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UNDERWRITING OUR PLANET:

HOW INSURERS CAN HELP ADDRESS THE
CRISES IN CLIMATE AND BIODIVERSITY

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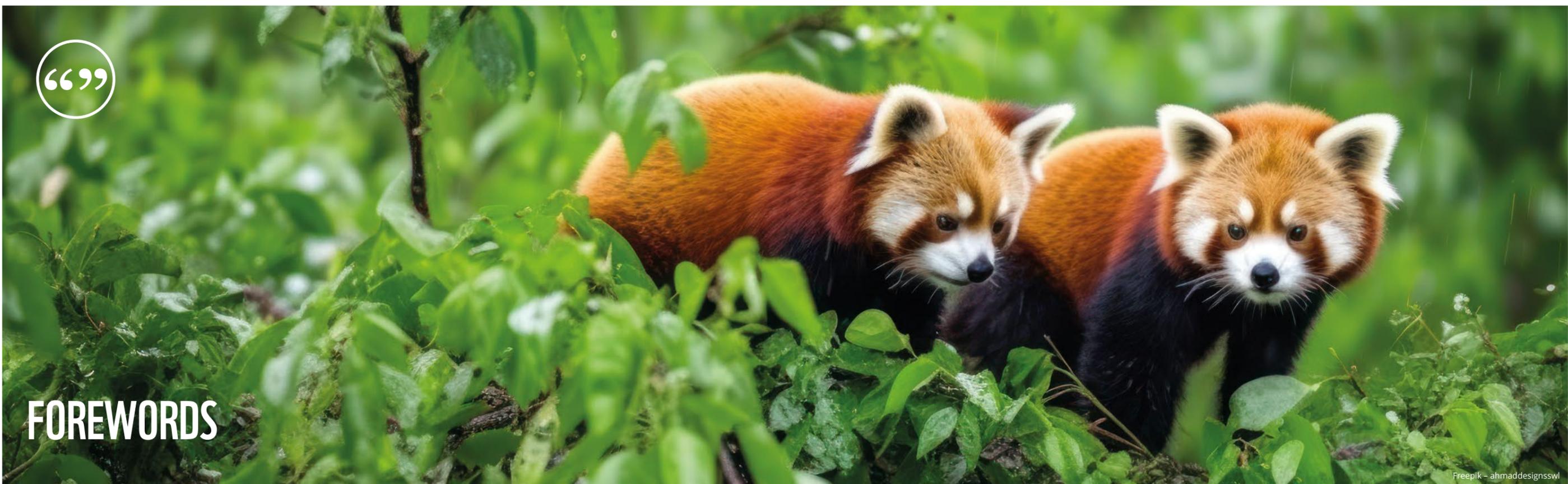
The mission of WWF is to stop the global destruction of the environment and shape a future in which people and nature can live together in harmony. In order to fulfil this mission, WWF is dedicated to preserving global biodiversity. WWF also fights to reduce the use of natural resources to a sustainable level. In order to meet its objectives, WWF works at four levels: in the field, with companies, in the political arena and with the population. WWF regularly performs company ratings and thus assesses the sustainability performance of companies in important sectors.



Hydroelectric power energy plant with turbines and water spills for generating green electricity | © Shutterstock / BORJA PD / WWF

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FOREWORDS

From forests to oceans, from the tropics to the poles:

Over recent decades, nature has suffered unprecedented destruction at the hands of humankind. As a result, we risk crossing irreversible tipping points that threaten to alter our planet in unpredictable and catastrophic ways. Climate change and biodiversity loss negatively affect the health of the planet and, with it, human wellbeing, the economy and our financial system. Fighting the twin planetary crises of climate change and biodiversity loss requires urgent and concerted action.

The recently adopted Kunming-Montreal Global Biodiversity Framework and the UN High Seas Treaty offer important guidelines for rapid collective action to halt and reverse biodiversity loss by 2030, complementing climate action under the Paris Agreement. They send a powerful and clear signal to governments and businesses around the world that they need to rapidly reduce their negative effects on nature, while enhancing their positive impacts. Conserving and restoring our natural assets is as important as combating climate change, as many ecosystems serve as valuable carbon sinks and help to regulate our climate. In turn, mitigating climate change is crucial to reducing biodiversity loss.

Numerous insurers have acknowledged the increasing risks and uncertainties due to climate change and the threat of uninsurability. But the insurance industry is not only challenged by its exposure to the growing risks from climate

change and biodiversity loss, with costs of disasters rising, leading to greater pay-outs. The industry also needs to play an increasingly important role in ensuring a sustainable future by protecting what is of value for our future, notably through its underwriting business.

With this report, we urge the insurance industry to acknowledge its important enabling role as underwriters and assume its responsibility for the effects of the economic activities it underwrites. It is high time that the insurance industry acts to help speed up the transition to a net zero, nature-positive world and help incentivise the shift towards more sustainable business models.



THOMAS VELLACOTT
CEO WWF SWITZERLAND

The world is facing a fundamental environmental challenge, with climate change and biodiversity loss threatening the very foundations of life on our planet.

As we continue to experience the far-reaching impacts of living beyond planetary boundaries, it is important to work towards a sustainable future that secures the health of our planet and all its inhabitants.

The insurance industry has the power to play a leading role in this effort. With their reach to all industries, insurance companies have the ability to incentivize sustainable practices and promote responsible behaviours of its customers. By incorporating environmental considerations into their business practices, insurers can help protect biodiversity, mitigate climate change, and build a more resilient and sustainable future.

This report, commissioned by WWF-Switzerland, examines the intersection of insurance, nature, biodiversity, and climate. It aligns insurance activities with the drivers of climate change and biodiversity loss, draws on expert opinions, and analyses regulatory trends to identify opportunities. Furthermore, it provides recommendations for insurers to develop innovative products and services that promote sustainability and protect the natural world.

The report stresses the importance of collaboration between the insurance industry, policymakers and other stakeholders.

To secure a sustainable development in the future, we need a coordinated effort that involves all sectors of society. Insurers can play an important role in this effort by incentivizing sustainable practices and advocating for policies that protect the environment.

In conclusion, this report provides actionable insights and recommendations to tackle the overlap of insurance, nature, biodiversity and climate change. By highlighting the opportunities for insurers to promote sustainability and protect the natural world, the report supports efforts of the sector to consistently include environmental considerations in its business practices. We hope that this report will inspire insurers to embrace a leadership role in the collective effort to build a more sustainable future for all.



MARCEL MEYER
DELOITTE SWITZERLAND
SUSTAINABILITY LEAD



EXECUTIVE SUMMARY AND RECOMMENDATIONS

This report is the first comprehensive guide for insurance companies to understand the impacts of their underwriting business on climate and biodiversity. It lays out the most important actions they should take to assume their responsibilities and contribute to the achievement of global climate and biodiversity goals.

The climate and biodiversity crises are having increasingly devastating effects on nature and humanity. They pose serious challenges to the insurance sector through mounting claims, increasing uncertainty and the threat of uninsurability. Insurance companies have recognized these challenges and are responding with risk mitigation and resilience efforts, increasing premiums or tightening eligibility. However, the increasing challenges linked to climate change and nature loss must be sustainably tackled by addressing their root causes and reversing damages caused.

The most powerful action insurance companies can take to mitigate the risks they face is to become catalysts, in their twin roles as institutional investors and risk underwriters, for reaching the global climate and biodiversity goals. Whereas the first role – as investors – has been covered extensively in the literature, the relevance of the underwriting business to achieving those goals has been largely overlooked. Many insurance companies do not fully embrace the responsibility they have for the economic activities they insure. This report, then, aims to shed light on the positive and negative links between insurance underwriting and climate change and biodiversity loss. It argues that insurance companies need to better understand those links, reduce their negative effects and leverage the opportunities offered by a green, fast and fair transition. It suggests a range of concrete actions that insurers can undertake to do so.

This report focuses on the non-life insurance underwriting lines of business. It builds on established literature and interviews with subject matter experts to identify the interactions and key levers between insurance companies and climate change and biodiversity loss. It discusses the

association of underwriting activities with the five most important drivers of biodiversity loss, namely: i) changes in land and sea use; ii) direct exploitation of organisms; iii) climate change; iv) pollution; and v) invasive alien species.

To do this, the report explores how specific underwriting practices interact with those drivers of biodiversity loss and describes current strategies that aim to decrease the negative and improve the positive impact of insurance underwriting on climate and biodiversity, illustrated with several real-world examples of potential actions that insurers can undertake. The levers and strategies insurance companies can deploy to contribute to global climate and biodiversity goals are explored, along three main conceptual categories:

- **The activities that an insurer chooses to underwrite or not.** Freight shipping would not take place in the same way as it does today without insurance coverage, for example, while renewable energy needs special insurance coverage to flourish. The identified levers in this category are: new insurance products supporting the green, fast and fair transition; specific products to insure natural assets, including nature-based solutions; surety for restoration; and exclusion and phase-out policies.
- **Product design and claims management.** The incentives created by insurance products are important. For instance, an environmental insurance liability product with inadequate terms and conditions could lead to riskier behaviour by the insured (moral hazard), thus increasing the risk of environmental pollution. Insurance companies could better design products to prevent moral hazard, and promote green choices, such as repair over replace, and build back better and green-for-old approaches.



