



Mind the Sustainability Gap

Integrating sustainability into insurance risk management



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Executive summary

The importance of building resilient infrastructure and promoting inclusive and sustainable industrialisation as well as fostering innovation, is increasingly recognised. The role of the insurance industry in facilitating the proper functioning of the economy, as risk managers, risk carriers and investors, helps to deliver inclusive sustainable growth and is a fundamental part of an insurer's business model.

This paper considers how the insurance industry – and in particular insurance sector Chief Risk Officers (CRO) and their colleagues – should respond to this evolving environment. It seeks to define a set of 'industry best practice' guidelines to manage the integration of sustainability into insurers' risk management frameworks, to help practitioners when addressing questions such as:

- What does sustainability mean for the insurance sector, from a risk perspective?
- What does it mean in practice to integrate sustainability risks into risk management frameworks? How should conflicts of interest be addressed within these frameworks – e.g. between different stakeholder groups or across different lines of business?
- How does an insurer identify the material risks and opportunities linked to sustainability and how could these be managed? How could scenario analysis and stress testing help?
- What data and internal knowledge is needed, and how should uncertainty and data gaps be dealt with?
- What is an appropriate time horizon over which to consider sustainability risks and how to reconcile the shorter-term business horizon with the longer-term horizon over which some of these risks crystallise (e.g. climate change)?
- How should insurers measure progress in managing sustainability risks?

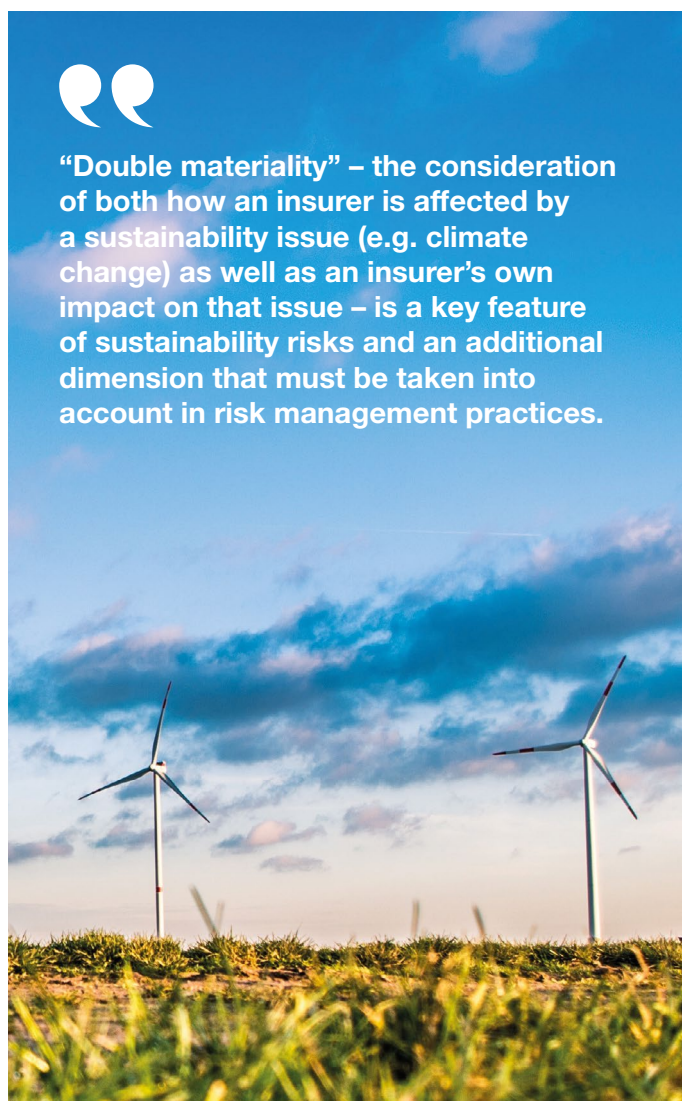
These guidelines should support CROs and their colleagues in articulating to both internal and external stakeholders that the sustainability risks affecting their business are understood, that measures are in place to mitigate these risks and that any associated limitations are clear and recognised.

Throughout this paper "sustainability" and "sustainability risks" are used as umbrella terms to cover environmental, social and governance (ESG) issues, which have the potential to affect the long-term value and performance of insurers.

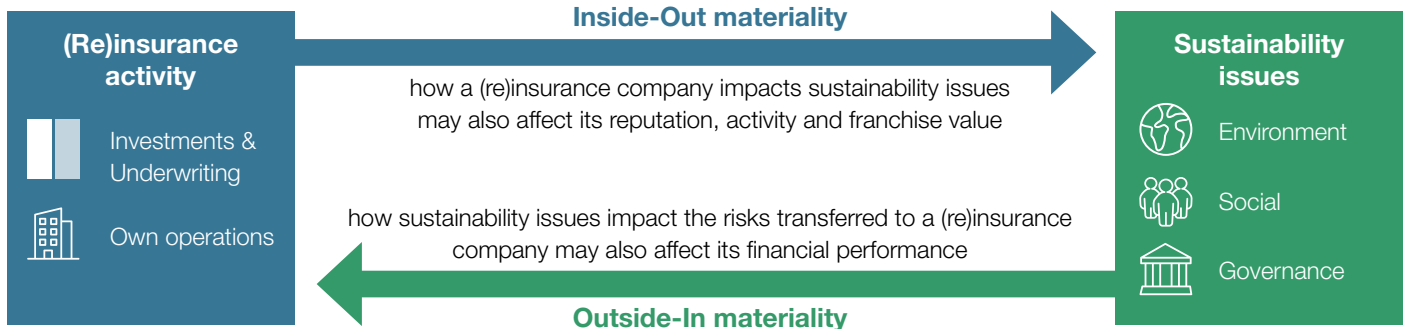
It is clear that sustainability considerations go beyond reputational risk and link to an insurer's purpose and strategic goals. "Double materiality" – the consideration of both how an insurer is affected by a sustainability issue (e.g. climate change) as well as an insurer's own impact on that issue – is a key feature of sustainability risks and an additional dimension that must be taken into account in risk management practices. Another key feature of these risks is their dynamic nature (the concept of "dynamic materiality"). The landscape is continuously shifting, including what is considered sustainable versus what is not.



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1 Integrating sustainability risks into the risk management framework means **understanding fully the materiality of sustainability issues**



This paper begins with an introduction to the concept of sustainability and the associated risks, an assessment of the current landscape, and the implications for insurers – including the regulatory environment (chapter 1).

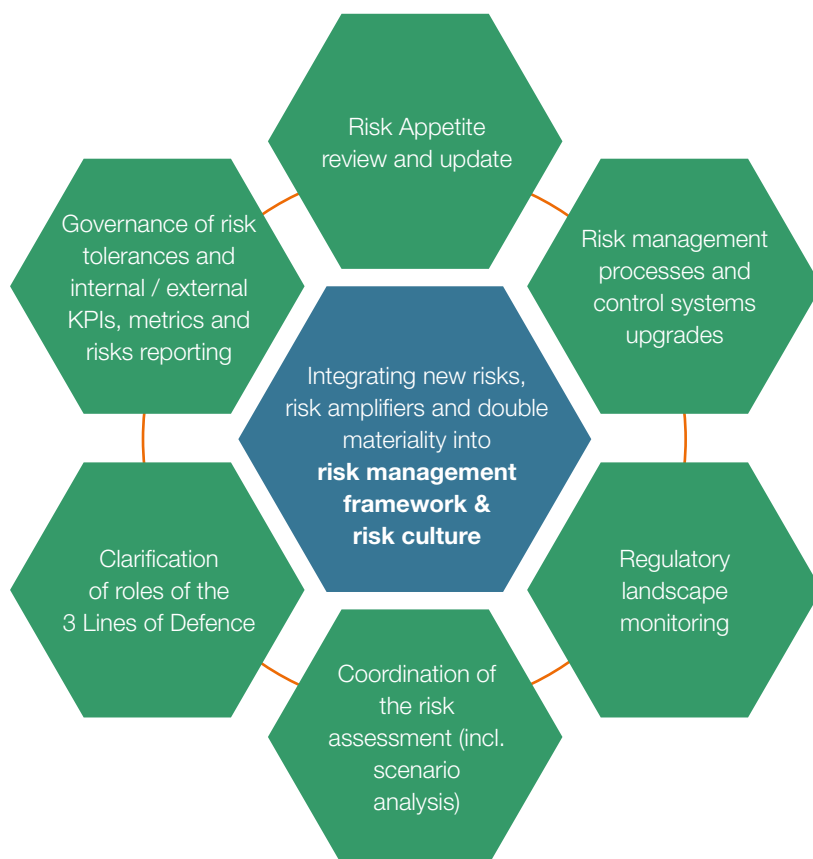
It then outlines how consideration of sustainability risks may be integrated into an insurer’s existing framework – from the strategy of the organisation, the governance arrangements

(including roles and responsibilities) through to the risk management framework. This covers the approach to defining risk appetite and how sustainability risks show up in established risk identification, measurement, management, monitoring, reporting activities and scenario analysis – as well as exploring the link to supporting business decisions and management actions (chapter 2).

2 Integrating sustainability risks into the risk management framework means **building and coordinating capabilities across the company to address them holistically**



3 Integrating sustainability risks into the risk management framework means **reviewing, updating and upgrading the existing risk framework for potential new risks, risk amplifiers and double materiality considerations**



The report then moves to the practical application of the risk management framework, illustrating how it is applied in the context of sustainability risks arising in the underwriting, investments and operations functions of the organization (chapter 3).

To bring the theory further to life and make the holistic approach more tangible, the report then covers two case studies – one related to climate change risk and the second related to financial inclusion (chapter 4) – before concluding by considering some of the challenges (chapter 5).

Throughout the report it is recognised that existing materials and support on this topic have already been developed and reference has been made to relevant existing frameworks and their practical application. It is also recognised that a key driver of much of the growing attention by the insurance sector in this area is a public awareness that sustainability-related issues need to be addressed, especially since the Paris Agreement was adopted in 2015, followed by the increasing demands posed by existing and emerging regulations in this area.

However, this is categorically not just a compliance exercise – the unique role of insurers in supporting sustainable business practices requires robust integration of sustainability risks across the entire organisation, building on strong foundations within the risk function.

1 Introduction

1.1 Defining sustainability

The Brundtland Commission report which was published in 1987 popularised the term “sustainable development”. The report is also credited with crafting the most prevalent definition of the term ‘sustainable’ to define an economic development “*that meets the needs of the present without compromising the ability of future generations to meet their own needs*” (“Our Common Future”, 1987).

The report strongly influenced the 1992 Earth Summit in Rio de Janeiro, Brazil, where more than 178 countries adopted a comprehensive plan of action to build a global partnership for sustainable development to improve human lives and protect the environment.

At the United Nations (UN) Conference on Sustainable Development (Rio+20) in 2012, Member States decided to launch a process to develop a set of Sustainable Development Goals (SDGs) building on the principles of Rio. In 2015, all UN members adopted the “2030 Agenda for Sustainable Development” with the 17 SDGs in the diagram below at its heart¹.

The Paris Agreement (“the Agreement”) set long-term goals to substantially reduce greenhouse gas emissions in order to limit the global temperature increase to 2 degrees Celsius while pursuing efforts to limit the increase to 1.5 degrees, review countries’ commitments every five years, and provide financing to developing countries to help achieve these goals.

The legally binding nature of the Agreement and the direction set by the SDGs have catalysed action by governments and by regulators. Many governments have in the meantime published their own targets, as has the European Union as a separate signatory to the Agreement. The EU has also developed an Action Plan on Financing Sustainable Growth, with regulation being introduced accordingly.

However, the SDGs apply at economy and societal levels and it can be challenging to clearly identify and assess the consequences for an individual company and what practical actions need to be taken.

Figure 1 Sustainable Development Goals (SDGs)



Figure 2 ESG issues



Narrowly, the sustainable growth of a company is growth that does not jeopardize but rather enhances its long-term enterprise value. The long-term enterprise value does not just reflect a company’s performance and potential for growth, but also the internal and external factors on which that performance and potential growth depend. The sustainable growth of a company is at risk if the factors on which it relies are themselves at risk, or if the company itself impacts those factors negatively.

There is growing acceptance that factors key to sustainable growth are associated with ESG issues. Those ESG issues are broadly defined as follows:

- Environmental:** relates to the quality and functioning of the natural environment and systems, such as climate change, the loss of biodiversity, the disruption of ecosystems, pollution (air, water, soil) and depletion of raw materials;
- Social:** relates to the rights, well-being and interests of people (including in the workplace) and communities, such as poverty, human rights violations, racial discrimination, gender inequality, child labour and the use of controversial weapons;
- Governance:** relates to the quality of governance such as transparency, corporate governance, responsible tax, diversity, bribery and corruption, and ethics violations.

Throughout the rest of this paper “sustainability risks” is used as an umbrella term to cover the ESG issues that could impact a company’s long-term performance and value.

1.2 Current state of play

The World Economic Forum (WEF) Global Risk Report 2021 identified 4 out of the top 5 global risks by likelihood as environmental risks, reinforcing sustainability risks’ materiality to businesses. The global COVID-19 pandemic has further highlighted our basic systems’ – including healthcare, social protection, education – and ecosystems’ vulnerability to unprecedented, multidimensional crises.

The CRO Forum first acknowledged the need for sustainability considerations to be part of core risk management processes more than a decade ago. However, integration of sustainability considerations into risk management has often been slow and has only recently become a major strategic concern.

A number of sustainability frameworks have been defined to support this

Figure 3 Top 5 global risks are now ESG risks

	2014	2015	2020	2021
1	Income disparity	Interstate conflict with regional consequences	Extreme weather	Extreme weather
2	Extreme weather events	Extreme weather events	Climate action failure	Climate action failure
3	Unemployment and under-employment	Failure of national governance	Natural disasters	Human environmental damage
4	Climate change	State collapse or crises	Biodiversity loss	Infectious diseases
5	Cyber attacks	High structural unemployment or under-employment	Human-made environmental disasters	Biodiversity loss

The WEF highlights the change in CEO risk views

Legend:

- Economic
- Geopolitical
- Environmental
- Societal
- Technological

Source: WEF The global risk report 2021

objective, but they all face similar challenges, in particular the difficulty of measuring and translating sustainability impacts into key performance indicators (KPIs).

A handful of guides have been developed with a specific focus on sustainability risk management, which may be useful in support of risk identification, assessment, evaluation and reporting.

For non-life and health insurers, in 2020 UNEP FI (United Nations Environment Programme Finance Initiative) Principles for Sustainable Insurance (PSI) developed the first global guide to manage sustainability risks in underwriting. It provides guidance on aligning ESG risks across an insurer's underwriting portfolio by sector and business line, indicating where there is a potential sustainability risk via the use of heatmaps².

The Committee of Sponsoring Organizations of the Treadway Commission (COSO) and World Business Council for Sustainable Development (WBCSD) partnered to develop guidance on how to better understand the full spectrum of sustainability risks and to manage and disclose them effectively. Released in 2018, the guide applies enterprise risk management concepts and processes to sustainability risks by aligning processes and procedures³. It is a good starting point for organizations, supporting their understanding of key risks across the business and helps them identify, address, and monitor those risks by using risk language and processes. It does not however address the specific risk considerations of an insurance company.

These guides are useful resources but more practical guidance on integrating sustainability into a risk management framework is needed as insurers consider how best to respond to evolving and increasing regulatory and investor demands for better management and disclosure of sustainability risks.



1.3 The implications for insurers

The insurance industry has long had a key role in facilitating the proper functioning of the economy, as risk managers and risk carriers, making sustainability a fundamental part of an insurer's business model. The effects of climate change on insured property and insured events, for example, have been on the radar for quite some time. The UNEP FI PSI were launched at the 2012 UN Conference on Sustainable Development to serve as a global framework for the insurance industry to address environmental, social and governance risks and opportunities. The vision of the PSI Initiative is of a risk aware world, where the insurance industry is trusted and plays its full role in enabling a healthy, safe, resilient and sustainable society.

The framework defines 'sustainable insurance' as "a strategic approach where all activities in the insurance value chain, including interactions with stakeholders, are done in a responsible and forward-looking way by identifying, assessing, managing

and monitoring risks and opportunities associated with environmental, social and governance issues. Sustainable insurance aims to reduce risk, develop innovative solutions, improve business performance, and contribute to environmental, social and economic sustainability."

PSI signatory companies sign-up to the following principles:

1. We will embed in our decision-making environmental, social and governance issues relevant to our insurance business.
2. We will work together with our clients and business partners to raise awareness of environmental, social and governance issues, manage risk and develop solutions.
3. We will work together with governments, regulators and other key stakeholders to promote widespread action across society on environmental, social and governance issues.
4. We will demonstrate accountability and transparency in regularly disclosing publicly our progress in implementing the Principles.

These principles, along with the double materiality and dynamic materiality considerations described above, underline the importance of a forward-looking and proactive approach to embedding sustainability issues within the risk management framework.

Regulations such as the Solvency II directive had also already foreseen, implicitly at least, the need to take into account sustainability issues from a risk management perspective, without necessarily naming ESG risks explicitly. An example is the wide formulation of the Prudent Person Principle. However, the principle-based approach enshrined therein and other similar requirements underline the need to assess the materiality of ESG risks, often within the bounds of existing categorisations of risks.

1.3.1 Materiality

Materiality defines why and how certain issues are important for an insurer by assessing their strategic importance to stakeholders and the scale of their impact. Sustainability issues and the way to address them are often system wide and complex. As the global understanding of these issues and responses evolve so will the expectations as to how firms should respond. Further, due to the deep-rooted underlying causes, any action seeking to address these concerns will often be over an extended time horizon, potentially inter-generational. These may lead to changes in the materiality assessment over time.

“Double materiality” is a key feature of sustainability risks – considering both the “inside-out” and the “outside-in” perspectives (the impact an insurer has on the issue and how an insurer is affected by the issue, respectively). However it should be noted that, despite the term “double materiality”, the issue in question may not be a risk in both directions, and/or it may not be a material risk in each direction.

“Dynamic materiality” is also pertinent to sustainability issues – the materiality of an issue may evolve over time, sometimes rapidly. For example, financial, reputational and liability risks are increasing due to increased urgency in responding to the climate crisis reflected through changing social views and customer expectations, along with direct associated costs. Environmental issues, such as biodiversity loss and water pollution, are increasingly recognised as having the potential to give rise to material risks. The insurance sector may be exposed to increasing litigation risk, both directly and via the types of insurance cover provided. How successful insurers are in managing and minimising their sustainability impact, whilst continuing to meet policyholders’ reasonable expectations, will affect their reputation.

As with all risks, assessment of the materiality of sustainability risks should therefore be integrated into risk management processes, and not only consider the “inside-out” and “outside-in” perspective but also the time horizon

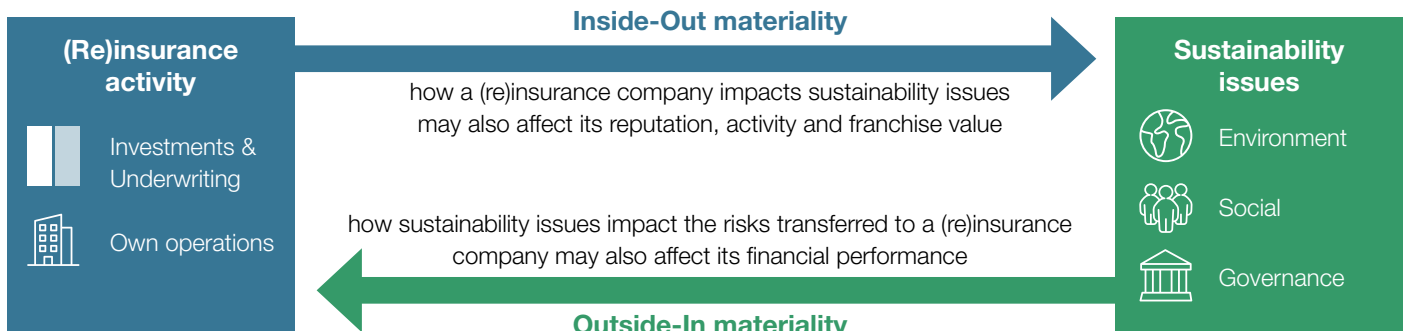
over which an issue is likely to develop. Indeed, both definitions of materiality may coincide when an issue that may have been considered predominantly from an “inside-out” perspective also becomes material from an “outside-in” perspective.

