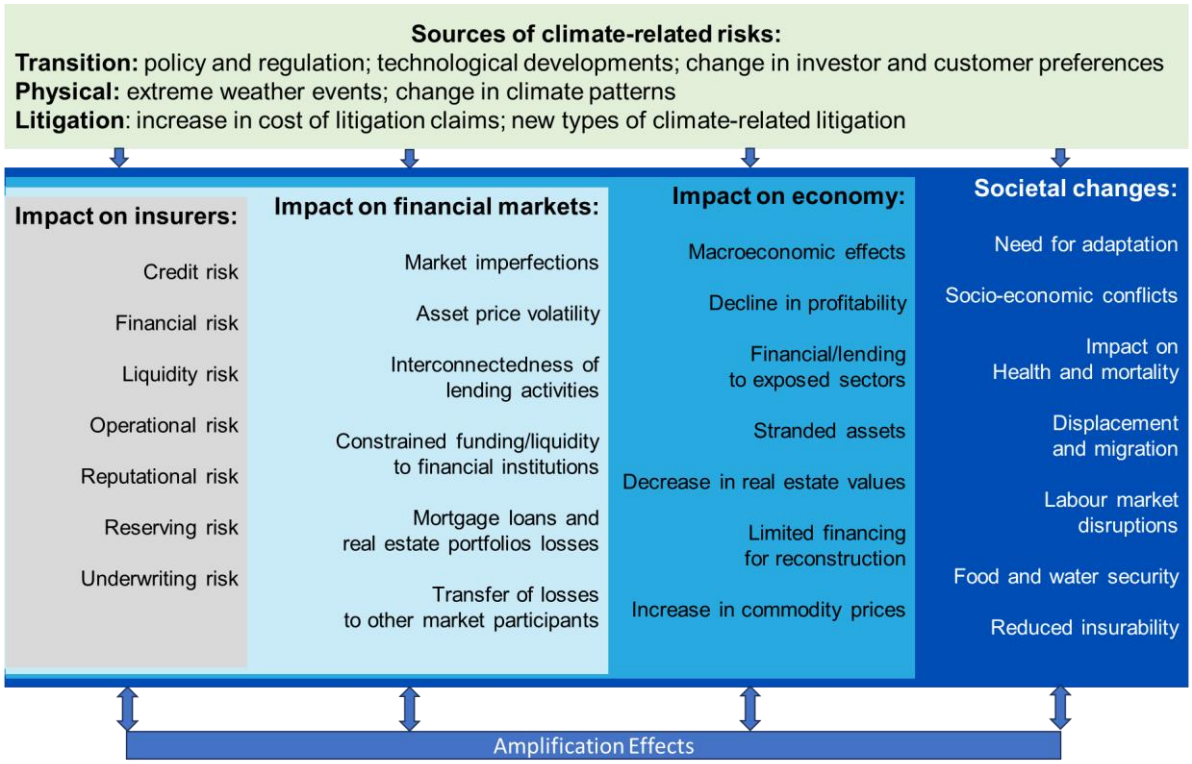
Furthermore, insurers may face reputational risk due to their financial support for carbon-intensive sectors, and they may also be exposed to counterparty risk from their business relationships with companies facing climate-related legal liabilities. These factors could have implications for the broader financial system.

When designing their data collection, analysis and supervisory responses, supervisors may wish to consider the climate-related risk drivers and possible financial stability transmission channels described in Figure 1. This context builds upon a 2021 publication from the IAIS, the special topic edition of the Global Insurance Market Report (GIMAR).[35]

[34] Application Paper on macroprudential supervision (August 2021)

[35] The impact of climate change on the financial stability of the insurance sector (September 2021)

Figure 1: Climate-related risk drivers and financial stability transmission channels



Supervisors should also consider the fact that important interdependencies may exist between climate-related risks, such as physical and transition risks. For instance, if the effective transition to a more sustainable or net zero economy is delayed, this will increase the probability that physical risks will materialise, including the severity and frequency of physical risk events. In turn, sharp increases in economic losses from weather-related events may trigger more abrupt policy responses, leading to higher transition risks. Supervisors should also consider the impact of physical and transition risks under different transition pathways, such as under an orderly transition scenario and a disorderly transition scenario. There could be substantial transition risks associated with abrupt policy action (for example, caused by a sudden introduction of or substantial increase in emission pricing) and, eventually, even higher physical risks associated with policy inaction. In the least favourable scenario, extreme climate-induced damage as a result of long delays in the transition will eventually force a sudden and radical change in the economy.

10.2 Data collection for macroprudential purposes

Sound macroprudential supervision of climate-related risk drivers, as for all risks, is reliant on timely and good-quality data to support analysis and decision-making. Data collection for macroprudential purposes is a critical element of macroprudential supervision and systemic risk assessments at an individual insurer level and a sector-wide level (see ICP 24.1 (Scenario Analysis Data Collection)).

As for other risks, supervisors should implement appropriate policies and processes to collect regular and systematic climate-related information from the insurers they supervise, including both

quantitative and qualitative data. Supervisors may also use data and analysis from other external sources, such as jurisdictional statistics and academic research. Supervisors should first make use of the data sets that are available and consider the costs and benefits of obtaining additional data. Data and information can be requested on a legal entity level or group-wide basis.

Data collection for macroprudential purposes should consider the same aspects as that for other risks, which are outlined in section 10. More specifically regarding climate-related risks:

- Supervisors should recognise that data needs may evolve to reflect the changing characteristics and materiality of various climate-related risk drivers, as well as advances in data availability.
- Given the still nascent nature of many climate-related data sources, the ability to achieve a representative sample to support macroprudential analysis and ability to perform data validation may be more limited than for traditional risks.
- Supervisors may need to enhance their overall data governance and IT infrastructure to accommodate detailed climate-related qualitative and more granular data (eg spatial, as macroeconomic analysis of some climate-related risk drivers may require it).

Recognising the challenges some insurers may have in providing climate-related data, the supervisor may complement information provided by insurers with data from other sources. Supervisors may for instance wish to employ third-party models for assessing their jurisdiction's exposure to NatCat risks or utilise scientific physical risk projections. Also, data already provided by insurers could be used as a proxy for exposures to climate-related risk drivers, eg sector breakdown of investments.

Coordination with supervisors in other jurisdictions or other financial sectors will be key to understanding systemic financial impact. In instances where spillover effects on other parts of the financial sector (eg banking) are likely, a cross-sectoral approach will be needed.

Frequency of monitoring should be similar to that of other risks and preferably at least annually. Although the projections of climate risk drivers may not need to be changed frequently due to their relative stability, insurers' climate risk exposure may nevertheless change due to changes in insurers' assets and liabilities composition.

Box 4 in section 8.4 provides examples of indicators and data elements that could be used to monitor climate risk trends and assess the potential build-up of climate-related systemic risk for individual insurers and the insurance sector as a whole.

Box 6: IAIS climate data and analysis

The IAIS has been integrating climate-related data elements into the IAIS Global Monitoring Exercise (GME) for several years, contributing to a global foundation of climate risk data. This, in turn, facilitates improved analysis of climate change and its effects on the global insurance sector.

Through an iterative process, the IAIS continues to improve its insights into the insurance sector's exposure to climate-related risks, including:

- Building on the GIMAR 2021, the annual GME exercises have, since 2022, been gathering more detailed information on insurers' assets to enhance the analysis of insurers' investment exposure to climate-related risks.

- In 2023, the quantitative data collection and analysis also included insurers' liability risks related to exposures to NatCat events.

As supervisors and the insurance industry refine parameters and definitions, the depth and familiarity of the data will continue to grow.

10.3 Risk dashboard for monitoring climate-related vulnerabilities

As for other risks, supervisors should establish an approach to aggregate, analyse and present available climate data to facilitate the monitoring of climate-related vulnerabilities and macroeconomic instability. Supervisors could also develop a climate-specific risk dashboard or include climate risks in a general risk dashboard covering all risks (for example, see the EIOPA Insurance Risk Dashboard).

A risk dashboard could be a useful tool to provide initial insights into climate-related vulnerabilities. Given the challenges for some supervisors to collect climate-related data directly from insurers, the dashboard may also contain third-party quantitative and qualitative information. The frequency of updating may depend on the availability of data, the stage of the financial cycle and other market developments or impending disruptions.

The climate risk dashboard should include indicators covering the different types of transmission channel –for example, climate risk scenario impact on investments or projected impact of climate change on NatCat capital requirements. If climate risk-based indicators are not available, exposure-based proxies, such as investment breakdown by high-carbon intensive sectors or NatCat exposures by peril, could also be used. Also, the climate risk dashboard could include key climate policy and climate science metrics, such as emission gaps relative to the Paris Agreement, emission pricing levels or current global warming projections.

10.4 Data analysis for macroprudential purposes

Given the complex nature of climate change, the historical trends of climate risk drivers will not reliably predict their future trajectories and hence it is important to assess in macroprudential analysis the potential impact through scenario analysis and stress testing. Section 11 provides guidance on how supervisors could integrate climate-related scenario analysis into supervisory processes to assess the potential systemic importance of individual insurers and the insurance sector (ICP 24.3 (Assessing systemic importance)), using climate-related scenario analysis to inform supervisory response (ICP 24.4 (Supervisory response)), and publish relevant data and statistics on the insurance sector from climate-related scenario analysis exercises (ICP 24.5 (Transparency)). For their macroprudential assessment of risks stemming from climate change, supervisors can consider additional approaches as well, including those described in the Application Paper on macroprudential supervision such as vulnerability analysis, horizontal reviews and qualitative analyses.

10.4.1 Analysis of climate-related vulnerabilities of the insurance sector

In performing their analysis of climate-related vulnerabilities, supervisors should first identify key climate risk drivers and trends to help themselves verify whether a risk driver is emerging and could have wider implications for the stability of the insurance sector. Such drivers could include current global warming, global emission gaps relative to the Paris Agreement, current/projected carbon taxes etc. Subject to availability of data, a quantitative analysis of climate-related vulnerabilities

should be performed. Box 4 in section 8.4 provides examples of climate risk indicators that could be used for such an analysis.

The information and data for this analysis may not be available to the supervisor through public disclosures or supervisory reporting and may require that additional quantitative and qualitative data be requested. While standard data and information requests and planned periodic reporting are typically used for monitoring traditional risk factors, additional requests may be necessary to investigate climate-related vulnerabilities. Considering this analysis is influenced by governmental and international policies, social and economic-financial events that may change over time, this analysis may require the use of ad hoc information.

Assessment of second-round effects (eg through climate risk drivers impacting the supply chains of insurers' counterparts) could be particularly useful to achieve a comprehensive assessment of the impact on insurers. Furthermore, a risk assessment of the second-round effects induced by endogenous drivers following actions taken by financial institutions, households, regulators and/or policymakers in response to an initial climate risk impact or scenario could be performed. For inward risk, supervisors could assess whether insurers have incurred losses from second-round effects that resulted in premium increases (eg catastrophic risk or legal liability risk connected to climate-related litigations). Such analysis may be complex; hence, supervisors may need to rely more on qualitative assessments and consider enhancing their assessments commensurate with availability of data. Finally, supervisors should aim to identify new and emerging threats to financial stability in the insurance sector arising from climate-related risk drivers.

10.4.2 Qualitative analysis methods

As outlined in section 10.3, supervisors could also consider undertaking regular qualitative analysis methods (eg review of questionnaires, surveys or published material) to monitor and assess specific risks that might not necessarily be identified by quantitative analysis methods or if quantitative analyses cannot be deployed due to data constraints.

In addition, for climate risk assessments, supervisors should identify the key sources of market, industry, climate policy and scientific information and take into account key drivers and developments, such as progress towards net zero commitments, latest global warming projections or jurisdictional decarbonisation plans, when assessing the information. Supervisors should ensure that there is an appropriate internal focus on regularly reviewing climate-related macroprudential supervision issues and market specificities and, where appropriate, initiate senior-level engagements with insurers on these issues. For this purpose, it could be useful for supervisors to keep abreast of the main developments observed by financial, insurance and climate analysts that can influence the insurance sector.

Macroprudential supervision should use approaches from a multi-disciplinary and cross-sectoral perspective in order to identify activities, trends and developments that might negatively affect the risk profile of insurers. In line with ICP 24.2.3, supervisors could assess analytical perspectives of relevant stakeholders in public and private sectors by setting up periodic meetings (eg annual workshops) with different stakeholders involved in the insurance sector, climate policy and climate science.

Supervisors could benefit from comparative analyses conducted by different stakeholders on climate risks and impact on the sector from different perspectives, both in terms of impact and probability of occurrence. For example, stakeholders could include insurance industry associations, think-tanks, risk professionals, NGOs, and representatives from consumer associations.

10.4.3 Horizontal reviews

As with other risks, to study aspects from a macroprudential perspective, consistent with ICP 24.2 (Sector analysis), supervisors could perform horizontal reviews of insurers and relevant data aggregation or make use of both public and other sources of information that provide horizontal perspectives.

Horizontal qualitative analyses can be conducted through:

- Preset questionnaires with multiple choice answers (eg perception of risk level: high, medium-high, medium, medium-low, low); or
- Questionnaires with open-ended responses.
- Supervisors may also find it useful to perform peer group or benchmarking analysis for horizontal reviews.

10.5 Supervisory response

A macroprudential perspective in the development and application of supervisory requirements is important to help limit the build-up of systemic risk and contribute to the resilience of the financial system. Depending on the outcome of climate-related vulnerability analysis, supervisory responses may be targeted at individual insurers and/or the insurance sector as a whole. In cases where identified vulnerabilities in the jurisdiction originate from other parts of its financial sector, the supervisor should coordinate with other institutions in their jurisdiction or otherwise highlight the risks publicly.

Climate-related systemic risk could evolve over time, and supervisory responses therefore should be tailored to prevailing circumstances.

Supervisors should also have the necessary flexibility to tailor their supervisory responses to the nature, scale and complexity of their insurance sector exposures and activities.

As for other risks, supervisory response can be twofold in nature:

- General supervisory requirements aimed at reinforcing the resilience of the insurance sector and limiting the possibility of any disorderly failures; and
- Targeted supervisory requirements focused on addressing a specific potential systemic exposure.

In order for these measures to have successful outcomes, it is important that macroprudential frameworks be based on efficient and robust coordination and cooperation processes with relevant supervisors in other jurisdictions or other financial sectors.

In line with ICP 10.2, many supervisory measures could utilise microprudential instruments that are applied with a macroprudential perspective in mind, such as:

- Strengthening how climate risk is reflected in ERM frameworks;[36]
- Crisis management and planning for climate-related natural catastrophes; and
- Preventive and corrective measures that may be considered, for example:

[36] See section 5.

- Prohibiting the insurer from underwriting certain climate-related risks;
- Withholding approval for acquisitions; and
- Directions to reinforce the insurer's financial position, such as requiring measures that reduce or mitigate risks or applying a capital add-on.

Supervisors are encouraged to consider any possible negative impact of such supervisory measures, and to avoid such actions, especially if they would increase the insurance protection gap.[37]

[37] See also section 2.1 of IAIS, A call to action: the role of insurance supervisors in addressing natural catastrophe protection gaps (2023)

11 Scenario analysis (ICPs 16 and 24)

11.1 Introduction

The focus for this section is the use of climate-related scenario analysis by both supervisors and insurers to understand the risks to which the insurance sector is exposed at a micro- and macroprudential level. It considers why and how climate-related scenario analysis exercises should be used and the extent to which they can overcome some of the shortcomings of existing methods for assessing risks. It does not consider the development of climate scenarios themselves, which are issues to be considered by bodies such as the NGFS.

This section focuses in particular on how climate-related scenario analysis should be considered in light of the standards set out in ICP 16 (Enterprise risk management for solvency purposes) and ICP 24 (Macroprudential supervision). Climate-related scenario analysis is still in its early stages as a risk assessment tool but continues to evolve rapidly and, for this reason, the IAIS expects to supplement this paper in the coming years as new tools, techniques and data becomes available. It also means the utility of climate-related scenario analysis will increase over time as data gaps are filled, the relationship between climate risks and financial risks is better understood and the capacity of supervisors and insurers improves. Despite these limitations, scenario analysis is a useful tool to support insurers and supervisors in understanding the resilience of individuals insurers and the insurance sector as a whole to the impact of climate change. While the uncertainties implicit in any exercise mean it cannot be used for precise decision making it can be used to understand general risk trends and efforts to increase business model and sector resilience.

The use of scenario analysis as a supervisory tool should be proportionate to the supervisor's assessment of the current uncertainty and limitations of scenario analysis (and the confidence in the validity of assumptions).

The IAIS is also working with partners, including the Financial Stability Institute of the Bank for International Settlements, to support capacity building of insurance supervisors as this field of work develops. It will continue to support members and an international dialogue in this evolving area.

11.2 Scenario analysis vs stress testing

The IAIS distinguishes scenario analysis from stress testing as follows.