“The report provides concepts and practical examples for insurers to become enablers of a more nature- and climate-friendly economy and society. The German Insurance Association will use this report as source of inspiration to take on this important task.”

DR. MICHAELA WILLERT

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- **The supportive activities that insurers engage in.** Insurance companies are important stakeholders for companies and public authorities. They can leverage that position for engagement and advocacy to accelerate the green, fast and fair transition. They could: more actively engage with clients, peers and policymakers; share research and data; and finance projects to directly protect and restore nature.

By stressing the environmental impact of insurance underwriting, the report aims to raise awareness and

improve understanding in the insurance industry about its important role and responsibility in reining in climate change and halting and reversing nature loss. It is aimed not only at the sector, but also at its clients and investors, and the policymakers and financial supervisors who regulate it. The report further offers a catalogue of measures that insurers can undertake within their underwriting activities. WWF strongly recommends the insurance companies and the broader insurance industry integrate and advance the considerations below into their strategies, frameworks and policies.



KEY WWF RECOMMENDATIONS FOR INSURANCE AND REINSURANCE UNDERWRITING

The following recommendations are a summary of the most relevant measures WWF proposes to insurance companies to reduce their negative effects on the environment and to simultaneously contribute to global climate and biodiversity goals through their underwriting business. For a more granular discussion of the recommendations by line of business, please consult the recommendations section (chapter 5) of this report.

01. OVERALL, CORPORATE STRATEGY-LEVEL RECOMMENDATIONS



Pledges, transition plans and disclosure

- a. Commit to reach net-zero GHG emissions by 2050 at the latest, in line with global efforts to limit global warming to 1.5°C, preferably via committing to the Science Based Targets initiative.
- b. Publish and implement transition plans covering climate and nature, aligned with global climate and biodiversity goals.
- c. Foster transparency through state-of-the-art climate and nature-related disclosure and reporting.

Coalitions, cooperation and political advocacy

- a. Collaborate in industry initiatives, with other sectors, public entities, NGOs and academia to advance the green, fast and fair transition.
- b. Advocate for stringent environmental regulation, effective fiscal incentives, consistent disclosure requirements for companies (covering climate and biodiversity-related disclosure; and asset-level disclosure) and other necessary framework conditions for the green transition.

02. RECOMMENDATIONS FOR INCREASING POSITIVE IMPACTS



Promotion of green choices and adoption of green technologies and practices

- a. Incentivize environmentally-friendly decisions when customers seek to replace or acquire new products or assets, for example, the adoption of sustainable transportation patterns (bicycles, public transportation, shared mobility) or energy efficient real estate renovations.
- b. Incentivize environmentally-friendly decisions by companies such as more sustainable agricultural or construction practices.
- c. Implement circular economy and emission reduction considerations in claims management, for example, by integrating 'repair over replace' covenants to reduce material use, waste and pollution.
- d. Offer new underwriting products that support the development and adoption of green technologies, like renewable energy technologies, or recycling techniques through risk management support, research and innovation.

Foster Resilience

- a. Prevent damages and rebuild sustainably along the concept of 'build back better'.
- b. Participate in multi-stakeholder initiatives to foster landscape resilience.

Nature-based solutions and protection of natural assets

- a. Promote nature-based solutions and the restoration of natural assets with novel underwriting products, research, multi-stakeholder collaboration and through grants and investments.



"The impact of insurance on biodiversity may seem abstract – but it is not. Insurance is woven into almost all economic activity and hence can help transform it from destroying nature to building it up again."

LUKAS STRICKER

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03. RECOMMENDATIONS FOR REDUCING NEGATIVE IMPACTS



Review terms & conditions

- a. Prevent moral hazard and ensure clean-up and restoration with regards to environmental liability by combining broad coverage and ample pay-out limits with significant deductibles.
- b. Require (and verify) ambitious climate- and biodiversity-related practises or exclude a company's contribution to biodiversity loss and climate change from insurance directors' and officers' liability coverage.
- c. Include strict environmental and safety standards in terms and conditions and enforce them through remote sensing and on-site inspections to make sure the highest environmental standards are respected, e.g., in case of construction all-risk insurance or surety.

Engagement with commercial clients and insurance brokers

- a. Engage and require clients to set science-based climate and nature targets and to publish and implement a transition plan covering climate and nature.
- b. Engage with clients to meet the highest environmental standards, e.g., with regards to pollution prevention or the tracing of raw materials.
- c. Engage with brokers on their biodiversity and climate goals, phase-out and exclusion policies as well as on the desired safety and environmental standards. For high-impact insurance deals led by brokers, the insurance companies involved should additionally perform their own environmental due diligence.
- d. Support clients in understanding risks from climate change and nature loss, e.g., by leveraging inhouse knowledge and research capacities to advance innovation, mitigation and adaptation measures.

Exclusion and phase-out policies

- a. Immediately exclude any insurance services for severely damaging economic activities such as:
 - The expansion of the coal, oil and gas industry.
 - Unconventional oil and gas extraction and deep sea-bed mining.
 - Severe-risk activities that may negatively impact World Heritage Sites or other areas of high biodiversity importance.
 - Projects that do not benefit from free, prior and informed consent by Indigenous Peoples and local communities or in any other way infringe on their rights.
 - Activities that drive deforestation and land conversion after 2025 within the project, company or supply chain.
 - Activities that use or produce persistent organic pollutants in violation of the rules set by the Stockholm Convention.
 - Vessels that are engaged in illegal, unreported or unregulated fishing.
- b. Communicate clear phase-out of any fossil fuel-related business in line with the International Energy Agency's Net Zero Emissions by 2050 Scenario and do not renew contracts with any customers from the fossil fuel sector, including downstream sectors like transport (motor, aviation, marine), which are not aligned with a credible 1.5°C pathway.
- c. Exemption: Environmental liability, surety, or insurance for decommissioning should be maintained for existing severely damaging activities without any expansion plans to ensure restoration.



INTRODUCTION

The twin crises¹ of climate and biodiversity² are reinforcing each other and spiralling out of control. Despite the urgent need to halve greenhouse gas (GHG) emissions between 2020 and 2030 to reach the globally agreed climate goals, they hit record levels in 2022.

The unprecedented floods in Pakistan in 2022 left an estimated 20 million people in need of humanitarian assistance.² In April 2023, new historical record ocean surface temperatures were reached.³ At the same time, droughts in Southern Europe hit harvests and increased prices for staples such as olive oil.⁴ The area burned by wildfires in Canada in early June was fifteen times larger than the average at this point of the year.⁵

While these developments are taking a heavy toll on affected communities and nature, they also pose a serious threat to the insurance sector.ⁱⁱ In 2022, estimated global economic losses due to natural disasters reached US\$275 billion,⁶ 32% above the previous 10-year average of US\$208 billion. Of these, US\$125 billion were covered by insurance. Higher expected losses will inevitably result in increased premiums. According to the European Insurance and Occupational Pensions Authority (EIOPA),⁷ the expected growth in physical risk exposures and insurance claims due to climate change will increase risk-based premium levels over time. This will potentially impair the affordability and availability of insurance products that provide coverage against climate-related hazards.ⁱⁱⁱ An example of how this is likely to play out can be seen in Florida and California. In Florida, the cost of flood insurance has doubled or tripled for homeowners in risky areas,⁸ 15 insurers have stopped underwriting new policies and seven insurance companies have been declared insolvent.⁹ In California, after several seasons with devastating wildfires, insurance companies are starting to pull out of property insurance, with Farmers, State Farm and Allstate all excluding or reducing new covers.¹⁰

As well as increased damages, insurance companies also face growing uncertainty as the climate and biodiversity crisis makes losses more difficult to predict. Overall, insurance companies can expect unanticipated and increasing losses and a shrinking client base, as customers can either no longer afford rising premiums or are excluded by insurers.

Maintaining systemic insurability is therefore crucial for the long-term economic viability of the insurance industry and its resilience against climate and other environmental risks. At the same time, people, companies and society in general are likely to suffer from an increasing insurance protection gap, left to cope by themselves with growing physical climate and nature-related risks. Even now, EIOPA estimates that only around a quarter of the total economic losses caused by extreme weather- and climate-related events in Europe are covered by insurance.¹¹

Insurance companies typically react to climate and nature-related physical risks by increasing premiums or excluding potential clients from coverage. They also try to reduce risks by encouraging clients to take adaptation measures to increase the resilience of insured assets. **But the most effective option to slow down the increase in risk is to halt climate change and nature loss.** Fortunately, insurance companies are in a powerful position to shape the economy and support a green, fast and fair transition to a more sustainable society.