It is important to recognise that neither double materiality nor dynamic materiality necessarily imply financial materiality, but could lead to other impacts, such as reputational damage. For example, longer term issues, such as chronic physical risks associated with climate change, may not have any impact on the current balance sheet of a company and so not be considered financially material, but still be of strategic importance to the responsibilities and positioning of individual companies and of the insurance sector as a whole.

1.3.2 Regulation and standards

Until recently, sustainability was mainly “soft law” driven, with voluntary disclosures and legally non-binding frameworks (e.g. Principles for Sustainable Insurance⁴, Principles for Responsible Investment⁵, UN Guiding Principles on Business and Human Rights⁶). However, regulatory bodies and accounting standard setters are increasingly considering sustainability in general and climate in particular in their frameworks to prevent these risks from materialising and to mitigate their impact.

1 Integrating sustainability risks into the risk management framework means understanding fully the materiality of sustainability issues



This has in turn led to rapidly evolving, and increasingly demanding, regulatory requirements and disclosure standards in this area, globally. Given the pace of change at the time of writing, any attempt to provide a comprehensive view of the full regulatory and legislative landscape would quickly become out of date. An overview of the position as at end August 2021 has been provided in Appendix 2, with the key themes identified in the table below.

The CRO Forum will continue to monitor developments and support co-ordinated regulation and disclosure standards that are fit for purpose and aligned with the Forum’s aims of championing best practice in risk management and aligning regulatory requirements with this best practice.

In general, the move towards more transparency in sustainability reporting and disclosures is a positive one, assuming the reporting burden remains proportionate. Ongoing efforts to standardise regulatory and disclosure requirements, globally, are also welcomed. The increasing alignment to the framework set out by the Taskforce for Climate-related Financial Disclosure (TCFD)⁷ is a step in the right direction in this regard.

Alongside the observed theme of increasing transparency and anticipated international convergence of requirements, the evolving requirements take the form of either revisions to existing legislation, to embed sustainability aspects, or brand new legislation.

The detail in Appendix 2 may be helpful in particular for those less familiar with sustainability-related regulatory and reporting developments and, given the clear direction of travel, provide impetus for action where preparation for these developments is not already underway.

Appendix 2 is structured as follows:

- European Union (EU) regulatory developments
- European regulatory developments (including the UK)
- International regulatory developments
 - Global
 - Asia Pacific
 - North America (United States of America and Canada)
- European Union (EU) disclosure and reporting developments
- International disclosure and reporting developments



Theme	Description	Example
Risk measurement and management	Setting regulatory expectations with respect to how sustainability considerations should be incorporated within risk management frameworks	Solvency II directive
Corporate Governance	Setting expectations for how corporate governance should incorporate sustainability	The Monetary Authority of Singapore’s expectation that financial institutions establish Board oversight of environmental risk management
Reporting and transparency	Disclosure requirements relating to either a firm’s financial disclosures or its product disclosures	The mandating of TCFD-aligned disclosures in the UK and New Zealand; Product level disclosures per the EU’s Sustainable Finance Disclosure Regulation
Scenario analysis	Regulatory-defined scenarios to drive understanding of the risks and to develop capabilities	NGFS (Network for Greening the Financial System) scenarios and the Bank of England’s Climate Biennial Exploratory Scenario
Reorientating capital flows	Regulations designed to support capital flows towards sustainable investing	EU Taxonomy

2 Integrating sustainability risks into existing risk management frameworks

Fully integrating sustainability into insurers' risk management frameworks will enable them to manage sustainability risks associated with their investments, underwriting and operations as well as to manage their strategy and reputation more effectively, whilst at the same time contributing to a more sustainable economy and society.

This chapter describes best practice with respect to integrating sustainability into existing strategy, governance, and risk management frameworks. It builds on the current state of play set out in section 1.2 taking into account the regulatory developments described in section 1.3.2.

In this context it discusses key issues such as: the respective roles and responsibilities of different functions within the organization (e.g. Corporate Social Responsibility, Risk, Finance and HR) and coordination across functions; whether sustainability issues should be dealt with on a stand-alone basis or integrated into existing frameworks; the role of engagement with investee companies and clients versus divestment and exclusion strategies; quantification of sustainability risks and the role and limitations of scenario analysis.

2.1 Strategy and Governance

2.1.1 Strategy

The vision, purpose and values of a company define its culture and help steer its strategic direction. Sustainability risks and opportunities should be incorporated into the wider business strategy as a prioritised set of goals and success criteria and be aligned with the company's vision, purpose and values.

The integration of sustainability risks and opportunities into the wider business strategy should help to ensure that a long-term view is taken and that the strategy appropriately takes into account social and environmental developments as well as customer and other stakeholders' expectations.

A rigorous materiality assessment (with consideration of both double materiality and dynamic materiality, as defined above) is essential to identifying the issues that matter most to the company as well as its stakeholders. Where material, sustainability risks and opportunities should be incorporated into the wider business strategy and be addressed through transversal work programs which detail concrete actions

across operations, underwriting and investment activities.

Such work programs can help articulate the company's goals with a suite of success criteria, targets or KPIs. The risk management framework is the mechanism by which the strategy is delivered safely, allowing for entrepreneurial leadership within the boundary of a defined risk appetite, supported by prudent and effective controls.

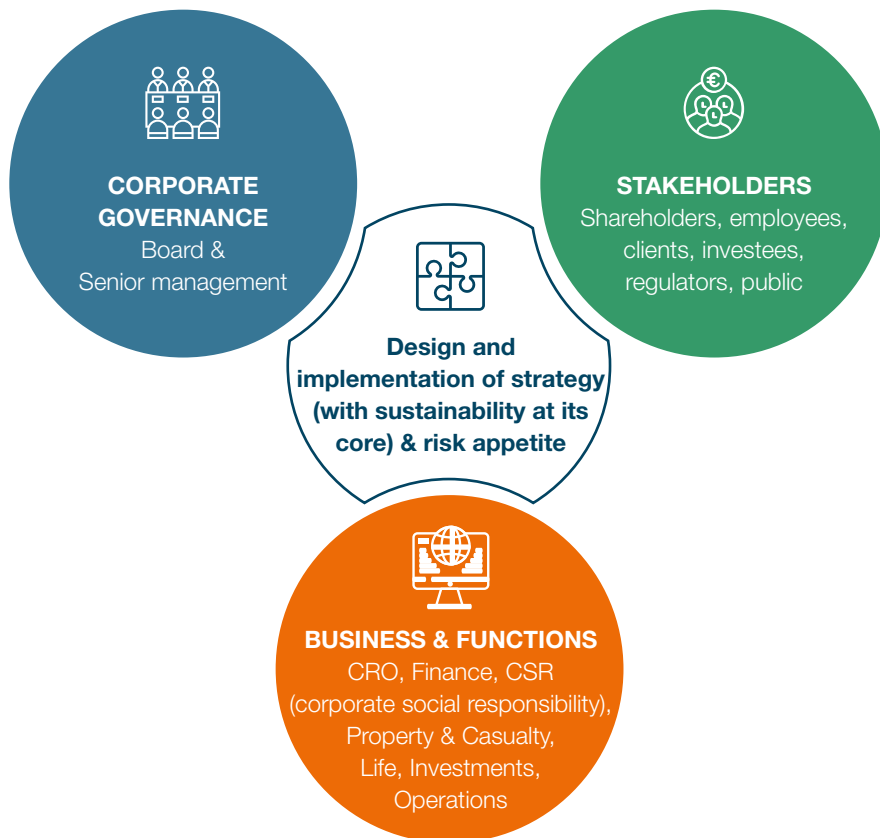
2.1.2 Roles and Responsibilities

Sustainability risks and opportunities are cross-cutting and affect insurance companies in their entirety. It is important to establish clearly how sustainability issues are governed throughout the organization to avoid confusion, overlap or inertia. This should include setting out clear roles and responsibilities for board and senior management committees, investment managers, underwriters, operations, risk, finance, corporate social responsibility, HR, client managers, investor relations and communications as well as effective integration across the 3 lines of defence.

The culture across the organisation will be critical to the success of the risk management framework, with training and awareness activity used to strengthen the risk management culture to ensure that accountability for managing ESG risks is shared widely across all employees. In designing roles and responsibilities, having a clear understanding of the culture and appetite of the business to focus on sustainability issues – as well as stakeholder expectations (e.g. shareholders, employees, clients, investees, regulators, governments and communities) – is crucial.



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The organisation’s size and structure is also important. This will influence what resources are available and whether a decentralized approach, with greater discretion given to investment teams, underwriters and operations along with suitable training (see section 3.3.3), or a more centralised approach with a specialist function/ professionals, is adopted.

Whichever approach is adopted, the design of roles and responsibilities should ensure a consistent approach is taken regarding the integration of sustainability into investments, underwriting and operations and associated updates to policies, guidelines and controls.

2.2 Risk Management Framework

The increasing focus on sustainability risks requires training and investment to develop capability and to identify gaps in the risk and control framework.

2.2.1 Risk Identification

Identifying the sustainability areas that are most important to achieving a company’s strategy is crucial for an effective allocation of resources. When it comes to sustainability risks and opportunities, different stakeholders have different and potentially conflicting expectations, and views on material topics will vary. Performing a materiality assessment provides a structured process to navigate this labyrinth of different concerns and land on a clear prioritization of sustainability risks.

Materiality assessment

A successful prioritization is highly complex, as there is no universal definition of materiality and competing perspectives of internal stakeholders will influence the assessment depending on their outside-in or inside-out perspective. Objectively quantifying the financial implications of sustainability impacts is also challenging in the absence of standardized valuation methods, such as a price of carbon

or natural capital. These different perspectives – supplemented by qualitative considerations, where available and appropriate – will need to be combined to come up with an integrated view for all involved parts of the organisation to be able to work towards a common ambition.

The starting point for a materiality assessment is to determine the full universe of potential sustainability risks (and opportunities), identified based on scientific developments and/or public sensitivity. The universe will cover the full ESG spectrum, although the relative importance of those categories will vary depending on the company’s own risk profile.

The risk identification exercise may be performed in each individual business function, using a “bottom-up” approach, or centrally using a “top-down” approach. With the “top-down” approach, a central team performs the initial horizon scan exercise and shares

the list of all identified sustainability risks to the business functions for validation. This process is more robust in identifying risks that apply across multiple business functions. With the “bottom-up” approach, each business function runs their own risk identification process, and the lists are then aligned to create a single view of sustainability risks across the business. This approach supports ownership of sustainability risks in the first line.

Considering the impact over different time periods, e.g. the business planning period or longer time horizons, would be expected to give different insights – and the impact will also depend on the nature of the business being written (i.e. environmental risks will have a different impact on a general insurer’s balance sheet vs a life insurer’s balance sheet).

Companies can build their own universe from internal and external sources (see

next page), while frameworks such as the UN SDGs can help validate the completeness of the identified topics. This effort may also include NGOs (non-governmental organisation) and academia, to gather broader societal viewpoints. Another approach is to leverage the services of data providers that have established proprietary lists of sustainability issues that can be quickly adapted to a company’s needs. To ensure the assessment begins with a universe that adequately covers a company’s ambition, a completeness check with internal stakeholders is advisable even when using external data providers’ outputs.

Internal sources include:

- Sustainability experts (e.g. in risk management and other key functions).
- Specific teams with public/customer/ investor interactions (Investor Relations, etc.).

- Broad cross section of employees including Management and Board.

External sources include:

- NGOs, data providers, regulatory guidance, reporting frameworks, customers, investors, competitor activity, green taxonomies.

Once the full universe of potential sustainability risks (and opportunities) has been identified, a materiality assessment may be performed taking the following steps:

1. Define purpose (e.g. drive strategy, inform reporting, etc)
2. Agree on single list of topics to be assessed taking into account stakeholder interests and outputs from other risk management processes
3. Assess potential impact of each topic, leveraging internal and external stakeholder input as well as other risk management processes and/or assessments
4. Prioritize issues based on assessment (see below)

Below are potential factors that may inform prioritization:

- Type of insurance business (composite, predominantly general insurance, predominantly life insurance, reinsurance)
- Financial exposures to sustainability-sensitive economic sectors
- Geographies of operations and exposures
- Strategic objectives
- Financial objectives
- Competition
- Analysis performed and research published, by NGOs, industry peers, regulators (e.g. PSI ESG heat maps, UN Global Compact, UN Guiding Principles on Business and Human Rights, sector information, including sustainability policies of peer group)

Once the final set of priorities has been agreed via appropriate governance, the next step is ensuring effective measurement and management of the associated risks.

Figure 4
ESG covers a wide range of issues



Figure 5 ESG stakeholder universe



2.2.2 Measurement and Management

The measurement and management of sustainability risks should consider the double and dynamic materiality perspectives described earlier.

Sustainability risks can be treated as stand-alone risks in the risk management framework, or as cross cutting amplifiers of other risks.

Effective measurement and management of risks relies on a defined risk appetite, agreed limits, tolerances and controls along with clear escalation procedures being in place. In this respect, the inside-out perspective is arguably the more difficult one to accommodate when defining risk appetite; from an outside-in perspective, especially where sustainability risks are treated as amplifiers of other risks, their integration into existing risk appetite statements – for example underwriting risk appetite – is relatively straightforward.

Risk Appetite

The risk appetite should connect the strategy and sustainability priorities to day-to-day decisions for individual transactions and management of risk accumulations. As sustainability issues often present both risks and opportunities, the combination of strategy and risk appetite should provide the boundaries within which the company operates and those areas where the business wants to increase or limit their activities. As most insurers already have a risk appetite framework, the sustainability risk appetite should be integrated into the existing framework and related policy framework for relevant functions such as underwriting and investment management. As noted above however, the double materiality consideration means that a distinction needs to be made for inside-out vs outside-in perspectives, and a corresponding different approach may need to be taken when defining the risk appetite for sustainability risks that are more material through an inside-out lens.

Another challenge for the integration into existing risk appetite statements and frameworks is that sustainability topics are relevant across a broad range of areas – insurance and investment portfolios as well as operations. In addition, due to the wide-ranging nature of sustainability considerations there may be conflicting benefits across the sustainability agenda, for example business areas that may provide a positive social benefit may have a negative environmental impact. This means balancing consistency of appetite across the different functions and dimensions whilst taking into account the particularities of the business areas.

In contrast to other elements of the risk appetite framework that can employ straightforward quantitative financial thresholds as appetite metrics, sustainability risk appetite statements may be more qualitative, or may only be able to refer to proxy metrics – depending on the particular risk – reflecting the complex and aggregate nature of sustainability risks. Given the current limitations of sustainability risk metrics and the corresponding difficulty of imposing hard limits as part of a quantitative risk appetite, insurers should focus on those areas where they do have control. For example, a metric that tracks the change in percentage of employees who believe the insurer is a good corporate citizen can only be a proxy for the insurer’s sustainability credentials, but may still be used to inform a risk appetite threshold below which further analysis of a deteriorating trend may be warranted (“escalation”).

A simple sustainability risk appetite may also be expressed by using high-level proxies such as industry sectors or geographies, to represent above-average sustainability risks due to associated environmental impacts or social implications. Such crude indicators however do not give credit to an individual company’s sustainability efforts and will overly restrict a company’s business opportunities, while doing little to improve societal sustainability.

Measurement proxies and engagement

A number of external providers are providing more elaborate ESG ratings at a company level, based on a variety of proprietary methodologies. Such ratings are particularly used for integration of ESG considerations into investment processes (see chapter 3). Increasingly there are attempts to leverage this type of information for insurance portfolios as well, subject to validation of their relevance and applicability in that context, depending on whether the outside-in or inside-out perspective is more material. This also however faces mapping and coverage issues, as insurance portfolios include a significant number of non-listed companies that are typically not covered by such ESG ratings.

Where such data coverage is missing, proxies such as industry sectors and geographies can serve as an initial indicator for transactions that might be outside of appetite, which then require a manual individual assessment, based on media research and investigation of the company's reporting and adherence to sustainability-related best practices and standards. Given the manual and qualitative nature of such assessments,

results are not always conclusive and may require longer-term engagement with the entity leveraging investment and procurement teams.

While in some instances exclusions might be suitable to reduce an insurer's reputational risks, they have limited impact on sustainable practices within the broader society, as once a relationship is terminated, insurers lose the ability to positively influence their customers' or investee companies' behaviour. Focusing on a longer-term engagement approach that tries to move customers and investees to more sustainable business practices and deploying exclusions only in areas that are completely incompatible with the insurer's own values is expected to be a more impactful approach.

Aligning risk management activities at the strategic level and ensuring a consistent approach is adopted towards individual companies for both insurance, investment and operations (e.g. supply chain management) activities improves the effectiveness of engagement and increases the external credibility of the sustainability strategy, with a corresponding positive impact on reputational risk management.

Misalignment, on the other hand, can lead to confusion and negatively impact the effectiveness of engagement and, in the worst case, give rise to reputational risks.

Key Risk Indicators

Fully embedding risk appetites and tolerances before identifying the appropriate Key Risk Indicators (KRIs) may not be immediately possible and an iterative process may be needed. For example, counterparties' ESG ratings may be identified as a KRI, in turn supporting the business in setting tolerances and limits to counterparties based on their ESG ratings. A key element of this iterative process is being clear on whether the proposed KRI is intended to facilitate measurement and management of sustainability risks from an inside-out and/or an outside-in perspective – some KRIs are likely to be more useful for just one of the two perspectives.

Similarly, not all of the above inputs will initially be available to support management of sustainability risks. The materiality assessment process described above will help inform where to focus efforts, leading to a qualitative assessment of the likely impact of sustainability risks across the insurer's risk universe, thereby creating a heatmap.

Existing controls, limits, frameworks and processes, such as counterparty and credit rating limits and procurement processes, could be leveraged for sustainability risks, e.g. to inform limits on exposures to certain sovereigns based on their governance ratings. Actions – similar to the engaging, screening and divesting activity being deployed for managing the carbon footprint of assets under management – may also be deployed to manage counterparties' sustainability risks.

While the risk appetite for sustainability risks should be aligned across the whole company, the methods used to manage these risks will differ across the various functions of an insurer (see chapter 3).



It may also be the case that effective management of those risks that are more material through an inside-out lens provides at least partial mitigation of those risks that are more material through an outside-in lens.

As with any business process, appropriate KPIs and assurance should be put in place to keep track of the design and operating effectiveness of the sustainability risk framework.

A key constraint to developing suitable and/or proxy KRIs is a lack of clear, consistent and complete data to measure sustainability risks. However, not having this data does not mean that the risks cannot start to be reported on qualitatively. The availability of sustainability-related data is increasing rapidly with specialist external data providers developing tools in this area.

As a first step, insurers may use internal and external sources from which to identify and select KRIs. For example, sustainability reporting standards, like SASB, GRI, WEF IBC might provide a useful place to start to identify potential KRIs. Requests by regulators can also be used to identify KRIs, although the focus of regulators – which is to prevent prudential risks – may not provide insurers with the types of KRIs it needs to manage its business. Scenario testing – covered below – is also a key tool to support the assessment and management of these risks.

To develop internal KRIs, a collaborative approach can be taken. A number of business areas are already collating sustainability-related information, but it is not necessarily presented in a coordinated, holistic manner. For example, Human Resource departments have information on diversity and inclusion, and sales departments have information on financial inclusivity. Involving those stakeholders responsible for determining the firm's strategy is recommended in order to identify the wide range of KRIs already available or accessible, that could then be distilled into metrics relevant for Board and governance committee reporting

purposes. Examples of such KRIs include: percentage reduction in CO₂e emissions, number of propositions that include social inclusion considerations, percentage of women in senior management / on the Board, absolute water consumption (m³).

2.2.3 Monitoring and Reporting

The next step is to monitor progress of the management of sustainability risk exposure, and transparently report on that progress and performance. To manage accumulated sustainability risk exposure across the insurer's portfolio, internal risk monitoring and reporting mechanisms should be established. For transparency, it is recommended that sustainability risk exposure be disclosed in line with relevant external reporting standards.

Consideration should be given to the quality of internal and external reporting. Best practice would be to report to auditable standards, though this may not be possible in the short term. A multi-year roadmap can be required to mature sustainability disclosures to limited and then reasonable assurance. Consideration should also be given to the intended audience (internal and external) for this information.