Stress testing is defined in the IAIS Glossary as:

> "A method of assessment that measures the financial impact of stressing one or more factors which could severely affect the insurer."

Although climate-related stress testing is not the focus of this Application Paper, the concepts described in the paper may also be relevant for stress testing exercises.

Meanwhile, scenario analysis is defined as:

> "A method of assessment that considers the impact of a combination of circumstances to reflect historical or other scenarios which are analysed in light of current conditions. Such analysis may be conducted "deterministically or stochastically."[38]

Climate change is a driver of many existing risks; therefore, supervisors expect insurers to consider the potential impact of climate change when assessing the existing risk categories. Given the long-term nature of the risk, the significant impact it will have on economies and the dynamics of physical, transition and climate-related litigation risks, it is well suited to scenario analysis. However, historical data is not a good predictor of risks because climate change both is an emerging phenomenon and its effects are non-linear. As a result, when conducting scenario analysis, supervisors should ensure that scenarios are sufficiently forward-looking to capture the specifics of climate change. These considerations add significant additional complexity to this task. As a result, supervisors need to consider the proportionality of exercises.

Climate-related scenario analysis exercises can be used to identify and assess emerging risks that may arise over time and use that information to make forward-looking business strategy and investment decisions. For example, certain assets or sectors may present increased risks if they become negatively impacted by policy shifts or technological changes related to climate change. Climate-related scenario analysis can highlight these risks so that insurers can take appropriate action to effectively and proactively manage them. Insurers could also use scenario analysis to guide and prepare for changes that may be needed to their investment limits framework.

Similarly, climate-related scenario analysis can be an impactful tool for managing underwriting risks. Non-life insurers could use scenario analysis to measure the compounding impact of several catastrophe risk perils occurring consecutively in short order. For example, heavy precipitation causing floods is followed by extreme drought conditions causing wildfires, with the pattern repeating itself in the following years. Climate change is projected to increase the frequency and severity of these compounding extreme weather events, and some geographical regions have experienced similar weather manifestations already.

Climate-related litigation risks are emerging in various jurisdictions across the globe and are similar to both transition and physical risks in that they can reduce asset values and create additional costs for insurers (including legal fees) through rising claims for business lines such as directors' and officers' cover. They arise from a variety of bases such as environmental damage, human rights violations, greenwashing or simply failure to disclose climate exposures. The materiality of these risks from an underwriting perspective is not currently clear, however large settlements could pose financial risks for insurers. Equally, the likelihood and impact of this risk is highly influenced by local legal regimes. In some jurisdictions, class actions may present significant risks for companies while for others there may be little risk. In considering these risks in scenario analysis, it will therefore be important for supervisors and insurers to be clear on the specific climate-related litigation risks posed in the jurisdictions in which the insurer operates. As well as potential financial costs, climate-related litigation also poses potential reputational risks to insurers. Insurers and supervisors need to recognise that insurers are not only exposed to underwriting litigation risks. They should consider the extent to which investment, corporate and operational risks (ie from an insurers' own activities) may be material and within scope of scenario analysis exercises.

[38] The IAIS Glossary defines a deterministic scenario as "An event, or a change in conditions, with a set probability in which the underlying assumptions are fixed". It defines stochastically as: "A methodology which aims at attributing a probability distribution to certain financial variables. It sometimes uses closed form solutions, often involves simulating large numbers of scenarios in order to reflect the distributions of the capital required by, and the different risk exposures of, the insurer."

Efforts to address climate change are accelerating globally although progress is currently falling behind internationally agreed targets, which poses significant risks for insurers. New approaches and technologies to address climate-related risks are emerging at a rapid pace. Supervisors should consider including both downside scenarios in which the GHG emissions stay elevated resulting in extreme physical risks, like the Current Policies scenario,[39] and other scenarios under which the transition to a lower emissions economy is achieved in a smooth manner, like NGFS' Orderly Net Zero 2050 scenario. Finally, they should also consider scenarios in which the most extreme physical risks are avoided at the cost of a disruptive transition, such as the Delayed Transition scenario. In all scenarios, insurance markets will be impacted and, therefore, the focus is not on "if" insurers will be impacted but "when" and "how much" they will be impacted. Insurers should also assess the need to adjust publicly available scenarios to meet their needs to better understand emerging climate risks, but in doing so should document these modifications in disclosures.

Climate-related scenario analysis, when designed and implemented appropriately, is a tool that can help insurers build resiliency in their business models over the long-term, spanning multiple decades, which goes beyond the regular business planning cycle.

The table below provides a non-exhaustive set of examples of the risks that can be identified and assessed using scenario analysis for different lines of business:

Table 6: Climate risks by business line

Type of insurance business	Examples of physical risk impact	Examples of transition risk impact
All types of business	• Impact of a certain NatCat risk peril on both sides of the balance sheet. For instance, where an insurer may hold mortgage-backed assets on their balance sheet in a region exposed to NatCat risk and have an underwriting exposure to properties in the same region. As a result, both sides of the balance sheet are exposed to the same risk. • Corporate bond and equity exposures on insurers' balance sheets may be subject to increased credit risk as a result of physical risks to these issuers. For example, supply chain disruption because of a storm may impact profits and increase the risk of default.	• Assets may lose value and liquidity due to climate-related policy shifts, changes in consumer demand or technological changes, especially in a delayed transition scenario. • Insurers may face reputational risks and/or government policy intervention as a result of insuring certain emissions intensive sectors, which may reduce certain business lines. • Long-lived assets may lose value and liquidity due to climate-related policy shifts or technological changes. • Real estate investments may face transition risks. For instance, buildings with low energy efficiency may be prone to transition risks, if new regulation forces all properties to meet certain higher sustainability standards, leading to either stranded assets or significant

[39] https://www.ngfs.net/ngfs-scenarios-portal/

	• Increased frequency and severity of certain catastrophe risk perils can negatively impact the value of certain asset classes, like real estate lending and infrastructure investments.	investments to meet the higher standard.
Non-life specific	• Increased frequency and severity of NatCat perils on liabilities (and its impact on the damage function used to translate perils impacts to financial losses).	• As economies transition to net zero, key markets such as car insurance will change. As these changes occur, insurers will need to understand the impact on their underwriting risks. For instance, the move to electric vehicles will present different fire risks to vehicles powered by combustion engines.
Life specific	• Chronic physical risks like heat waves or persistent droughts can lead to increased or altered mortality and morbidity experience, impacting underwriting risks. • Life insurers in particular may have significant sovereign asset exposure creating a sovereign/insurer nexus. This depends on the intrinsic exposure of a jurisdiction to physical risk events (for instance, the debt of jurisdictions most exposed to a rise in sea levels may suffer in case of a global warming quicker than anticipated).	
Health specific	• Increased heat and moisture content in the atmosphere can increase or alter the likelihood of breakouts of water borne diseases like malaria and increase infectious diseases, etc. Global warming will increase zoonotic transfer of diseases and increase the probability of infectious disease pandemics.	

Climate-related litigation risk scenarios could involve assessing underwriting liabilities (claim settlement, for instance, from directors' and officers' policies and legal costs) that a company could incur as a result of climate litigation. Another option is it could consider the extent to which litigation risk is adequately captured in the assessment of investment risks (eg on corporate bonds and equity)

and the extent to which insurers could be liable for some of these losses, including the insurers' view on the robustness of any explicit contract exclusions in place.

Although climate risk will be universal, risk factors will be jurisdiction-specific. Physical impacts will be regional or even more local. Transition risks will be driven by a range of national factors (eg the ambition of governments on net zero transition plans) and litigation risks will vary depending on the local legal system. Supervisors will therefore need to understand these dynamics and ensure they are factored into scenario design.

11.3 Scenario analysis objectives and scenario design (ICPs 24 and 16)

Context

This section provides guidance on how supervisors could consider data collection within the context of climate-related scenario analysis (ICP 24.1), how it could be a tool to support sector-wide analysis (ICP 24.2), and relevant time horizon considerations for climate-related scenario analysis, including considerations within the insurer's ORSA related to time horizons (ICP 16.14). ICP 24.1 is embedded across section 11, while ICP 24.2 is covered in section 11.5.

Recommendations

11.4 Objectives of climate-related scenario analysis exercises

It is important to clearly define the objectives of the exercise from the onset. Supervisors will need to make this decision based upon their knowledge of the insurance sector they supervise, as developing an effective scenario will be specific to the characteristics of that market or the insurers that will be within the scope of the exercise.

The objectives of the exercise will depend on the supervisory mandate and may vary according to microprudential, macroprudential and/or market conduct considerations. Supervisors should set the objectives for scenario analysis exercises based on their mandates and may, where applicable, base them on internationally agreed standards. This will help ensure greater consistency, comparability and predictability. For instance, with regard to financial stability, the objectives of a scenario analysis exercise should look to capture the financial stability goals which the authority monitors.

As described in section 11.7.3, climate-related scenario analysis may, for instance, help assess protection gaps (see Box 8), which is relevant for both conduct and prudential supervisors. It may also help assess possible transmission channels between the insurance sector and the financial system and real economy more widely.

Considerations will be specific to the jurisdiction's insurance sector, such as examining and concluding on the impact of climate change on insurer assets and liabilities, how to define benchmarking of insurers for specific regulatory requirements and how to assess the longer-term soundness of the industry.

Climate change increases both short-term and long-term risks and climate science is evolving as observations, models and physical understanding of climate improve. To understand the full range of impacts of climate change on insurer risks, it will be important to run a range of scenarios over time. Running each scenario requires considerable time and resources, therefore supervisors should consider how their use of scenarios will develop over time and how the different exercises will build on each other. Supervisors should think strategically about which scenarios should be used when

and how they can build on each other. Coordination with other supervisors, in the case of overlapping jurisdiction, will help maximise resource efficiency and capabilities.

Supervisors should decide on the scope of insurers to include in a scenario analysis exercise after defining their objectives. It is desirable that when the aim is to analyse financial stability implications, such exercises cover at least all domestic systemically important insurers and/or locally headquartered IAIGs.

11.4.1 Analysing objectives and design considerations

As set out above, there are a range of considerations that inform the objectives for a scenario analysis exercise. The table below sets out how these objectives and design considerations can be considered together. This is not an exhaustive list, and a number of these objectives may be captured in one exercise; however, the table is designed to help supervisors consider relevant issues.

Table 7: Scenario analysis design considerations

Objectives	Design considerations
To develop capacity for insurers and supervisors in undertaking scenario analysis.	A dynamic balance sheet approach will allow insurers to consider the management actions they take to deal with the impact of climate change, thus building capacity. However, it will make cross-sector comparison more difficult. Equally, a simpler static balance sheet approach may help supervisors and insurers that are new to scenario analysis develop their understanding of first order impacts of various climate risk scenarios.
To assess underwriting risks to insurers from climate change.	Depending on the geographic footprint of the insurer, supervisors may wish to limit the exercise to the most relevant material geographies and/or those with the most exposures.
To assess risks to assets from climate change.	Asset values will be affected by direct impacts (eg increased credit risks for certain assets given physical risks from climate change and, more broadly, because of macroeconomic impacts from change). Although it may not be possible to include all of these elements, it will be important to be clear on what is and isn't in scope. Where relevant, the duration and liquidity of assets should also be taken into consideration.
To assess the impact of physical risk to individual insurers.	Physical risks can differ considerably in relatively small areas – for instance, an elevation of one metre may significantly change the underwriting risks to which an insurer is exposed. Adaptation measures may also reduce exposure. In developing the scenario, it will be important to understand what physical risk - related data is available and the limitations that this may pose.
To assess the interdependency between risk types and transmission channels.	Scenario analysis can be utilised to assess the impact that physical risk and transition risk can have on one another, by exploring simultaneous impacts to both assets and liabilities – for example, exploring the impact on both assets and liabilities

	due to a sudden and significant physical risk event resulting in a disorderly transition.
To assess the long-term impact (more than 30 years) of climate change on the insurance sector.	A long time horizon will highlight the broader strategic considerations for the impact of climate change. However, the long-term nature increases uncertainty and complexity. This exercise could be useful when trying to understand likely management actions and the impact these would have on the insurance sector. An exercise can also contain several scenarios with different time horizons, although, in the interest of limiting the complexity and burden, a balance will need to be sought between the number of scenarios and the added value of having different time horizon perspectives.
To assess the impact of transition risk to individual insurers.	Transition risks will depend on the geographic footprint of the insurer. Supervisors may find it easier to understand the transition risks in their own jurisdiction and, therefore, may decide to limit the scope of the exercise to their jurisdiction or may look to third parties to help verify the assessments.
To assess macroprudential risks to large insurers from climate change.	To assess macroprudential risks supervisors may need greater consistency across insurers, for instance, taking more of a top down approach and setting more parameters for the exercise. In such instances it will be useful to work with insurers both before and after the exercise to understand the different approaches they have taken. Although it might be proportionate to limit the exercise to larger insurers, supervisors may wish to consider how to communicate the findings to smaller insurers to increase capacity across the sector.
To assess macroprudential risks to the financial system from climate change.	The scenario may look at the spillover effects of climate risk to the rest of the financial sector, for example possible increased credit risk on mortgage books for banks if insurance coverage is reduced (ICP 24.2). Or increased liquidity risks on certain assets as they are quickly repriced when climate risks crystallise. Such exercises are likely to be very complex to run, therefore, when designing a scenario, it is important to know which macroprudential spillover effects to measure. Such exercises are most likely conducted in a second stage, after other sectoral-specific scenario exercises.
To understand the impact of climate change on protection gaps.	In a twin peaks model, prudential and conduct supervisors may wish to work together on the exercise. Design may look at how demand for cover will change as pricing increases, which is relevant from both a prudential and policyholder protection perspective (see Box 8).

11.5 Scenario design

Scenario design is driven by the objectives for which scenario analysis is being undertaken. This is likely to differ between supervisors and insurers. Supervisors may consider risks from a microprudential and/or a macroprudential perspective as well as broader macroeconomic impacts of climate change. Insurers, meanwhile, may use scenario analysis to understand the potential impact of climate change on their business, strategy, investment portfolio and capital position.

If the exercise is performed to support microprudential risk analysis, insurers in scope should ideally be selected according to their exposures to specific risks and the scenarios to be assessed. If the exercise aims to enhance macroprudential analysis, it is desirable that such exercise include at least all systemically important insurers or locally headquartered IAIGs (see also ICPs 24.2.6-8).

11.5.1 Supervisory design considerations

Scenarios should reflect the current market environment and potential unfavourable evolutions in terms of changes in market conditions and other risks to which insurers are exposed. Historical data typically do not capture the frequency and severity of future climatic scenarios and the impacts of tipping points.[40] For these reasons, sector analysis should be forward looking, to the extent possible, when developing scenarios to capture potential future developments.

Science-based scenarios, such as the IPCC-sourced scenarios used by the NGFS, can be utilised as reference scenarios, providing a common starting point for supervisors to analyse climate risks to the economy and financial system.

Such ready-made scenarios provide a range of possible outcomes, based on different future paths of climate policies, technological developments and consumer behaviour aimed at limiting the rise in global temperatures and reducing emissions pathways, in combination with the corresponding projected temperature rises.

The technical scoping of a climate-related scenario analysis exercise is driven by its objectives. Supervisors should decide on the key sources of scenario specification and if any modifications are required when using ready-made scenarios. The scenario architecture is supported by the different types of scenario analysis (top-down vs bottom-up, see Table 8 below) and other key design decisions. Supervisors may also wish to add elements from authoritative sources such as the analysis by the International Energy Agency (IEA) or the IPCC. However, in making changes they should clearly document all relevant changes and adjustments.

There are four categories of primary design decisions. Advanced climate-related scenario analysis exercises can be supported by two further design decisions. These decisions are explored further in the table below.