By providing credit, investment and other financial products and services, the financial sector has enormous leverage to mitigate climate change and stop and reverse biodiversity loss. Insurers play an instrumental role in this regard by enabling the corporate economy and wider society to manage risks, and by acting as a catalyst for solutions that promote social and environmental sustainability.¹² Essentially, they operate in a dual capacity as institutional investors and risk underwriters.^{iv} As institutional investors, insurance companies can use their influence as asset owners to require assets they (co-)own to become more sustainable. In this regard, insurance companies are not unlike other investors, such as pension funds and asset managers.

The relevance of the underwriting business to achieving sustainability goals, however, has been less considered, both at the company level and internationally.^v



Yet without sufficient insurance coverage, large infrastructure or construction projects cannot go ahead, in the absence of public guarantees. Businesses rely on insurance to operate, as do individuals to protect their property, health and families. Insurance thus plays a crucial role in most vital aspects of modern economies and lifestyles. This gives the insurance sector an opportunity to leverage its central role at the heart of economies and societies by contributing to the transition to a green economy.

Doing so would not only help mitigate increasing risks to the insurance sector, but would also allow ambitious insurers to reap additional benefits and differentiate themselves from slower-moving competitors. Conversely, insurance companies who ignore or underestimate their impact on biodiversity and climate may face litigation and reputational risk, with demands to act more sustainably from investors, employees and clients, as well as exposure to protests and boycotts.

Growing regulatory requirements regarding sustainability are also putting additional pressure on insurance companies to respond to the climate and nature crises and adapt their

business models accordingly. By moving to address the environmental impacts of their underwriting business, insurance companies can demonstrate their willingness to proactively comply with evolving regulatory expectations.

Finally, insurance companies that actively engage with their clients to help them reduce their climate risks and environmental footprints are more likely to forge longer-term relationships. They will be seen as trusted partners rather than as simple financial intermediaries who can be replaced as soon as a competitor offers a lower premium for a similar cover. Harnessing this opportunity requires insurance companies to act quickly, with rigour and at scale.

Based on these reflections, this report focuses on the impacts that insurance companies have on climate and biodiversity through their underwriting business, with a focus on property and casualty (P&C) insurance and the opportunities presented for insurance companies to speed up the transition to a green economy while also managing the mounting risk of increasing losses and uninsurability.

i. Biodiversity is defined within the 1992 Convention on Biological Diversity as the variability among living organisms from all sources, including, among other things, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. In other words, biodiversity is the part of nature that is alive, and includes every living thing on earth.

ii. For this report, where not explicitly stated otherwise, we include as within the insurance sector all entities in the insurance landscape (e.g., direct insurance providers, reinsurance companies, brokers and other institutions) that provide underwriting services.

iii. For a comprehensive discussion about the risk that biodiversity loss poses to the

insurance sector, please see Chandelier, J. & Malacain, M. (2021). Biodiversity and Re/Insurance: an Ecosystem at Risk. HAL open science.

iv. See endnote 12 for a brief explanation of the two pillars of insurance investment and underwriting.

v. This is reflected in the fact that international pledges and initiatives for insurance activities have historically lagged behind those targeting investments. For example, the UN-sponsored Principles for Responsible Investment were launched in 2005, while UNEP FI's Principles for Sustainable Insurance followed suit only in 2012. The same can be seen at the level of the net zero sector alliances, with the first target-setting protocol of the Net Zero Asset Owner Alliance published in 2020. In contrast, the Net Zero Insurance Alliance's own target-setting protocol was only released in January 2023.



01. SCOPE & SOURCES

Closeup portrait of green turtle (Chelonia mydas) | © Shutterstock / Willyam Bradberry / WWF



1.1: OBJECTIVES AND STRUCTURE OF THE REPORT

The main objective of this report is to explore and highlight the transmission channels through which insurance underwriting activities have material positive and negative impacts on climate, biodiversity and nature in general.

This contrasts with the majority of published research on the interplay of insurance and climate and/or biodiversity, which primarily focuses on physical and transition risks (i.e., the implications for underwriting of risks originating from climate change or biodiversity loss).

Specifically, the report seeks to:

- Explore the links between underwriting activities and key drivers of climate change and biodiversity loss;
- Highlight the role of insurance in helping to achieve global biodiversity and climate goals, with selected examples of current good practices to illustrate this; and
- Make recommendations for insurance companies to improve their biodiversity and climate footprints.

In pursuing these goals, the report focuses on three main levers that insurance companies have to manage their impact on climate change and biodiversity loss:

1. The enabling role of insurance companies through underwriting and risk transfer services. At the heart of this role is the question of **what economic activities are insured** and thus enabled, and the impact of these activities on climate change and biodiversity loss.
2. The insurance companies' claims management practices and product design. This examines the question of **how economic activities are insured**. Of interest here

are the conditions and incentives that are created for the insured entity to align (or not align) its actions with global biodiversity and climate goals.

3. The **supportive activities** performed by insurance companies. These include activities relevant for biodiversity and climate goals that have a direct relation to underwriting and are not covered by the first two categories, such as providing risk management services, advocacy or research.

These specific levers should be embedded in the wider strategy of an insurance company relating to its biodiversity and climate goals, transition plans, risk management and governance.

As the biodiversity and climate crises are closely intertwined, this report takes a systemic approach by integrating both climate change and biodiversity loss into the analysis. In contrast, social and governance-related aspects are not the prime focus of the report and are only incorporated insofar as they are inseparable from environmental aspects, such as in the context of the respect of rights of Indigenous Peoples and local communities. By stressing the environmental impact of insurance underwriting, the report aims to raise awareness and understanding in the insurance industry, and among its clients and investors, policymakers, financial supervisors and society as a whole, about the important role of the insurance sector in reining in global warming and reversing nature loss.

1.2: SOURCES

The report builds on the following main sources:



Publications from international standard-setters, financial supervisors, NGOs, insurance associations, insurance companies, regulators, academia, and the written press.^{vi}



An Advisory Group,^{vii} which brings together experienced professionals from the insurance industry, academia and NGOs.



Interviews with subject matter experts from the insurance industry.^{viii}

1.3: ACTIVITIES AND BUSINESS LINES IN SCOPE FOR THIS REPORT

The overall activities of any insurance company can be roughly divided into three main categories: own operations, investments, and insurance underwriting.

The operations of insurance companies have an impact on biodiversity and climate, for instance through their buildings, energy use, employees' commuting and business travel, and IT processes and infrastructure. However, similarly to other companies in the tertiary sector, these activities are generally negligible compared with the impact of what insurance companies finance and insure through their investment and underwriting portfolios. CDP estimates that for global financial institutions, portfolio emissions from financing, underwriting and investing are on average 700 times larger than their direct emissions.¹³

Insurance companies are major institutional investors (as asset owners and asset managers) with global assets managed by insurance companies estimated

at US\$40.6 trillion (2021),¹⁴ which equals roughly a third of the global market capitalization of all publicly traded companies.¹⁵ The investment activity of insurance companies is broadly similar to that of other asset owners or institutional investors (albeit with some specificities, such as for instance a generally longer investment horizon and a higher proportion of investments in bonds). The impacts of these on climate and nature, and the related responsibilities of insurance companies, are addressed by initiatives such as the Net-Zero Asset Owner Alliance (NZAOA), the Net Zero Asset Managers initiative (NZAMI), the Finance for Biodiversity Pledge and the Principles for Sustainable Insurance (PSI),¹⁶ as well as specific reports, notably from WWF.¹⁷ For this reason, investment activities are not a focus of this report.