For external reporting, it is often the Finance function that has responsibility, with the Risk function's role being to provide input. Generally, companies will align with an established ESG standard for their external reporting, which is also increasingly demanded by investors and larger customers. As there are a number of different sustainability reporting frameworks, the standard or standards to report against should be selected carefully to optimize resource use and ensure stakeholder interests are sufficiently met.

Selecting an appropriate framework against which to report could consider:

- Does it ensure regulatory reporting requirements are met?
- Do our key investors require specific standards to be met?
- Which standard enables the company to positively present their

sustainability strategy?

- If there is a need to report against multiple standards, how easy is it to map requirements of one standard to another, and can the reporting overhead for additional external indices be minimised?

As outlined in section 1.3.2, the evolving regulatory and reporting landscape is leading to an increase in the scope and expected quality of companies' sustainability reporting. Identifying and assessing the implications of these and similar developments in sustainability reporting is essential to avoid adverse reputational impacts from disclosures that are below expectations and do not meet regulatory requirements, as well as associated litigation risk (e.g. arising from greenwashing accusations).

2.3 Scenario analysis

2.3.1 What is scenario analysis?

Scenario analysis is both a tool to inform the materiality assessment of an insurer's exposure to a given risk(s) under certain "what-if" circumstances, with the outcomes of scenario analysis being used to inform management actions, including appropriate management and mitigation of the risk(s) within the scope of the analysis. Scenarios covering longer time horizons are a valuable input to inform strategic decisions and to guide the overall strategic direction of a company beyond the shorter-term business planning horizon.

As a tool, scenario analysis is used for identifying vulnerabilities in central, realistic or tail scenarios e.g. by stressing observed trends or central assumptions, or by looking at the tail of the distribution of risks. Stressed scenarios do not need to be "worst case" however. Scenario analysis needs to be conducted within an appropriate governance framework to ensure that it is adequately resourced, the results of the analysis are reviewed and validated, and that the conclusions are subject to appropriate challenge and follow-up actions are identified and acted upon.



The goals of scenario analysis may evolve over time as the results of the analysis will deepen understanding of the risk exposures being studied and how the analysis can be enhanced. The initial goal could be to raise awareness about emerging and/or long-term sustainability risks. As the process matures, the goal could be to provide further input to:

- **The understanding of tail risks:** To identify and understand extreme, low probability risks
- **The understanding of emerging risks:** To imagine and comprehend new or evolving risks
- **Strategic planning:** To define a resilient strategy for the future that alleviates risks
- **Accumulation management:** To explore possible extreme or maximal correlated losses to insurance portfolios

It is important when using scenario analysis to ensure that the limitations are understood and effectively communicated. Scenario analysis is not the same as probabilistic loss modelling. The results of scenario analysis are not forecasts nor predictions. Scenario analysis relies on a limited set of scenarios whose probability of occurrence is not quantified. The plausibility of the stressed scenarios is instead supported by a narrative.

As a result, this tool can deliver valuable insights, especially where data are

lacking or triggers are difficult to model (e.g. political decisions), and hence complements the existing modelling and actuarial tools used for purposes, such as for pricing policies or calibrating reinsurance purchases.

2.3.2 Governance, organisation and process

Performing scenario analysis on sustainability risks may require coordinating a wide range of internal stakeholders beyond the risk management function. Having appropriate process and governance in place can support the production of results which are based on a methodology consistently applied across business units and over time and allow a holistic assessment of the risks.

Scenario analysis can take place outside of existing processes and may rely on ad hoc processes and governance, especially for long-term scenarios that go beyond the typical time-horizon employed or it can leverage existing processes such as the ORSA. There is no best practice in the former case as it all depends on the specific analysis being performed but, by way of illustration, some or all of the following governance could be appropriate:

- A project team may be established to set the scenarios and assumptions, produce the results and perform the analysis. It may bring together representatives from functions (e.g. risk, ALM, finance, corporate

responsibility) and business units (property & casualty (P&C), life, investments).

- Coordinators may be appointed to organise the overall planning and ensure the technical oversight of the implementation of the project. They would generally be chosen within the risk function.
- A steering committee may be established and its composition mirrors that of the project team. The role is to steer the work of the project team, to resolve issues and validate each milestone of the project.
- A sponsor of the project may also be designated at the level of senior management to ensure buy-in, support and report results to the Board, where appropriate.

A scenario analysis project can typically be organised into a number of phases or steps. These will typically include the following activities: agree purpose and objective of the analysis; perform a gap analysis against current capabilities; conduct a literature review; set assumptions; perform analysis; validate outputs; analyse results; report conclusions; identifying follow-up actions and lessons learned.

The critical phase is often the assumption setting phase. The understanding of the assumptions, their translation into financial parameters and the expert judgment involved in performing the scenarios should be complete, thoroughly documented – including the limitations – and shared beyond the risk management function to avoid inconsistencies in analysis that could undermine the results. An example of inconsistency is the use of different financial parameters to test sustainability risks on the asset and liability side of the balance sheet.

2.3.3 Key design questions

A number of key design questions that need to be considered when using scenario analysis to assess sustainability risks are: What is the scope of coverage of the analysis? What time horizon should risks be analysed over? What is the baseline scenario? Should the

analysis be qualitative or quantitative in nature? Should a static or dynamic approach be adopted? What granularity of analysis is required? What are the appropriate data and metrics required to perform the analysis and are they available?

Scope of coverage: It makes sense to start with the most material risk exposures but in practice the process often starts with the company's capabilities, in terms of resources, modelling capacity and data. Where these practical considerations reduce the scope of the analysis, it is important that any material risk/exposure not captured is explicitly identified.

Time horizon: The time horizon over which the scenario analysis is conducted should link back to the goal of the analysis. Although some aspects of sustainability risks may emerge suddenly and in the near term, others may develop over a longer period and require a much longer time horizon to be considered.

Baseline: When analysing the impact of a scenario it is important to consider what is the baseline scenario that the impacts of the scenario are being measured against. For example, impacts could be assessed against a counter-factual scenario where no sustainability risk impacts occur or alternatively a central scenario regarding the emergence of these sustainability risks could be chosen that tail scenarios could be assessed against.

Qualitative versus quantitative: Where the time horizon considered is within the strategic and business planning horizon, a more quantitative approach can be adopted. Beyond this time horizon, a more qualitative approach may be considered more valuable as there are limited capabilities in the market for projecting long-term changes in a firm's economic position based on factors such as changing customer behaviour, resilience measures, technology and governmental policy responses.

Static vs. dynamic approach: Insurers have a wide range of mitigating actions

available to them to reduce the impact of sustainability risks and these will be adapted to the changing dynamics of the underlying risks as they emerge over the time horizon of the scenario. However, these can be difficult to quantitatively account for ex-ante. Good practice is therefore to split the scenario analysis in two phases whereby Phase I is based on exposures at the starting date for the scenario analysis and Phase II considers the potential impact of the management actions that could be taken over the time horizon of the scenario.

Granularity: The level of granularity will depend upon both the goal of the analysis being conducted and the nature of firm's exposure to the sustainability risks being considered. For example, does the analysis need to be at sectoral or firm level for investments; which biometric variables for life and perils for P&C need to be covered and at what level of geographical granularity.

Data & metrics: Data gaps are inevitable but many open-source databases – and proprietary databases – are in development. The use of external data providers can compensate for the lack of in-house data or assumptions. Where the outputs from scenarios take the form of changes in sustainability metrics these will need to be translated into balance sheet impacts such as the impact on net asset value or expected losses. Given the long term nature of the scenario analysis it will usually not be appropriate to consider the impact on an insurer's solvency ratio.

2.3.4 Reporting results, lessons learnt, limitations and follow up actions

Results: It is essential to convey the message to the reader of the results that they are not forecasts nor predictions. Scenario analysis provides the possible outcome of a hypothetical scenario based on specific assumptions. The results are as valid as the assumptions. As mentioned above, scenario analysis is better suited to identifying vulnerabilities than quantifying risks, unless the distribution of risks is also available.

Lessons learned: Scenario analysis is an iterative process which provides the opportunity to increase the sophistication of the exercise over time. As such, some of the key lessons learned will be of a methodological nature and should help to inform and improve the next round of scenario analysis.

Limitations: quantitative analysis may provide a false and spurious sense of accuracy. An important element of the analysis should be to qualify the reliability of the assumptions and parameters used to produce the results. Good practice, when possible, is to mention the return period of the event. Care should also be taken to ensure that potential non-linear dependencies and tipping points are clearly communicated in order to avoid the results being extrapolated inappropriately. Reference scenarios developed by external stakeholders (e.g. supervisors) whilst helpful in getting started need to be reviewed and challenged by internal stakeholders because they are not tailored to the specifics of a company's risk profile.

Follow up actions: The conclusions from scenario analysis could give rise to a range of different actions related to the sustainability risks being analysed. For example, public policy advocacy, engagement with investee companies, development of new sustainable products and changes to the insurer's strategy, risk appetite, reinsurance programme, or disclosures. In general, management actions affecting insurance activities such as underwriting, ALM and business planning considerations will though need to be supported by near-term quantitative analysis even if they are designed to help deliver longer term goals.

To illustrate how scenario analysis can be used in practice to address sustainability risks, see Appendix 1 which sets out how scenario analysis can be used to assess climate change risks.

Case study: Taskforce on Nature-related Financial Disclosures

More than half of the world's economic output – US\$44tn of economic value generation – is moderately or highly dependent on nature. Financial institutions and companies need better information to incorporate nature-related risks and opportunities into their strategic planning, risk management and asset allocation decisions.

The Taskforce on Nature-related Financial Disclosures (TNFD)⁸ aims to develop and deliver a risk management and disclosure framework for organisations to report and act on evolving nature-related risks, in order to support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes. Better information will also allow financial institutions and companies to incorporate nature-related risks and opportunities into their strategic planning, risk management and asset allocation decisions.

This framework will serve as a mechanism to help organisations understand, disclose and manage the financial risks and opportunities associated with the deteriorating state of nature and a transition to an economy consistent with meeting future nature-related international agreements such as the UN Convention on Biological Diversity (CBD) and the ambitions set out in its forthcoming Post-2020 Global Biodiversity Framework.

The TNFD has initially adopted⁹ the following definition offered by the Science Based Target Network (SBTN)¹⁰ for:

- **impacts on nature** (“inside-out”): “positive or negative contributions of a company or other actors toward the state of nature, including pollution of air, water, soil; fragmentation or disruption of ecosystems¹¹ and habitats for [human and] non-human species; alteration of ecosystem regimes.”;
- **dependencies on nature** (“outside-in”): “aspects of nature’s contributions to people¹² [ecosystem services] that a person or organisation relies on to function, including water flow and quality regulation; regulation of hazards like fires and floods; pollination; carbon sequestration.”

Drawing from the existing evidence and frameworks (such as work by ENCORE, SASB, WEF and DNB (De Nederlandsche Bank)¹³), the TNFD will provide a typology of impacts on nature, dependencies on nature, and the financial risks and opportunities resulting from these impacts and dependencies, organised by industry. At a high level TNFD consider that nature-related risks can be classified into the following two broad physical and transition risk categories, which align with the approach taken by the TCFD:

Nature-related physical risks:

Physical risks resulting from nature loss can be categorised as event driven (acute), or longer-term shifts (chronic) in the way in which natural ecosystems function – or cease to function. Examples include local and regional financial losses in the agricultural sector from reduced pollination from insects, and global financial losses in the medicine and technology sectors from reduced genetic biodiversity inhibiting research and development.

Nature-related transition risks:

Transitioning to a nature-positive economy may entail extensive policy, legal, technology, and market changes. Economy-wide impacts on nature, commitment frameworks such as the SBTN, and international frameworks such as the CBD’s Post-2020 Global Biodiversity Framework will all inform credible future nature-related goals. In turn, these frameworks’ goals will define the changes that may need to be made and, hence, the drivers of transition risk.

The TNFD also plan to include discussion in their detailed implementation guidance as to how organisations could use scenario analysis to estimate these nature-related physical and transition risks. The TNFD Framework is expected to be launched in 2023.



3 Integrating sustainability risks into investment, underwriting and operations

This chapter considers the steps that should be taken to integrate sustainability risks into existing business processes and activities, in particular underwriting, investments and operations. Sustainability risks permeate many risk types and hence affect existing risk policies, standards and operating guidelines that provide the framework for day-to-day decisions.

3.1 Underwriting

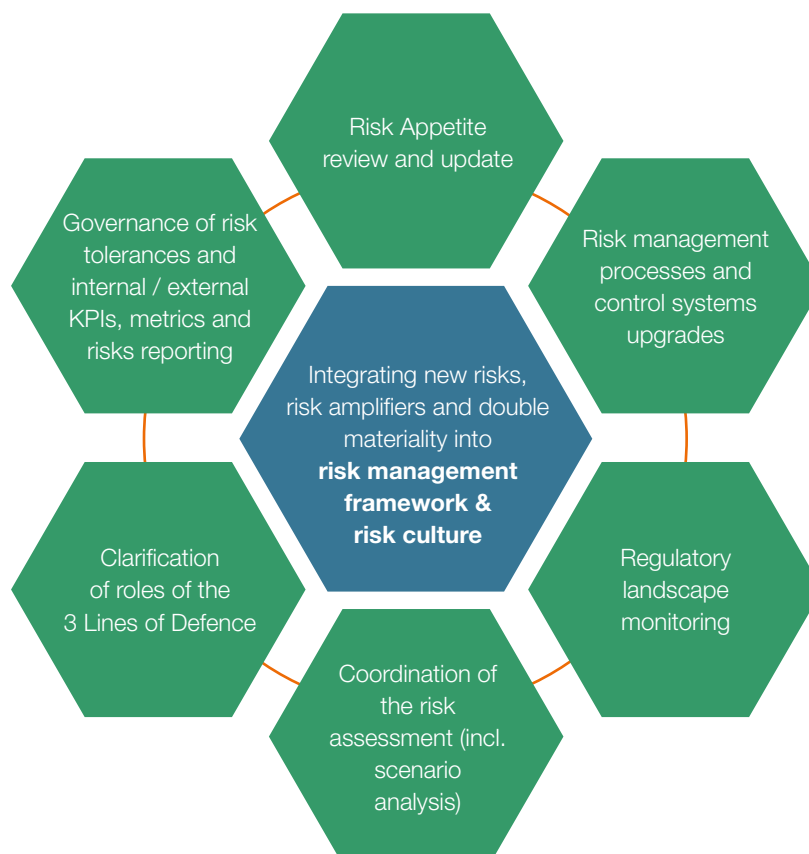
Sustainability risks can vary according to economic sector, geography, line of business, type of cover and customer characteristics, and each insurer’s appetite for the universe of sustainability risks will vary. Often, reputational impacts are a key driver of what an insurer will choose to underwrite, as they seek to avoid negative publicity and positively influence employee

and investor perceptions. These considerations all form part of an insurer’s underwriting strategy.

Understanding the exposure in the underwriting portfolio

Underwriting has a policy-lifecycle perspective, which can be relatively short when compared to the timeframes over which some sustainability risks manifest. This means that not only is the exposure to a customer potentially short,

3 Integrating sustainability risks into the risk management framework means **reviewing, updating and upgrading the existing risk framework for potential new risks, risk amplifiers and double materiality considerations**



but also the exposure to a customer's sustainability risks is often very difficult to assess, as it is the policy and the type of cover provided that defines the exposure and risk profile. However, reputational risks are cross-cutting as the public do not distinguish between different products. For example, a Directors & Officers policy will be more exposed to sustainability-linked litigation risk than a policy covering the construction of a new building, which might be more susceptible to, say, climate-related physical risks.

A risk mapping exercise provides a useful way of understanding exposure to risks by sector, cover or geography. The previously mentioned UN PSI ESG Guide for Non-Life Insurance provides guidance and sample heat maps that support this mapping of risk to sector and business line and can be tailored to a given portfolio.

Once a risk by sector or business line has been identified the next steps involve analysis of the risk at policyholder level. The Monetary Authority of Singapore, for example, recommends that insurers provide underwriters with the means to check the potential impact of a proposed transaction and understand a customer's sustainability risk profile. Various tools may be used to support the underwriting process, when assessing the sustainability risk profile of such transactions. Depending on what tools and systems are already available across the various business lines, the sustainability risk management process may need to be tailored accordingly.

This activity should be owned by the underwriting function and reviewed by the risk function. Once the risks have been identified and mapped, an analysis of how to measure the exposure is the next step.

Measuring the risk

Underwriters must build sustainability risk considerations into the underwriting process before policy inception. This enables the insurer to take into account a customer's sustainability risk profile and their needs, which in turn

informs strategic planning and pricing considerations. For example, with respect to commercial lines:

- **Policyholder screening:** Online assessment tools support the assessment of a company's (or sector's) exposure to relevant sustainability risks. Examples of such tools are MSCI ESG manager, RepRisk, NGO databases, or information in the public domain, such as publicised lawsuits and media coverage more broadly. Where a company has no listed information available, sector, geographic and peer data points can be used to assess a proxy rating.
- **Checklists/due diligence:** Adequate due diligence by the underwriter will help businesses anticipate and prevent or mitigate adverse impacts. A referral process to an expert team or to management can support this step.
- **Exclusion lists and benchmarks:** An insurer may decide to refuse cover to specific companies on the basis of benchmark scores or exclusion lists, publicly available from international organizations, third party data providers or governments. Where possible, the assessment should consider a customer's ability and willingness to mitigate or reduce their sustainability risk. An insurer can support a customer in their efforts or impose underwriting conditions.

And with respect to personal lines:

- **Underlying asset:** An underwriter may assess the exposure of the underlying asset at risk, such as a property. For example, the property's address and geographical location affects its exposure to climate change. Similarly, for contents insurance, a due diligence checklist can be applied to assess the risk to the property contents as a result of a natural catastrophe event. These measures can help when setting premiums and risk appetite.
- **Prevention and mitigation:** An underwriter may work with the policyholder to mitigate the risk, for example by moving expensive assets from the ground floor to a first floor in a house or incentivizing the

policyholder to invest in mitigating measures to protect their property, for example by installing fireproof roofs and decking in a high-risk bushfire area.

The short and/or long-term effects of a sustainability risk on underwriting practices should be assessed. By applying a forward-looking risk perspective, situations where there is a lack of historical data, for use in modelling and pricing the risk, will be more proactively addressed. It will also ensure sustainability risks are considered in business planning and in the definition of a short and long-term underwriting risk appetite. Developing a long-term view should also foster innovative thinking and opportunity seeking.

To assess sustainability risks over the medium- and long-term, scenario analysis could also be applied, as described in section 2.3.

The following questions may help to structure the analysis of sustainability risks and to understand the potential associated underwriting exposure:

- What exactly would happen if this event occurred?
- How severe would the impact be if it did?
- What are the causes of the event or the factors affecting its occurrence?
- How likely is it that it would happen?
- How effective are the existing controls?

Managing the risk

The results of the risk assessment will help identify what amendments should be made to underwriting processes, if any. Examples of changes could be:

- Embed sustainability assessment into product approval review process to assess impact against key sustainability criteria;
- Amend standard policy language to reflect sustainability risk exposure or to reduce liability risk;
- Include additional layer of ESG-specific due diligence, to assess sustainability risks of the customer;
- Introduce pricing flexibility linked to a customer's sustainability risk;

- Apply limits to the underwriting exposure.