Table 8: Scenario analysis design decisions

Primary design decision	Key considerations
Scenario design	A supervisor can choose between using ready-made scenarios (such as those developed by the NGFS), modifying ready-made

[40] Economic impacts of tipping points in the climate system (August 2021)

	scenarios and developing reverse stress tests.[41] A variety of factors including resourcing, relevant skillsets and data availability should be considered. Where ready-made scenarios contain limitations (eg data provided is not sufficiently granular), supervisors should be aware of such limitations and could consider modifying ready-made scenarios to address these limitations.
Time horizon and interval of analysis	To assess impact, climate change scenarios could be generated by comparing the climate risk and impacts in a baseline (or reference situation) with scenarios inducing various impacts on the risks at different time horizons: short-term, medium-term or long-term. Common time periods currently being used are three to five years for short-term (consistent with NGFS short-term scenarios), between five and 15 years for medium-term and around 30 years for long-term, although a longer target horizon of 50 years or greater can also be considered. Supervisors will want to consider the most appropriate timelines based on the specifics of their insurance market and/or insurers in scope of the scenario analysis. Supervisors may also wish to align these time horizons with any horizons specified in any other disclosures where companies may be reporting on these exercises. Each time horizon has advantages and disadvantages when designing climate scenarios, and the choice is driven by the expected purpose and intended outcomes of the exercise. Given the uncertainty surrounding the timing of the impact of climate-related risks and the dependency on short-term actions, transition risks would be best captured within a shorter- to medium-term time horizon as they require more pressing actions, while physical risk would be best captured within medium- to longer-term horizon as events can take years to unfold and most material physical risks are currently expected to materialise later in the century. They are also most of the time aligned with net zero commitments of either the insurers themselves, where net zero commitments are required by law or voluntarily committed, or of the government of the jurisdiction in which they operate, that are themselves of a medium- to longer-term nature. Alternatively, some supervisors, such as the Bank of England, have looked at the impact of bringing forward long-term climate risks to

[41] ICP 16.2.21: Reverse stress testing may help identify scenarios that could result in failure or cause the financial position of an insurer to fall below a predefined level. Although some risk of failure is always present, such an approach may help to ensure adequate focus on the management actions that are appropriate to avoid undue risk of business failure. The focus of such reverse stress testing is on appropriate risk management actions rather than the assessment of its financial condition and so may be largely qualitative in nature although broad assessment of associated financial impacts may help in deciding the appropriate action to take.

	consider what impact their crystallisation would have on current balance sheets.[42] In addition to the time horizon of the exercise, risks can be assessed at different intervals (eg one year, two years, five years, 10 years etc) over the course of the time horizons.
Balance sheet choices (static vs dynamic vs hybrid)	Static balance sheets require insurers to hold their portfolios constant over time and replace maturing assets with new, similar assets while maintaining a consistent insurance policy profile. Its focus is on risks in the current balance sheet, and it is more concerned with understanding current exposure and is not as dependent on assumptions. Management actions are, therefore, not included in this approach. The outcomes of the exercise may, however, be used to inform management actions. Dynamic balance sheets allow for the inclusion of management actions in the scenario analysis itself, where institutions can assume to react to future events including changing their exposure profile, regulatory changes, technology developments and changes in customers' preferences. It is thus dependent on assumptions about behaviour. A hybrid approach combining a static and dynamic balance sheet may also be pursued. The decision on balance sheet assumptions is interdependent with decisions on time horizons. Over long-term horizons, management actions will be a primary driver of impacts but are very difficult to predict. A benefit of allowing for management actions is the ability of supervisors to understand aggregate industry actions, eg if all insurers intend to sell the same classes of asset under stress (ie a fire sale), asset prices may be significantly lower than insurers expect, or where insurers in aggregate might want to withdraw coverage in a geographical area or for type of business. It may, thereby, help the assessment of possible systemic risks (see ICP 24.0.3: "the risk of amplification and transmission of shocks to the financial system and real economy caused by (…) collective actions of a sufficiently large number of insurers undertaking similar activities and thus exposed to common risks".)
Top-down or bottom-up	In a top-down exercise, the analysis is primarily run centrally by the supervisor, using a centrally defined model and limited input from insurers. In contrast, a bottom-up exercise is run by participating insurers, using a company-specific model. Supervisors may also take a hybrid approach where the scenarios and output variables are highly prescribed by the supervisor but are run by the insurer, using a company-specific model.

[42] Key elements of the 2021 Biennial Exploratory Scenario: Financial risks from climate change (June 2021)

	The relative advantages and disadvantages of both approaches is explored in more detail within the IAIS Application Paper on Macroprudential Supervision (page 16).
Advance design decision	**Key consideration**
Shock calibration (prescriptive vs descriptive shocks)	Different climate economy models offer different levels of sectoral and geographic coverage and, therefore, it is important to understand which financial and macroeconomic shocks are most relevant. Prescriptive shocks involve specifying additional detail to define the shocks that insurers should apply, whereas descriptive shocks will provide guidance on the impacts that the supervisor is looking to explore as part of the exercise. Supervisors can decide between including prescriptive or descriptive shocks. Prescriptive specifications of macroeconomic scenarios will minimise the assumptions made in different models used by insurers. As a result, it leads to greater consistency between insurers taking part in the exercise. Descriptive shocks can make the magnitude of shocks intuitive but are hard to translate into financial market impacts.
Modelling freedom	The flexibility of the modelling methodology provides a further dimension in which results from the scenario analysis can be aligned to strategic objectives. A standardised approach can help to improve consistency and ensure some degree of comparability, enhancing the usefulness of the information received by supervisors. Allowing a degree of freedom for insurers can avoid a one-size-fits-all situation, acknowledging the different time horizons and different impacts that are meaningful for insurers. However, it can make consistent interpretation of conclusions more difficult.

The scenarios used for these exercises should evolve over time, incorporating the advancements in scientific and economic understanding of climate change. Using new scenarios is important for insurers to understand how different pathways may impact an insurer's resilience.

11.5.2 Non-linearities, tipping points and long risks

The purpose of scenario analysis is to test the resilience of an insurer in severe but plausible climate pathways. As a result, over time it is useful for exercises to consider a range of more severe scenarios to provide an effective test of insurer resilience. In particular, the following should be considered:

- Non-linearities: recognising that climate pathways may not be linear and that the impact of climate risk could quickly increase in a way that is inconsistent with historical data. It is therefore important to understand how non-linearities may arise and whether there are any particular jurisdictions and/or business lines that may be particularly impacted.

- Tipping points: Similarly, climate science predicts that there are points beyond which the trajectory of climate change could significantly increase, with a limited chance of returning to earlier levels. Scientific research on the points at which tipping points become relevant is evolving and it is important for insurers to consider the steps they can take to incorporate these risks.
- Tail risks: The benefit of running scenario analysis exercises is to consider the resilience of business models in response to different climate pathways. It is therefore also important to use scenarios to consider the impact of tail risks according to the latest scientific modelling of climate risk. Scenario analysis exercises should therefore consider where scenarios sit on the distribution of possible outcomes (ie a central estimate or tail risk scenario)

11.5.3 Spatial resolution

For physical risk the conclusions from a scenario analysis exercise can be impacted by how granular the data is that is being used, for example a large area (eg 10km by 10km) as opposed to a small area (1km by 1km). This "spatial resolution" can vary significantly between data sources and without a more detailed resolution it can be difficult to capture physical risks. It is also important to consider the robustness of methodologies used to downscale climate model output to a more granular spatial resolution. If the spatial resolution of data is not sufficiently detailed to capture the landscape, estimation of losses could be very different. For instance, if the data does not capture the fact that a housing complex in a river plain is elevated to two metres above the river then the scenario analysis will likely reach different conclusions about total loss. It is essential therefore, that supervisors have a good understanding of the spatial resolution of the data being used in scenario analysis.

11.5.4 Insurer design considerations

The previous section considered scenario objectives that are more likely to be relevant for insurance supervisors. Although these considerations may also be relevant for insurers, there are additional considerations for insurers that conduct scenario analysis exercises to support their own ERM, including:

- Strategy: Insurers may want to run a scenario to understand the extent to which climate change will impact their business strategy – for example, will certain business lines continue to be profitable in 10 years' time, or how will insured losses change? Will certain industries continue to exist or substantially diminish with the transition to net zero, and what does this mean for certain business lines?
- Pricing: To what extent will climate risk impact pricing and what price elasticity is to be expected in certain lines of business, eg commercial lines vs retail? What impact may such pricing changes have on the rest of the business?
- Operational risks: The insurer may want to consider the extent to which climate-related physical risks may increase the risks to their business operations – for instance, direct impact on their own assets (eg risks to data centres) or significant supply chain disruption, which could pose material challenges to their business model.
- Capital position and risk management: scenario analysis could help assess the potential future impact on the capital position from climate-related scenarios. Caution should be used when determining the impact to capital, given the high degree of tracking error, use of subjective assumptions, numerous variables, varying time horizons, range of possible outcomes associated with each scenario and overall uncertainty of scenarios. Over time, supervisors and insurers will

hopefully be able to address these issues. Despite these challenges, climate-related scenario analysis outcomes can still provide meaningful input for the assessment of its risk management and current, and likely future, solvency position (see ICP 16.10), as it still provides an indication on the relative magnitude of capital impacts under different scenarios.

Box 7: Examples of technical design decisions in recent climate scenario exercises

	Banque de France	Bank of England	Office of Superintendent of Financial Institutions (Canada)	De Nederlandsche Bank	Monetary Authority of Singapore
Time horizon	30 years	30 years Physical risks 60 years	30 years	5 years	30 years
Balance sheet	Static for first 5 years Dynamic 6-30 years	Static Dynamic element in questionnaire	Static	Static	Static Dynamic element in questionnaire
Scenarios	2 short-term, 4 long-term, 2 NGFS scenarios, 1 RCP 4.5 scenario (physical risk)	3 NGFS scenarios	3 NGFS scenarios + physical scenarios	3 shocks	3 NGFS scenarios, plus flood overlay
Types of risk	Transition, physical	Transition, physical + litigation	Transition, physical	Transition	Transition, physical
Firm-based	Bottom-up	Bottom-up	Hybrid	Top-down	Bottom-up
Granularity	Sectoral	Sectoral + counterparty	Sectoral + counterparty	Sectoral	Sectoral + counterparty
Insurance sector risks	Assets and liabilities	Assets and liabilities	Assets + personal and commercial property insurance liabilities	Assets and liabilities	Assets and liabilities

11.6 Macroprudential considerations for supervisors (ICP 24)

Context

This section provides guidance on how supervisors could integrate climate-related scenario analysis into supervisory processes to assess the potential systemic importance of individual insurers and the insurance sector (ICP 24.3), using climate-related scenario analysis to inform supervisory response (ICP 24.4), and publication of relevant data and statistics on the insurance sector from climate-related scenario analysis exercises (ICP 24.5).

11.7 Assessing systemic importance (ICP 24.3)

ICP 24.3 requires supervisors to have an established process to assess the potential systemic importance of both individual insurers and the insurance sector as a whole. In particular, guidance under ICP 24.3.3 states that, as part of their assessment under ICP 24.3, supervisors should consider emerging developments that may affect the insurance sector's risk exposures.

Recommendations

Supervisors may include climate risk considerations through climate-related scenario analysis exercises as part of their quantitative analyses – considering both inward and outward risks[43] – as required under ICP 24.2. The output may help supervisors assess the impact and trend of climate-related risks on assets and liabilities, ultimately informing the overall assessment of the insurers' potential systemic importance.

As highlighted above, the focus of the scenario analysis can be on the insurance industry as a whole, or on a selection of insurers that are identified based on specific criteria. It can also be carried out on other financial sectors, in combination with the insurance sector, to gain a better idea of risks across the financial system. It could be beneficial for supervisors to consider the potential benefits of factoring in all these components into scenario analysis.

11.7.1 Challenges at a jurisdictional level

In instances where spillover effects on other parts of the financial sector (eg banking) are detected, a cross-sectoral approach might be needed. Some supervisors have narrow sector-specific mandates. For example, they may only supervise insurers or a twin peaks model may operate in their jurisdiction (ie separation of prudential and conduct regulation). It will be important, therefore, to consider how to overcome these structural hurdles. For instance:

- Insurance-only supervisors: Where supervisors only supervise the insurance sector, they should take steps to collaborate with other financial supervisors in a way that allows them to more effectively identify and address spillovers. For instance, this could be addressed by developing a cross-agency standing committee or a similar structure for information sharing and joint analyses.
- Twin peaks model: Where one supervisor has responsibility for prudential supervision and the other for conduct of business supervision, there are also significant benefits in collaborating. For instance, a prudentially focused climate scenario may provide useful information on the extent to which insurers expect to alter their pricing policy to take into account climate risks. This is relevant information for a conduct supervisor to the extent it may highlight consumer protection issues, especially where a supervisor has pricing powers. In this case, the two authorities could strive to share information and collaborate to discuss findings and formulate strategies.
- Unitary authorities: Even in authorities that have a mandate across prudential and conduct supervision, and across different parts of the financial sector, it will be important to share experiences across banking, insurance and markets teams given that there could be potential spillover effects between sectors. For example, reduced insurance availability and affordability could pass additional physical risk exposure through to banks where mortgage customers cannot secure adequate insurance.

11.7.2 Challenges at an international level

When conducting a climate-related scenario analysis on IAIGs, supervisors should consider coordinating with other involved supervisors[44] and regional or global insurance standard-setters (eg the IAIS). This is a useful exercise to the extent it reduces the number of overlapping requests that

[43] Assessing inward risks refers to the extent insurers may be exposed to, or vulnerable to, a certain risk within the insurance sector, whereas the outward risk refers to the situation in which these vulnerabilities would generate externalities which may then propagate to other financial markets or the real economy.

[44] See ICP 25 (Supervisory Cooperation and Coordination), in particular ICP 25.2, 25.3 and ComFrame integrated in ICP 25.6.

insurers receive, helps to build a greater understanding across the insurance group's supervisors of the climate risks it is exposed to, and also helps build capacity amongst the supervisory community. There are significant benefits to aligning the design and frameworks of climate-related scenario analysis at an international level and sharing best practice.

Supervisors leading a scenario analysis exercise may wish to collaborate with other involved supervisors via supervisory colleges in a number of different ways:

- Design: Collaboration in the design phase of the exercise could benefit supervisors in gaining a better understanding of insurers' exposures. It will also reduce the number of separate requests that insurers may receive.
- Data gathering: Supervisors may be able to share information on useful data sources and assumptions about the impact of climate risks in their jurisdiction.
- Results: Sharing the results in a supervisory college discussion will help develop a common understanding across supervisors of the extent of the insurer's exposure to climate-related risks.

At the international level, international financial organisations cooperate in order to provide shared examples of best practice and to avoid areas of overlap (eg through the NGFS or the FSB).

11.7.3 Risk concentration

Scenario analysis can be carried out to assess potential systemic risk concentrations, including whether indications exist for spillover effects not only into the real economy in general but also into other sectors and/or other assets, due to potential financial sector and market interlinkages. Assessing risk concentrations is relevant when assessing the potential systemic importance of individual insurers and/or the insurance sector as a whole.

Concentrations may exist in the following areas, amongst others.

- Physical risk concentrations manifest in underwriting liabilities/losses, which are significantly impacted by the increasing severity and frequency of natural catastrophe losses – for instance, where an insurer has a particular geographic focus, or its underwriting risks are highly correlated (eg an insurer with a large property insurance portfolio that is affected by an increase in fire risk, driven by rising temperatures). This could impact individual insurers or could be common across many insurers and, therefore, poses a macroprudential risk through its cumulative impact. See examples of risk correlation in Box 11.
- Transition risk specific to:
  - carbon-intensive asset concentrations (whether in fixed income or equity investment) and their associated credit quality. This has the potential to be both a micro and macroprudential risk;
  - exposure to green assets (eg those likely needed for the transition to net zero); and
  - underwriting certain lines of business.
- Assets vulnerable to physical risks: Where a jurisdiction faces significant physical risks and assets are largely invested in that jurisdiction, there is potential for an increased macroprudential risk.
- Reinsurance: Given the importance for primary insurers of ceding risks and the increased risks reinsurers will face from climate change, scenario analysis can help to understand how market

dynamics may change – for instance, what concentrations will reinsurers face (eg increased extreme weather events around the globe may limit the ability for diversification of risk) and what action will they take to mitigate this risk (eg reducing coverage for certain primary insurers in specific jurisdictions, increasing prices)? Scenario analysis should critically challenge assumptions to understand what impact climate change will have on different parts of the insurance sector.

Box 8: Scenario analysis and protection gaps

Gaps in protection against climate-related risks are, in many cases, significant, and supervisors anticipate that they will continue to grow, which is why this will be an increasing area of focus for the IAIS.[45] Supervisors expect the impact of climate change to widen and materially affect how the insurance sector sets pricing, risk appetite and coverage. Particularly in concentrated markets that are dependent on a small pool of large insurers, a change in their settings could lead to a widening of protection gaps, which could carry potential wider systemic implications. The strengthening of supervisory tools to assess and monitor the availability and affordability of insurance products could play a key role in addressing some protection gap concerns. By identifying possible protection gaps, supervisors can also support measures by insurers and policymakers to support adaptation and increase capacity of relevant insurance markets.

Scenario analysis of climate-related risks is relevant for both prudential and conduct supervisors with regard to natural catastrophe protection gaps. For prudential supervisors, it can be used as a tool for assessing the viability of business lines and models and assessing the potential systemic importance of insurers and the insurance sector (ICP 24.3). Meanwhile, for conduct supervisors, it can be used as a tool to assess how the market may change in the face of increased climate risk, what consumer risks may emerge and whether certain policyholder groups are most likely to be negatively impacted.

Scenario analysis exercises may explore the impact of climate change on pricing and identify vulnerable regions/communities (eg those exposed to transition and/or physical risks), vulnerable socio-economic groups, and other protection gaps. Such exercises can also be used to explore the impacts of climate change on reinsurance affordability and availability/capacity.