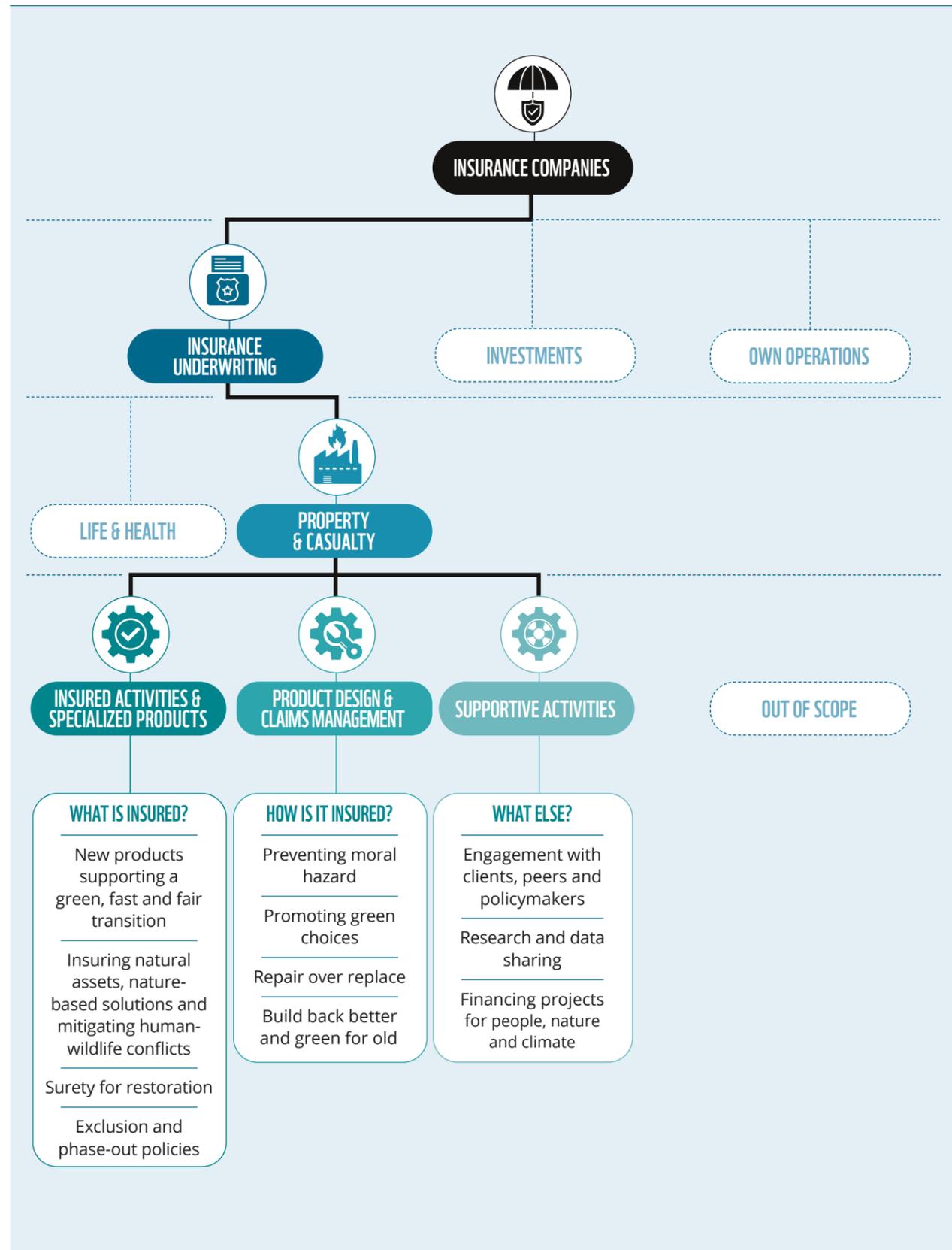
vi. The cut-off date for consideration of publications was mid-July 2023.

vii. The members of the Advisory Group are listed in the acknowledgements section.

viii. These were: Lea Müller, Head of Agriculture Risk Modelling, at SCOR; Hailu Tadesse, Head Engineering Lines, and Marco Deters, Sustainability Lead Commercial Insurance,

both at Zurich Insurance; James Wallace, Executive Director ESG, Ratings, Reporting, at Novartis, formerly at Allianz, and a UN PSI board member; and a fourth interview, conducted under Chatham House Rules.

FIGURE 1: CATEGORIES OF INSURANCE ACTIVITIES IN SCOPE OF THE REPORT



This report instead focuses on the **underwriting activities of insurance and reinsurance companies**. Their links to and responsibility for climate change and biodiversity loss are still greatly under-researched and undervalued. Moreover, the integration of net zero goals into underwriting portfolios and claims management is comparatively underdeveloped, as Figure 2 demonstrates.

Regarding the different business lines of insurance companies, the report focuses specifically on non-life underwriting (excluding life and health insurance),^{ix} commonly referred to as property and casualty (P&C) lines, as shown in Figure 1.

By taking a deeper dive into insurers' P&C business lines, this report looks at the impact of a broad range of non-life insurance business, including commercial insurance and personal lines. Reinsurance companies are included as well, given the major part they play in the insurance system through their collective role as risk capacity providers and specialized risk experts, but their specifics are only discussed

to a limited extent.^{x,19} Brokers and insurance markets are also only superficially investigated in this analysis.^{xi}

When referring to lines of business in the report, we borrow from a terminology broadly similar to the one used by the Net-Zero Insurance Alliance (NZIA) and the Partnership for Carbon Accounting Financials (PCAF) in their protocols and standards (see Figure 3).

Commercial lines of business covered in the report include insurance and reinsurance contracts provided to for-profit entities such as: property, liability/casualty (including directors' and officers'), transport (motor, aviation and marine), agriculture, credit, engineering and other special lines.

Personal lines of business covered include insurance policies contracted directly with individuals. These include, among others: motor, liability,^{xii} property and travel assistance. Reinsurance contracts for these personal lines are also in scope.



Sustainable energy is used at a wastewater treatment plant near Atlantic City in New Jersey, USA | © Alex Potemkin / Getty Images / WWF-US

ix. Life and health insurance are not in scope for this report; the role they play to guarantee health care or provide income to the elderly or surviving dependants are conceptually very different from the covered underwriting activities.
 x. Simply put, reinsurance can be described as a mechanism by which insurance companies pass on some part of their own insurance liabilities to other insurance companies to

reduce the likelihood of large payouts in the event of a major claim. What reinsurers agree to cover and under which terms has an impact on direct insurers and insurance clients.
 xi. Their role is discussed in Box 3: The role of brokers.
 xii. Car and property-related liability insurance is included in the assessment, but general personal liability lines are out of scope.

“The insurance industry has warned about increasing climate risks for 50 years. As one of the hidden hands shaping modern development, insurance companies have a big responsibility to put their money where their mouths are and to accelerate the transition away from fossil fuels. This new WWF report provides an excellent toolbox on how they can do this, from fossil fuel exclusion policies to meaningful engagement with coal, oil and gas companies.”

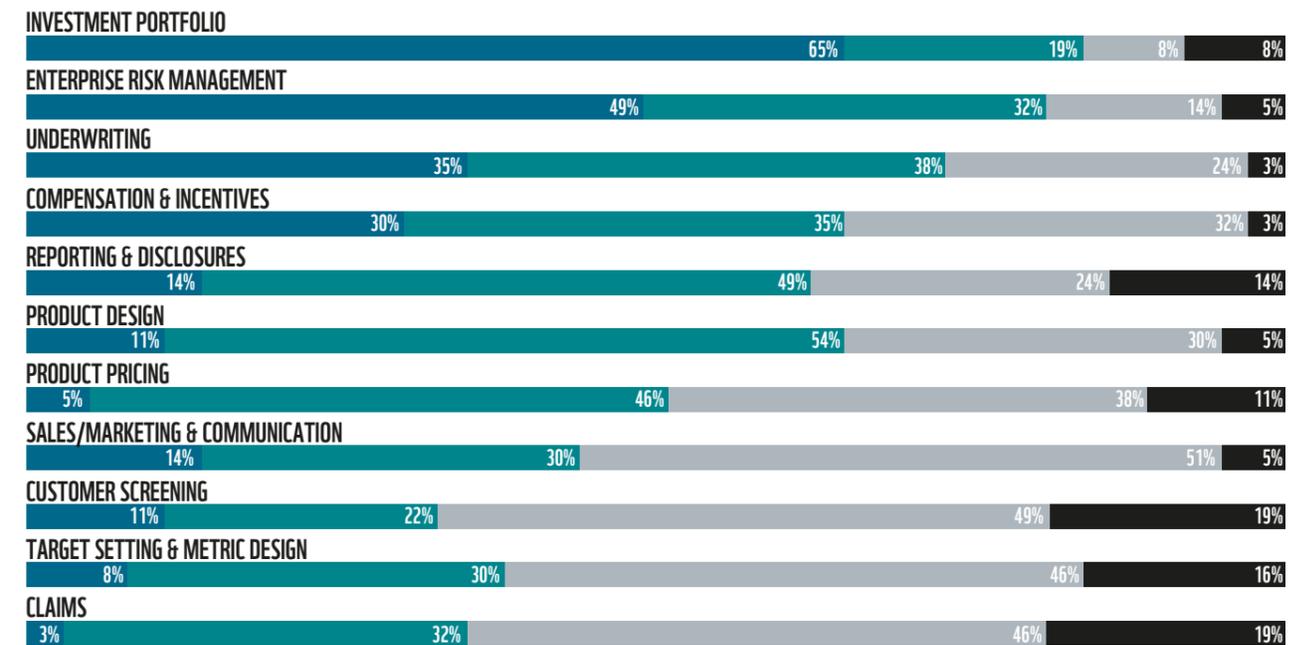
PETER BOSSHARD



Unsplash / Getty

FIGURE 2: INTEGRATION OF NET ZERO GOALS INTO THE VALUE CHAIN AMONG P&C INSURERS

■ HIGH ■ MODERATE ■ LOW ■ NOT AT ALL



Source: Adapted from Deloitte climate risk governance survey, Nov 22. Analysis by the Deloitte Center for Financial Services / Source: Sherwood et al (2023)¹⁸