Monitoring and reporting the risk

Sustainability risks should be continuously reviewed, and efforts made to address any gaps in the risk

assessment. This can be done through use of standard questions in business or product reviews, a mandate to a governing underwriting committee to review the risk or via close collaboration with risk and ESG expert teams. With the development of new capabilities

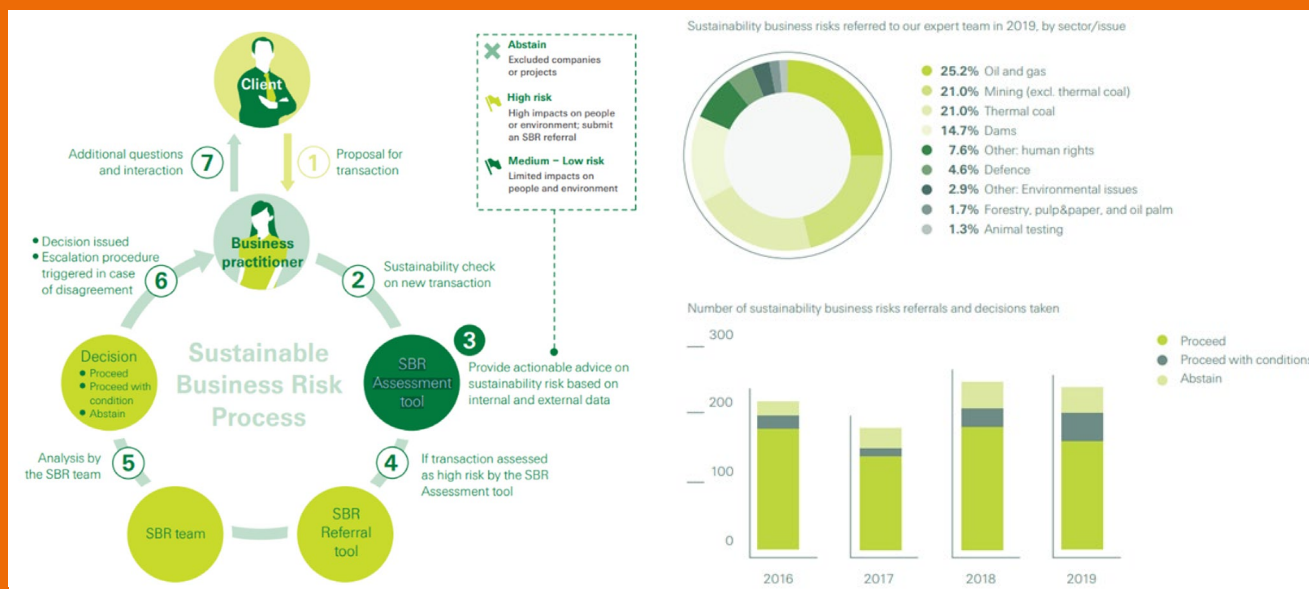
and expertise in sustainability risk management, the insurer can use improved knowledge to their advantage – e.g. by encouraging risk reducing behaviour, new product innovation and potentially increased demand for services.

Case study: integrating sustainability risk into underwriting

A member firm has developed a Sustainable Business Risk (SBR) Framework¹⁴, which comprises two Umbrella Policies on human rights and environmental protection, as well as eight sector-specific guidelines, which set out what the company

regards as the main concerns in the respective areas. The SBR Framework contains criteria and qualitative standards which define precisely when a transaction may present a “sustainability risk” from both an underwriting and investments

perspective. To identify high risk transactions in underwriting an SBR process has been established, which consists of two due diligence mechanisms – the online SBR assessment tool and the SBR referral tool.



Assessment Tool: The online SBR assessment tool enables underwriters to screen potentially sensitive transactions. The online tool is easy to access, provides clear guidance to underwriters about what to assess in further detail and ensures consistent documentation in standard underwriting tools. At the same time, the experience garnered from using the tool enables the central sustainability risk management unit to continuously adjust key policy parameters and make them effective “at the push of a button”.

Referrals: The transactions identified as most critical are transferred through the SBR referral tool to a team of sustainability experts, who conduct targeted research to decide

whether the transaction at hand is acceptable according to the policies outlined in the SBR framework. This decision is given in the form of a binding recommendation to proceed with the transaction, to proceed with certain conditions attached, or to abstain. If there is disagreement about the recommendation, the case can be escalated to the next management level, ultimately to the Group Chief Risk Officer and the Group Executive Committee.

Engagement and leverage: The decision to abstain from a business is used for the most grave of SBR violations – in cases where there is no likely avenue for remediation, redress or improvement. The preference is to engage with

clients on identified sustainability issues and to discuss remediation plans. This is done most frequently by making cover conditional on the client’s response to the acute issues, opening a dialogue with them and asking critical questions both to show concern and to understand their plans for remediation and prevention. Relevant documents that are not publicly available are frequently requested, such as environmental and social impact assessments. Additionally, advice from independent technical experts is often sought on issues of concern. Besides engaging with their clients, the company also engages with their cedants, industry organisations as well as other types of financial institutions in order to share expertise.

3.2 Investments

Insurers are significant institutional investors and sustainability risks are relevant to managing credit, market and liquidity risks. Sustainability (or ESG) risk management is well established in the investment function. Insurers should have investment processes structured to identify sustainability risks and opportunities alongside traditional measures. Sustainability measures inform the due diligence, portfolio construction, and monitoring processes, as well as the approach to risk management. A well-defined investment framework should permit a diversity of approaches across different investment teams and strategies. Portfolio managers are accountable for managing exposure to material sustainability risks and should be able to provide evidence of how sustainability considerations inform investment decisions in each portfolio.

Understanding the exposure in the investments portfolio

Similar to underwriting, it is possible to assess exposure to material sustainability risks on a geographic, industry sector, investment product and company level. The same heat map exercise can be performed as described above for the underwriting portfolio, linking material sustainability risks to the investment portfolio.

Measuring the risk

Once the risks have been mapped an assessment of the insurer's exposure is required. The investment function may use ESG data providers to directly evaluate the performance of a company across the E, S and G dimensions. Indicators used for this assessment are typically calibrated at company level, taking into account sectoral characteristics to capture specific sensitivities of the ESG factors. While this approach is predominantly backwards looking, it can be used for engagement with the investee company or to help shape future actions by looking at industry trends and company patterns.

The investment function can also use this data in a forward looking way, for example to assess climate-related risk in stress testing or scenario analysis exercises. This method focuses on the sensitivities of the portfolio and exposure to actual risk levels. Guidance can be taken from regulatory material such as supervisory statement SS3/19 published by the UK Prudential Regulation Authority in 2019, or the TCFD recommendations. For more information on stress testing, refer to section 2.3. Once exposure has been identified and mapped, the investment function can assess it against the defined risk appetite.

Managing the risk

There are several different investment strategies available to effectively integrate sustainability risks into investment decisions and to ensure those decisions remain within defined risk appetite:

- **Engagement:** attempt to use ownership stake in a company to influence its strategy
- **Screening:** exclusion of sectors or companies based on ESG factors or based on risk appetite statement, e.g. no appetite to invest in companies with XX% revenue derived from coal
- **Best-in-class:** include companies that perform best on ESG criteria from various sectors and industries. This approach can also be used for specific higher risk sectors.
- **Divestment:** sell all holdings in a particular sector or company. This approach may be a "last resort" where efforts to engage and influence an investee's strategy do not yield the desired results within a defined timeframe.

ESG integration is also important when selecting external asset managers or when defining externally managed mandates. When considering an external asset manager a robust due diligence process should be applied to ensure their ability to perform sustainability risk reviews and to select investments accordingly is in line with the insurer's own sustainability risk appetite. A well-developed sustainability framework will support the communication of an

insurer's needs when selecting an asset manager.

There is no single approach to integrating material ESG information into investment decisions. Global initiatives like the UN Principles of Responsible Investment (PRI) can be used as a guide to incorporating ESG issues into investment analysis and decision making. Some initiatives address a specific sustainability risk, such as the Net Zero Asset Owner Alliance, which supports institutional investors in aligning their investment portfolios with the Paris Agreement, with the aim of net zero greenhouse gas emissions by 2050. Irrespective of the particular approach taken, the goal is to identify what suite of tools, data and metrics provides the strongest correlation with achieving the insurer's sustainability objectives as well portfolio outperformance.

Monitoring and reporting the risk

Whatever approach is used, the above steps should be integrated into an insurer's investment strategy and other guiding documents. Compliance with these measures should also be tracked via regular reporting or the creation of dashboards and automated alerts in trading and risk platforms. A reporting and escalation mechanism should also be in place in case of a breach of risk appetite or non-compliance. It is critical that these measures are communicated internally and, when relevant, also to external parties.

By integrating these measures, the investment function can manage potential vulnerabilities and take advantage of opportunities.

ESG integration into investments has been proven to be popular with both shareholders and the broader community. Companies that do not address sustainability risks in this way risk losing the confidence of key stakeholders.

Case study: integrating sustainability risk into real estate investments

The real estate sector accounts for nearly 40 percent of global energy-related CO₂ emissions¹⁵. Real estate is also highly exposed to physical climate risks. The dedicated real estate investment and asset manager of a member firm is working to reduce the greenhouse gas (GHG) emissions of their portfolio to net-zero by 2050 by incorporating and embedding ESG criteria into its investment cycle for its real estate business and collaborating with others to strengthen ESG activities. They are planning to be aligned with the 1.5°C decarbonization pathways for the global real estate sector published by the Carbon Risk Real Estate Monitor (CRREM)¹⁶.

To decarbonize the sector and comply with tightening environmental regulations, real estate assets face significant costs in meeting higher energy efficiency standards and addressing demands from investors and tenants. Large-scale investment may be required to improve resilience to climate change. At the same time, changing investor and tenant preferences can provide new opportunities, for example by tapping into climate-conscious tenant groups that increasingly demand green building certificates.

The member firm’s ESG integration framework¹⁷ is designed to improve the ESG performance and transparency of real estate assets and address issues such as physical climate risks, reducing the risks of obsolescence and depreciation. Alongside this, it looks at the social impact of the buildings on the community that uses them.

The framework is based on three key areas of activity: assess, engage and improve.

1. Assess

Assets are screened for potential ESG issues, particularly during the acquisition phase. Every new equity investment undergoes a thorough

due diligence process including technical and environmental due diligence and property-related ESG assessment. Any new office, retail or logistics investment (equity) must have an environmental or sustainability certification that is either globally recognized (such as LEED or BREEAM) or locally dominant (for example HQE in France and DGNB in Germany). For new fund investments, fund managers are required to have an ESG policy or to be a PRI signatory.

2. Engage

During the management phase, a collaborative engagement strategy seeks to influence business partners to strengthen ESG activities. This includes ensuring ESG topics are considered as part of performance review meetings with joint venture partners, supporting external property managers to improve ESG standards and performance, and engaging with tenants to influence their choice in fuel.

3. Improve

They aim to measure and improve the ESG performance of their entire real estate portfolio. This includes seeking out pilot ‘lighthouse’ projects and group-wide initiatives, such as procuring certified green energy and investing in onsite energy production and energy efficiency measures like installing LED lighting.

In October 2020, the ESG approach was expanded and strengthened in the context of indirect investments and to increase the emphasis on energy performance data collection for both controlled and non-controlled areas, such as tenant areas.

They also finalized a new global carbon accounting and reporting framework which will drive more systematic environmental reporting across our portfolio. The framework will improve the collection of actual energy performance data in the context of a globally diversified real estate portfolio – a necessity to effectively steer future decarbonization efforts.

Looking ahead, they plan to conduct further energy audits to better understand energy performance and inform action plans to bring down the energy consumption of assets. They aim to extend efforts to reduce carbon emissions in line with their commitment to drive decarbonization. This includes for example, revising the technical/environmental due diligence scope of work to give greater consideration to required actions and additional investments. In depth ESG analysis in investment documentation is intended to place a stronger emphasis on these ESG considerations.



3.3 Operations

Sustainability risks represent an operational risk and need to be considered in the context of internal operations, such as the management of people, processes and technology. This section briefly addresses sustainability risk considerations in other functions of the business.

3.3.1 Human resources (HR)

By considering the double materiality of sustainability risks, an insurer needs to assess how a company is run, focusing on culture, purpose and value as well as the work environment it provides for its employees. What a company does, says and what employees believe are all crucial to a well-established risk culture. Given the HR function's role in organizational process, change management and culture stewardship, it is well-placed to also take a leading role in developing an understanding of – and managing – sustainability risks.

Understanding the exposure through the HR lens

To run a sustainable human resources management system, HR managers must identify the most common people-related sustainability risks, such as conduct risk, equality, diversity and inclusion (EDI) and human rights.

To perform its materiality assessment, the HR function can map its various activities e.g. recruitment, remuneration, employee opportunity, reward and recognition, etc. to the universe of sustainability risks.

Measuring the risk

The assessment of the likelihood and severity of the mapped risks could be conducted by reviewing existing issues in the press or court cases, assessing impact on the company's reputation or employee reaction as well as benchmarking the company against peers.

Managing the risk

Once the materiality has been established, a risk tolerance and controls need to be put into place to manage the

risk. Using human rights as an example, the HR function could break down the risk into individual human rights and map each right to its business activities. The existing guidelines and policies can then be reviewed to assess whether all rights are adequately captured. If a gap is identified, the policy or guideline should be updated, KRIs developed, and controls put in place to manage the risk.

The HR function should have well-established KRI's and targets in place, such as women in leadership targets or retention rates. Such targets support the management of the relevant sustainability risks. Targets and the strategies for how to reach them should be included in HR guidelines such as those around recruitment and succession planning.

Where a sustainability risk has been identified at company level but might be considered less relevant for the HR function, the HR function may still consider reflecting this risk within their strategy and support its management within their sphere of influence. For example, if the insurer has made net zero emissions commitments, HR could include net zero considerations when hiring new talent by identifying applicants with an awareness and interest in sustainability and/or including consideration of this issue in existing employees' goals and remuneration. To further inform any hiring activity, an assessment of the adequacy of existing skills across the organisation should be completed to ensure that successfully realising the insurer's sustainability ambition, and mitigating its sustainability risks, is not jeopardised by insufficient resources with the right skillset.

3.3.2 Procurement and claims

An insurer's supply chain can be highly complex and will depend on the kind of insurance it provides. Supply chains are often multinational, multitiered and not transparent. They can also expose the company to unknown and hidden sustainability risks, such as human rights abuses, corruption or natural resource depletion. Sustainable supply chain risks have already been targeted by regulators in Europe and

Australia, who have taken steps to mandate supply chain due diligence, such as the UK Modern Slavery Act (2015) or the Australian Modern Slavery Act (2018). Given the implications of sustainability issues arising in and from supply chains, there are clear incentives for insurers to manage the risks more effectively. Procurement (including claims procurement) are essential to the success of the business and can be a significant source of value creation and innovation.

Understanding the exposure through the procurement lens

Similar to underwriting and investments, an analysis and mapping of supplier industries can provide a good understanding of the risks to which the insurer is exposed. This can be done on a topical basis, such as an assessment to understand the risk of modern slavery in the supply chain, or more widely, taking into consideration geography, type of supplier, spend and criticality of the supplier. Where possible, the assessment should be done at supplier level.

The assessment can be performed in-house, with support from consultants or with the use of supplier management systems and risk management tools that provide more granular data on a supplier's own supply chain. Data quality and availability may be a constraint, as many insurers do not have centralized data systems for their suppliers. The type of companies in a supply chain will to some extent be linked to the products available in the insurance business and, as such, the insurer needs to not only consider the sustainability risks on the sell side but also on the buy side when offering new products e.g. car insurance.

Measuring the risk

An exposure analysis and mapping of suppliers should provide the insurer with a good understanding of the risk landscape. In contrast to underwriting or investments, the procurement function might not have the ability to stop dealing with an entire sector, but the procurement function can incorporate risk factors and sustainable guidelines

when selecting, onboarding or working with suppliers. Each sustainability risk should be assessed for materiality and appropriate risk management steps considered.

Managing the risk

To effectively manage the sustainability risks associated with procurement, procuring managers can:

- apply due diligence and risk assessment when identifying and managing sustainability risks and opportunities with their direct suppliers of goods and services. Risk assessment criteria can vary by geography, industry type and spend levels;
- engage with suppliers to improve their sustainability risk management;
- refuse to work with suppliers that do not meet specific risk criteria;
- ask suppliers to abide by specific sustainability requirements, such as through a Code of Ethics and Conduct for suppliers; and
- show preference to suppliers that are actively managing their sustainability risk. This can be done as part of a formulated procurement sustainability strategy, that aligns with the insurer’s group wide sustainability strategy.

Risk mitigation can also be more systematic, for example by setting sustainability strategies around claims, e.g. a destroyed home after a fire event is rebuilt to higher and better standards, reducing future underwriting risk. It is recommended that risk management approaches be incorporated into procurement policies and guidelines, such as a Third Party Risk Management Framework, or a Supplier Sustainability Strategy.

Monitoring the risk

Risk assessments should be performed on a regular basis, ideally during supplier selection, onboarding and contract renewals or more regularly depending on the supplier risk. Sustainability risks must be considered when selecting a supplier and, where sustainability risks are assessed as relatively high, this should be a consideration for not selecting or renewing with a supplier. The risk assessment process should allow for the inclusion of controls at contract stage when a supplier is considered high risk but still selected, in conjunction with the risk, compliance and legal functions.

It is recommended that insurers are transparent and fair in their dealings with suppliers and proactive in their definition of good sustainability risk management. A smaller supplier cannot always be expected to have the same level of risk management processes in place as a multinational company, so the insurer needs to strike a balance between what they consider essential and what they consider “nice to have”. What is expected of suppliers can be formulated in an external policy, standard, guideline or code that describes the minimum requirements a supplier must meet or exceed in the handling of sustainability risks. This document should be part of the contract work and should allow auditing or due diligence checks from the insurer.

Case study: integrating sustainability risk into procurement

Even without an established approach to address sustainability risks, insurers may still address individual sustainability related issues.

A member firm had begun considering sustainability risks within its procurement function but had no established processes in place to comply with the requirements of the UK Modern Slavery Act of 2015 and the Australia Modern Slavery Act 2018 to identify, assess and manage any potential exposure to the requirements.

Assessment process

After an initial heat map exercise to assess its exposure to industries and geographies with higher modern

slavery risk in its supply chain, the insurer developed a risk assessment process that manages its risk as part of the onboarding and renewal process. The procurement function, in collaboration with sustainability experts in risk and compliance, developed a two phase risk assessment process, which would:

- firstly, identify suppliers at elevated risk on the basis of industry sector and geography, and
- secondly, request those suppliers to complete a self-assessment questionnaire to better understand how well they manage their risk

Where a modern slavery risk remains elevated, the procurement team works with the risk and compliance teams to

assess how to address this risk, e.g. identify what mitigating actions might need to be taken by the supplier. The process also includes a referral process to senior management, where required.

Sustainability risk integration

The modern slavery risk assessment process, which includes the risk triage approach, the self-assessment questionnaire and the allocation of roles and responsibilities across three lines of defence can over time be replicated or expanded to include further sustainability risks, where applicable.

3.3.3 Training

The allocation of roles and responsibilities with respect to the management of sustainability risks should be supported by a broad-based educational program across all levels and functions, with the emphasis dependent on the nature and risk profile of the business.

A good foundation for any risk training program is a company's culture and risk culture: behaviour, attitude and actions are all tied to awareness and support a company's overall sustainability.

Providing sustainability risk training to employees is an important step towards creating a sustainability-aware culture. Employees need to understand sustainability risks and the importance of supporting the company's sustainability risk management efforts.

The level and specialisation of the training will vary; high-level company-

wide training can help all teams recognize sustainability risks that arise in their daily work. This training can support and influence risk and control identification when a team performs its regular Risk and Control Self-Assessment (RCSA). All teams should also know how to flag sustainability risks that have materialized, such as when reporting an Issue or Incident.

When specific sustainability risk policies or guidelines apply to a particular business line or function, training on how to implement or comply with the policy is required. This could be the case for policies or guidelines that address higher risk business areas e.g. increased due diligence or exclusions related to exposure to the fossil fuel industry.

Tailored training is also needed for functions that are confronted with sustainability risks from a specific angle, such as communications teams or investor relations. The Risk function

should receive specialist training given sustainability risks are pervasive across an organisation and may indirectly impact the Risk function in their oversight role.

Lastly, due to the complexity of many sustainability risks, it is recommended that ongoing training be provided on new and emerging risks that will impact employees and the company over time. These types of training are well placed to be given as "Lunch & Learn" sessions.

As new and emerging sustainability risks may be identified centrally (top-down) or within individual functions (bottom-up), open and transparent communication on identified risks is key to a successful sustainability risks awareness training program.



4 Case studies

In order to demonstrate how sustainability risks can be integrated into the risk management framework two case studies have been developed –the first relates to climate change (addressing the E in ESG) and the second related to financial inclusion (addressing the S in ESG). These case studies illustrate how this integration can be applied in practice.

4.1 Case study: Climate change

In the last decade there has been an increase in knowledge and research on the topic of climate change within the insurance sector as climate change is becoming a major source of risk and uncertainty for insurers over the coming years. There are many initiatives that document the science and the scale of the impact of climate change. However, beyond the initiatives of the international science community, the volume of research being conducted by the financial services sector itself and associated regulatory bodies has been growing as well.