Impact on policyholders

As climate change impacts physical risk in the form of increasing frequency and severity of losses from weather extremes, insurers would likely decide to reprice their products to reflect the change in risk. This could lead to either a decline in the availability and/or affordability of property catastrophe lines, as individuals and businesses are priced out of the market. A sufficiently material increase in physical risks could reduce insurers' risk appetite. Insurers may reduce their exposure to certain geographies or perils, which could lead to an exit or substantial reduction in the provision of catastrophe insurance cover. This may also apply to other lines of business.

[45] IAIS outlines actions for insurance supervisors in addressing natural catastrophe protection gaps

Competition could be reduced if insurers exit markets or product lines to mitigate their climate risk. This could also prompt government intervention, such as public bodies directly offering weather disaster insurance, thereby potentially reducing the size of a market-based insurance sector. Supervisors should consider finding methodologies that allow them to assess the likelihood, extent and implication of such developments, where appropriate, as part of scenario analysis. For instance, where scenario analysis exercises use dynamic balance sheets and allow for management actions, supervisors will be provided with a cross-industry view of issues related to pricing and availability. By looking at the proposed collective management actions, supervisors will gain a better understanding of possible dynamics on pricing, availability, and the potential implications of collective management actions on protection gaps.

Consistent with ICP 24.5, transparency over protection gaps identified in scenario analysis exercises will help to bring these issues to the attention of a range of different stakeholders and foster a broader policy discussion.

Financial stability considerations

Protection gaps could also have broader financial system implications. Increasing protection gaps could:

- Impact bank balance sheets (through increased credit risk);
- Force governments to take a more direct role as the “insurer of last resort”; and/or
- Result in a slower recovery of the overall economy as the public (private persons and/or enterprises) incurs greater losses after a catastrophe event.

In the case of additional government intervention, this could put additional fiscal pressure on governments, which could affect the broader financial system and economy (for example, through increased government borrowing to fund reconstruction and adaptation, putting credit stress on sovereigns).

Climate-related scenario analysis could be used to better understand the risks posed to the financial system, and vulnerabilities that may arise in the local economy and community, stemming from less affordable insurance coverage. It may be beneficial for scenario analysis to be used to better understand the potential:

- Size, scale and location of insurance affordability challenges and to identify the most vulnerable communities;
- Concentrations of risk, which could impact other lending institutions and their lending portfolios (uninsurable collateral);
- Potential fiscal pressure created by governments becoming the insurer of last resort in order to support consumers facing unaffordable insurance;
- Opportunities for prevention and mitigation efforts, such as flood levies or nature-based solutions, thereby reducing the risks faced by financial institutions and their customers, or work to look at adaptation measures (eg build back better) to reduce exposure to future claims;

- Extent of increasing natural catastrophe losses that result in insurers and reinsurers choosing to stop, or decrease significantly, writing a specific line of business, which would impact insurance or reinsurance capacity (including Insurance Linked Securities for relevant sectors); and
- Changes in the appetite of reinsurers to take on climate risks. Scenarios could be used to assess whether increasing severity and frequency of weather events could reduce global reinsurance risk appetite. This may indirectly contribute to the widening of domestic protection gaps in individual countries. For example, increased occurrence of hurricanes in the United States and winter storms in Europe, occurring concurrently with increased wildfires in other countries, could lead to increased reinsurance costs globally, thereby indirectly amplifying insurance costs and protection gaps in each individual domestic market.

Cross-sectoral supervisors may assess risks to the financial system from the transfer of physical risk from the insurance sector to the banking sector – for example, bank mortgages being left without adequate insurance coverage against weather catastrophes due to unaffordability or unavailability of insurance coverage. The falling collateral value leads to a higher loan-to-value ratio for the bank and thus higher credit risk, all things being equal.

In cases of scenario analysis using dynamic balance sheets (ie insurers are allowed to take management actions), supervisors should look to understand the risks that these management actions may pose for the sector as a whole. For instance, from a demand perspective, what assumptions are insurers making about demand and price elasticity for coverage of products? Equally, from a supply perspective, will the accumulation of indicated management actions increase protection gaps. Insurers may well take logical actions from a microprudential perspective (eg to reprice or reduce/remove cover), but the collective impact could lead to significant protection gaps with associated consumer and macroprudential risks. Looking at management actions during a scenario analysis exercise has the potential to cast new light on these issues.

Using data to assess protection gaps

Consistent with ICP 24.1, supervisors with access to adequately granular data, specific to protection gaps and other societal and financial stability impacts, could use scenario analysis for the following purposes:

- To create a jurisdictional climate peril map (showing risk today and future projections), for use by government agencies responsible for land planning, building codes and mitigation work;
- Overlay the climate risk map with the mortgage portfolio of the entire banking system, or individual lenders, to better understand insurance coverage of collateral as well as potential concentration risks;
- Potentially consider the impacts to different socio-economic groups, which may better inform government policy and prioritisation; and
- In combination with transition risk and socio-economic data, understand where economic circumstance such as job losses in climate-relevant sectors, combined with physical risk, drive unaffordability in general insurance.

If a protection gap issue is projected or observed, supervisors may wish to inform and collaborate with other public bodies to find solutions. Other agencies dealing in land use, building standards and public works, may be best placed to develop an appropriate and feasible response. Such findings may also be relevant when discussing double materiality, whereby the possible transition plans of insurers might not only benefit insurers but also contribute to the mitigation of climate change and aid in the reduction of protection gaps in the long-term.

11.8 Supervisory response (ICP 24.4)

Context

Insurance supervisors may choose from a wide range of supervisory responses, including both macroprudential and microprudential supervisory tools, to address the outcomes of their scenario analysis exercises.

Recommendations

A number of actions or follow-up work that could be taken:

11.8.1 Further supervisory work

The scenario analysis outcomes may also reveal certain vulnerabilities or risk exposures that warrant further supervisory action at the level of the individual insurer or the insurance market.

Where there are common issues identified across a number of insurers by the scenario analysis exercise, further thematic initiatives may need to be undertaken to address weaknesses – for instance, thematic work on ERM integration, setting out preventive and corrective measures (eg restrictions on business activities or restricting exposures, see ICP 10.2) and where there are significant concerns looking at issues related to crisis management and planning (see ICP 24.4.4).

Further work may take a macroprudential perspective. For instance, scenario analysis may highlight climate change risk concentrations across the sector and, therefore, could be a useful early indicator for the need to undertake further thematic supervisory activity. Such work could be used to better quantify the cross-sector impact of climate change, including the disproportionate impacts in climate-vulnerable areas and the potential for this to increase inequalities and wider financial instability. The exploration could focus on whether climate change risk is adequately reflected and quantified in financial returns. Additionally, in the case of transition risk, if insurers face difficulties quantifying risk, then further supervisory work could explore what can be done to support insurers adequate risk quantification. For example, the sharing of best practices or the formation of cross-sector groupings to map out responses to these issues.

Finally, further action may be needed to address insurer-specific issues, highlighted by the scenario analysis. This may include weak integration of climate risk into ERM. Here. supervisors should consider whether individual remediation plans need to be developed.

11.8.2 Climate change financial disclosure requirements

Scenario analysis exercises demonstrate that climate-related financial disclosures help build a wider understanding of the effects of climate change on insurers and provide more transparency as to the

financial implications for insurers. Disclosure requirements provide supervisors and other stakeholders, in an ideal case, with comparable, clearly defined data.

It may not be possible, due to resourcing constraints or limited expertise, for supervisors to regularly conduct scenario analysis exercises, which is where disclosure requirements, typically built on certain standards, can be utilised to provide detailed information on how insurers assess, manage and mitigate climate-related financial risks and opportunities. Although disclosure requirements tend to have a microprudential focus, they can be used to assess macroprudential impacts when sufficiently harmonised. Supervisors should ensure alignment with international standards such as those developed by the International Sustainability Standards Board and other standard-setting activity (eg US Securities and Exchange Commission and European Financial Reporting Advisory Group).

11.8.3 Scenario analysis to inform further scenario exercises

The outcomes of scenario analysis can also point to vulnerabilities in other areas that may need to be further explored to better understand climate-related risks to which insurers are exposed. The conclusions of a previously carried-out scenario analysis exercise may, for example, show the volatile and changing nature of climate risks or lack of precision in climate change exposure quantification, which could necessitate such an exercise to be conducted on an incremental basis. Alternatively in some circumstances a scenario analysis exercise could identify the need for different quantitative or qualitative risk assessment tools to assess material climate-related risks. For example, if risks are identified during a scenario analysis exercise a supervisor may not require an annual scenario analysis on the whole of the balance sheet but may seek an annual sensitivity analysis on parts of the balance sheet.

Conducting follow-up scenario analysis exercises will allow supervisors to observe how an exposure is trending for a specific jurisdiction from a macro perspective and to take note of any emerging risks or trending topics. Supervisors can better quantify climate-related risks if they are well informed of developing capabilities of insurers and systems. A number of jurisdictions that have already conducted scenario analysis exercises have experienced some limitations in the precision and granularity of the data inputs used, resulting in data quality issues, which may require that they repeat the exercises (in a similar, or altered, format). Qualitative information can also be gathered to complement quantitative exercises.

Given that no single scenario analysis exercise design can address all risks on all time horizons, follow-up scenario analysis exercises also present an opportunity to address new risks and scopes that may not have been prioritised in the initial exercises.

11.8.4 Policy work

Where issues identified through a scenario analysis exercise cannot be addressed by supervisory actions, new policy tools may be needed to address the issues identified in parallel to ongoing supervisory work. In this case, with the uncertainties in calibration and results accounted for, the scenario analysis exercise could be a key input to defining the problem and helping to find a policy-oriented solution.

11.9 Transparency (ICP 24.5)

Context

When considering transparency of scenario analysis exercises, the purpose and objectives of the exercise will ultimately define which results are published. Publishing results can send a clear message about the potential climate-related risks posed to the insurance sector, and also highlight any shortcomings such as data quality and modelling issues.

Recommendations

Supervisors should communicate results as these can be used to increase transparency on the impact of climate risk, build industry capacity and ensure that the market more broadly appreciates climate risks to the insurance sector.

The focus of the scenario analysis exercise will determine what information is published. Before publishing any data, it is important to ensure its validation. Limitations may exist for a number of insurers in properly quantifying climate-related risks so it is important to ensure the quality of data.

Depending on the focus of the exercise, the following data/statistics could be published:

- Quantitative assumptions and caveats for the scenarios itself;
- Asset/liability splits, exposure to physical and transition risk under certain scenarios, over specific time horizons;
- Business developments, lines of business, geographic distribution of coverage, certain supply/demand developments and the impact on availability of reinsurance;
- Soundness of the insurance sector under the different scenarios and time horizons (eg solvency impacts);
- Conduct of business issues (eg availability and cost of coverage);
- Any qualitative considerations such as embedding climate-related risks into strategic decisions or reputational impacts of climate change; and
- Data quality challenges, key material assumptions, modelling uncertainty and limitations.

The level of transparency is expected to increase as climate scenario analysis capabilities evolve over time. Supervisors might consider publishing concepts underlying scenarios, such as:

- an indication of the probabilities assigned to scenario outputs; or
- the extent to which scenarios extrapolate from present day conditions, or conversely work back along a trajectory from an identified future projection.

Additionally, reports may highlight lessons learnt from the exercise and share examples of good practice to help build capacity across the industry. For example, where scenario analysis has highlighted problems with ERM integration, these could be mentioned together with the steps taken to mitigate them. Alternatively, good examples of the tools that insurers use to translate climate risks into financial risks could be shared to spread best practices.

Box 9: Case study on a regulatory example of published scenario analysis conclusions

The Bermuda Monetary Authority published their 2021 Climate Risk Exposure Survey Report, including outcomes of a scenario analysis exercise that sought to obtain early indications of the industry's climate change risk exposures, based on several relatively simple quantitative metrics focusing on physical risk. The survey identified particularly affected perils and related loss cost increases, and concluded that physical risk is the most significant driver of climate risk-related exposures due to the nature of risks underwritten in Bermuda, particularly NatCat exposures. The exercise also found that the modelling of mid- to long-term physical climate risk is still in the development stages and requires improvements.

11.10 Scenario analysis to inform assessment of insurers' risk management and governance (ICP 16)

This section provides guidance on how supervisors could integrate climate-related scenario analysis into ERM for solvency purposes, including:

- ERM framework review (ICP 16.16);
- Risk appetite statements (ICP 16.4);
- Asset-liability management (ICP 16.5), including in investment policies (ICP 16.6) and in underwriting policies (ICP 16.7); and
- Board accountability (ICP 16.11).

11.11 ERM framework review (ICP 16.16)

Context

The nature and materiality of relevant risks (eg insurance, credit, market, concentration, operational or liquidity) will vary depending on the exposure to climate change of each insurer. Hence, the ORSA is a particularly useful tool for insurers to assess the adequacy of their ERM and capital position, as it summarises the main outcomes of the risk management process to ensure proper communication to the management board.

Recommendations

Supervisors should base their expectations of the ERM framework on the nature, scale and complexity of the business (ICP 16.16.5). Where climate risk is material, it should be considered as part of the ORSA assessment. As such, the supervisor should assess whether the scenario analysis and modelling approaches used are commensurate with the insurer's vulnerability to climate risks, based on the insurer's risk profile.

Supervisors should consider the extent to which climate risk is integrated into the insurer's ERM framework. The outcome of the scenario analysis may help define the resilience of the business strategy of the insurer, providing insights into material exposures and business risks as well as testing the robustness and adequacy of its solvency position.

These insights should be taken into account when defining both short- and long-term strategy and when determining the most appropriate management actions to properly react to occurring risks (eg a limit breach).

In setting regulatory expectations specific to insurers' ERM frameworks, supervisors should consider taking a proportionate approach. The requirements could apply to the insurance industry as a whole, or only to insurers with a certain risk profile, size or complexity, depending on whether the outcomes of the scenario analysis demonstrate that only select entities are affected. However, using only size as a criterion for inclusion will not capture smaller entities that may be materially exposed to climate change risks or any potential change in climate risk concentrations of smaller entities. For this reason, a broader criterion for the scope might be more appropriate.

The ORSA requirements may also be applicable to entities in phases, where specific requirements will be rolled out over a number of years or according to entities' size (ie where smaller entities will be required to enhance their ORSA a year or two later than larger groups and/or IAIGs). Additionally, distinction can exist between requirements across the insurance sector, such as having separate requirements for life vs property and casualty insurers, insurers with concentrations in specific lines of business/product types, geographies, or insurers with specific type of climate risk exposure, where it may be material to the region.

11.12 Investment policies (ICP 16.6)

Physical and, especially, transition risks can have complex and non-linear impacts on insurers' investments. Where material, these risks should be taken into account regardless of whether the insurer invests directly, or through a third-party asset manager or investment advisor. Supervisors and insurers could use scenario analysis to better understand:

- The gaps in knowledge that need to be filled to understand the climate risks to which their assets are exposed. Insurers may need to engage more with investee companies to understand the steps they are taking to reduce their exposure so that the insurer has a better understanding of the evolution of these risks. Where investee companies are producing transition plans, insurers should also consider engaging with them to understand their plans which may inform insurer climate scenario analysis. Outcomes of such exercises may result in insurers further collaborating in supporting investee companies' efforts in their transition over time towards more sustainable business practices, while maintaining their risk management standards.
- How and when different climate tipping points will impact risks, including capturing the non-linear impacts on credit, market and liquidity risks. Insurers could use this information to consider what conclusions from scenario analysis exercises mean in terms of the assets they hold and the extent to which they may be able to diversify some of their risks.
- The potential micro- and macroprudential effects of insurers' investment decisions/policies and whether they may significantly impact other insurers, sectors, financial systems and the broader economy, especially for insurers with sizeable investment portfolios and/or concentrations in specific asset classes.

11.13 Underwriting policies (ICP 16.7)

Physical, transition and litigation risks arising from climate change can impact the business risk profile, underwriting strategy and underwriting processes of insurers. When material, supervisors should expect insurers to identify the relevant climate-related risks inherent in their business portfolios, assess the implications to their underwriting strategy and develop policies and procedures to integrate the management of these risks within their enterprise risk management framework. Their

risk appetite statement should similarly reflect these risks. Supervisors and insurers should use scenario analysis to:

- Understand climate risk exposure in certain geographic areas (eg flood plains, areas of increased drought or fire risk), economic sectors (eg energy intensive sectors) or lines of business (eg property, agriculture) that have higher exposure to climate risk; and
- Understand how areas of new business and the overall insurance market may be affected by climate change, including from a macroprudential perspective.

Consideration should be given to how results from climate-related scenario analysis can be integrated into underwriting processes and what additional data or decision points may be needed to make scenario analysis more actionable.

Scenario analysis may also be useful for understanding second or third order impacts and how these may impact on underwriting decisions. For instance, will a move to net zero lead to fewer cars per household, increased community pooling of cars or different risks. These changes will have a significant impact on business models.