FIGURE 3: LINES OF BUSINESSES IN SCOPE

| SEGMENT | LINE OF BUSINESS |
|--|--|
| Personal lines | Motor (all lines) |
| | Property |
| Treaty reinsurance (including treaty-like facultative reinsurance structures) | All non-life lines of business |
| Commercial insurance (directly insured and facultative reinsurance covers) | Property (e.g. fire, multi-peril) |
| | Liability/casualty (e.g. environmental liability) |
| | Commercial motor (all lines) |
| | Marine (liability and hull) |
| | Aviation (liability and hull) |
| | Agriculture (excluding government schemes/arrangements) |
| | Surety |
| | Engineering lines: construction all-risk, erection all-risk only |
| All other engineering lines (e.g. machinery breakdown, electronic equipment) | |
| Other/special lines (e.g. financial lines [e.g. professional indemnity, directors' & officers' liability] workers' compensation) | |

Source: Adapted from UNEP FI (2023)²⁰



02:

ANALYZING THE IMPACTS OF UNDERWRITING ON BIODIVERSITY AND CLIMATE

Regardless of the specific business or activity a company or organization undertakes, the starting point for analyzing the impact on biodiversity and climate is to understand which activities or sectors are most material. Creating such an understanding is key to devising a sound sustainability strategy that focuses on the most impactful levers to halt biodiversity loss and mitigate climate change. To do so, insurance companies must understand what drives biodiversity loss and climate change, and which industry sectors exert most pressure on biodiversity and climate.^{xiii}

2.1: DRIVERS OF BIODIVERSITY LOSS

Biodiversity is at the basis of the global economy. PwC has estimated that 55% of the world's Gross Domestic Product (GDP) is moderately or highly dependent on nature, biodiversity and the ecosystem services it provides, such as fresh water, healthy soil and clean air.²¹

However, this foundation of economic value is quickly eroding. In fact, nature is currently deteriorating at a rate and scale unprecedented in human history. The latest Living Planet Index from WWF shows that monitored wildlife populations – an indicator of healthy ecosystems – have declined by 69% on average since 1970.²² In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment came to the conclusion

that 1 million plant and animal species out of an estimated total of 8.1 million are threatened with extinction.²³ Many ecosystems are today close to tipping points beyond which they may be unable to recover.

Direct drivers of biodiversity loss

IPBES divides the causes of biodiversity loss into direct and indirect drivers.²⁴ Direct drivers of biodiversity loss are human activities impacting biodiversity at a proximate level, for example through forestry, fishing and infrastructure, or through pollution (see Figure 5 and Box 1). Human-caused climate change is also a direct driver of biodiversity loss, whose significance is expected to grow substantially in the coming decades.

If left unchecked, climate change is likely to become the dominant cause of biodiversity loss and the degradation of ecosystem services by 2050.²⁵ This trend is particularly concerning given that biodiversity and climate risks and impacts are inextricably linked and mutually reinforce one another. In fact, while the decline in biodiversity can have a material impact on the ability of ecosystems to regulate climate and natural processes, some mitigating actions for climate change may also have negative impacts on nature, resulting in negative trade-offs or unintended effects, as in the case of hydropower (see Figure 4).²⁶ In essence, this means that the two crises can only be solved if addressed together, while also striving for social development goals.²⁷ As discussed below, actions to protect, sustainably manage and restore ecosystems, also known

as nature-based solutions (NbSs), can provide livelihoods for local people and can make a critical contribution towards both climate change adaptation and mitigation, while also supporting biodiversity objectives.²⁸

Indirect drivers

Indirect drivers of biodiversity loss operate more diffusely and at a more systemic level. They can be seen as underlying causes that drive the human actions that impact nature, such as societal values, economic factors, demographics and technology. Authoritative sources like the IPBES, ENCORE and WWF combine views of both direct and indirect drivers to establish a list of major human-induced drivers of biodiversity loss (see Figure 5 and Box 1).