The launch of the Financial Stability Board’s Task Force on Climate Related Financial Disclosure has accelerated this trend and highlighted the need for decision-relevant, clear, consistent and comparable climate information for stakeholder groups. In response to this trend and demands, insurers are increasingly looking to integrate climate-related risks into their risk models and frameworks, in part driven by increasingly strict regulation on the topics of sustainability risks and climate change. To help assess climate-related risks and meet the demands of regulators and

investors, insurance companies need to assess the likely impact and appropriate responses to this threat.


In his 2015 speech, “Breaking the tragedy of the horizon” (Carney, 2015), Mark Carney, Governor of the Bank of England, classified the risks arising from Climate Change in three main categories:

- Physical risks related to changes in weather patterns, temperature and hydrological conditions,
- Transition risks towards a net-zero emissions economy and related fundamental changes in, for example, energy, food and transport systems,
- Liability/Litigation risks pertaining to climate change and breach of underlying legal frameworks on both the business and corporate levels, arising from stakeholders to seek recompense for failures to mitigate, adapt or disclose climate change risks.

These risks were further outlined in the IfoA (Institute & Faculty of Actuaries) Risk Alert and in the paper “Climate Change for Actuaries: an introduction” (Climate Change Working Party, 2019).


Referencing credible, recognised external frameworks, such as the SDGs, can also help insurers to link their business strategy back to their purpose and values, and explain how the topic of climate change is embedded within it - e.g. by supporting the transition to a low-carbon, climate resilient economy and providing climate conscious insurance products and services. Examples of how insurers can think about linking their strategy to the SDGs include:

6
CLEAN WATER
AND SANITATION



Facilitate climate action in order to fight the increasing frequency of droughts, helping secure the supply of water for future generations.

7
AFFORDABLE AND
CLEAN ENERGY




Increase investment into renewable energy generation capacity and divest from issuers heavily reliant on fossil fuels in order to drive a transition to greener sources of energy.

11
SUSTAINABLE CITIES
AND COMMUNITIES




Work with customers to help them become more resilient after a claim to ‘build back better’ to create safe and sustainable communities.

12
RESPONSIBLE
CONSUMPTION
AND PRODUCTION




Develop climate conscious products and services, which reward customers for environmentally responsible actions.

13
CLIMATE
ACTION




Produce quality climate disclosures detailing the impact of climate change on the company and vice versa. This transparency is the bedrock for ambitious climate action.

14
LIFE
BELOW WATER



Work towards a Net Zero target to tackle ocean acidification and warming seas to maintain ocean biodiversity.

15
LIFE
ON LAND



Divest from issuers heavily reliant on using the terrestrial ecosystem in an unsustainable manner to aid biodiversity maintenance.

Depending on the nature of their business (life vs property & casualty (P&C), retail/consumer vs commercial focus, primary vs re-insurance) insurers will focus on different risks within the universe of climate-related risks.

- Typically, for all insurers underwriting risks will be covered by premium (pricing) and reserving risks but those risks (for example, morbidity/mortality or accumulation/aggregation risks and natural catastrophe risks) may be more or less material.
- On the asset side of the balance sheet, investment risks related to market and credit risks will predominate (although credit risk may also be an important underwriting risk component in some underwriting portfolios).
- For all insurers, operational risks and business/strategic risks will also be an important overall component of risk.

In climate risk analysis an important first step for insurers is to decide how to integrate climate risk into their risk taxonomy, identification, quantification and risk management actions (see figure 6).

The process would typically start with a materiality assessment of climate-related physical and transition risks. On the assets side, this encompasses both the investment portfolio and assets for own use, e.g. real estate. On the liabilities side, this entails screening business lines' exposure to climate risk hazard parameters and transition risk drivers and effects.

Figure 6 **Scoping climate risk**



- 1) Transition risk on assets** has several channels: it can be measured i) at single name / individual asset level by quantifying corporate and sovereign credit and spread risks and equity risk; ii) via macroeconomic assumptions on inflation, exchange and interest rates. One challenge is the ability to identify “best-in-class” strategies, to differentiate those investee companies that have engaged in the transition.
- 2) Physical risk on assets** can either be: i) direct e.g. on insurance-linked securities or investment in physical assets such as real estate or infrastructure debt, or ii) indirect on corporate exposures depending on the geographical location of investees' assets.
- 3) Physical risk on liabilities** is channelled via both P&C and life businesses: i) for P&C business, changes in climate-related hazard parameters may impact the materiality of natural catastrophe risk of specific region/peril bundles. Climate risk may also increase claims inflation; ii) for life insurance business, climate risk may be channelled through the impact of more frequent and acute heatwaves or the prevalence of vector-borne diseases on mortality and morbidity assumptions and experience.
- 4) Transition risk on liabilities has several channels:** i) public policy actions (e.g. tax policy on carbon price), ii) businesses and consumers' preferences, iii) litigation risks for both clients (liability insurance) and the insurer (due to insurer's own impact on the risk). Also, per 1) above, transition risk has a potential material impact via the ALM of insurers where it translates into revised macroeconomic and financial assumptions, e.g. changes in risk-free interest rates used to discount the technical provision and in claims inflation for establishing the size of reserves.

Best practice is to treat climate risk as a cross-cutting risk type that applies across the established risk taxonomy.

Tools to identify and assess physical and transition risks should be developed and external models (such as those provided by climate science) integrated with existing tools, such as natural catastrophe modelling and credit risk watchlists. These approaches should be applied at multiple levels within the organisation so that they can be applied easily by first-line management, for example for individual clients and transactions and at an aggregate portfolio level, so that risk concentrations may be assessed.

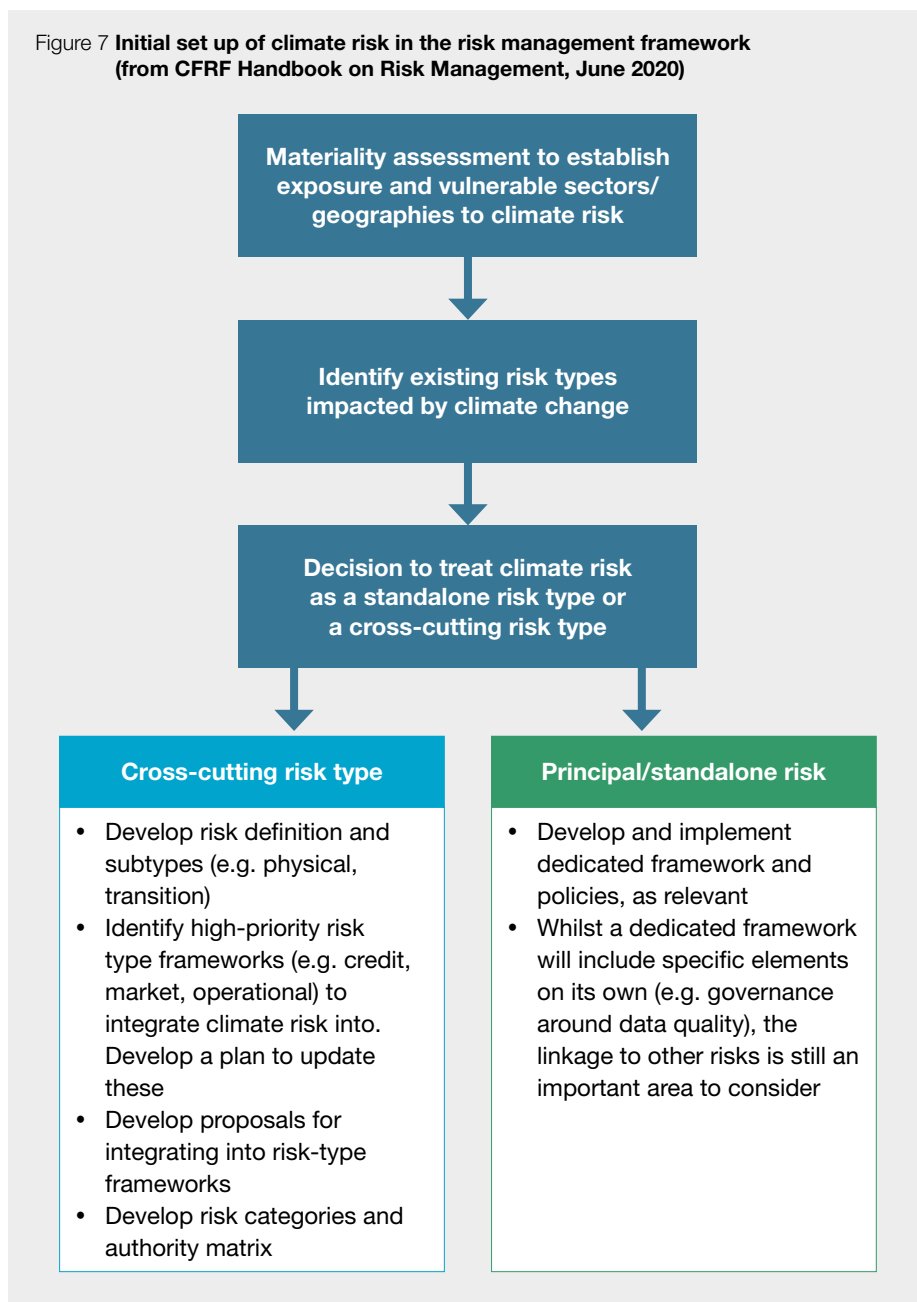
The analysis of climate risks needs to be able to inform strategy discussion and portfolio responses over different timescales, so that climate risk management information can be established and included in standard risk reporting (e.g. to governance committees and to management) and then through the appropriate governance (disclosure committee etc) before being disclosed to external stakeholders in line with recognised standards, such as the TCFD recommendations.

4.1.1 Risk Appetite

Expression of a risk appetite depends on how climate risk and sustainability risks are integrated into the firm’s risk management framework, either as a standalone risk, or as a cross-cutting risk type. In the latter case, climate risks may be integrated into the existing risk metrics framework potentially via the creation of sub-risks clearly aligned with climate risk. In the former case, the appetite may be expressed as a quantitative or qualitative statement of an acceptable stand-alone climate risk level underpinned by specific risk metrics.

An alternate approach could be to integrate climate risk into an overall sustainability, strategic or reputational risk appetite statement linked to a firm’s risk/return metrics and aligned with overarching goals or outcomes that the organisation aspires to.

Figure 7 Initial set up of climate risk in the risk management framework (from CRRF Handbook on Risk Management, June 2020)



In whichever way the risk appetite is expressed, it needs to address the time horizon to adequately operationalise the appetite in terms of management actions. Typically risk appetites are expressed over a 3 to 5 year time-horizon associated with achievement of a business plan or strategic plan. From a climate risk perspective the risk appetite should consider the impacts of climate change over longer time horizons, maybe over decades, with interim milestones, that will evolve as more knowledge is gained.

One option is to incorporate a long-term objective, or outcome, into the risk appetite, e.g. alignment with Paris Agreement goal to limit global warming to substantially below 2 degrees, or alignment with the UN Global Compact 1.5 degree commitment. This can help align risk appetite with “no-regrets” strategic decisions around portfolio adjustments that avoid exposure to asset revaluations, or exposure to underwriting risk exposures. It can also help manage the complex trade-offs that management are willing to take now, e.g. business model decisions to avoid



concentration of exposure in certain sectors and/or regions. This is already common in many P&C insurers, for example, in their thermal coal positions.

This aspect of climate risk appetite needs to be translated into risk limits and thresholds that can be implemented and operationalized in the business, for example by underwriters or asset managers. In each example the front-line risk takers will need to assess, through metrics or thresholds (such as carbon intensity, or revenue derived from certain

carbon-intensive assets), whether or not to invest or underwrite. This can be further enhanced with an assessment of the investee company, or the client’s actions to mitigate their own exposure to climate risk (such as adherence to a transition pathway defined by science-based targets).

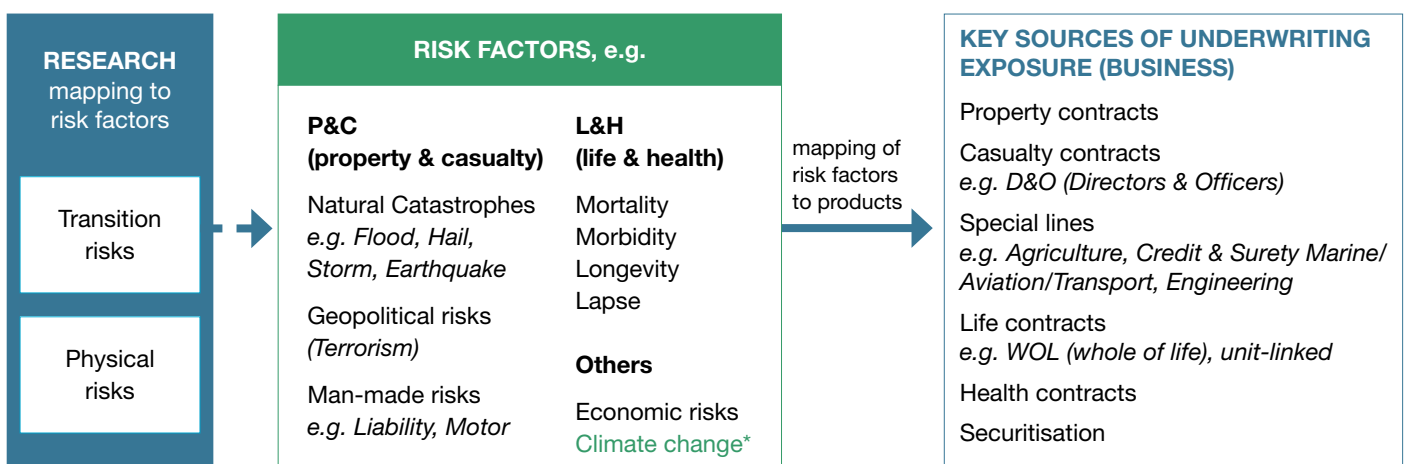
4.1.2 Management Actions

A well-designed and well-defined climate risk appetite will make the task of implementing and guiding management actions much easier. However, there are

still likely to be conflicts and trade-offs, especially regarding long-term objectives aligned with the Paris agreement goals and short-term profit maximising opportunities.

To illustrate how climate risk scenario analysis could help to answer questions such as whether: 1) adjustments to risk appetite are required; 2) new risk factors should be included in the risk reporting; and 3) what management actions could be taken to mitigate the risks identified see Appendix 1.

Figure 8 An Example of Risk Factor Mapping



*may be included depending on the chosen model approach

Case Study: Carbon footprinting of underwriting portfolios

An evolution of climate-related risk metrics for the financial services sector is currently underway, driven in part by the requirements of the TCFD framework, but also increasingly by regulators starting to mandate disclosure of climate-related risks. Alongside this, despite prevailing

caveats and shortcomings, there is a strong demand for disclosure of carbon emissions. Carbon footprinting methodologies for insurers' underwriting portfolios is one place to start, a foundational step to identifying carbon intensity hotspots (using a weighted average intensity measure

of CO₂e emissions - WACI) where this data is available or of sufficient quality. Figure 9, describes the WACI formula below using gross written premiums. The comparison of WACI methodologies based on metrics other than gross written premium are summarised in table 1.

Figure 9

$$\sum_n^i \frac{\text{gross written premium of insurance transaction}(i)}{\text{total GWP volume of insurance portfolio}} * \frac{\text{insured's Scope 1 and Scope 2 GHG emissions } (i)}{\text{insured's \$M revenue } (i)}$$

In 2020 the CRO Forum published a paper on the topic “Carbon footprinting methodology for underwriting portfolios”, which summarised a range

of options, methodologies and barriers for the carbon footprinting of insurers' underwriting portfolios. The report seeks to help insurers understand the

challenges and eventually disclose the carbon intensity of their underwriting portfolios.

Table 1 Comparison of WACI methods

Proposed WACI method	Advantages/disadvantages	Data availability
Gross premium weighting	Probably the most consistent KPI Supply and demand impact on premium uncorrelated to emissions but leads to change in WACI Gross Premium only available on an overall basis, not per location/occupancy Insufficient quality for multi-peril/multi-location industrial business with different occupancies per location	Easily available Reasonably homogeneous application across (re-) insurers
Gross (vs. net) premium weighting	Includes components with substantial premium differences dependant on location not GHG emissions Premium also includes other deductions / commissions Before reinsurance “normalisations” might be necessary to avoid double counting	Similar data issues to GWP approach, but Net approach adds complication
Limit / sum insured / value / capacity weighting	No linear correlation to actual risk or premium Information consistent across industry, but many different limits, sums insured etc.	
Risk capital weighting	Even more heterogeneous across the industry and might change over time Makes limited sense on a granular level	Available (on policy level)

A particular challenge in this endeavour is double counting. An insurer would often both underwrite and invest in the same company. That company only has one set of emissions, so simplistically adding the investment and underwriting relationships would double-count the emissions. There is currently no accepted methodology that resolves this issue or which creates an aggregated carbon footprint at the organisational level, except for scope 1 and 2 emissions (i.e. insurer's own operations) alone. The other major challenge is that of data quality and availability.

The evolution of this approach is now being taken up by the UN-convened Net Zero Insurance Alliance (NZIA) and The Partnership for Carbon Accounting Financials (PCAF) working in partnership to develop the first global standard to measure and disclose insured greenhouse gas (GHG) emissions.

A global, standardised methodology to measure and disclose the GHG emissions of insurers' underwriting portfolios will give insurers deeper insight into the risk profile of their respective underwriting portfolios,

stimulate innovative approaches to decarbonisation, and create comparability for stakeholders. It will also help insurers understand the climate impact of their underwriting decisions, laying the foundation to decarbonise their portfolios through target setting, scenario analysis, strategy development, and individually taking concrete actions that have real-world impact through emissions reduction in the real economy.

4.2 Case study: Financial inclusion

“Achieving financial inclusion is not an end in itself. It’s the means to an end.”

Queen Máxima of the Netherlands/
UNSGSA (2016)⁴

As noted by the Principles for Sustainable Insurance (PSI), “the insurance industry has the responsibility of providing quality and reliable products and services”, and ‘Financial Inclusion’ involves ensuring that these products and services are accessible, affordable, understandable and suitable for all segments of the population. To varying degrees, the principle of financial inclusion can often be found embedded within several aspects of an insurer’s current and future business strategy.

4.2.1 What is ‘financial inclusion’?

Financial inclusion seeks to promote greater access for all segments of society, from individuals and families to businesses with limited resources and, of specific relevance for an insurer, to reduce the protection gap (the difference between insured losses and economic losses, or uninsured losses). The principle of financial inclusion can be considered a combination of two factors: good financial decision-making (the ‘demand side’ of the equation) and easy access to suitable products and services (the ‘supply side’). In practice, it simply means individuals and businesses having **greater access to useful and affordable** financial products and services that meet their needs – transactions, payments, savings, credit and insurance – **delivered in a responsible manner** for the long-term. The characteristics of individuals (and small businesses) can contribute to financial exclusion and make it harder to create personal financial resilience. For example, the traits of vulnerability such as poor health, lack of savings or the legacy of negative life events can be either permanent or temporary, where individuals experience difficulties at specific times in their lives. Other

examples of ‘customer-led’ blockers to financial inclusion (influencing the ‘demand-side’) include, but are not limited to:

- Inadequate education
- No valid identification
- No fixed abode (homelessness)
- Geographic challenges (remoteness)
- Financial products too expensive
- No credit history
- Poor health

Closely associated with financial inclusion is the concept of ‘financial capability’ which considers consumers’ ability to use, and maximise their use of, products and services made available by the financial services industry. Certain segments of society can unintentionally ‘financially exclude’ themselves through an inability, difficulty or reluctance to access mainstream financial services.

By understanding the ‘demand side’ challenges that create ‘financial exclusion’, financial services firms, including insurers, can start to develop ‘supply side’ solutions through the provision of services and products. These can then be targeted at three broad ‘financially excluded’ segments of society:

Unserved: including those with no basic bank accounts, who are reliant on a cash economy or who have no (or restricted) access to financial services

Under-served: including the poor, women (in developing countries), youth, the less educated and people living in remote rural areas

Vulnerable: including elderly people, migrants, and displaced persons

Extending product offerings to a wider consumer base could help insurers unlock business growth potential and increase profitability (the commercial goal), whilst also generating wider societal benefits by making products accessible and affordable to everyone, and also reducing the protection gap. This can create positive reputational benefits for the company that can help further attract new customers



and increase customer retention and persistency; though a key strategic consideration is the trade-off between acting for the good of society and generating an acceptable level of profitability and return. From the insurance sector's perspective, focusing on financial inclusion can also help to mitigate potential criticisms of the industry and the associated reputational risk whereby some insurance products are perceived as a non-essential item aimed at the more educated and wealthier segment of society in developed countries.