11.14 Insurer ORSAs (ICPs 16.12 and 16.14)

Context

Climate-related scenario analysis could be used as an input to ORSAs. As per ICP 16.12, it is required that ORSAs "encompass all reasonably foreseeable and relevant material risks (…) and, as necessary: to assess the insurer's resilience against severe but plausible macroeconomic stresses through scenario analysis or stress testing; and assess aggregate counterparty exposures and analyse the effect of stress events on material counterparty exposures through scenario analysis or stress testing".

The unique business strategy, investment portfolio and risk profile of each insurer will affect the degree of impact from climate-related risks. The nature and materiality of the relevant insurance, credit, market, concentration, operational and liquidity risks will vary depending on each insurer's exposure to climate change. Hence, the ORSA is a particularly useful tool for insurers to assess the adequacy of their ERM and capital position. Supervisors should expect insurers to consider all material physical, transition and litigation risks arising from climate change in their ORSA process and adopt the appropriate risk management actions to mitigate the identified risks. Insurers may consider the risks on both a qualitative and quantitative basis, with the understanding that quantitative capabilities should improve over time as the ability to access the necessary data is improved.

Recommendations

As part of the ORSA, the insurer assesses its risk management and financial resources over a longer time horizon than the time horizon used to determine regulatory capital requirements. Given the systemic nature of climate risk, it is important for scenario analysis to extend beyond typical business planning cycles of three to five years, and take into account medium- and longer-term risks, thereby addressing what has been described as the "tragedy of the horizons".[46] The time horizon should be consistent with the nature of the insurer's risks. Some climate-related risks may take longer to fully

[46] https://www.bankofengland.co.uk/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability

materialise and, therefore, it would be expected that the ORSA also include appropriate scenarios that cover a more extended time horizon. When assessing the appropriateness of time horizons used by insurers, supervisors should consider the nature and types of business written by the insurer.

As part of the ORSA, an insurer is required to perform a continuity analysis to assess its ability to manage its risks and meet its capital requirements under a range of plausible adverse scenarios with a forward-looking perspective in mind. When material, this analysis should include the identification and assessment of the direct and indirect impact of climate-related risks (for instance, including as part of the scenario analysis a (reverse) stress testing process). This would enable insurers to assess their resilience to financial losses with respect to climate change. This process should incorporate an assessment of physical, transition and litigation risks across the different risk categories, for example, the assessment of:

- Physical risks include the use of catastrophe modelling, covering a number of different scenarios (eg encompassing a range of return periods), to assess the impact on both assets and liabilities. Asset-focused assessments should include both financial as well as operational assets, such as office buildings and data centres. Liability assessments should not only look at natural catastrophe exposures but also consider how hotter climates may impact life and health exposure to future claims, due to the increased occurrence of heat waves and the expected wider geographical spread of tropical diseases;
- Transition risks may cover how increases in carbon taxes and moves towards a low-carbon economy would impact both financial assets and technical provisions. Also, any risk of deterioration of future new business volumes or increase in lapses should be assessed to avoid any negative reputational impact in the event an insurer's activities are considered to be supporting carbon-intensive industries; and
- Climate-related litigation risk involves the risks resulting from potential changes in societal, litigation and judicial environments. These are likely to differ significantly across jurisdictions and over time. The assessments should cover litigation risk from existing or future insurance contracts as well as from the insurers' own activities (eg any potential greenwashing risk).

Supervisors should encourage insurers to use models that are pertinent to their geographical scope and the nature of their business. It is important for insurers to fully understand these models, the uncertainties of the results and their underlying assumptions and methodologies when deciding on their relevance.

Climate-related risks are material to the insurance industry and are expected to have an impact on most insurers; therefore, these risks should be considered for inclusion in the ORSA. If climate-related risks are assessed to be immaterial by an insurer, the insurer should document the reason for this assessment. The rationale for immateriality could be included in the documentation that summarises the risks that the insurer considered for incorporation in the ORSA and should be presented concisely.

Box 10: EIOPA guidance on scenario analysis and ORSA[47]

The EIOPA has recognised the importance of climate change and its potential impact on the insurance sector. The authority has developed application guidance to assist insurance companies in conducting climate change materiality assessments and utilising climate change scenarios in the ORSA process.

The application guidance presents easy-to-apply techniques which could be used by insurers with limited resources to conduct climate change analysis as part of their ORSA. These techniques should not be taken as a standard, particularly by mid and large insurers with previous experience.

The application guidance from EIOPA provides insurers with practical guidance on how to conduct these assessments, including the identification of relevant climate change risks, the assessment of their materiality and the integration of the findings into their risk management frameworks.

In addition, the guidance emphasises the use of climate change scenarios in the ORSA process. Climate change scenarios are hypothetical future pathways that capture different climate outcomes and their potential impacts on the insurance sector. By using these scenarios, insurers can assess their resilience and evaluate the effectiveness of their risk management strategies in different climate change scenarios.

The application guidance is neither binding nor prescriptive to promote a diversity of approaches, which would support the development of technical knowledge and tailored risk assessments.

For physical risk, the guidance informs on concrete approaches for scenario analysis, such as:

- Using NGFS climate impact explorer: this tool shows how the severity of climate change impacts will increase over time in continents, countries and provinces at different levels of warming, starting with 1.5°C;
- Using the PESETA IV study: it aims to better understand the effects of climate change on Europe, for a number of climate change impacted sectors;
- Using catastrophe models: catastrophe modelling is the practice of using computer programmes to mathematically represent the physical characteristics of natural catastrophes; and
- Using existing scenario analysis: previous scenarios could also be used to perform a climate change scenario analysis in the ORSA. The Bank of England , for example, launched an insurance stress test in 2019, which included an exploratory exercise in relation to climate change.

For transition risk, examples include:

[47] Application guidance on climate change materiality assessments and climate change scenarios in ORSA (2022)

- Using traditional scenario analysis: offers flexibility for tailoring to the specific objective of the stress test exercise;
- Using open-source tools: eg measuring the alignment of a portfolio to a range of climate transition scenarios via forward-looking comparisons of key outputs, such as emissions intensity of the investment portfolio and transition plans; and
- Using existing scenario analysis: The 2020-2021 Autorité de contrôle prudentiel et de resolution (ACPR) pilot climate exercise scenarios have been presented as an example of the application of a climate stress test to a whole market using the NGFS transition pathways as a starting point. The ACPR's second climate stress test, whose results were published in 2024, had 15 insurers (covering almost 90% of the total assets of French insurers) test three scenarios combining physical and transition risks on their balance sheets. These scenarios were made of two long-term scenarios by 2050 based on work carried out by the NGFS, in addition to another short-term scenario that aimed to address insurers' request for a stress-testing timeframe better aligned with that of their strategic planning.

11.15 Integrating scenario analysis into risk policies (ICPs 16.5, 16.6 and 16.7)

Context

Given the need to integrate climate risks into existing frameworks, this section considers how climate risk scenario analysis can be relevant for investment (ICP 16.6) and underwriting policies (ICP 16.7), together with asset liability management (ICP 16.5).

Recommendations

Where material, insurers should include an assessment of climate risks as part of their overall review of investment and underwriting risks and have internal guidance on how the assessment and monitoring of such risks are embedded in the investment and underwriting processes.

Supervisors could also consider setting out expectations on the role of scenario analysis to determine the appropriate frequency for reviewing and making changes to investment policies, including the limits framework. For example, scenario analysis may highlight the need to review sectoral investment limits for certain vulnerable sectors that are more exposed to climate-related financial risks.

Scenario analysis can prompt early development of mitigation strategies like investee engagement, restricted lists[48] and divestment lists[49] for asset types that have been identified as vulnerable. Insurers could also use scenario analysis to determine the impact of these mitigation strategies on its balance sheet for solvency and liquidity purposes. For example, scenario analysis could highlight

[48] A list of investments, normally in certain sectors, that investors will not invest in because it does not align with their climate risk tolerance.

[49] A list of investments that an investor chooses to sell because it is not aligned with their climate risk tolerance eg they do no longer wish to hold equity in a certain sector or with a company that undertakes certain activities.

assets that become "stranded"[50] under certain scenarios, resulting in significant losses and adversely impacting the capital and liquidity position of the insurer. Hence, supervisors should require insurers to incorporate consideration of climate-related risks in their investment and underwriting policies, where there is material exposure of individual products to climate change risk.

ICP 16.5, which addresses ERM for solvency purposes, requires "insurer's ERM frameworks to include an explicit ALM policy that specifies the nature, role and extent of ALM activities and their relationship with product development, pricing functions and investment management". Scenario analysis could help to identify correlation risks between assets and insurance liabilities that are not apparent (for instance, retail mortgage - backed assets in areas subject to significant climate risk held as assets on an insurer's balance sheet and where the insurer underwrites cover for residential property in the same area). A robust bottom-up approach in building the scenario analysis exercise could allow the insurer to isolate such correlated positions and address the risks, by either divesting or diversifying such exposures, before they are manifested.

Box 11: Examples of risk correlation

Physical risk correlation

A physical risk correlation could exist as a result of a real estate portfolio that is exposed to the changes in value of properties that serve as collateral. Depending on their geographical location, these properties can be exposed to several natural catastrophe perils. A property and casualty insurer that might be exposed to certain natural catastrophe perils by holding mortgage loan assets in its portfolio might also be underwriting the same natural catastrophe perils on the liability side, thus doubling down on the same risk.

Transition risk correlation

Another example could be through a risk arising from transition risk correlation. A life and annuity insurance company might be underwriting minimum guarantee riders for its variable annuity liabilities. The underlying funds for these liabilities could be exposed to carbon-intensive sectors. It might also be owning assets from these sectors in its general account portfolio. In aggregate, it will have exposure to transition risk from similar vulnerable sectors on both sides of the balance sheet.

11.16 Risk appetite statement (ICP 16.4)

Context

ICP 16.4 requires insurers to have a risk appetite statement that:

- Articulates the aggregate level and types of risk that the insurer is willing to assume within its risk capacity to achieve its financial and strategic objectives, and business plan;
- Takes into account all relevant and material categories of risk and their interdependencies within the insurer's current and target risk profiles; and

[50] Assets that have suffered from unanticipated or premature write-downs, devaluations or conversion to liabilities.

- Is operationalised in its business strategy and day-to-day operations through a more granular risk limits structure.

Recommendations

Supervisors could consider setting expectations on scenario analysis design that allows for assessing alignment of the existing portfolio of assets and liabilities with the risk appetite statement, under different scenarios, over longer time horizons. Scenario analysis could also be used to assess the adequacy and appropriateness of the existing risk appetite statement under different plausible or potential future business environments. Certain lines of business could become riskier in the future as the nature of risk changes due to climate change, and certain traditional avenues of risk transfer could shrink or no longer exist. Increasing frequency and severity of catastrophe perils that are expected in the future may impact the pricing and reinsurance capacity available to the insurer. The insurer should consider incorporating such changes to the existing reinsurance capacity in the scenario analysis exercise. This information would be useful in assessing product viability and risk mitigation in a forward-looking manner.

Supervisors could consider the use of scenario analysis as a tool that could allow insurers to identify and assess the robustness of their risk appetite statement and evaluate the need to make any changes to the statement upfront. For example, scenario analysis can highlight time periods under different scenarios when capital levels may be at risk of breaching the thresholds dictated by the risk appetite statement.

Scenario analysis could be used to inform the insurer of the potential vulnerabilities in its business model that could result in breaches to the risk appetite statement in the future.

11.17 Board accountability (ICP 16.11)

Context

The board of directors is responsible for setting and overseeing insurer's overall business strategy and risk appetite, including climate risk. The use of climate risk scenario analysis is an important tool to aid the integration of the risks from climate.

Recommendations

Boards should ensure that they are provided with sufficient information to understand the climate change risk to which their business is exposed. They should explicitly consider how climate-related scenario analysis is integrated into existing governance frameworks. In particular, the board should be provided with:

- A materiality assessment, identifying the current exposure of the insurer as a starting point for the analysis;
- A set of scenarios, including in detail the underlying assumptions and the likelihood of each scenario transpiring, aimed at assessing climate risk in a forward-looking manner, taking into account the long-term nature of climate risk. They should provide an adequate basis for the assessment of overall solvency needs; and

- Management actions to be undertaken in case of adverse scenarios. Management actions should be concrete, applicable within a short timeframe and tailored to the specific risk profile of the insurer but may vary according to the market conditions.

In order to ensure accountability, the board should consider scenario analysis being independently reviewed. This might only be appropriate to apply where the results of scenario analysis are identified as being material. This might be set by a pre-defined materiality threshold, for example.

When scenario analysis exercises are conducted, the board should dedicate time to understanding the results and what they mean for the insurer's strategy. Boards may discuss the more detailed findings in board subcommittees.

Box 12: MAS guidelines on environmental risk management for insurers

The Monetary Authority of Singapore (MAS) recognises the critical role that the board of directors plays in incorporating environmental considerations (including climate risk) into the insurer's risk appetite, strategies and business plans. This includes taking into consideration both the short-term (within the insurer's business planning horizon) and the longer-term (given that the impact may arise beyond the maturity of current portfolios and run into decades) when assessing the impact of environmental risk and opportunities.

The MAS guidelines inform on responsibilities of the board, such as:

- Approving an environmental risk management framework and policies to assess and manage the insurer's environmental risk exposures on an ongoing basis. This includes using climate scenario analysis to assess these risk exposures;
- Setting clear roles and responsibilities of the board, including personnel who are responsible for oversight of the insurer's environmental risks; and
- Ensuring that directors have adequate understanding of environmental risk and that senior management is equipped with appropriate expertise for managing environmental risk.

12 Market conduct (ICPs 19 and 21)

12.1 Context and objective

Over the past decade, the number of initiatives aimed at ensuring the transition of economies towards a more sustainable path has increased. Particular attention has been paid to the financial sector in general and, more specifically, on large institutional investors, such as insurers, and the role they can play in supporting this transition. Demand is increasing for sustainable life and non-life insurance products, which has led insurers and intermediaries to offer more sustainable products and integrate sustainability practices in their operations. These efforts have been accompanied by a surge in related communications, disclosures, and marketing materials.

Although these developments are welcome, they could lead to new risks. For example, risks may arise when representations[51] made by insurers and intermediaries on their own sustainability and the sustainability of the insurers' products are either misleading or unsubstantiated, potentially leading to accusations of greenwashing. If not adequately identified, monitored, and mitigated, such reputational and legal risks could have a substantial impact beyond individual insurers and intermediaries, affecting the insurance sector as a whole. In particular, if customers are misled into buying products with questionable sustainability features, their funds may not be invested in sustainable products, thereby not meeting the consumers' expectations. Furthermore, this type of practice could generate a general loss of confidence in the role the sector can play in facilitating the transition towards a more sustainable path as well as lead supervisors and policymakers to overestimate the industry's progress in the climate transition.

Beyond supporting the transition, significant attention is given to ensuring that society is resilient against climate shocks, especially given the expected increase in intensity and severity of NatCat events due to climate change. There is a risk that consumers may not be able to access nor afford adequate protection against NatCat events, leading to an increase in the insurance protection gap. Furthermore, policyholders have been facing certain issues with existing NatCat insurance products that should be addressed, such as a lack of sufficient clarity in the terms and conditions (specifically, which events are covered), and delays in claims handling processes at times of extreme NatCat events, when there are large numbers of claims.

This section aims to support supervisors in their efforts to identify instances of potential unfair treatment of consumers that can emerge in relation to sustainability-focused products or NatCat protection products. As this section focuses on those instances when sustainability-related risks and considerations can lead to the unfair treatment of consumers, ICP 19 (Conduct of business) is most in scope. However, ICP 21 (Countering fraud in insurance) may also be applicable for greenwashing where facts in a specific case may indicate behaviour that goes beyond misconduct to fraud.

It is important to note that legal requirements as well as the supervisors' role, mandate and powers vary across jurisdictions. Section 12.2 on greenwashing is generally applicable to jurisdictions with pre-existing sustainability requirements for products and entities. However, in light of existing general requirements for insurers and intermediaries not to provide unfair and misleading information, this paper also applies to insurers or intermediaries that make voluntary sustainability representations about their entity or their products, even if there are no specific sustainability-related requirements in place in that jurisdiction. In relation to the Section 12.3 on NatCat insurance coverage, aspects

[51] Given the specific meaning that "claim" has in the insurance sector, this paper uses "representation" instead, however both can be interchangeably used.

relating to clarity of information are generally applicable, while other aspects related to access and affordability may be applicable in jurisdictions where the supervisory mandate includes market development.

12.2 Greenwashing considerations

12.2.1 Introduction on greenwashing

An increase in consumer appetite for products with sustainability features, both in the life and non-life business, has been observed in some jurisdictions. To meet this increase in demand, insurers and intermediaries may adapt their offers to propose products with sustainability features and to portray themselves as having sustainability features.