FIGURE 4: INTERACTIONS BETWEEN CLIMATE CHANGE, NATURE AND PEOPLE

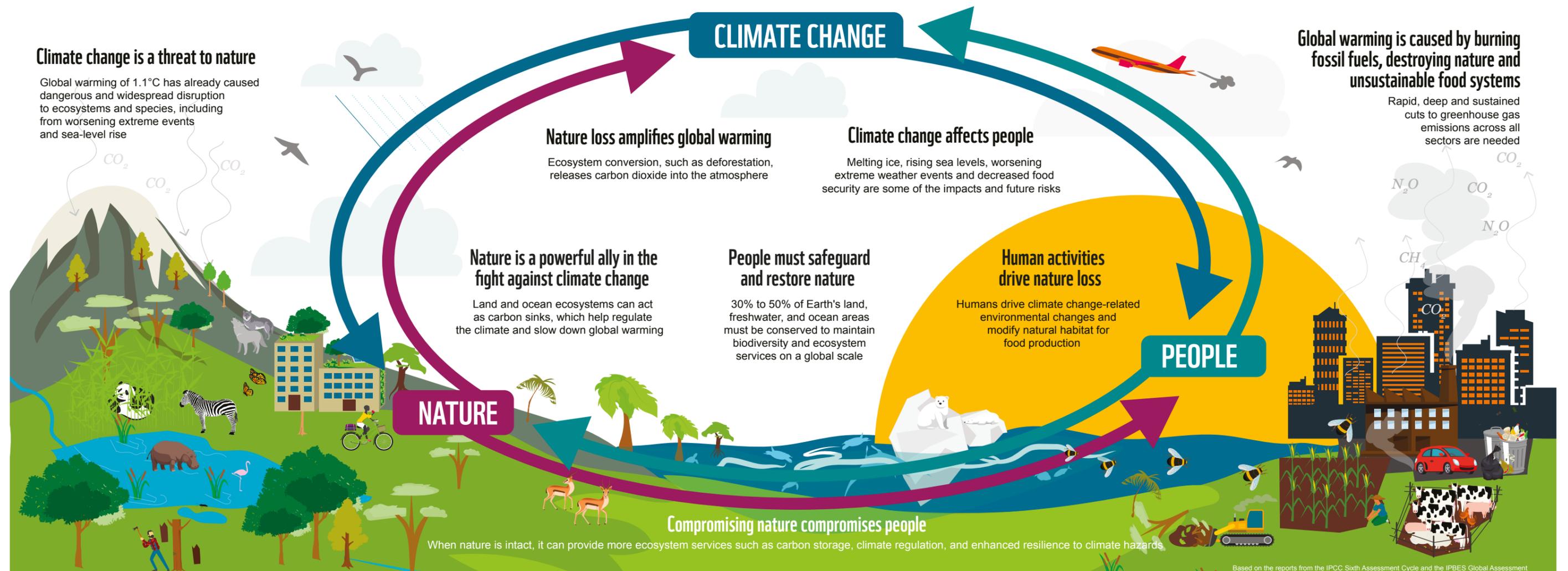
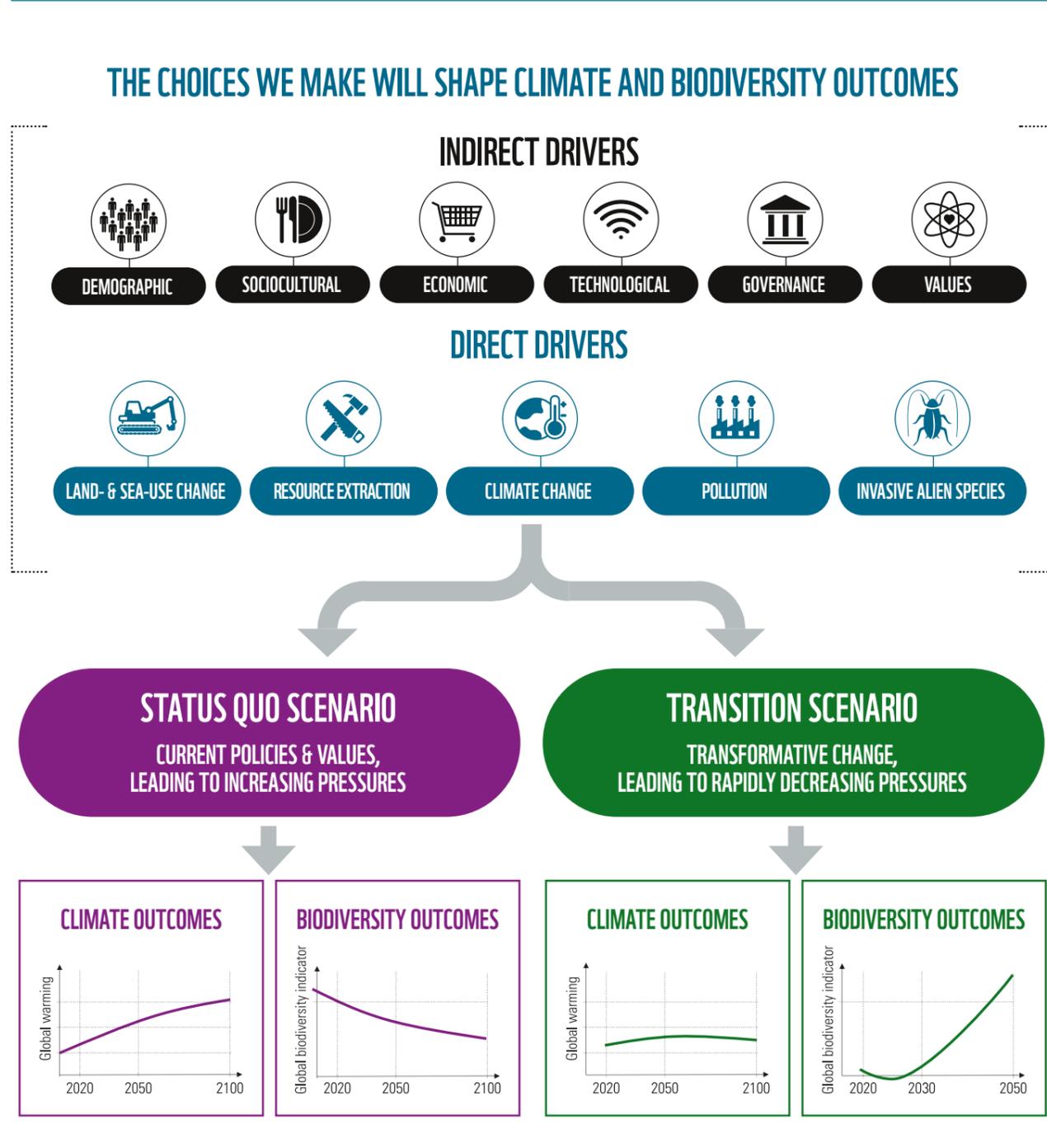
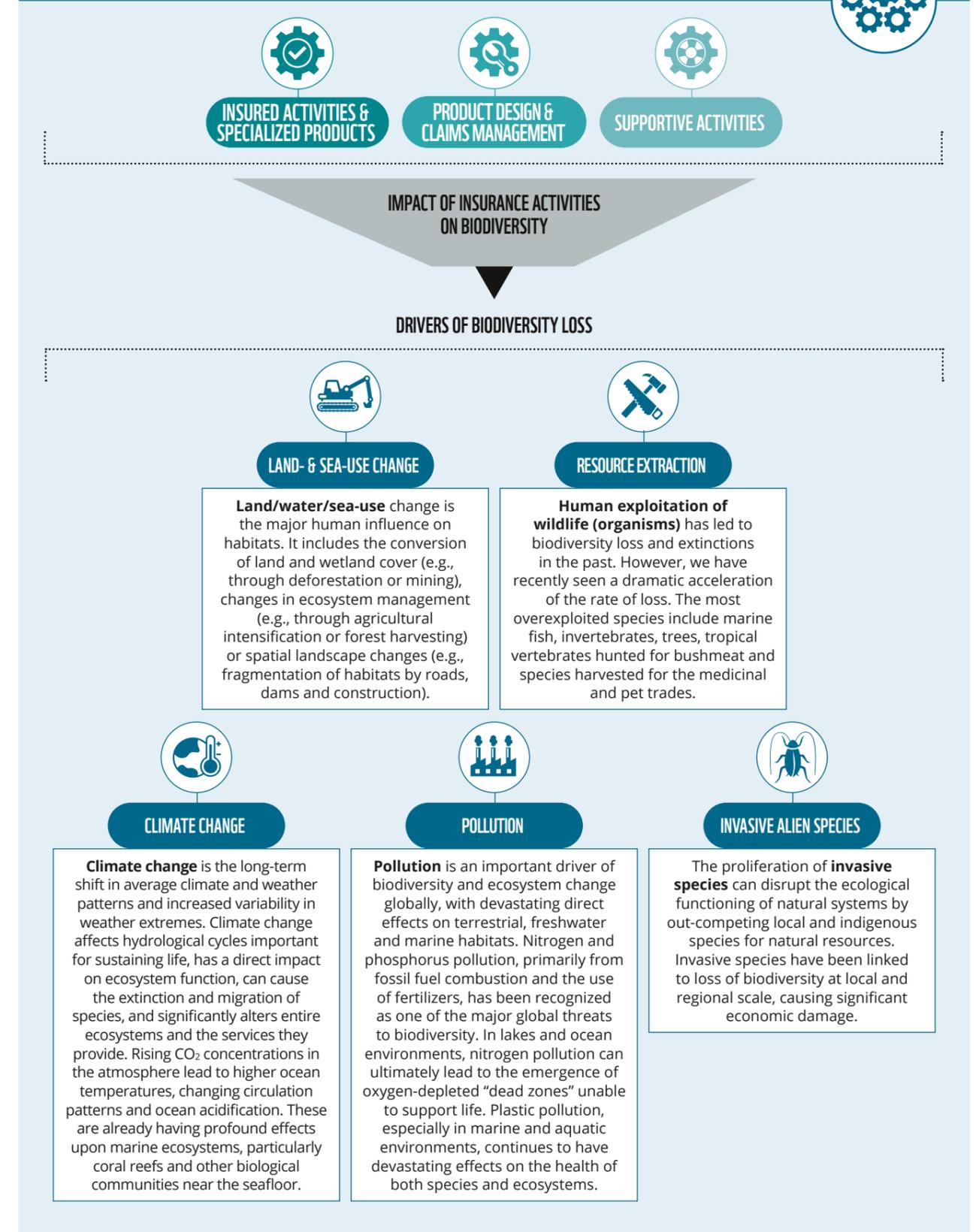


FIGURE 5: INDIRECT AND DIRECT DRIVERS OF BIODIVERSITY LOSS



Source: Adapted from WWF (2022)³⁰

BOX 1: THE FIVE KEY DRIVERS OF BIODIVERSITY LOSS



Source: A Biodiversity Guide for Business³¹

2.2: THE INDUSTRY SECTORS WITH MOST IMPACT ON BIODIVERSITY AND CLIMATE

To assess a company’s impact on the key drivers of biodiversity loss, it is important to understand which industry sectors and activities have the most material adverse effects on biodiversity and climate. This allows insurance companies to concentrate their time and resources efficiently on the most relevant issues.

To this end, WWF’s biodiversity stewardship programme has published *A biodiversity guide for business*,³² which outlines the impact and dependencies on biodiversity of the most relevant sectors. Also, WWF released in 2023 its Biodiversity Risk Filter,³³ an education and assessment tool for biodiversity risks.³⁴ Building on this expertise and the work done by the Science Based Targets Network (SBTN),^{xiv,35} it identifies the industry sectors listed in Table 1 as having the greatest impact on biodiversity.^{xv} Likewise, in its report on asset owners and climate change, WWF provides two complementary lists of high-carbon priority sectors.³⁶

Table 1 gives an overview of the sectors that most affect both biodiversity and climate. It shows that some sectors, such as agriculture, mining, oil and gas, and transportation,

are both highly carbon-intensive and have a high impact on biodiversity. These sectors should therefore be given special attention by insurance companies.

Although insurance companies must understand the impact their commercial clients have on biodiversity and climate, they should look beyond the direct impact of an industry and the stand-alone production processes of companies. Insurance companies should also take into account the whole value chain, including the behaviour of the end user. In the end, industries are driven by consumer demand and preferences – an area where the insurance sector can also help set consumer incentives aligned with fighting climate change and preserving nature.



TABLE 1: HIGH-IMPACT SECTORS^{34,36}

| SECTORS WITH HIGHEST IMPACTS ON BIODIVERSITY | HIGH-CARBON SECTORS ^{xvi} |
|---|--|
| AGRICULTURE (ANIMAL PRODUCTS) | A.01: Crop and animal production, hunting and related service activities |
| AGRICULTURE (PLANT PRODUCTS) | |
| FISHING & AQUACULTURE | A.03: Fishing and aquaculture |
| PAPER & FOREST PRODUCT PRODUCTION | A.02: Forestry and logging C.16: Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials C.17: Manufacture of paper and paper products |
| METALS & MINING | B.05: Mining of coal and lignite B.07: Mining of metal ores B.08: Other mining and quarrying B.09: Mining support service activities C.23: Manufacture of other non-metallic mineral products C.24: Manufacture of basic metals C.25: Manufacture of fabricated metal products, except machinery and equipment |
| OIL, GAS & CONSUMABLE FUELS | B.06: Extraction of crude petroleum and natural gas C.19: Manufacture of coke and refined petroleum products |
| LAND DEVELOPMENT & CONSTRUCTION | F.41: Construction of buildings F.42: Civil engineering F.43: Specialised construction activities L.68: Real estate activities |
| TRANSPORTATION SERVICES | H.49: Land transport and transport via pipelines H.50: Water transport; H.51: Air transport H.52: Warehousing and support activities for transportation |
| ELECTRIC ENERGY PRODUCTION - HYDROPOWER | D.35: Electricity, gas, steam and air conditioning supply |
| ELECTRIC ENERGY PRODUCTION - COMBUSTION (BIOMASS, COAL, GAS, NUCLEAR, OIL), GEOTHERMAL ENERGY | |

xiv. For a more granular assessment of each sector’s impact on biodiversity, please consult the SBTN Sectoral Materiality Assessment Tool (see endnote 35).
xv. There are other classifications of economic sectors with high impacts on biodiversity and ecosystem services. For instance, in its 2023 Biodiversity and Nature related

Risks for Actuaries: an Introduction report, the Institute and Faculty of Actuaries identifies two additional lists from UNEP FI and Finance for Biodiversity.
xvi. The numbers refer to the respective NACE codes.