The experience from the Covid-19 pandemic has highlighted the valuable role that insurers play in providing health and protection benefits to society. Whilst the governments in developed economies often adopted furlough schemes to provide financial stability to their populations, governments in developing economies have looked to the private sector, to varying degrees, to supplement their individual efforts, specifically the life and health insurers. To help mitigate customers' short-term financial concerns, the insurance sector responded by introducing varying degrees of product flexibility to enable customers to stay financially protected at a time of extreme uncertainty, examples of which included premium payment holidays, waiver of fees and offering premium reductions or refunds. The resulting increased societal

expectations that governments and customers place on financial services firms, particularly insurers, continues to increase the focus on the topic of financial inclusion and expectation that "the insurance industry has the responsibility of providing quality and reliable products and services" to all segments of society.

4.2.2 Key attributes of a 'financial inclusion' strategy

A business strategy founded on financial inclusion needs to ensure that financial services and products are accessible, affordable, understandable and suitable for the consumer. By recognising these four elements, insurers can then start to consider how the risks associated with pursuing such a strategy 'cut across' the existing risk types within an insurer's risk management framework, highlighting the inter-connectedness of sustainability risk topics.

Accessible: Financial access facilitates day-to-day living and helps families and businesses plan for everything from long-term goals to unexpected emergencies. 'Effective access' involves convenient and responsible delivery of services that are responsive to the needs of financially excluded and underserved customers, at a cost affordable to both customers and providers. Proof of effective access is usage – the fact that a customer can access services offered by a formal financial service provider

does not mean she or he is "financially included."

Affordable: Financial products and services need to be provided at a cost that is affordable to both customers and providers. From the provider's perspective, products need to be priced appropriately to maximise their attractiveness to the wider potential customer base, whilst remaining commercially profitable and viable for the insurer. The other side of affordability is from the customer's perspective. Whilst the customer bears some responsibility for ensuring they can afford the products, the provider's distribution channels should also have adequate processes to ensure that the customer can afford their products (i.e. income versus expenditure assessments, or credit scores).

Understandable: Financial information should be presented so that a reader can easily comprehend it. Customers need to understand the products and services they are purchasing to ensure they are suitable for their needs. This can also be thought of as the demand-side of suitability whereby consumers seek to ensure they are able to make good financial decisions and look to financial services providers to help with their 'financial education'.

Suitable: On the supply-side, financial services providers are also obliged to ensure that the products they are selling to customers are appropriate and suitable for their needs. Suitability can be influenced by affordability and understandability and considering both can help the customer determine the cost versus benefit of insurance products, and hence the suitability of those products for themselves.

4.2.3 Integrating financial inclusion into the risk management framework

The starting point for evaluating a strategy of financial inclusion is identifying the key stakeholders who benefit – the unserved, the under-served and the vulnerable – and developing an understanding of how a business can



create value from servicing them (the commercial proposition).

Strategy setting & sustainability risk appetite

A strategy of financial inclusion for an insurer is likely to be clearly aligned with the ‘purpose’ of the business to ‘support customers in their times of need’. It could therefore be considered output oriented which means its success, or otherwise, can be assessed from the impact it has on the targeted beneficiaries and other stakeholders. Whilst metrics and hence targets can be generated to measure customer engagement and interaction, a qualitative, stakeholder-focused risk appetite statement highlighting the targeted positive objectives and/or the desire to avoid any potential unintended consequences is equally appropriate for financial inclusion. This could potentially be incorporated into an existing, stakeholder-focused non-financial risk appetite statement. Individual firms need to define their risk appetite to reflect their own level of ambition towards a strategy of financial inclusion, which will be informed by considerations like its targeted growth market segments, externalities like government policy changes and balancing any potential trade-off between broader societal benefits and corporate profitability.

As highlighted for the climate change case study, referencing credible, recognised external frameworks, such as the SDGs, can help insurers link their business strategy to their purpose and then explain how the topic of ‘financial inclusion’ (i.e. making insurance products and services available to all) is embedded within that. While the SDGs do not explicitly target financial inclusion, greater access to financial services is a key enabler for many of them. Examples of how insurers can think about linking their strategy to the SDGs include:

 <p>1 NO POVERTY</p>	<p>Prevent people falling into poverty by mitigating risks of unexpected expenses. Provide appropriate and affordable insurance products and services to all segments of the population.</p>
 <p>2 ZERO HUNGER</p>	<p>Expand access to credit and insurance helps farmers making bigger investment, increasing their production to bolster greater food security.</p>
 <p>3 GOOD HEALTH AND WELL-BEING</p>	<p>Manage medical expenses, including financial risk protection, and rebound from a health crisis to ensure healthy lives and promote well-being for all at all ages.</p>
 <p>5 GENDER EQUALITY</p>	<p>Undertake reforms to give women equal rights to economic resources, as well as ownership and control over financial assets and services.</p>
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p>Provide access to financial services to allow people protect and grow capital, leading to sustainable economic growth, productive employment, and hence decent work prospects.</p>
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p>Foster innovation and facilitate the access and usage of financial services, including affordable credit.</p>
 <p>10 REDUCED INEQUALITIES</p>	<p>Help people to absorb shocks (e.g. insurance). Make financial products and services available to the under-served, more remote or lower income parts of the population.</p>



Governance & roles

The areas of activity to operationalise a strategy of financial inclusion, such as new product development and distribution digitalisation programs, will likely already have established governance committee structures, with clearly defined roles. The oversight responsibilities of these committees could be extended to consider the risks identified as linked to financial inclusion, specifically from the perspective of the three financially excluded segments of the population – the **unserved**, **underserved** and **vulnerable**.

The product governance policy, product development and product approval processes can be expanded to ensure consideration of financial inclusion is evidenced. Product design should reflect the company’s strategy and ambitions with regard to financial inclusion and consider opportunities to contribute towards it. The product approval process should include an assessment of the extent to which a new product considers financial inclusion. For example, does it specifically target any of the excluded segments of the population and/or is it aligned with the company’s business strategy. For each new product, the target market should be clearly identified in order to ensure its suitability, and that its distribution approach provides adequate accessibility for the identified target market (e.g. digital distribution versus intermediary in-person channels).

Risk Identification & Assessment

Considering the four elements of financial inclusion – **accessibility**, **affordability**, **understandability** and **suitability** – when assessing the strategic business activities to help the three excluded categories of customer will help identify the risks associated with pursuing a strategy of financial inclusion. In doing so it is important to consider both the positive and potential

negative impacts; target customers who become financially included as well as those that may become newly or further financially excluded. Whilst the intent may be to increase consumer awareness, understanding and access to insurance products and services, the approaches adopted to implementing this objective may unintentionally heighten risks, potentially creating unintended consequences. For example,

consideration should be given to the possibility that product design (e.g. restrictions and pricing) and choice of distribution channels may unintentionally further exclude certain segments of society and potentially contribute to increasing financial inequality. Further examples of how to consider the four elements underpinning financial inclusion include:

Strategic focus	Intended outcome(s)	Unintended consequence(s)
<p>Accessibility: Innovate distribution channels to reach more customers at lower cost</p>	<p>Digitalised distribution can increase financial inclusion in a large scale, low cost way, targeting the ‘tech-savvy’ (youth) and reducing the cost of products for the poor.</p>	<p>Those not ‘tech-savvy’ (elderly) who rely on traditional, in-person distribution channels via agents or branches, those not connected to the internet (remote locations) and those without access to the necessary tools can become increasingly excluded by a focus on digital distribution.</p> <p>Increased digitalisation gives insurers access to growing amounts of customer data, increasing the risks associated with data privacy and data ethics.</p> <p>It can also introduce new elements of conduct risk which may, for example, place increased scrutiny on the appropriateness and complexity of financial products being offered to the less educated segments of society.</p>
<p>Affordability: Lower costs of insurance products/services; commercially viable from the benefits of scale afforded by digitalisation</p>	<p>People on low incomes with long-term health conditions can often find saving extremely hard which affects their resilience to financial emergencies. They can therefore become ‘priced out’ of the insurance services (medical) they need. Inequalities can be reduced by enabling the poorer population to consider products that can help them absorb financial shocks (insurance).</p>	<p>These services will continue to remain out of reach of the ‘unserved’ who have no (or restricted) access to financial services, which may actually increase wealth inequality.</p> <p>Products and services need to be appropriately priced to ensure that the offerings are commercially viable and profitable in the long-term.</p>
<p>Understanding: Educate existing and prospective customers about products in simple language/terms</p>	<p>Providing educational programs that enhance digital and financial literacy will improve the financial capability of existing and prospective customers, and support customers in developing responsible behaviour.</p> <p>Appropriate training (“preventative controls”), either directly or via intermediaries, might form part of insurers’ risk mitigation efforts.</p>	<p>Whilst digital and financial literacy programs can assist the youth (more ‘tech-savvy’) and the less financially educated, those that are not digitally enabled and the ‘vulnerable’ (e.g. elderly) will continue to rely on traditional in-person meetings with agents and intermediaries.</p>
<p>Suitability: Customise offerings to raise relevance</p>	<p>Profiling customers to tailor products to meet their specific needs and circumstances enables customers to choose how to invest in themselves (health and education) and to mitigate the risk of unexpected expenses (insurance)</p>	<p>Increased screening for pre-existing health conditions such as diabetes and heart disease could progressively exclude the ‘vulnerable’ (elderly and long-term ill) who are most in need of medical insurance.</p>

The positive socio-economic impacts of a targeted financial inclusion strategy can potentially be reduced by these ‘unintended consequences’, which can often manifest as reputation risks and need to be considered in any risk assessment.

4.2.4 Key Risk Indicators, Risk Monitoring & Reporting

Both internal and external data sources should be leveraged to try to develop useful metrics that consider how strategic business decisions, including product design and distribution considerations, could impact the **unserved**, **under-served** and **vulnerable**. For example, internally, sales teams may be able to provide data on customer renewals which could form part of the monitoring metrics to track product **affordability**. Additionally, an insurer that

chooses to focus on improving financial literacy and product **understandability** as part of a financial inclusion strategy may be able to source supporting metrics from the digital teams related to customer website visits, article reads or downloads, and the usage of online tools. Other relevant internal data could include monitoring customers, both existing and prospective, with pre-existing medical conditions, such as cancer, diabetes or mental health conditions. These consumers can often have problems finding health or travel insurance that provides **suitable** cover appropriate to their needs and, as a result, can end up travelling without insurance cover, cancelling trips, or paying significantly more for policies than they need to. External data can supplement the internally sourced metrics, including the metrics reported

by firms in other financial services sectors or other industries with a link to financial services. For example, in developing countries, a bank account is often the first step in acquiring an insurance product and opening a bank account is often directly linked to a telecoms operator. Using the relevant data reported by these types of company could help identify pockets of unserved customers with **accessibility** challenges.

Thinking in terms of the **accessibility**, **affordability**, **understandability** and **suitability** factors of financial inclusion to dissect the insurer’s business strategy can help determine the appropriate metrics to support monitoring and reporting on the success, or otherwise, of the component parts of the strategy implementation.

Case Study: Flood Re

Flood Re is a reinsurance company within the UK insurance sector, which enables insurance companies to insure themselves against losses due to flooding. Unlike other reinsurance companies it is a not-for-profit fund, owned and managed by the insurance industry. Flood Re’s aim is to promote the availability and affordability of flood insurance to those who own and live in properties in flood risk areas. Establishing it required UK government legislation and it was the first scheme of its kind anywhere in the world. Customers still buy their insurance from insurers or insurance brokers in the usual way, they will not deal directly with Flood Re. When the cost of flood risk cover exceeds a certain level, it may make sense for the insurer to place that part of the policy with Flood Re. In the case of a customer making a claim because of a flood they will have their claim managed and repair works completed by their insurer in the usual way, but that insurer will then be able to recover those costs from Flood Re.

The insurance industry itself paid the set-up costs (over £20 million) of Flood Re, and many millions more have been spent by individual companies preparing their own systems. The pool of money to cover claims made on

policies in the scheme has two sources – the charge for each policy which is passed into Flood Re, and an additional annual £180 million levy on UK home insurers. Flood Re also has its own reinsurance policy in place to ensure it can cope with significant or multiple flood events. It is expected around 350,000 properties meet the eligibility criteria and benefit from Flood Re over time, although there is no cap. This figure represents about 2% of eligible UK households. The decision about which properties are passed on is financially-driven; if a property can get a better price for flood insurance outside of Flood Re there will be no need to use it. Only when the cost of covering the flood risk becomes more expensive than the cover offered by Flood Re will it make sense to pass that part of the policy on.

Flood Re enables insurers to extend their flood risk insurance coverage to customers who may ordinarily be excluded on the grounds of affordability, from the prospect of unaffordable high premiums for the customer (demand-side) and/or a potentially unprofitable line of business for the insurer (supply side).



5 Challenges

In seeking to make the guidelines in this paper as practical as possible, inevitably difficulties and challenges emerge. Many of these challenges and associated constraints are familiar to risk professionals, who must regularly work with imperfect data and use judgement in the absence of full information.

The range of challenges and constraints encountered in this area is wide: data, time horizon, granularity, models, scenario identification, resources and capability, integration of scenario analysis into decision making, interpretation of outputs, communication of outputs and their role in driving the right decisions, informing strategy and facilitating effective stakeholder engagement.

Accepting that the pursuit of perfect data is endless, a useful step forward is identifying what data would truly be useful – and why – so that efforts to source this data are effectively spent. Similarly, identifying what expertise is needed and what options are available to provide that expertise (e.g. in-house vs external, central or decentralized) will accelerate decision-making around how to deal with data gaps and related uncertainties.

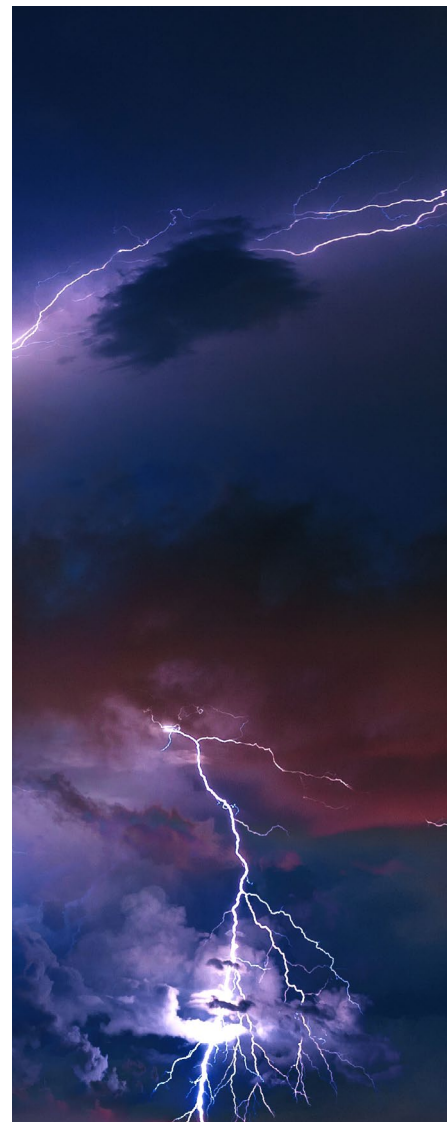
Data-related challenges affect many areas of the business, from investments (e.g. the ability to identify ‘green’ opportunities), finance (the ability to comply with ever-evolving and increasing reporting and disclosure requirements) to underwriting, pricing and capital management (i.e. core insurance data needs for computation of liabilities and calibration of capital requirements).

Making progress with data will in turn facilitate development and more robust implementation of sustainability risk metrics, to deliver the risk management framework in a quantitative way. Although the limitations of metrics due to data quality, availability and consistency constraints are fully recognised, progress can be made by deciding how to use those metrics now – to ‘plug in’ what is available and take a strategic approach to address the residual gaps.

Some of those residual gaps and challenges will arise from trying to align competing forces – for example, the long-term horizon over which climate change will (continue to) manifest and the shorter-term business horizon. Or in the recognition that there may be competing business objectives and stakeholder expectations, so reaching consensus at Board and senior management level may be challenging given the trade-offs needed – e.g. if or how to align risk appetite across the investment and underwriting portfolios.

Not only are there limitations associated with identifying and managing sustainability risks that are material to the organisation today, “dynamic materiality” means that an eye must remain trained on the horizon, to identify those sustainability risks that may not be material today but become so, with potential corresponding implications for the business strategy and objectives.

Given the particular nature of sustainability risks and the external factors that are driving demands for both private and public sectors to consider sustainability in all decision-making, the wider role and purpose of the insurance sector has never been



more critical. The need to embrace a “corporate citizenship”, or stewardship, role with respect to investee companies, the selection of customers and wider stakeholder groups has risen up the senior management agenda. This sits alongside the public policy and advocacy role, influencing the legislative agenda and the regulatory direction of travel – to promote public policies that would be conducive to increasing the insurance sector’s capacity to carry and address the sustainability risks of wider society – whilst proactively engaging customers, policyholders and suppliers with respect to their own sustainability objectives. Maintaining a well-informed watching brief on the full policy, regulatory, technological and societal landscape imposes further demands on scarce resources.

6 Conclusion

The direction of travel is clear, accelerated by global developments and increasing attention from a wide range of stakeholders (including regulators, investors and customers). Given insurers' unique role within the global economy, the insurance sector and its risk professionals must now consider how existing risk management practices could accommodate the evolving universe of material sustainability risks – not only those affecting their organisation but also what drives their organisation's impact on the external environment. Just as insurance risk professionals ensure that more traditional risks are being appropriately identified, managed, monitored, measured and reported, so too should sustainability risks be considered – despite the challenges outlined above.

In short, CROs and their colleagues should consider whether the

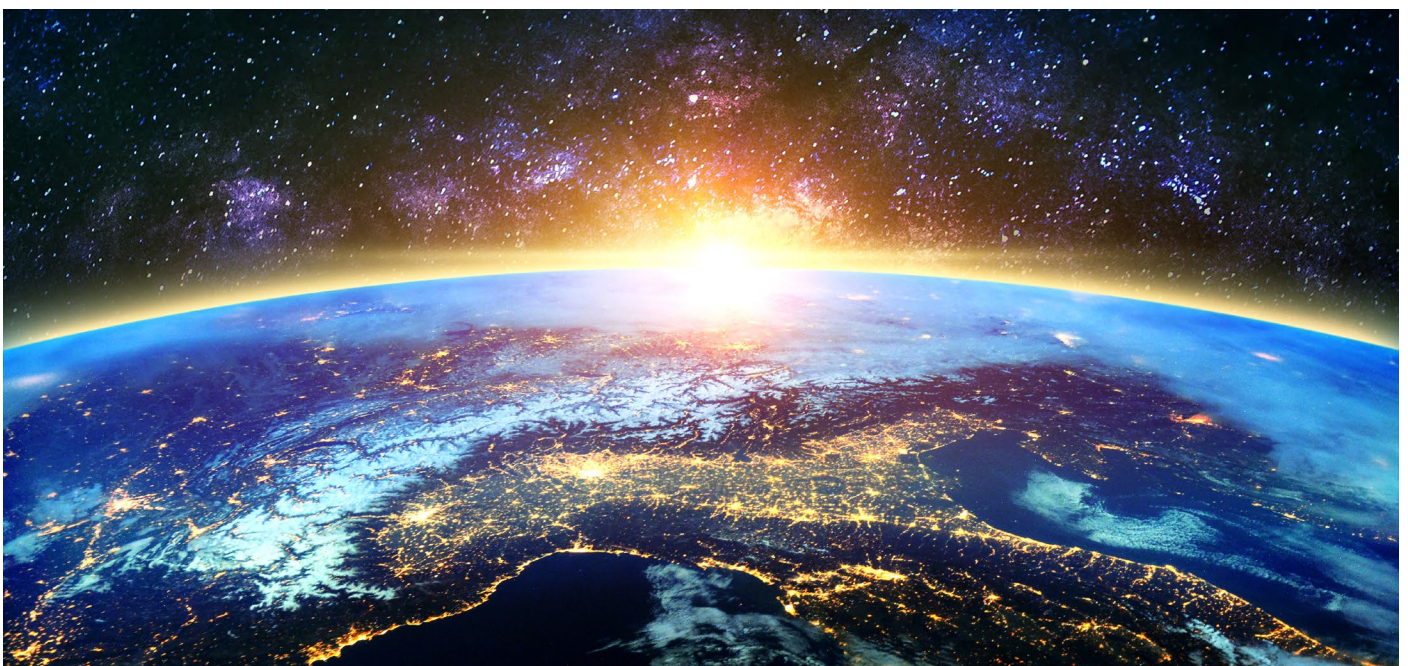
sustainability risks affecting their organisation are understood, whether sufficient measures are in place to mitigate these risks and whether any associated limitations are understood.