Issues arise when these representations are misleading, which can be considered greenwashing. The term is understood by insurers, intermediaries, customers as well as society in general. This paper uses greenwashing to encompass all misleading sustainability representations (ie environmental, governance and social).[52]

With this paper, IAIS is not implying that greenwashing is necessarily a frequent practice in the insurance sector; rather, that there may be a risk of greenwashing.

Greenwashing is primarily a conduct risk that can result in the unfair treatment of customers, where companies may engage in misleading practices as a strategy to artificially improve their brand image among customers. Supervisors should, therefore, consider tools for ensuring that insurers or intermediaries that claim to be sustainable do so honestly, both before entering into a contract and through to the point at which all obligations under the contract have been satisfied, in line with ICP 19 (Conduct of business).

Greenwashing may impact stakeholders in various ways. It can deceive potential policyholders into buying products that do not meet their sustainability expectations, or from insurers and intermediaries that are not aligned with their sustainability preferences. Greenwashing can also prevent capital from flowing towards investments that benefit sustainability factors – for example, in the case of insurers acting as institutional investors that give a false impression that steps are being taken to benefit sustainability factors.[53] This may also include insurers promoting their long-term sustainability commitments or transition plans (eg plans to reach net zero emissions in a given time period) in a misleading, unsubstantiated, and inaccurate manner which is not reflective of their true sustainability profiles. Such misrepresentations could lead to reputational, regulatory, and legal risks for insurers. Finally, greenwashing can cause the loss of consumer trust, which may reduce capital flows towards the transition to a more sustainable economy.[54]

In certain instances, the facts of a specific greenwashing misconduct case may be considered severe misconduct and, if they meet the relevant legal thresholds, even fraud. To mitigate the risk of greenwashing, supervisors should remain mindful of the general reach and provisions of ICP 21 (Countering fraud in insurance) and the fraud frameworks within their own jurisdiction. Where relevant, supervisors should appropriately apply fraud-related enforcement actions in line with their jurisdiction's laws.

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[52] The term "sustainability" is used interchangeably with "ESG", "ESG-related", "green" and other similar terms.

[53] "Sustainability factors" cover environmental and social related issues.

[54] Advice to the European Commission on greenwashing risks and the supervision of sustainable finance policies (June 2024)

Sub-section 12.2.2 below highlights potential conduct of business issues in the event of misleading information on the impact of a product, an insurer, or an intermediary. It also includes recommendations on how supervisors, insurers and intermediaries could address such issues. In particular, it explores the relevance of existing principles related to ICP 19 (Conduct of business) and greenwashing. Greenwashing is not a new risk category but rather an element of existing conduct principles and related risks; hence, jurisdictions should consider whether new tools, policies, or regulations are required to address greenwashing or whether existing requirements, such as providing fair and not misleading information or preventing mis-selling, are sufficient to tackle greenwashing in their market. In particular, in considering whether new policies or requirements are needed, it is important to ensure efforts taken to prevent greenwashing are focused on consumer outcomes (eg ensuring disclosures are clear and easy to understand so that consumers can make informed decisions on the sustainability features of a product).

These considerations are most relevant for jurisdictions in which insurers or intermediaries publish or make sustainability-related representations about themselves or the products they design and commercialise. It is also worth noting that the suggestions in this paper can apply to both supervisors that do and do not have specific sustainability-related mandates, as most jurisdictions have general requirements that insurers and intermediaries treat consumers in a fair, clear, and not misleading manner, which would apply also to sustainability-related representations.

12.2.2 Clear and robust sustainability-related definitions and criteria

Context

In the absence of robust sustainability-related definitions or clear criteria as to what are products with sustainability features, commitments and strategies, the risk of greenwashing increases as products and entities could be labelled as sustainable without any substantiation.

Unclear sustainability definitions and criteria can hinder insurers and intermediaries in their efforts to promote themselves and their products in a manner that is clear, fair, and not misleading (ICP 19.6) and, therefore, prevent stakeholders (including customers) from gaining a correct understanding of their products (ICP 19.7).

Similarly, the lack of policies and processes to address the risk of greenwashing by insurers or intermediaries could lead to further information asymmetries between them and customers (ICP 19.2.2).

Finally, unclear criteria as to what constitutes greenwashing hinders supervisors' ability to identify greenwashing cases and take relevant supervisory and enforcement actions.

Greenwashing can occur to varying degrees of severity, in relation to misleading statements, declarations, actions, or communications (including advertisements) that are made about the sustainability profile of an entity or a product (sustainability representations).

There are several ways in which representations can be misleading and thus be conducive to greenwashing. "Misleading" is meant to cover all of the following: selective disclosure, empty representations, omission, lack of disclosure, vagueness, lack of clarity, inconsistency, lack of meaningful comparisons, unsubstantiated underlying assumptions, misleading imagery, irrelevance, outdated information and falsehoods. While recognising that consumer preferences are diverse, one example may be a failure to consider the sustainability preferences of the identified targeted group of consumers when offering a product.

Typical sustainability representations are those that portray an entity or product as providing benefits to the environment or society. The type of "benefit" is varied and includes:

- Helping sustainability drivers;
- Not negatively impacting sustainability drivers;
- Aiming to reduce negative impacts on sustainability drivers; and
- Mitigating the impact of climate change on people (including adaptation measures).

Sustainability representations may portray in a misleading way, such as:

- The imbalance or incomplete representation of the environmental or social impacts of insurance products. For example, a life insurer may falsely advertise that the insurer will entirely use the means related to its policies to make investments that contribute to the mitigation of climate change. Further, there may be potential trade-offs between ESG elements, where for example, a product promoted as sustainable might only prioritise environmental benefits but harms social and governance aspects.
- The false advertising of operations and management of an insurer – for example, deceptive advertising that the business processes are sustainable with no supporting information, or a non-life insurance provider portraying its claims management process as sustainable without any substantiation.
- The unsubstantiated environmental or social credentials of an insurer – for example, by falsely highlighting that the insurer does not underwrite oil extraction or coal mining activities, although this may not be fully executed in practice. This may also apply to insurers misrepresenting their transition plans or other long-term sustainability commitments where they have such plans and/or commitments, in ways that do not reflect their sustainability practices.

Greenwashing can occur at all stages of the life and non-life insurance life cycle. When designing a product with sustainability features, product design staff may not have enough expertise to understand the target market's sustainability objectives and preferences. Even if they do, they may choose not to take into account such sustainability related objectives. When marketing or advising on a product with sustainability features, insurers or intermediaries may not provide any applicable regulatory sustainability-related disclosure in a timely and not misleading manner. They may also produce non-regulatory information, such as advertisements or social media posts in an unclear, unfair, and misleading manner. Labels, which often lead consumers to identify specific features of a product, can be particularly misleading if not used correctly.

Recommendations

To encourage insurers and intermediaries to review their sustainability representations, supervisors may promote the development of a definition of greenwashing and a list of common characteristics of greenwashing in their jurisdiction. To do so, where considered relevant and appropriate, supervisors could consider definitions used in other jurisdictions. In encouraging the review of sustainability representations, supervisors should apply proportionality in recognising that various stakeholders may possess varying levels of sustainability-related knowledge.

In their efforts to prevent greenwashing, supervisors may also promote the development of common criteria to determine whether a product has sustainable features. One example of this may be defining a benchmark for measuring the level of environmental or social benefit of an insurance product. Where appropriate, minimum thresholds could be stated. One example of establishing minimum thresholds specifically for unit-linked life insurance where underlying investments are

named, marketed, or represented as having sustainability features is the MAS[55]. MAS expects such investment funds to reflect these sustainability features in its investment portfolio or strategy in a substantial manner. In assessing whether a fund's investment portfolio or strategy is focused on sustainability in a substantial manner, MAS would consider factors including whether the fund's net asset value is primarily invested in accordance with the fund's investment strategy. As a guide, a fund is normally considered to be "primarily invested" if at least two-thirds of the fund's net asset value is invested in accordance with the fund's investment strategy. Another example of this may be the definition of what features enable a non-life insurance products to present itself as having sustainability credentials in marketing material. In its final report on greenwashing, EIOPA listed various types of non-life insurance products that represented themselves as having sustainability credentials[56].

Supervisors may also define certain greenwashing risk indicators for supervisory purposes, where seen as relevant.

Particular attention should be paid to sustainability labels (ie, regulated or non-regulated certifications or ratings that indicate certain ESG characteristics of products) as customers often associate labels with specific features. Regardless of whether the use of sustainability labels is regulated, supervisors should monitor that insurers and intermediaries use sustainability labels in a fair and not misleading way.

12.2.3 Offering products with sustainable features that meet certain policyholder requirements

Context

Greenwashing can occur in the design, delivery, or performance monitoring of a product[57].

At the design stage, while considering that consumers may or may not have sustainability preferences, greenwashing could occur if products that have either exaggerated or mis-stated sustainability features are designed for target markets that include consumers with sustainability preferences. This is an example of not considering customers' interest in developing the product (ICP 19.5).

At the delivery stage, greenwashing could occur if products with no sustainable features are marketed and sold to consumers with sustainability preferences, using unclear or misleading advertising. This is an example of not considering customers' interest when distributing the insurance products (ICP 19.5).

At the monitoring of the products' performance stage, there is a risk of greenwashing if an insurer does not have in place policies, procedures and controls to monitor a product after its launch to ensure that it is still aligned with the stated sustainability-related purpose and objectives for which it was designed, marketed and sold (ICP 19.5.5). Greenwashing may also occur as a result of insurers failing to inform policyholders when products, which originally might have been aligned with policyholders' sustainability preferences, are no longer aligned – for example, due to a change in asset allocation of the product.

[55] CFC 02/2022 Disclosure and Reporting Guidelines for Retail ESG Funds (July 2022)

[56] Advice to the European Commission on greenwashing risks and the supervision of sustainable finance policies (June 2024)

[57] Ibid.

Recommendations

Supervisors may review whether there is a risk of greenwashing throughout an insurer's product design process.

Where relevant, supervisors may assess whether insurers take into account the target market's needs, objectives and characteristics in relation to sustainability factors in the different stages of the product lifecycle.

Design

Insurers should consider, where relevant and taking into account proportionality, policyholders' sustainability preferences alongside their other financial preferences and objectives when developing and designing new products either by following industry best practices or by carrying out an assessment of the target market. Insurers should assess whether the product's sustainability features are in line with the sustainability preference or objectives of the target market. For example, insurers should not develop a new product with low sustainability features for a target market that has high sustainability preferences. In the European Union (EU), the Product Oversight and Governance (POG) delegated regulation[58] requires the products' manufacturers and intermediaries to take into account the objectives, interests and characteristics of customers, including any sustainability-related objectives.

It is also important that staff designing the product has the necessary knowledge, skills, and expertise to understand any sustainability preferences and objectives that potential policyholders might have.

While recognising that not all consumers have sustainability preferences, when testing an insurance product sold to consumers with sustainability preferences, insurers should consider whether it may meet, over its lifetime, the identified sustainability-related objectives in order to identify opportunities for product revision. Furthermore, the product assessment should ensure that the sustainability preferences, investment risk appetite, and other financial goals are aligned with the target market's needs, objectives and characteristics – for example, the investment strategy chosen to address the sustainability preferences may impact the overall level of risk of the investments of a product.

Delivering

Insurers and intermediaries should consider a potential consumer's sustainability preferences, if any, when delivering the product. In doing so, if required under the jurisdiction's law or if consumers express having sustainability preferences, insurers and intermediaries should gather information on the consumer's sustainability preferences and advise on appropriate products. Insurers and intermediaries should not recommend products that do not meet the customer's preferences.

To aid insurers and intermediaries in their considerations of consumers' sustainability preferences, supervisors may communicate their supervisory expectations as to how consumers' sustainability preference should be considered in the advice process. In doing so, supervisors may promote the development of categories of consumers' sustainability preferences. In the EU, EIOPA provides further guidance as to how insurers and intermediaries should consider consumers' sustainability preferences when advising on an insurance-based investment product[59].

[58] EUR-Lex - 32017R2358 - EN - EUR-Lex (europa.eu)

[59] Guidance on the integration of sustainability preferences in the suitability assessment under the Insurance Distribution Directive (IDD) (July 2022)

ICP 19.7 states that "The supervisor requires insurers and intermediaries to provide timely, clear and adequate pre-contractual and contractual information to customers." Where applicable, this includes information on any sustainability features (refer to section 12.2.5 for more detail on disclosure) or sustainability objectives that the product targets. Staff distributing products with sustainability features or having sustainability objectives should have appropriate knowledge to explain these sustainability features to customers.

Monitoring the product's performance

Supervisors should periodically assess whether insurers have adequate monitoring arrangements in place to ensure that a product, throughout its life cycle, remains aligned with its initial sustainability-related objectives. As such, there could be appropriate internal or external control mechanisms in place to monitor compliance with the product's – or its underlying investments' – sustainability characteristics on a continuous basis (including methodologies used to measure the attainment of those objectives).

Timely, adequate, and clear disclosure to policyholders may minimise the risk of greenwashing. For example, the actual proportion of underlying investments that meet the product's sustainability focus could be disclosed to policyholders. This includes the situation where following a product review, changes are applied to its sustainable features, making it no longer aligned with policyholders' preferences. This would be the case if an insurer changes the asset allocation towards investments with lower sustainability characteristics.

12.2.4 Insurers promoting their own sustainability profile to attract clients

Context

Greenwashing in insurance may also occur where insurers make misleading representations or wider statements about the environmental and social benefit of their own operations, investments and underwriting activities.

Such sustainability representations may include where insurers make sustainability representations about their decision making, risk management, remuneration, culture, internal audit and/or internal processes.

Recommendations

Supervisors should require that any advertising on the environmentally and socially friendly business operations is clear, fair and not misleading. Such representations should be precise, substantiated and accurately reflect entities' sustainability practices to mitigate the risk of greenwashing.

To mitigate misleading information, supervisors may encourage insurers to report to the relevant stakeholders (eg supervisors or the general public) on progress in meeting their sustainability-related commitments along with adequate substantiation. For example, an insurer could publish a roadmap with measurable milestones over short- and medium-term horizons in order to chart the company's progress on the public commitments made, which may relate to commitments to reduce indirect financed or insured emissions or to not invest in new fossil fuel projects, for example.

12.2.5 Substantiation of sustainability representations presented to policyholders

Context

There is a risk that sustainability representations are considered unclear or unfair if not sufficiently substantiated or sufficient evidence is not provided (ICP 19.6).

Numerous jurisdictions and multilateral bodies are increasingly developing and using international standards relevant to sustainable finance. In addition, there exist a plethora of sustainability-related taxonomies. However, to date, there is no common set of definitions or one unique globally recognised set of sustainability standards. As a result, insurers may use subpar standards to ensure their representations are substantiated, especially in the case of a lack of data (ICP 19.6.2). For example:

- Insurers may not accurately or sufficiently describe sustainability objectives or characteristics, including metrics and quantitative targets where applicable;
- Insurers may not sufficiently and adequately explain how their investments or products are sustainable – for example, by failing to sufficiently and adequately link them to existing taxonomies; or
- Insurers may not provide adequate explanations as to how such products do not negatively impact environmental or social factors.

A commonly observed market practice in many jurisdictions is the use of non-regulatory climate-related and other sustainability-related labels for the promotion of insurance products, particularly for investment products (eg a product is labelled sustainable or branded a green colour scheme). Although non-regulatory labels could prove useful in helping customers choose an insurance product that considers sustainability factors, there is a risk of misinformation. In addition, the multiplicity of non-regulatory sustainability-related labels could lead to further confusion for consumers facing a vast offering of products with diverse sustainability representations (ICP 19.6.2).

Another risk is that sustainability-related information may not be shared in a sufficiently timely manner before the point of sale, in order for the customer to be able to make an informed decision.

Recommendations

In the context of sustainability-related information, supervisors should require that any information provided by insurers and intermediaries is substantiated with an adequate and sufficient level of evidence.

Supervisors could encourage the development of frameworks, using a common sustainability normative framework for their jurisdiction. Such frameworks may consist of a combination of several key elements, including sector-specific KPIs, a classification scheme for sustainable investments, sustainability disclosure requirements for investment products, and financial market participants, as well as requirements for securities issuers to publish sustainability data on their economic activities.

Insurers should carry out sufficient due diligence, taking into account proportionality, in relation to the sustainability data that they use. This includes, where allowed and relevant, estimating sustainability data that is missing. Insurers should further disclose the sources and usage of ESG data and any potential data limitations, methodological difficulties or assumptions made due to lack of data.

Based on such frameworks, supervisors could require that insurers and intermediaries take reasonable steps to provide information in an accurate, clear, and not misleading manner before promoting an insurance product while considering potential ESG data quality and availability limitations. This should relate to both required disclosures as well as any marketing and promotional material, where relevant for the jurisdiction. This may also include the implementation of binding and standardised sustainability disclosures focusing on:

- A description of the promoted sustainable objectives or characteristics and their role in the investment selection process, including metrics and quantitative targets, where applicable;
- The minimum or effective share of sustainable investment in the product where the jurisdiction has defined criteria to classify sustainable investments (eg through a taxonomy);
- Information on the extent to which the investments do not negatively impact environmental or social factors; and
- Information on engagement strategies for the product's investments.