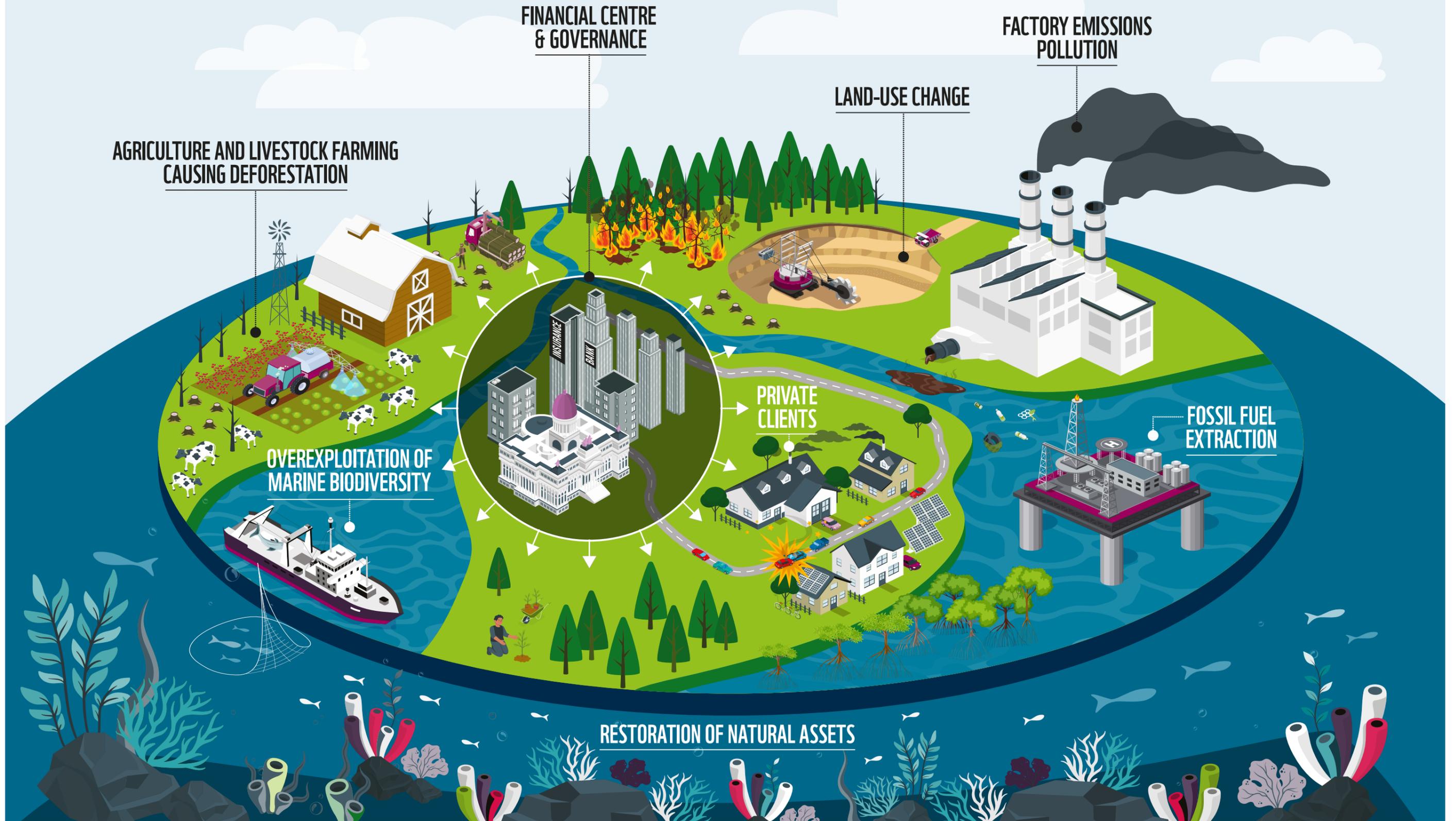
03:

IMPACTS OF THE UNDERWRITING BUSINESS ON BIODIVERSITY AND CLIMATE AND WAYS TO ADDRESS THEM



Insurance companies are some of the main managers and carriers of risk in our societies through the activities they decide to insure, their product design and their management of claims. With global gross written premiums totalling US\$6.86 trillion in 2021, the insurance industry is also a heavyweight in the global economy.³⁷ Understanding the impact of its underwriting activity on biodiversity and climate is thus key.

INSURANCE ENABLES ECONOMIC ACTIVITIES



Insurance companies have important levers to enable or influence economic activities and their impact on biodiversity and climate. To understand these impacts and levers, it is necessary to understand:

1. What is insured, and with which products?
2. How are these activities insured, and what incentives are created through product design and claims management?
3. What else could insurance companies do to drive the green, fast and fair transition?

Insurance companies do not act in isolation. They are rather part of a broader landscape alongside other actors with complementary roles, such as banks, insurance brokers, development financial institutions, public investors and regulatory authorities. In many cases, banks require

that collateral pledged by lenders (e.g., real estate, leases or machinery) is insured. In turn, insurance brokers intermediate between the person or company insured and the insurance underwriter. Finally, insurance companies transfer their risks to reinsurers, which provide financial protection to insurance companies.

All these actors participate in the provision of underwriting services and thus need to be factored in when assessing the impact of insurance companies on the environment. While the respective roles vary among different players, it is fundamental that all are committed to the same overarching goal of achieving global climate and biodiversity goals and support each other in this common endeavour.³⁸ While this report cannot cover all these actors and their roles extensively, it discusses some of the most relevant interactions with regards to banks (Box 2: The interactions with banks) and insurance brokers (Box 3: The role of brokers).



BOX 2: THE INTERACTIONS WITH BANKS

“Without insurance there is no financing [...] If you get the majority of the market together to align on principles of insuring in a climate-friendly way, it will have an even bigger effect on financing.”
 THOMAS BURBEL CEO OF AXA³⁹

The insurance and the financing business are strongly interlinked. Borrowers generally make loan repayments out of profit generated by the activities funded by the proceeds of the loan. Anything that impacts borrowers’ profits influences their ability to repay the loan and thus ultimately increases the credit risk for the bank. Lenders assess the viability of projects to which they are making loans, and this extends to the insurance that is in place. The more comprehensive and sound an insurance cover for a given activity is, the less risky it is generally for a bank to hand out a loan for that activity. Insurance thus acts as a risk mitigant and strengthens the financial resilience of banks to adverse events that could give rise to loan defaults.

Therefore, insurance is often a pre-condition of lending, particularly in the case of corporate, project or asset-backed lending, that banks offer to clients. For example, the European Bank of Reconstruction and Development requires companies to obtain insurance against “normally insurable risks”.⁴⁰ Similarly, in places where homeowner insurance is not legally mandatory, mortgages lender require it.⁴¹ Hence, non-renewal of insurance can also potentially trigger loan termination from the lender.

This means that through their underwriting criteria (exclusion or conditions) insurance companies determine whether economic activities that are harmful to biodiversity and climate can be financed, or at least shape the conditions attached to the financing. By refusing for instance to insure certain economic activities in World Heritage Sites, insurers may prevent the financing and thus potentially the occurrence of these activities. The relevance of this lever is evidenced by the fact that in 2019, the world’s largest banks’ lending and capital market activities across areas that are primary drivers of biodiversity loss totalled US\$2.6 trillion.⁴²

As in the case with brokers, aligned action from banks and insurance companies is required to achieve global biodiversity and climate goals and to reduce systemic risks. The coordination can also be reached through a common alignment on the global biodiversity and climate goals and be based on the scientific understanding of what kind of transformation is needed to reach these goals. For example, making sure that corporate clients have validated science-based targets for nature and climate, or that protected areas and areas in restoration are respected. This common commitment towards a green, fast and fair transition would prevent insurers with good sustainability practices losing business to those without and could reduce systemic risks that arise from insurers withdrawing cover whilst banks continue to provide finance.