A robust understanding of the risks would imply that the implications for the insurer's strategy and business model are also well understood, whilst recognising that there are many different potential pathways that environmental, social and governance issues and other political and technological developments could follow over a range of different time horizons. Strong engagement with the underlying assumptions of the central, realistic and tail scenarios of well-integrated scenario analysis will support this understanding and facilitate a full intersection between risk management activity and strategy definition.

Given the current limitations of sustainability risk metrics and the

corresponding difficulty of imposing hard limits as part of a quantitative risk appetite, insurers should focus on those areas where they do have control. Qualitative rules could be defined to drive the business in the right direction, increasing stakeholders' confidence that what can be done is being done, while more sophistication is being developed in parallel.

By enabling robust identification and measurement of these risks, confidence will grow, both in the insurer's ability to disclose these risks (and opportunities) and in the credibility of those disclosures. Robust disclosure in turn leads to a wider appreciation of the risks being borne and should trigger action at all levels of society – ultimately supporting the longer-term sustainability not just of the insurance sector but of the wider financial system and indeed the planet.



Appendix 1

Climate Change Scenario Analysis

In April 2021 the European Insurance and Occupational Pensions Authority (EIOPA) issued an Opinion on the supervision of the use of climate change scenarios in the Own Risk and Solvency Assessment (ORSA). In this document EIOPA set out expectations on the supervision of the integration of climate change risk scenarios by insurers in their ORSA. EIOPA considers it essential to foster a forward-looking management of climate-related risks to ensure the long-term solvency and viability of the industry.

As stated in the Opinion, insurers need to integrate climate change risks in their system of governance, risk-management system and ORSA. In the ORSA, insurers should do an assessment to identify material climate change risk exposures and subject the material exposures to a risk assessment.

Climate change risks should be assessed not only in the short term but also in the long-term using scenario analysis to inform the strategic planning and business strategy.

Insurers should subject material climate change risks to at least two long-term climate scenarios, where appropriate:

- a climate change risk scenario where the global temperature increase remains below 2°C, preferably no more than 1.5°C, in line with the EU commitments; and
- a climate change risk scenario where the global temperature increase exceeds 2°C.

The Opinion follows a risk-based approach, recognising that methodologies are still developing, and insurers need to gain experience. Insurers are expected to evolve the sophistication of the scenario analyses, taking into account the size, nature and complexity of their climate change risk exposures.

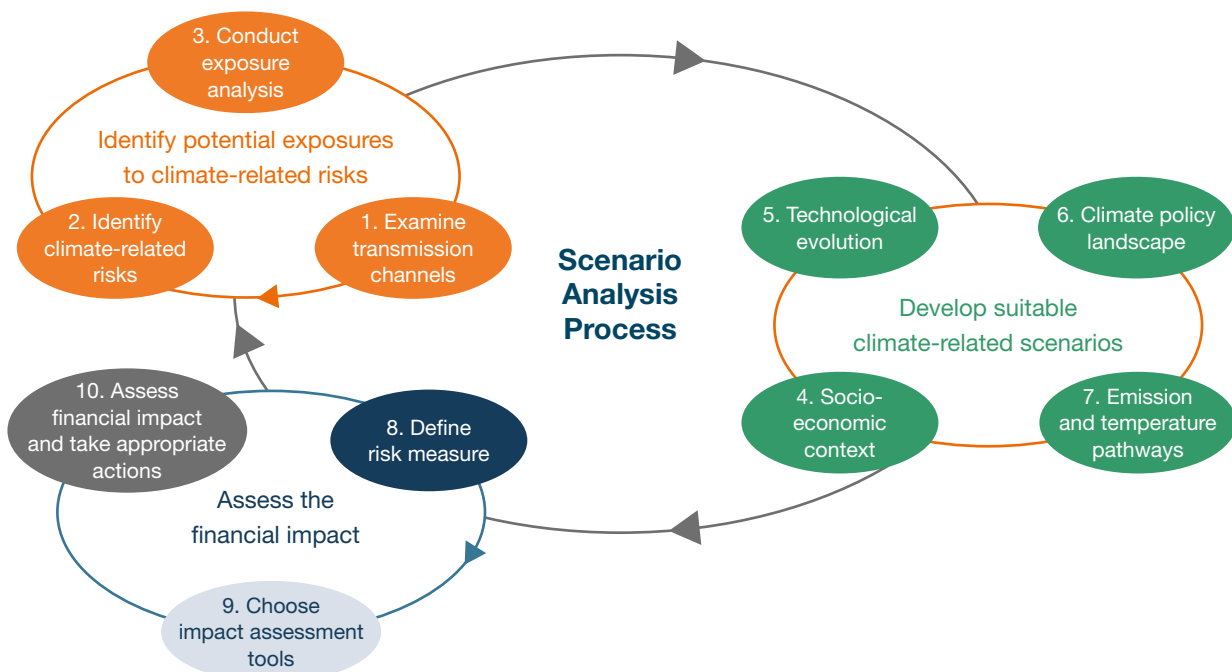
EIOPA will start monitoring the application of this Opinion by the national supervisory authorities two years after its publication (i.e. from 2023).

Guidance for the financial sector on how to proceed with quantification

using climate scenarios is provided as part of the TCFD recommendations and the Network for Greening the Financial System framework. In addition, the Climate Financial Risk Forum (an initiative by the Prudential Regulation Authority and Financial Conduct Authority in the UK) published dedicated chapters on scenario analysis.

The PRA/FCA Climate Financial Risk Forum Scenario Analysis guides focus on the types of question that can be answered using scenario analysis and how firms can identify their potential exposures to climate-related financial risks and develop suitable climate-related scenarios, taking into account their exposures. The document also deals with how firms can assess the financial impact of those scenarios on their business and highlights the key challenges and barriers of this methodology.

The end-to-end climate scenario analysis process described in the guides is iterative and illustrated as follows:



The first step is to identify potential exposures. The results of this can then inform the scenario development process. The final stage is to assess the financial impacts of these scenarios. Insights gained from that financial impact analysis should in turn feed back into the refinement and identification of new risks and potential exposures, which will then inform the development of scenarios as well as supporting identification of potential new scenarios to be analysed.

The guide developed a practical 3-stage approach to help firms to get started quickly with their implementation of climate scenario analysis:

1. Identify the objective of the scenario analysis and resources needed/ budget available. Define how climate change impacts firm's specific exposure.
2. Identify the type of scenarios and risk metrics to be considered given

the firm's objectives and exposure as well as data and tools to be used to conduct the scenario analysis.

3. Define how impacts should be translated into financial metrics used in decision-making and define the actions to be taken.

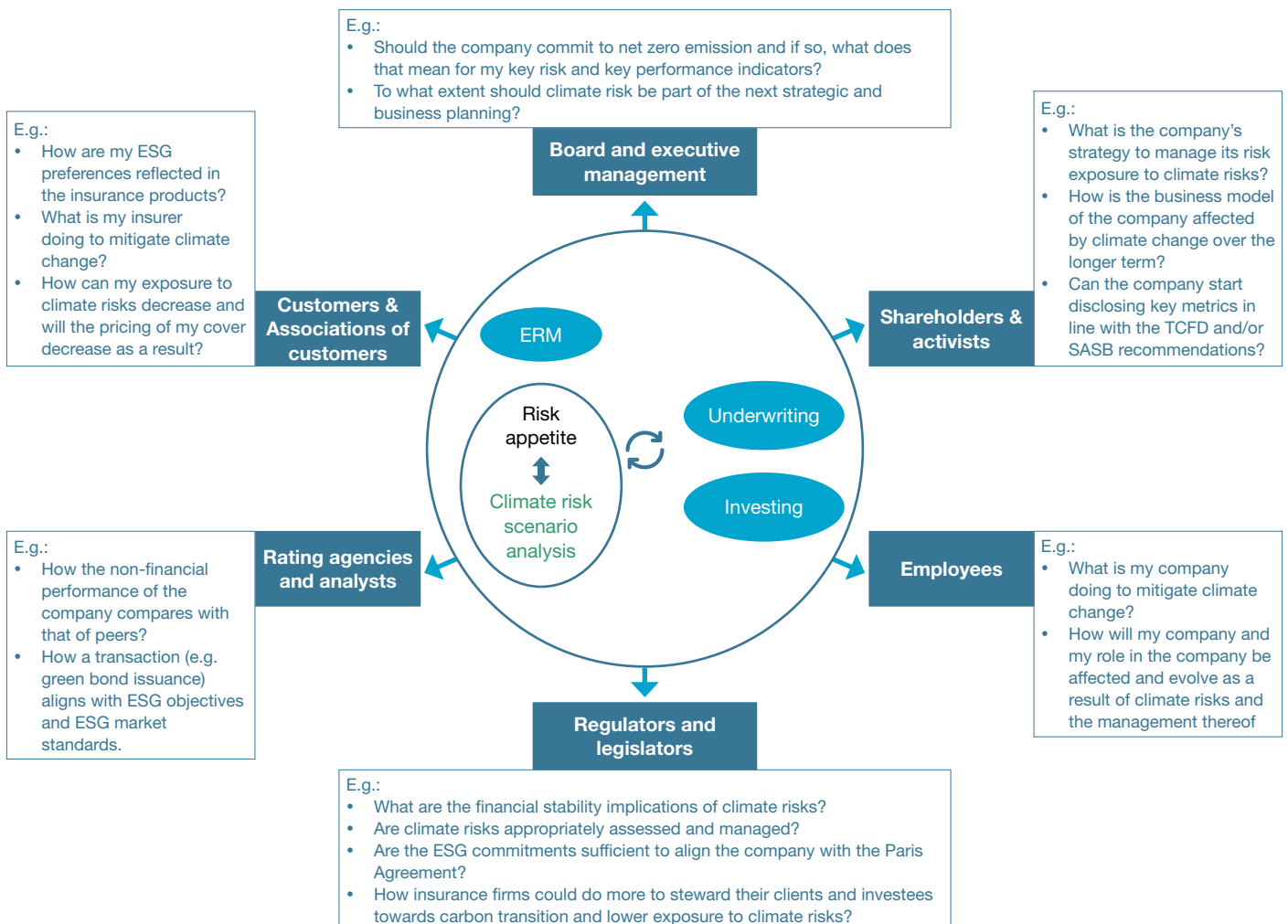
In general, it is recommended that a range of scenarios are explored, including a scenario aligned with a 2°C or lower warming path (i.e. limitation of global temperatures to 2°C or lower) which may be met in an orderly or disorderly fashion. Several public scenarios exist, including those developed as part of the assessments of climate change from the Intergovernmental Panel on Climate Change (IPCC) and from the International Energy Agency (IEA). They are widely used for scenario analysis and scenarios adapted for the financial sector are often based on these. For

the insurance industry, the challenge is to link the assumptions made by these scenarios to impacts specific to the business (e.g. on claims, solvency and profitability). Those scenarios may not be adapted to the specifics of the insurance business and bespoke in-house scenarios may provide a better alternative depending on the needs and goals. Beyond the narrative, scenarios can either take the form of shocks (sudden onset, shock events that occur quickly or unexpectedly) or trends (slow-onset, trend phenomena that emerge gradually over time).

Role and purpose of climate risk scenario analysis in the management of climate risks

Climate risk scenario analysis can play a positive role in encouraging exchange and discussion between the risk management function and other functions across the organisation.

Figure 10 Climate risk scenario analysis is a go-to tool to address the concerns of stakeholders



Understanding the responsiveness of insurance covers’ terms and conditions and of investments’ market value to climate risks is critical to inform any update of the risk appetite framework in the face of climate change. Conversely, adapting the risk appetite framework to climate risks will spill over into the underwriting and investment strategies, policies and guidelines. This would have capital and profitability implications. The purpose of climate risk scenario analysis is ultimately to put the risk management function in a position to inform the various stakeholders of the business of the potential outcomes related to climate risks and how these outcomes might be mitigated. Those stakeholders include the internal governance (Board and executive management), shareholders, customers, employees, regulators, and legislators.

How insurers manage climate risks – both physical risks and those associated with the energy transition – and how they assume responsibility for their impacts will not only be a compliance exercise to abide by disclosure laws and regulations. Climate risks are already raising strategic questions, for example, relating to the support of climate-sensitive sectors, the management of client relationships, the maintenance of good ratings and public perception (for example, affecting talent recruitment and retention).

Climate risk scenario analysis is increasingly becoming a standard to

provide informed insight into such strategic questions. However, the type of scenario analysis conducted would likely need to be adapted to respond to the various interests and concerns of the different stakeholders concerned (see figure 10 on the previous page).

The confusion of horizons

In his landmark speech on the “Tragedy of the horizon” in 2015, the Bank of England’s Governor at the time, Mark Carney, emphasized that addressing the long-term horizon of climate change would require the financial sector to ward off short-termism and instead become forward-looking.

To describe the impacts of climate change, the time horizon of the IPCC extends to 2100. The time horizon of current policy actions to limit greenhouse gas emissions in line with the Paris Agreement, is 2050. In contrast, the strategic horizon of insurance companies, upon which business planning is based, is typically a maximum of 3-5 years.

An important question to consider is whether the time horizon adopted for the quantification of an insurer’s climate risks should align with the longer-term view taken by climate science and transition policy that cover the next 30 to 80 years.

There are several aspects worth considering in order to resolve the

conflict between the long-term horizon of climate change and the uncertainty that goes with any attempt to model its impacts for insurers (see figure 11):

- **Objective** of the climate risk analysis: longer horizons are often better suited to raise awareness or test the limit of assumptions and modelling capabilities. Decision-useful results tend to require a high level of reliability and an ability to quantify the uncertainty, which often mean a time horizon based on strategic planning.
- **Risks** being assessed via the scenario analysis: physical risks are felt today but their most extreme manifestations will unfold over many decades in the absence of strong mitigation actions. In comparison, transition risks are more likely to unfold over the short to medium term.
- **Time** needed to take mitigation actions: the characteristics of the risk profile and the terms and conditions of insurance products are paramount to understand better when actions might be timely and when it might be too late. The time needed to change the clauses in a portfolio of insurance contracts and to renew the entire stock can be a long process and may face legal or competition hurdles. The duration of the bond portfolio on the asset side is another example of what should be considered when envisioning any adjustment to the allocation. On the other hand, P&C covers renew annually, thus allowing

Figure 11 Potential considerations to navigate the question of horizons



incremental changes over time, and there are risk mitigation techniques such as reinsurance purchase which are actionable in the short term.

- The **articulation** between quantitative and qualitative assessment: the importance of the role of qualitative assessment, as outlined in a February 2021 Geneva Association paper¹⁸, cannot be overstated. Not only is a qualitative assessment a necessary first step before carrying out a quantitative analysis, it can also consider the implications of longer time horizons on the business where quantification may be misleading. The June 2020 PSI report¹⁹ proposes tools to perform qualitative assessment such as a heat map, impact pathways and the identification of key impact drivers.

In summary, the business horizon of most insurers does not align with the policy-making or scientific time horizon and it is likely to be appropriate in many

instances to choose a shorter time period rather than a longer one to test assumptions. Climate risk analysis can be a significant investment of time and resources, the aim of which should be to derive actionable conclusions and recommendations – something which cannot be achieved if the uncertainty in the assumptions and the results is too high. However, long-term scenarios should also be considered and explored, e.g. to meet supervisory expectations of insurers avoiding a disorderly transition pathway.

The dos and don'ts of climate risk scenario analysis

While there is no rigid or universal template by which to perform scenario analyses, some hints and tips are suggested below.

From “What-if” to “So what?”, the takeaways of doing climate risks scenario analysis

Climate risk scenario analysis is based on a set of “what-if” assumptions. This raises the question as to what follow-up actions can be taken from the conclusions of this sort of exercise. First is an understanding of the main limitation of scenario analysis: whether the “what-if” assumptions are plausible is based on expert judgment, which can be disputed endlessly. This is different to probabilistic modelling where the probability of occurrence / confidence level/return period can be quantified. Enabling follow-up actions, in absence of quantification of the “plausibility” of the studies, requires achieving a shared assessment and reaching shared conclusions beyond the risk management function. This underlines the value of involving internal stakeholders at each step of the process, and most notably during the assumptions setting phase.

Do	Don't
<ol style="list-style-type: none"> 1. Determine the objectives and the intended audience of the climate scenario analysis upfront. The time horizon and narrative of the scenario will follow. 2. Plan ahead, for example over one or multiple years, to allow for ambition in the ultimate objectives while starting with realistic milestones. 3. Align the objectives of the scenario analyses as much as possible with public disclosure requirements. 4. Value qualitative assessment as an insightful step to understand how climate change is affecting the business (double materiality) and a prerequisite to design the narrative of the scenario analysis. Qualitative assessment may include a heat map, impact pathways, and identification of key impact drivers. 5. A literature review is an effective way to kickstart a qualitative assessment and to enable any future quantitative assessment. Both scientific and economic literature are relevant to combine weather-related parameters with financial variables and socio-economic pathways in an appropriate mix to test the responsiveness of the insurance business and investment portfolios. 6. Share the knowledge and know-how across business units and functions through, for example, ad hoc presentation or publications, training sessions (incl. of Board members), newsletter, townhall. 	<ol style="list-style-type: none"> 1. Wait any longer before starting analysing the climate risks to which the business may be exposed. 2. Allow scenario analysis capabilities to be built in silos. Having a holistic view on both sides of the balance sheet and across climate risks and lines of business is the ultimate goal. Resources and capabilities do not have to be centralised provided they can be pooled. This means involving internal stakeholders beyond the Risk function (from business units, investments, finance, treasury, corporate responsibility, etc.). 3. Think that a dynamic approach is necessarily better than a static approach. Applying an instantaneous shock (calibrated over the chosen horizon) to the balance sheet may provide more interpretable results than a projection of the balance sheet. Moreover, modelling future management actions may be biased as the future is known by design (when setting the assumptions). 4. Think that you are not equipped to start modelling climate risks. Already available asset valuation tools, probabilistic CAT loss modelling techniques and life actuarial techniques are all that is needed to start testing scenarios. Forward-looking adjustments of the assumptions and parametrisation of the models will inevitably be based on expert judgment.

Second is the realisation that climate risks are not necessarily standalone risks but rather factors which accentuate pre-existing risks. Tropical cyclones, wildfires and flood are instances of physical risks that are already insured and managed. Market risks, litigation risks and policy risks are also instances of transition risks that are already managed. As a result, many of the existing risk monitoring and risk reporting processes can be used to convey the conclusions of the studies. In fact, using existing risk management tools is good practice to ensure climate risks are integrated in a consistent manner in the risk landscape of the company.

Three possible questions that climate risk scenario analysis could help to answer are: 1) whether adjustments to

risk appetite are required; 2) whether new risk factors should be included in the risk reporting; and 3) whether and what management actions could be taken to mitigate the risks identified.

- With respect to the **risk appetite**, the focus may be on setting processes, monitoring tools, risk tolerances and limits with respect to the exposures to carbon-intensive sectors and/or exposures to real assets and supply chains materially vulnerable to physical risks.
- With respect to **risk reporting**, climate risks scenario analysis can help identify and derive risk metrics to be reported in regular risk dashboards, or the ORSA. Inclusion in risk dashboards and the ORSA may be a longer-term endeavour although the ORSA could already document

the processes in place to identify, measure, manage and monitor climate risks and, where relevant, why they are not considered material.

- With respect to **management actions**, when robust and focused risk metrics have been derived, for instance on carbon-intensive exposures, it may be insightful to engage a discussion with internal stakeholders on the range of management actions available to mitigate the risks (e.g. introduction of sustainable investment and underwriting strategies, adequacy of traditional risk mitigation techniques, adequacy of NAT CAT (natural catastrophe) pricing, underwriting strategy for key markets and reinsurance purchases).