Supervisors may also require that relevant sustainability-related information is provided in a sufficiently timely manner to allow consumers to make informed decisions.

To facilitate comparability of sustainability representations, supervisors should also consider developing standardised sustainability disclosures, which may include concise side notes to help introduce to the consumer key sustainability-related information and concepts.

To mitigate potential greenwashing, insurers using non-regulatory climate-related and other sustainability-related labels should adequately explain what they mean.

Within their remits, supervisors could require that the labels used accurately reflect key product characteristics. They may also consider developing minimum standards for labels.

Finally, for insurance products that re-package investment products, supervisors may consider establishing disclosure requirements for the underlying investment funds that are marketed as having sustainability features or as pursuing sustainability objectives. Taking market specifics into account, supervisors could require that investment fund brochures include information, which is considered critical for sustainable investment, for example:

- The investment focus such as the relevant sustainability criteria, methodologies or metrics (eg third-party or proprietary ratings, labels and certifications) used to measure the attainment of the fund's sustainability focus;
- The investment strategy such as the relevant sustainability criteria, metrics or principles considered in the investment selection process. Also, a description of the sustainable investing strategy used by the fund to achieve its sustainability goals, the binding elements of that strategy throughout the investment process and how the strategy is implemented on a continuous basis;
- The reference benchmark with an explanation of how the benchmark index is consistent with or relevant to its investment focus; and
- The risks associated with the fund's sustainability focus and investment strategy (eg concentration in investments with a certain sustainability focus, limitations of methodology and data, lack of universal sustainability standards or taxonomy, or reliance on third party information sources).

12.3 Natural catastrophes considerations

12.3.1 Introduction on NatCat considerations

NatCat events include extreme weather events, such as water-related (flooding), wind-related (hurricanes or tornados), wildfires, and hail/ice/lightning storms, as well as earthquakes. Recent

reports by the IPCC[60] highlight that climate change is expected to increase the frequency and severity of different types of extreme weather events across the globe, including heat waves, wildfires, flooding and storms.

The increase in the impact of NatCat events is a society-wide issue and can lead to an increase in uninsurable risks or risks that can become too expensive to insure for some insurers, given their risk appetite. There are also issues in relation to a lack of clarity in the terms and conditions as to which NatCat events are covered by a policy. Furthermore, important protection gaps exist.

As noted in the introduction to this paper, in November 2023, the IAIS released a report focused on the role of supervisors in addressing NatCat protection gaps. Some of the concepts introduced in that report are also relevant for this section, including the role of supervisors in developing strategies to improve consumer risk awareness, and in setting requirements on insurers to provide clear information on risks and available coverage for NatCat risks.

In addition to concerns about increasing protection gaps, there are also concerns that existing conduct of business risks might not be managed sufficiently by insurers and intermediaries to ensure customers are treated fairly.

This section explores how ICP 19 (Conduct of business) applies to products offering NatCat protection, in particular, how supervisors should identify, monitor and address possible market conduct risks associated with these products.

NatCat related issues can lead to emerging conduct risks such as:

- Low awareness of the risks posed by NatCat-related events to home/property may result in consumers not having sufficient NatCat insurance protection;
- Low awareness of available insurance coverage options or limited awareness of price may result in consumers not buying coverage even when needed or being unable to access insurance that covers their needs;
- Low interest for insurance coverage options as there is a belief government should intervene or there is general trust that governments will intervene;
- Sudden price increases and lack of affordability partially due to increased frequency and scale of NatCat events;
- Low awareness of the content, coverage and limitations or exclusions of the existing insurance they have purchased, resulting in the fact that there may be a mismatch between what consumers believe is covered and actual coverage, including as a result of changes made due to the increase in frequency and magnitude of NatCat events; and
- Limited understanding of insurance products, coverages, limitations and deductibles can result in unintended coverage gaps.

Overall, clarity on NatCat cover and exclusions is a far-reaching area of concern playing a crucial role through the life cycle of a product.

[60] See Climate Change 2023: Synthesis Report (March 2023) or State of Global Climate 2022 (April 2023)

12.3.2 Provide easy to understand products, using plain language

Context

Unclear policy wording and ambiguity regarding exclusions may lead to uncertainty over coverage. The extent to which consumers erroneously believe that they are covered against NatCat may be influenced by the degree of clarity of their insurance contracts and respective exclusions (ICP 19.7).

Uncertainty on how a NatCat claim would be treated may make consumers hesitate to purchase NatCat cover. Such uncertainty may also raise doubts of existing customers on whether to renew their existing coverage (ICP 19.6). Moreover, some consumers may hesitate to buy coverage as they trust governments would intervene.

At the same time, insurers may have to amend their terms and conditions to introduce new exclusions so as to limit disputes or risk exposure following NatCat events. As a result, insurance products that had originally covered such events or had been silent on their coverage may no longer provide adequate cover. There is risk that the implementation of such changes may happen without balancing consumers' interest (ICP 19.2) or without appropriately disclosing such changes to existing and potential customers, which would ultimately affect their understanding of the level of coverage provided.

Recommendations

To ensure that information allowing consumers to make informed decisions in relation to NatCat coverage and exclusions is properly and sufficiently communicated and understood by the target market, all communication materials should be presented and formulated in a clear and comprehensive manner. In particular, insurers should ensure that NatCat coverage and exclusions are clearly stated in disclosures, advertising materials, pre-contractual and contractual documentation by conducting consumer tests. For example, an insurer may test whether the language used is easy to understand and concise, without any complex wording or technical terms/jargon and that there are no misleading or unclear statements.[61] Intermediaries should provide pre-contractual documentation well in advance of the conclusion of a contract, to give customers enough time to read and properly decide on the proper insurance policy.

Insurers and intermediaries should ensure that communication materials clearly specify the scope and type of coverage provided and whether it relates to direct or indirect losses. If standardised disclosures are in place, they should aim at achieving the desired policy outcomes (eg ensuring transparency and clarity in terms of coverage and exclusions). If standardised disclosure templates are not in place, supervisors should encourage the development of a common approach for insurers to present the insurance options and different types of coverage to consumers. These types of disclosures should include simplified materials, outlining the types of coverage and options available, and examples of what the policy would cover in the case of NatCat events. Supervisors should also encourage providers to develop standardised terminology and models, so that products can be compared more easily.

Supervisors should require that insurers do not use vague language or terminology in their communication materials and disclosure documents such as "similar events", "full coverage", "complete coverage", or "all risks". Supervisors should monitor that such terms are only used when they are reflective of the actual coverage and that they are used in a clear and not misleading

[61] For more details regarding what constitutes misleading information, please refer to Section 12.2.2.

manner. Any exclusion should be properly supported by further explanations and details, and include, whenever feasible and pertinent, possible scenarios.[62]

Supervisors should also monitor whether the format and manner in which exclusions are presented is clear, easy to understand, fair and not misleading. Notably, exclusions should be presented in such a way that consumers can understand the overall coverage (eg next to the relevant section explaining what is covered) in order to avoid inaccurate understanding of the risk coverage.

If insurers and intermediaries, in the disclosure documents or in the sale process, provide case examples of the stated exclusions, then they should ensure they are giving a sufficient number of examples of such foreseeable exclusions.

Finally, supervisors should monitor that insurers and intermediaries use consistent wording throughout their documents about the coverage offered and applicable exclusions.

12.3.3 Test the understanding of exclusions and promote transparent advice

Context

Considering the nature of exclusions and the difficulties in understanding different NatCat events, there is a risk that consumers may not clearly understand whether a certain event is covered. Discrepancies between advertising, marketing material and contractual documents may also limit clarity on coverage (ICP 19.6).

Moreover, when NatCat cover is bundled with other products (eg home insurance) and when the sale focuses on the main product, there is a risk of unawareness and low understanding of the options available for NatCat protection (ICP 19.7).

Finally, there is a risk that exclusions are not duly assessed to ensure the insurance product is appropriate for consumers, given the risks they are exposed to. For example, in the case of exclusions to certain risks (ie flood losses in high risk flood areas), these exclusions are often not sufficiently communicated and considered in the sale process (ICP.19.8).

Recommendations

Supervisors should require insurers take appropriate measures to avoid, or at least to mitigate, discrepancies between advertising, marketing material and (pre) contractual documents.

Supervisors could consider the use of behavioural testing that takes into account the profile of customers within the target market. If the testing proves that coverage and exclusions are unclear, supervisors should require insurers to revise the contract and other relevant documentation.

Insurers should test product disclosures, paying particular attention to exclusions, to ensure that customers are aware of them and, therefore, are able to make well-informed decisions. Intermediaries could also be involved in this process.

Supervisors should assess whether insurers evaluate the differences between sales channels/intermediaries and seek engagement with customers to ensure adequate understanding of exclusions, irrespectively of the sales channel.

In the case of contracts with a larger number or more complex exclusions, supervisors should further assess:

[62] Make it clear what events are considered “Act of God” etc.

- Whether insurers test if the product, despite its complexity, remains appropriate for the target market; and
- Whether the mechanism of communication between insurers and intermediaries is appropriate given the level of complexity.

Supervisors should also require that consumer preferences are duly assessed in the product design and sale process.

12.3.4 Affordability

Context

In order to improve affordability, it is important for the supervisor to ensure that measures that can be easily implemented are taken, such as clarity of terms and comparability. However, addressing affordability often requires a multi-stakeholder approach and can be constrained by the principle of risk-based pricing, which is a foundation of insurance.

Lack of affordability is one of the major reasons leading to underinsurance. Products may be too expensive or perceived as such by consumers. Given the typical annual repricing of non-life insurance contracts, the expected increase in frequency and intensity of some weather events may lead to products becoming less affordable, further disincentivising consumers from purchasing insurance for NatCat events. Supervisors should monitor situations in which pricing and affordability can lead to conduct risks.

In some markets, affordability issues also stem from pricing practices, which may lead to possible discrimination. Some insurers may adjust the premium based on factors that are unrelated to the cost of service. For example, consumers may be inappropriately charged a different premium based on personal behavioural characteristics, such as their price elasticity and lack of propensity to shop around at the renewal stage. Such pricing techniques may lead to an unjustified increase in the price for NatCat and household insurance, resulting in consumers cancelling or not buying the policy.

Affordability issues raise several conduct risks that require supervisory attention. Often, consumers that are more vulnerable[63] are also amongst those that may be more exposed to NatCat events (ICP 19.4). It is important that consumers are fairly treated in light of their vulnerable condition, which, in some cases, may require broader public policy solutions or interventions in order to ensure availability of sufficient coverage.

Consumers may also perceive insurance as being too expensive; this may be because they do not understand the losses covered by the policy or the extent of the increase in the underlying NatCat risks. This could indicate that products may not be promoted in a clear and fair manner (ICP 19.6) or that pre-contractual information is not provided in a timely and clear manner (ICP 19.7). Finally, differential pricing practices may lead to the unfair treatment of consumers.

Recommendations

Supervisors should require that pricing is adequate, non-discriminatory and properly communicated to consumers. Supervisors should also require, without undue interference in commercial pricing

[63] Although vulnerability should be assessed in relation to the specific situation in which the specific consumers find themselves, for NatCat particular vulnerability aspects include those consumers – particularly low income consumers – who because of their situation live in houses or building more exposed to climate events and/or who may not be able to take risk-mitigation measures to limit the damage of specific events.

practices, that pricing of NatCat products reflect adequate risk-based technical models, including in relation to the increasing frequency and intensity of NatCat events.

Supervisors whose mandate also includes product approval, while supporting product viability and profitability, should also ensure that they are not an impediment to the introduction of new and innovative products, which can improve access and affordability.

Where appropriate and when within their remit, supervisors could promote the adoption of practices by consumers to put in place sufficient risk-mitigation measures, which would also reduce the risks for insurers. If pay-outs are conditional on implementing risk-mitigation measures, supervisors should monitor how insurers identify techniques that are feasible and proportional for the identified target market and that such techniques are sufficiently and adequately communicated to consumers. Alongside this, supervisors should require that risk mitigation measures are clearly advertised and taken into account by insurers through appropriate premium discounts.

Supervisors should monitor and require that there are no differential pricing practices, which are misleading and deceptive or unfair to consumers. Differential pricing practices refer to charging different prices to consumers with similar levels of risk and service costs. In particular, supervisors should require that insurers have adequate systems and controls to monitor the implementation of differential pricing practices. For example, insurers should sufficiently test, monitor and review products where differential pricing practices are applied to identify potential consumer harm.

When it is within their remit, supervisors should assess whether all costs due are proportional to the service offered and the cost borne by the provider. This includes costs charged to customers that are consistent with the target market's needs and objectives and are clearly identified and quantified. In particular, insurers and intermediaries can clearly link these costs to services rendered, coverage offered, or expenses made and ensure they are proportionate to the efforts and expenses incurred by the insurer or intermediary. It is also important to ensure that product testing considers whether product pricing is aligned with the target market's needs, objectives and characteristics.

12.3.5 Access, awareness, and understanding

Context

Beyond affordability issues, consumers may have limited access to adequate coverage because insurers, responding to the increasing frequency and intensity of some weather events may introduce more exclusions or stop issuing policies in some areas (ICP 19.5). There are also instances that consumers may not perceive possible risks they are exposed to, indicating the need to increase awareness on NatCat risks and coverage (ICP 19.13). Customers may find insurance too complex to fully understand, indicating the need to promote simplicity and comparability when implementing financial literacy initiatives (ICP 19.6 and 19.7).

Often, consumers may not be familiar with the risks they are exposed to, which may lead them to believe they do not need insurance.

In certain cases, the process of purchasing products and understanding the risk coverage options available could also be perceived by consumers as burdensome and, hence, limit the buying of these products. It may be possible that the perception that finding the right type of coverage is an effort-demanding activity can deter the uptake of home insurance with NatCat coverage: the effort itself acts as an extra cost which, once added to the financial cost of the insurance, can reduce the perceived benefit of insurance for consumers. Furthermore, the bundled offers of NatCat coverage can make comparability increasingly difficult for consumers. While consumers may perceive digital

access as easy, in some instances – especially for NatCat products – the limited use of digital channels may hinder a higher uptake.

When systemic events such as NatCat materialise, insurers may be required to review their terms and conditions often to avoid losses due to ambiguous contractual terms. Such reviews in some instances are carried out without taking into account the different types of consumer needs and objectives (ICP 19.5). A thorough product review process would ensure that the relevant interests and needs of all parties involved are balanced vis-à-vis other business needs and considerations.

Recommendations

When it is within their remit, supervisors could promote or supervise the development of independent comparison tools to assist consumers in comparing all available insurance products offering NatCat protection.

Supervisors should promote the simplicity of the consumer's journey by requiring that insurers and intermediaries propose a more consumer-friendly purchasing process, while ensuring requirements aimed at preventing mis-selling and ensuring that consumers make informed decisions are in place. In particular, supervisors should monitor whether the insurer in its distribution strategy development process has assessed which distribution channel may be most aligned to the target market's needs, objectives and characteristics.

When supervisors have a market development mandate, they should regularly conduct consumer research to determine the main issues causing under-insurance for NatCat events and make available datasets that can provide greater insight into the extent and causes of underinsurance.

When developing new products and reviewing existing ones in order to decide whether to introduce new exclusions, insurers should assess whether, in light of the exclusions, the product remains aligned with the target market's needs, objectives and characteristics. However, insurers should also consider the possibility that some risks may no longer be insurable under certain circumstances and at affordable cost.

Supervisors should consider liaising with insurers and other relevant authorities to develop accessible tools that provide consumers with first-hand information on the risks they are facing or on the cost of recovery, allowing consumers to make informed decisions about the coverage they purchase (eg public risk-zoning tools that enables consumers to understand the level of risk for their type of home in their regions).

Finally, supervisors should require that insurers have back-up systems to ensure consumers can continue to access services in the event that insurers themselves are also affected by NatCat events.

12.3.6 Timely and fair claims handling

Context

The magnitude of NatCat events often results in a large number of consumers being impacted, potentially leading to a backlog of claims that may significantly affect the policyholder' claims settlement process and may lead to unfair treatment.

If the volume of claims from NatCat events is not managed in a timely way, delays may impact insurers' business-as-usual claims activities. A claims backlog may then have a flow-on effect, leading to delays in internal and external dispute resolution processes.

Claims handling is where the promises of an insurance policy become tangible. For consumers, it is where an insurer's product is tested, making it important that insurers can serve their policyholders at times of severe weather events.

After a NatCat event, consumers may have difficulty assembling all the information required to submit a claim, including accessing their policies and documentation to establish if and how they are covered for a relevant event. Further, expert investigators are likely to be in short supply in the vicinity of a natural disaster. Delays in claims handling caused by an influx of claims can lead to consumers exhausting any immediate benefits available under their policy while waiting for their claim to be fully processed.