Case Study: Example of climate impact study

The desire to robustly operationalise the management of climate risks was the motivation behind a member firm's decision to conduct a major climate study starting in 2020.²⁰

In the first phase of the study the company assessed the gross loss impacts of global warming on key natural perils for property and agriculture lines over a 5-10-year time horizon. The focus was on physical risks and comprised the following four steps:

1. Derive an **internal view on the latest climate science** by undertaking an extensive scientific literature review with over 1000 papers reviewed by 15 scientific experts in the modelling team covering drought, wildfires, floods, hurricanes, extratropical cyclones and tornado/hail. This stage involved hundreds of meetings, including deep technical dives with model vendors and sessions with world leading academics.
2. **Scenario Design.** A set of approximately 20 scenarios were designed reflecting an internal view of the key signals affecting extreme events, of importance to society, the industry and the company. Scenarios targeted important aspects of extreme events: sea-levels, wildfire burnt area, rainfall from tropical storms, frequency of intense hurricanes and typhoons, frequency and intensity of European windstorms, migration of storm tracks, flooded area and frequency of river flood discharge, all based on a 5-10-year future time horizon.
3. Implementing the scenarios and **computing gross impact** of the scenarios on the global portfolio of property CAT and agricultural risks. The proprietary nature of most vendor models means that the simulation

catalogues are fixed based on current climate conditions and with no opportunity to test alternative parameterisations. Further, as a global reinsurer, rerunning analysis for hundreds of cedants with many millions of locations is impractical and logistically challenging. Instead the company designed algorithms that disrupted its event catalogues toward targeted scenario parameters more representative of a warmer climate and automated the application of these impacts across the database of modelled loss results, before finally reapplying contract terms and conditions.

4. The final stage in Phase 1 involved **communicating results** to the wide array of interested stakeholders. In addition to the senior management and various risk committees, the findings were also actively shared with the underwriting teams and clients.

Phase 2 involves an assessment of the commercial implications of Phase 1 findings on the outlook for catastrophe risk pricing, risk appetite and tolerance setting.

New extreme events and attribution studies are expected to prompt new scientific literature to review, with the integration of a growing understanding of climate change into internal processes becoming business as usual.

The report also provides more details on how physical and transition risks impact P&C and life re/insurers on short- and long-term time horizons on both sides of the balance sheet, taking into account that this will also depend on the company's specific business and investment portfolio.

Appendix 2

Regulatory developments

This appendix provides further detail on the rapidly evolving regulatory and reporting landscape with respect to sustainability considerations, both at an EU and international level. It is structured as follows:

- European Union (EU) regulatory developments
- European regulatory developments (including the UK)
- International regulatory developments
 - Global
 - Asia Pacific
 - North America (United States of America and Canada)
- European Union (EU) disclosure and reporting developments
- International disclosure and reporting developments

European Union (EU) regulatory developments

Sustainable finance in the EU is intended to support the delivery of the objectives of the European Green Deal, a growth strategy aiming to make the EU the first climate neutral continent by 2050. This requires channeling private investment towards more sustainable business and technologies, as the scale of investment needed is far beyond the capacity of the public sector alone.

EU policy in this area is based on the 2018 Sustainable Finance Action Plan²¹, a comprehensive strategy to further connect finance with sustainability and which has 3 objectives: (i) reorienting capital flows towards sustainable investments; (ii) mainstreaming sustainability into risk management; and (iii) fostering transparency and long termism. These objectives are translated into 10 actions which impact companies, banks, institutional investors, services providers, investment advisors and insurers.

The EU has been building a comprehensive set of requirements by

revising existing legislation to embed sustainability aspects (e.g. Solvency II²², Insurance Distribution Directive²³ and the Non Financial Reporting Directive²⁴) and by creating brand new legislation (e.g. Taxonomy²⁵ and Sustainable Finance Disclosure Regulation²⁶).

In July 2020, the EC published the draft amendments to the **Solvency II** delegated acts²⁷, which integrate sustainability factors into insurers' risk management functions. It is largely based on the technical advice published by EIOPA in 2019, which took into account the views expressed by stakeholders. It identifies four key areas that will require insurers and reinsurers to incorporate sustainability risk into their assessments:

- Risk management framework areas and ORSA
- Actuarial assessments of the uncertainty associated with estimates made in the calculation of technical provisions
- Remuneration policy (for consistency with the integration of sustainability risks)
- Implementation of the prudent person principle

The amendments define 'sustainability risk' to mean an environmental, social or governance event or condition that, if it occurs, could cause an actual or a potential negative impact on the value of the investment or on the value of the liability. On 21 April 2021, the EC adopted amendments to the **Solvency II Delegated Regulation**²⁸ in order to integrate sustainability risks into insurers' prudential framework and the **Insurance Distribution Directive (IDD)**²⁹ for the integration of sustainability factors and preferences in the delegated acts under and will amend.

In addition, EIOPA has issued consultations on Sustainable Finance aspects in the area of risk management.

In particular, EIOPA consulted on the integration of climate risk scenarios in the Own Risk and Solvency Assessment (ORSA) and published a final Opinion on this topic in April 2021 with the aim of enhancing supervisory convergence in the supervision of the use of climate change risk scenarios in ORSA.

European regulatory developments (including the UK)

In addition, in a number of European jurisdictions (including the UK), national regulators and supervisors are looking into a number of national sustainability measures.

In the **UK**, regulators and supervisors are enhancing the rules related to climate risk disclosure and management. In April 2019, the **Prudential Regulation Authority (PRA)** published a **supervisory statement SS3/19 "Enhancing banks' and insurers' approaches to managing the financial risks from climate change"**³⁰, and a **policy statement PS 11/19 "Enhancing banks' and insurers' approaches to managing the financial risks from climate change"**³¹ expecting board-level engagement and identification by firms of a Senior Management Function with specific responsibility for identifying and managing climate-related risks. It also wants firms to adopt a strategic approach to managing climate risk, including through the use of scenario analysis. On 1 July 2020, a follow up letter was issued by the Deputy Governor and Chief Executive Officer (CEO) of the PRA, Sam Woods, to CEOs of all PRA-regulated firms building on the expectations outlined in the supervisory statement, providing observations on good practice and setting out next steps for implementation.

In December 2019, the Bank of England announced it will use its 2021 biennial exploratory scenario exercise to explore the financial risks posed by climate

change. This exercise will test the resilience of the current business models of the largest banks, insurers and the financial system to climate related risks and therefore the scale of adjustment that will need to be undertaken in coming decades for the system to remain resilient. The Bank of England has consulted relevant stakeholders on the design of the exercise expected to be completed between June and September 2021 with results published in Q1 2022.

On 9 November 2020, the UK Chancellor of the Exchequer Rishi Sunak delivered a statement to the House of Commons on his new ambition for the future of UK financial services after Brexit.

The Chancellor outlined new proposals to support sustainable financial flows and extend the UK's global leadership in green finance ahead of hosting COP26: he announced that **the UK will become the first country in the world to make Task Force on Climate-related Financial Disclosures (TCFD) aligned disclosures fully mandatory across the UK economy by 2025**, going beyond the 'comply or explain' approach.

The implementation of a **green taxonomy** for determining which activities can be defined as environmentally sustainable was also announced in order to aid the UK's transition to a sustainable economy.

Following this speech, **in December 2020 the UK Financial Conduct Authority (FCA) published a policy statement announcing that companies will be required to include a statement in their annual financial report which sets out whether their disclosures are consistent with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD)**, and to explain if they have not done so. This rule applies for accounting periods beginning on or after 1 January 2021, meaning the first annual financial reports subject to the rule would then be published in spring 2022.

In June 2021, the FCA published consultation papers CP21/17 and CP21/18 extend the application of TCFD disclosures in early 2021, in alignment with the roadmap to mandatory TCFD-aligned disclosures released by the UK Government in November 2020.

In **France**, Article 173 of the Law on Energy Transition (2015) requires that French insurance companies publish a report on how they assess risks relating to ESG issues, in particular climate risk. The first reports by French companies relating to Article 173 were published in the summer of 2017.

Within this legislative framework, French financial supervisors have a strong focus on the assessment of climate change related risks in their work, addressing recommendations to the sector and conducting analysis/reports. **The ACPR (Autorité de contrôle prudentiel et de résolution) notably launched a pilot exercise in July 2020 on climate risk scenarios** highlighting two main features: consistency between risks to be assessed and scenarios is needed; and the issue of time horizon (insurers mainly consider the risk below 10 years which is not enough, in its pilot exercise ACPR tries to adapt the tools to the long term). The main conclusion of the ACPR exercise at this stage is that the assessment by insurers was mainly qualitative.

The supervisor also published in December 2020 a **first annual report to analyse French insurers, banks and asset managers' commitments regarding climate issues**, outlining that the approaches and methodologies used by financial institutions are heterogeneous, thus limiting comparisons and the ability to assess exposures or investments on an aggregated basis.

This report identified several recommendations in particular for facilitating the traceability and reliability of commitments, defining quantified objectives and a clear timetable, strengthening the transparency and comparability of the selected indicators

and methodologies, involving control mechanisms to ensure the follow-up of commitments, and taking into account the risks related to biodiversity loss.

Other European regulators and supervisors are also focusing more and more on the integration and disclosure of sustainability risks, like in the Netherlands where the supervisors DNB conducted an analysis in 2020 on the financial sector's risk exposure to biodiversity loss (cf. Report "Indebted to nature", June 2020).

International regulatory developments

Global

The Taskforce for Climate-related Financial Disclosure (TCFD)³², convened by the Financial Stability Board (FSB), sets out a framework for companies to disclose how climate-related risks and opportunities are taken into account in their governance, strategy and risk management, as well as what metrics and targets are used.

Through the International Association of Insurance Supervisors (IAIS), insurance regulators have collaborated to influence and assist in the implementation of principles, standards, and other supporting materials for supervision of the insurance sector³³. The IAIS released an issues paper in February 2020 around the implementation of the TCFD's recommendations, concluding that without supervisory support towards the adoption of TCFD recommendations, the quality and scope of disclosures internationally may not support informed decision-making or enable market participants to adequately assess how insurers act on climate-related risks and opportunities.

Regulators, supervisors and financial institutions globally are also developing responses to the climate data deficit through scenario analysis and climate disclosures. NGFS³⁴ produced updated climate scenarios in 2021 as best-practice recommendations, which have since been used by regulators in their climate stress testing exercises – for

example, in the Bank of England's Climate Biennial Exploratory Scenario (CBES) exercise in 2021³⁵. While they were originally developed to help central banks and supervisors explore the possible impacts on the economy and financial system, they also provide a common starting point for the financial services sector to perform its own stress and scenario testing on climate risks.

Asia Pacific

In September 2020, New Zealand announced that they would implement mandatory climate-related risk reporting in line with the TCFD recommendations. Around 90% of New Zealand's assets under management³⁶ will be required to make disclosures in 2023 at the earliest³⁷.

Singapore's regulator, the Monetary Authority of Singapore (MAS), published Guidelines on Environmental Risk Management for financial services on 8th December 2020³⁸. These guidelines were developed to enhance the insurance sector's resilience to and management of environmental risks and support the transition to an environmentally sustainable economy. MAS expects financial institutions to establish Board oversight of environmental risk management, incorporate environmental considerations into products, strategies and business plans; engage in risk management through environmental risk assessments and the development of tools and metrics; and clearly and regularly disclose information and engage in international reporting frameworks like the TCFD recommendations.

Hong Kong financial regulators also announced that financial institutions and listed companies will have to disclose the financial impact of climate change on their businesses by 2025 (with some sectors required to comply earlier) in line with TCFD recommendations.

The Australian Prudential Regulation Authority (APRA) developed a new climate change financial risk prudential practice guide to clarify expectations around disclosures in early 2021³⁹.

APRA are responding to the need to enhance the capacity of regulated entities to manage and respond to climate-related risks. During 2022, APRA will conduct a climate vulnerability assessment to explore potential financial exposure and macroeconomic risks for the insurance sector from both physical and transition climate risks.

In Malaysia, the BNM (Bank Negara Malaysia) has issued a finalised guidance document for financial institutions to use to assess and classify economic activities that contribute to climate change mitigation and adaptation⁴⁰.

China released the 2021 edition of Green Bond Endorsed Project Catalogue which classifies green activities according to six key areas of activity: energy conservation, pollution prevention and control, resource conservation and recycling, clean transportation, clean energy, ecological protection, and climate change adaptation⁴¹.

North America (United States of America and Canada)

In the US, the Biden administration is expected to follow the lead of New Zealand and the UK and announce mandatory climate-related financial disclosures⁴². The Securities and Exchange Commission (SEC) has been developing guidance around climate change disclosure. In May 2020, the SEC Investor Advisory Committee approved recommendations for the Commission to update disclosure requirements for issuers to include material ESG factors. In March 2021, the Commission called for public input on the Commission's disclosure rules and guidance on climate change. Additionally, they have created a Climate and ESG Task Force to develop initiatives that proactively identify ESG-related misconduct⁴³. In June 2021, the US House of Representatives passed a bill – The Climate Risk Disclosure Act of 2021 – that would direct the SEC to publish rules requiring public companies to produce annual climate-related financial disclosures within two years. In a speech to the Principles for

Responsible Investment in July 2021, the SEC Chairman said that the regulator has a role in ensuring climate-related financial disclosures are “consistent and comparable” by making them mandatory for corporate issuers, adding that he has directed his SEC colleagues to “develop a mandatory climate risk disclosure rule proposal” by the end of 2021, pulling on the views shared by the March 2021 consultation's respondents.

State governments have also been acting on climate disclosures. Responding to the US withdrawal from the 2015 Paris Agreement (a decision since reversed by President Biden), New York State Department of Financial Services (DFS) stepped up to push sustainability to the fore of the state agenda. The DFS issued for public comment their Proposed Guidance on Managing Financial Risks from Climate Change in early 2021⁴⁴. The guidance is consistent with international best practices on climate-related financial supervision. They call on domestic insurers to incorporate financial risk management of climate change into their governance frameworks, risk management processes, and business strategies; and take a proportionate approach to manage and mitigate these risks⁴⁵.

In Canada, the Office of the Superintendent of Financial Institutions (OSFI) launched a three-month consultation with the publication of a discussion paper, Navigating Uncertainty in Climate Change: Promoting Preparedness and Resilience to Climate-Related Risks⁴⁶. The paper focuses on risks arising from climate change that can affect the safety and soundness of federally regulated financial institutions and federally regulated pension plans. Canada continues to move toward affirmation of its commitment to fight against modern slavery in supply chains by developing a Modern Slavery Act requiring mandatory reporting on how a company manages its modern slavery risk.

European Union (EU) disclosure and reporting developments

The EU is building a comprehensive legislative corpus which encompasses a variety of interrelated pieces of legislation.

Taxonomy

The backbone of the corpus is the **Taxonomy Regulation**, which entered into force in July 2020. It is designed to help companies and investors navigate the transition to a low-carbon, resilient and resource-efficient economy by defining which economic activities are environmentally sustainable.

With the Taxonomy, an activity will be qualified as environmentally sustainable if it:

- Contributes substantially to one or more of 6 environmental objectives: (1) climate change mitigation, (2) climate change adaptation, (3) sustainable use and protection of water and marine resources, (4) transition to a circular economy, (5) pollution prevention and control, and (6) protection and restoration of biodiversity and ecosystems;
- Does not significantly harm any other of the 6 environmental objectives;
- Complies with minimum social safeguards; and
- Complies with technical screening criteria (thresholds for activities).

Delegated acts on the first two environmental objectives (climate change mitigation and adaptation) of the regulation were published in early 2021, and formally adopted on 4 June. Delegated acts for the four other environmental objectives will be published in 2022⁴⁷.

The Taxonomy will have several impacts notably on the future **EU Green Bond Standard** and **Ecolabel for financial products**, the standards for “climate transition” and “Paris-aligned” benchmarks and the reporting of non-financial information.

The European Commission (EC) adopted the delegated regulation supplementing Article 8 of the Taxonomy Regulation in early July,

following a 3-week consultation on the draft Delegated Act (DA)⁴⁸. This DA specifies the content, methodology and presentation of information to be disclosed by financial and non-financial undertakings concerning the proportion of environmentally sustainable economic activities in their business, investments or lending activities. In particular, the disclosure obligations set out the annual publication of KPIs associated with environmentally sustainable economic activities.

In July 2021, the EC published a draft report⁴⁹ on extension options for an environmental taxonomy, which would support the environmental transition needed in the whole economy and investigates the creation of a taxonomy for significantly harmful activities and activities that have no significant impact on environmental objectives. Stakeholder feedback on the draft suggests focus should remain on finalising the current green taxonomy first and on supporting transition activities that can improve investor’s sustainability performance beyond significant harm.

Sustainable Finance Disclosure Regulation

The Sustainable Finance Disclosure Regulation (SFDR)⁵⁰ provides the nature of the information that should be disclosed by financial market participants and financial advisers to enable end investors to understand the degree of environmental sustainability of an investment. The Regulation entered into force in December 2019, and it applied from 10 March 2021 (with some exemptions). The SFDR empowers the European Supervisory Authorities (ESAs) to deliver draft delegated acts with regard to the content, methodologies and presentation of sustainability-related disclosures. To this end, the ESAs launched a consultation on a draft Regulatory Technical Standards (RTS) regarding taxonomy-related disclosures of financial products, which will amend the draft RTS under the SFDR, attempting to provide coherent requirements between the two regulations.

Non-Financial Reporting Directive

The Non-Financial Reporting Directive (NFRD)⁵¹ currently being revised provides principles to disclose how sustainability issues may affect the company, but also how the company affects society and the environment. The Directive identifies 4 sustainability issues: (1) environment, (2) social and employee issues, (3) human rights, and (4) bribery and corruption. It applies to all listed corporates as well as corporates with more than 500 employees in Europe.

In June 2019, as part of the Sustainable Finance Action Plan, the Commission published additional guidelines on reporting climate-related information, which integrate the recommendations of the TCFD under the Financial Stability Board (FSB) umbrella. In April 2021, delegated acts were adopted specifying the information companies subject to the NFRD will have to disclose on how their activities align with those considered environmentally sustainable in the Taxonomy.

The **European Financial Reporting Advisory Group** (EFRAG) was requested by the EC to undertake preparatory work to assess the possible content and structure of any future EU non-financial reporting standard (NFRS) in the revised NFRD. This work was carried out by a Project Task Force (PTF) appointed by the EFRAG Lab and a final report was submitted to the EC on 28 February 2021⁵².

The EC adopted a proposal for a Corporate Sustainability Reporting Directive (CSRD) which revises and extends the scope of the sustainability reporting requirements introduced by the NFRD⁵³.

A proposal for a **Sustainable Corporate Governance Directive** is expected to be published October 2021⁵⁴. It aims to enhance the reliability of information disclosed under the NFRD by ensuring that the reporting obligation is underpinned by adequate corporate and director duties.

International disclosure and reporting developments

Sustainability reporting standards are also going through a period of rapid development beyond the EU, with standards being developed independently by each of the “Group of Five”⁵⁵, and with different stakeholders in mind, notably:

- the Sustainability Accounting Standards Board (SASB), which guides the disclosure of financially material sustainability information by industry to their investors
- the Global Reporting Initiative (GRI) Standards, set by the Global Sustainability Standards Board (GSSB), which guide organizations in reporting on their sustainability impacts in a transparent and accountable way, that meets the needs of multiple stakeholders and enhancing global comparability.
- the World Economic Forum (WEF) International Business Council (IBC), in collaboration with the Big Four accounting firms, developed a list of metrics that aims to bring consistency across industries. These metrics should be capable of verification and assurance, to enhance transparency and alignment among corporations, investors and all stakeholders.

Stock exchanges are also adding to ESG reporting requirements. For example, the Hong Kong Stock Exchange (HKSE) has introduced a number of new reporting requirements that must be adopted on a comply or explain basis.

The Trustees of the IFRS Foundation announced in March 2021 the formation of a working group to accelerate the convergence in global sustainability reporting standards and to undertake technical preparation for a potential international sustainability reporting standards board under the governance of the IFRS Foundation. Further developments are expected to be announced at the UN Climate Change Conference (COP26) in November 2021, such as the expected launch of the IFRS Foundation’s International Sustainability Standard Board (ISSB) which will be tasked with developing and maintaining

global sustainability-related financial reporting standards.

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