Accordingly, insurers should take actions to ensure that claims handling after a natural disaster is timely and fair, and to prevent consequent delays from affecting their wider activities (ICP 19.10). They should ensure that they can handle relevant complaints in timely manner (ICP 19.11).

Recommendations

When considering the potential for claims handling delays due to extreme weather, insurers should examine their claims handling operations and consider whether a demand surge plan or a permanent structural shift in their resourcing, systems and practices (including updating relevant lists of approved service providers for repairs) is required to ensure adequate and timely claims handling in the event of a major NatCat event. This could be achieved through investing in systems and processes to effectively record claims information, or by permanently increasing capacity and resources to deal with increased claims because of the expected impact of climate change. Using the latest technologies, such as digitisation to improve policyholder convenience in making claims or AI to speed up damage assessment, could be avenues to consider.

Where the regulatory mandate and cost implications permit, supervisors, as well as all other stakeholders, may also encourage insurers to consider the United Nations Sendai Framework,[64] which prioritises enhancing preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction after a NatCat.

It is important that insurers manage consumer expectations during the claims handling periods following NatCat events. Where claims will not be resolved in a timely manner, insurers should communicate clearly with customers.

It is also important that insurers enable consumers affected by a NatCat event to access all the relevant information to determine if they can make a claim and make it in a timely manner. For example, providing digital access to policy information and insurance coverage is helpful for policyholders that are forced to evacuate or cannot access their properties, and therefore most of their relevant documents for submitting claims.

As part of communicating effectively with consumers, insurers could also consider:

- Centralising the oversight of each claim with a dedicated claim manager to ensure it is easier for the customer to enquire about the claim;
- Allocating a role to intermediaries, especially as a point of contact for consumers in distress; and
- Providing effective and regular communication about the claims process, how it will be assessed and how the claim is progressing.

[64] What is the Sendai Framework for Disaster Risk Reduction? | UNDRR

Supervisors should also consider comparing claims handling experiences of extreme NatCat events to a business-as-usual period. This could help supervisors determine whether they should advise insurers of any further changes required to their claims handling operations.

While ensuring that customers are treated fairly, supervisors should consider whether insurers need flexibility following a NatCat event. If necessary, this could lead to a temporary reduction in the regulatory requirements imposed on insurers.

If, following NatCat events, insurers decide to reduce or no longer offer coverage for certain risks, they should communicate this in a timely manner, allowing consumers to identify other options or adjust their coverage. Moreover, supervisors should monitor such reductions and engage with insurers about the reasons behind such decisions.

Finally, to ensure the fair treatment of consumers when NatCat events occur, supervisors may consider monitoring whether insurers are taking actions to ensure the fair treatment of consumers – for example, measures that insurers could take include premium grace periods or avoiding cancellations.

Section 12 Market Conduct Annex - List of jurisdictional examples

The examples listed in the annex are provided for illustration and may support supervisors that want to adopt similar supervisory practices. As this is a rapidly evolving area, however, these are not meant to be a comprehensive and up-to-date list of all examples across the global supervisory community.

Greenwashing

Example about sustainable finance framework to mitigate greenwashing

In the European Union (EU), a Sustainable Finance framework is being implemented, which focuses in part on mitigating greenwashing. It aims to address sustainability-related disclosures, sustainability-related definitions and criteria, advice to consumers with sustainability preferences, and manufacturing of products for target markets with sustainability-related objectives.

In relation to disclosures, the EU set out the Sustainable Finance Disclosure Regulation. This regulation lays down harmonised transparency rules for financial market participants (including insurers) and financial advisers (including insurance intermediaries) on how they integrate environmental, social and good governance factors into their investment decisions and financial advice, both at the entity and product level. At the entity level, the regulation requires that there is a website disclosure outlining whether they consider the negative externalities of their investment decision or of their financial advice, and, if so, how. At the product level, the regulation sets out pre-contractual, periodic and website disclosures for products with sustainability features. In particular:

- Article 8 outlines the disclosure for products that have some sustainability features but do not have a sustainable investment objective; and
- Article 9 outlines the disclosure for products with a sustainable investment objective.

In relation to sustainability-related definitions and criteria, the Taxonomy Regulation sets out whether an economic activity is environmentally sustainable by setting common EU-wide criteria, which includes the following elements:

- Contributes substantially to one or more of the following environmental objectives: climate change adaptation or mitigation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, protection and restoration of biodiversity and ecosystem;
- Does not significantly harm any of these environmental objectives;
- Is carried out in compliance with the minimum social safeguards (OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights); and
- Complies with a set of detailed technical screening criteria tailored to each economic activity.

In relation to environmental and social data availability, an EU directive (the Corporate Sustainability Reporting Directive) outlines environmental and social reporting standards, which require large EU corporates to provide data to allow financial market participants to report under the Sustainable Finance Disclosure Regulation. This directive ensures that there is an adequate level of data available for financial market participants to report on the impact of their investments.

In relation to the advice to consumers, the EU's Insurance Distribution Directive (IDD) was amended to include new sustainability-related requirements in the advice process. These new requirements require intermediaries, when they are assessing if a product is suitable for a potential consumer, to also assess the potential consumer sustainability preferences vis-à-vis the product.

In relation to product manufacturing, the IDD was amended to include new sustainability-related requirements in the manufacturing process. These new requirements require insurers to take into account target markets' sustainability-related objectives in the design of the insurance product in addition to the objectives, interests and characteristics of the target market.

Example about thresholds

For a unit-linked life insurance where the underlying investments are named, marketed or represented as having sustainability features, the MAS expects such investment funds to reflect these sustainability features in its investment portfolio or strategy in a substantial manner. In assessing whether a fund's investment portfolio or strategy is focused on sustainability in a substantial manner, MAS would consider factors including whether the fund's net asset value is primarily invested in accordance with the fund's investment strategy. As a guide, a fund is normally considered to be "primarily invested" if at least two-thirds of the fund's net asset value is invested in accordance with the fund's investment strategy.

Example about marketing material

The ACPR has issued guidelines on advertising of extra-financial characteristics in life insurance. The guidelines recommend good practices for marketing material related to life insurance products as well as their underlying unit-linked offering and portfolio management options, and institutional communications by insurers and intermediaries on sustainability characteristics.

The recommended practices include displaying the number and percentage of sustainable investment options available on the product, as well as a direct link to a webpage providing all mandatory information on the product's sustainability characteristics. The mandatory information is to substantiate any sustainability representations made in the advertisements. Additionally, in order

to avoid any misunderstanding from customers that the entire product has sustainability characteristics whereas only a fraction does, a prominent note should be inserted where applicable, to clarify that the product's effective sustainability depends on the selection of underlying investments. For investment management options, ACPR recommends that sustainability representations should be made only where they reach a minimum share of investment qualified as sustainable, as per national and EU criteria.

Finally, ACPR guidelines extend the principles of materiality and proportionality of sustainability representations to all general marketing material (ie not only those promoting a product or investment offering). Hence, any such representations should be evidenced by accurate information presented in the same document. For instance, an insurance company advertising on its initiatives against global warming may include key data and metrics on specific commitments made, quantifiable results achieved and a reference or a hyperlink for further information.

NatCat

Examples on providing easy-to-understand coverage

EU

In the EU, specific POG requirements are in place, which mandate insurance product manufacturers to test whether the product, including disclosure documents, are aligned with the target market needs, objectives and characteristics. The EIOPA in this regard has also issue a Supervisory Statement[65] that provides further guidance on ensuring exclusions are clear and simple. The IDD, beyond including general requirements on ensuring consumers are treated fairly and are provided information in a timely, fair and not misleading manner, also introduced specific disclosure requirements including a standardised insurance-product information document (IPID).

Australia

The Australian Competition and Consumer Commission recommended government (or regulators, depending on jurisdictional differences) to mandate standard definitions for certain prescribed events to remove potential gaps in coverage between insurers.

Canada

The Canadian Council of Insurance Regulators (CCIR) published, in 2023, a position paper on climate change, natural disasters and consumer awareness. The working group acknowledges that public awareness of risk and products are not the only factors affecting insurance uptake levels. Amongst the other potential factors, research indicates that the cost of insurance (ie premiums, deductibles) may impact some consumers' decision-making process. According to CCIR, more could be done to explain to customers in plain language coverage gaps based on their property-specific risk as well as ways that they can reduce their risk and potentially their insurance premiums.

[65] Supervisory statement on exclusions in insurance products related to risks arising from systemic events (August 2022)

Complexity and confusion regarding policies, coverages, limitations, and deductibles can limit a consumers' ability to make informed decisions and limit the uptake of needed or suitable products that may be available and affordable.

Even where consumers have purchased additional protection, CCIR is concerned that they may not fully understand what is covered by the policy. For example, an earthquake endorsement covers shake damage, but it may not cover secondary events triggered by the earthquake, such as tsunamis or landslides. Generally, the complexity of insurance policies may result in consumers assuming they have greater protection than their policies offer.

Although detailed breakdowns of the content, coverage, and limitations/exclusions is included in insurance contracts, CCIR's review found that there is tremendous variation in the content and quality of information provided to consumers. Some disclosures provided valuable, plain language explanations of coverage; others provided very little, if any specific information. At the same time, insurers often rely on intermediaries to share disclosures with customers and to solicit and distribute their products, which may result in inconsistencies in terms of the information and level of detail provided to the customer when the product was originally purchased.

The CCIR's recommendations include the identification and implementation of best practices for assessing and communicating known property-specific NatCat risk at point of sale and at renewal to customers. Also, before providing advice, insurers or intermediaries should take reasonable steps to better understand the known property-specific risk and insurance needs of the specific customer.

As a best practice, in assessing the customer's risk, insurers should consider the property-specific risk information collected by those interacting with the customer, including intermediaries where applicable. The insurer is responsible for providing intermediaries with the assessment, including any available material property-specific risk information it may have in its possession. Customers should be informed that the data collected from them would be used to help understand their risk profile. Also, customers should receive a clear disclosure of their customer's property-specific NatCat risks. Those engaging with the customer should explain their exposure to various perils as well as relevant factors that increase the likelihood of loss based on their disclosed circumstances and potential risk mitigation measures that can help reduce their risk.

This approach ensures that, regardless of distribution channel, the customer is provided with, in plain language, personalised advice regarding how the products they are being offered relates to their property-specific risk. Insurers and intermediaries should also conduct a similar assessment at renewal, ensuring the customer understands any changes to their NatCat risk, including from a changing climate.

United States

Some states in the US, for example California and Colorado, have developed tools to allow consumers to compare homeowner insurance premiums being offered along with policy types and

coverage limits or to provide general cost comparison between insurers offering differing coverage which includes discounts or surcharges in areas with high NatCat risks[66].

The NAIC has developed a variety of consumer education resources and tools to, for example improve understanding of flood insurance and coverage of homeowners' policies[67]. Some states have also developed such tools – for example, the South Carolina Department of Insurance has created a webpage explaining the key elements of an insurance policy[68].

Switzerland

Switzerland has an extended natural hazard protection scheme for property exposure, based on historical experience.

In the majority of Swiss cantons (19 out of 26), there are canton-run building insurance companies (KGV) offering the mandatory building insurance cover. Additionally, these KGVs finance substantial investments into protection measures. Among there KGVs, there is an inter-cantonal reinsurance programme covering major risks. It also balances out fluctuations in the long-term claims experience for the individual KGVs. This unique solidarity system enables efficient risk equalisation among these cantons.

In the remaining seven cantons, the buildings and the majority of their content are covered by the mandatory Swiss Hazard Insurance scheme, which is defined by law and supervised by the Swiss Financial Market Supervisory Authority (FINMA). It is mandatory to purchase insurance against natural hazards when taking a fire insurance policy. The insurance covers the most relevant natural hazards that are meteorological in nature. The premiums are approved by FINMA and uniform across Switzerland. A pooling mechanism for losses exists among the insurers, and the legal provisions foresee a limitation of the coverage. However, customers can purchase additional coverage at market conditions. Earthquake risks may be insured on a voluntary basis. There are political efforts to establish mandatory earthquake risk coverage.

Regarding agriculture, customers can purchase coverage at market conditions. However, there is an insurance company organised as a cooperative that insures, among other things, a substantial part of the arable land in Switzerland. Depending on the type of agriculture (arable farming or fruit etc.) and the extent of the policy, insurance against the following natural hazards is possible: hail, flooding and high-water level, landslide, lightning, fire and earthquake, storm, snow pressure, drought, heavy rain and restoration of cultivated land.

[66] Colorado - provide general cost comparison between insurers offering differing coverage which includes discounts or surcharges in areas higher NatCat risks.
California - https://interactive.web.insurance.ca.gov/apex_extprd/f?p=111:20
[67] Flood Insurance Campaign - https://content.naic.org/consumer/flood-insurance/what-the-flood-quiz and Homeowners Coverage Resource - https://content.naic.org/consumer/homeowners-insurance.htm
[68] South Carolina - https://doi.sc.gov/957/Understanding-Your-Insurance-Policy

Examples of challenges to access

EU

In the EU, access to insurance products other than household (which often does not include NatCat coverage) and motor insurance remains low, with less than 20% of consumers having such insurance products.

Focus groups carried out as part of a study by the EIOPA showed that some consumers would be more likely to purchase coverage if they had access to flat rates for all possible NatCat events, even if this meant paying a higher price. This shows that if consumers are able to more easily understand what is covered and at what cost, they may be willing to pay a higher price.

A behavioural study carried out by the EIOPA shows that when a group of consumers that have never had home insurance was asked how much they would be willing to pay for it, they provided a median premium similar to the median premium paid in the market.

There are specific POG requirements in the EU that mandate insurance product manufacturers to take into account the needs of the customer, including NatCat protection needs and ability to pay. This means that insurance products need to offer a value to the identified target market. In this regard, the EIOPA also issued a Supervisory Statement that clarifies how POG requirements should be interpreted vis-à-vis NatCat events. The IDD also introduced specific disclosure requirements including a standardised IPID. Finally, in relation to differential pricing practices, the EIOPA issued a Supervisory Statement that clarifies expectations differential pricing practices, including how POG should be applied to ensure that only those practices that lead to good consumer outcomes are implemented.

Australia

In Australia, the Australian Competition and Consumer Commission recommended that insurers disclose premium costs or savings for each optional inclusion or exclusion offered, including premium costs or savings for incremental changes in excess levels and sums insurer.

Canada

According to the CCIR, more could be done to explain to customers in plain language the coverage gaps based on their property-specific risk, as well as ways that they can reduce their risk and potentially their insurance premiums. The working group recognises the ability of insurers to freely set prices that reflect competitive market conditions and price risk accordingly.

Federal, provincial, and territorial governments are examining the feasibility of market interventions to address protection gaps that exist where consumers cannot readily purchase insurance for a variety of reasons, including affordability issues.

Regarding affordability, the CCIR suggests that insurers incorporate premium discounts for certain mitigation actions that consumers can take. The Task Force on Flood Insurance and Relocation (formed by a group of representatives from federal, provincial and territorial governments and the insurance industry) found that “individual risk reduction behaviour can be incentivised if the costs of

premiums and deductibles are explicitly linked to mitigation actions" (ie if risk reduction is rewarded at the consumer level).

Examples of affordability

EU

A study carried out by the EIOPA in four member states showed that 36% of responding consumers stated that the main reason for not being insured was that they considered such NatCat events to be very unlikely. Lack of previous experience with NatCat events can be a driver of diminished risk perception and thus affects the uptake of cover. The same study highlighted that people who were affected by NatCat events are more likely to buy insurance coverage: the percentage of respondents who were insured is twice as much amongst those having experienced a NatCat event than amongst respondents who did not (64% vs 36%).

In Europe, the EIOPA has developed a NatCat Dashboard,[69] the aim of which is to present the drivers of a climate-related insurance protection gap in order to identify measures that will help in decreasing society's losses in the event of natural catastrophes.

Australia

In Australia, the Australian Competition and Consumer Commission recommended that insurers report their brands and where they are writing new business to the regulator/supervisor, for the supervisor to publish this information publicly. This is with the aim of providing transparency and assist consumers in searching for alternate suppliers in an easy manner.

Canada

Private insurance coverage for major perils in different regions is generally available across Canada. Additionally, the existence of a competitive marketplace suggests that property insurance products are accessible, provided through multiple distribution channels and generally affordable to consumers who need coverage. This combination of availability and accessibility is instrumental in mitigating losses associated with catastrophic events. However, the value of these products can only be maximised if consumers are aware of their choices when shopping for insurance, ensuring they have the information required to obtain the right coverage and are protected from the relevant NatCat risks. This is partially mitigated by the structure of most homeowner insurance policies, which cover a range of perils. However, certain perils such as earthquakes and flooding are not normally included in homeowner insurance policies. For example, in terms of flooding, which is typically sold as an optional endorsement, only 26% of Canadians living in high-risk areas report that their insurance representative has discussed flood insurance options with them.

[69] Dashboard on insurance protection gap for natural catastrophes