Freepik – aleksrybalko



BOX 3: THE ROLE OF BROKERS

Insurance and reinsurance brokers are financial intermediaries who match customers looking to purchase insurance with providers of risk transfer solutions. To do so, insurance brokers sell, solicit or negotiate insurance on behalf of clients in exchange for a fee. Insurance brokers may advise and transact business for retail clients, corporations and insurance companies. The largest insurance brokers in the world by revenue are Marsh McLennan, Aon, Willis Towers Watson and Arthur J. Gallagher.

Brokers have a key advisory role and can help their clients better manage sustainability-related risks. They have a self-interest in maintaining insurability, and the largest brokers produce important research and advice on climate and ESG risks, including, for instance, Aon’s annual report on weather, climate and catastrophes⁴³ and Marsh McLennan’s ESG Risk Rating assessments.⁴⁴

Although there are a few exceptions (for example, the surety line of business), the provision of insurance is generally one of the last steps in the financing process for large construction projects. Hence, when insurance companies come in, they can find themselves in a position where they can simply accept or decline the risks apportioned by brokers. Fear of being excluded from future deals and losing business is a common motivation for insurance companies to agree to participate without asking too many questions or collecting more environmental data beforehand.

Insurance brokers typically put little focus on external environmental impacts of the underlying insured activities they facilitate (unless these impacts are closely correlated with the insured risks themselves). For most large infrastructure projects or specialty line insurance contracts, the various risks are generally split and layered by the brokers and then apportioned to different insurance companies; for instance, a

given insurer may only cover the turbine on a large dam building project. Therefore, in practice, brokers are often the ones overseeing the whole insurance process and providing risk engineering and prevention advice to the project, rather than the insurance companies themselves.

Several brokers have committed to reaching net zero for their own operations, but not yet for the insurance business they transact. Aon, Marsh and Willis Tower Watson are signatories to the PSI. However, at the time of writing, none of them had publicly disclosed their progress in implementing these principles on the PSI signatory web repository.⁴⁵

The critical intermediating role of insurance brokers is often invisible to the public eye, although this is starting to change. In February 2023, the US NGO Inclusive Development International and 10 Ugandan and Tanzanian organizations filed a complaint with the OECD against insurance broker Marsh McLennan. The plaintiffs argued that “the East African Crude Oil Pipeline (EACOP) cannot be constructed without insurance. It is a legal requirement under Ugandan law that the EACOP must be insured, and large-scale construction projects such as the EACOP are unlikely to be financially viable without insurance. Through its engagement as insurance broker for the EACOP, Marsh is enabling the construction of the pipeline and is therefore contributing to the adverse impacts” of the project on human rights and the environment.^{46,47}

Based on this understanding of the central role of insurance brokers, it is crucial that insurance companies engage these brokers with regards to their biodiversity and climate goals, phase-out and exclusion policies, as well as their safety and environmental standards. Without this alignment between insurance companies and brokers, it will be hard for insurers to deliver on their biodiversity and climate commitments.

3.1: INSURED ACTIVITIES AND SPECIALIZED PRODUCTS (WHAT IS INSURED?)



What insurance companies choose to insure or not to insure matters, as they act as important enablers of economic activity.

The most basic function of insurance companies for individuals, companies and other entities is the protection against risk. By providing coverage in the event of loss, insurers help smooth consumption across entities, over time and between geographies. They provide benefits that are essential for the development and functioning of the modern economy. For example, the European Systemic Risk Board states that insurance coverage encourages innovation and long-term planning, eases access to capital and helps avoid lengthy bankruptcy processes. Moreover, insurance may have positive macro-economic spillover effects by stabilizing the economy and supporting public budgets in case of adverse shocks.⁴⁸

The absence of insurance coverage is thus often cited as a hurdle to economic development, the realization of a large-scale project or the introduction of new technologies. For example, the absence of earthquake insurance in Haiti was a crucial factor in the country's slow recovery after the catastrophe in 2010.⁴⁹ Similarly, the difficulty in covering liability risks faced by nuclear power plants is a major obstacle to realizing such projects and has created the need for special legislation and the creation of special nuclear insurance pools. Lastly, new technologies such as autonomous vehicles pose challenges to insurance companies, likely slowing their market uptake.⁵⁰

To act as catalysts in the green, fast and fair transition, insurance companies should therefore think strategically, and consider which economic activities they wish to enable and which they plan to phase out.

On the positive side, it is crucial that insurance companies invest resources to develop new coverage around green technologies, practices and natural assets to speed up their uptake and protection and restoration, respectively. On the negative side, insurance companies should stop or phase out coverage for environmentally harmful economic activities and companies. For example, according to unpublished estimates from the analysis and consultancy company Insuram, insurance companies make US\$30 billion annually in gross written premiums from underwriting oil and gas extraction, and many large insurance companies still have coal policies that are not compatible with global climate goals.

An example of the power of insurance companies and banks is the battle over the development and operation of the Carmichael coal mine by the Adani Group in Australia. The project infringes on the lands of Indigenous Peoples,⁵¹ will accelerate climate change and, through its effect on the Great Barrier Reef,⁵² will destroy biodiversity. Due to these controversies, many global banks and insurance companies have refused to finance and underwrite the coal mine. While the much-delayed project nevertheless found some insurers prepared to provide coverage, its current production capacity of 14 million tonnes of coal per year lags way behind its planned 60 million tonnes, which is partly attributed to these financial challenges and the continued exit of insurance companies.⁵³ While this shows the power of banks and insurance companies, it also underscores the importance of all insurance companies presenting a united front in the effort to reach global climate and biodiversity goals.

3.1.1: NEW PRODUCTS SUPPORTING A GREEN, FAST AND FAIR TRANSITION

Among other things, a green, fast and fair transition will require US\$5 trillion annual investment into renewable energy,⁵⁴ US\$475 billion annual investment into the rail sector⁵⁵ and US\$665-1,280 billion investment in carbon sequestration.⁵⁶ Insurance coverage is crucial to enable these investments. While some of the technologies and products to achieve the transition have been around for decades, the scaling of newer, less market-proven solutions sometimes requires innovation from insurance companies. The latter can also be important partners in testing and scaling new solutions. In addition, the rapid adoption of solutions needed for the transition cannot be taken for granted. Through the incentives that insurance products can provide, insurance companies have leverage to increase the rate of adoption and support green behaviour.

Overall, product development is highlighted in several publications as a key action that insurers can take to support the transition to a green economy.^{57,58,59,60} For instance, the Sustainable Markets Initiative (SMI) Insurance Taskforce Sustainable Products and Services Showcase report⁶¹ identifies a wide range of insurance products that are designed to support the goal of net zero. Such product innovation also represents new business opportunities for the insurance industry.

Insuring renewable energy

Many insurance companies offer cover for renewable energy, with specific products ranging from cover for infrastructure construction and operation to battery storage. In addition, several providers offer products for renewable energy providers that compensate against underperformance in the form of natural financial risk insurance or warranty insurance.

For example, *We2Sure* offers an insurance product that compensates for the underperformance of heat pumps, with the homeowner being compensated with a payment under certain weather conditions.⁶² As weather also affects the output of renewable energy projects (whether wind, solar or hydro), many operators choose to buy insurance against underperformance due to variations in weather, supporting their cash-flow planning and risk mitigation. As an example, *Swiss Re* offers a parametric insurance product covering the risk to wind farms from either low or excess wind.⁶³ Similarly, *Helvetia* offers comprehensive cover for photovoltaic installations, including cost coverage in case of underperformance.⁶⁴ Meanwhile, *Munich RE* offers technology performance insurance for bioenergy, circular economy and solar energy projects.⁶⁵

To grow this part of the market, some insurance companies have set targets for underwriting renewable energy generation. For example, *Aviva* made renewable energy underwriting a priority and set itself the goal of becoming the UK leader by 2027.⁶⁶

Real estate and construction

The sector is responsible for 40% of global GHG emissions (including energy used in the operation of buildings) and uses a large quantity of raw materials.⁶⁷ Constructing greener buildings in terms of their energy sources, energy efficiency, and building materials and recycling is therefore indispensable for the transition to a green economy. As with the examples in renewable energy, insurance products are offered to protect against the underperformance of green buildings, e.g., in Beijing and Qingdao in China.⁶⁸

There are also efforts underway to insure buildings built with more sustainable materials. Mass timber materials manufactured from layers of wood have some potential to more durably replace emissions-intensive steel and concrete, if the wood is sourced sustainably (e.g., is FSC-labelled) and the demand for wood does not lead to deforestation of intact forests. Compared to equivalent concrete and steel structures, using mass timber reduces GHG emissions from manufacturing by up to 25-40%, while sequestering carbon for the building's lifetime. The Geneva Association discusses the case for insuring mass timber, and both *Zurich* and *AXA XL* offer builders risk coverage that includes mass timber.^{69,70} Product innovation is needed, as fire hazard during the construction phase is different to buildings made with conventional materials (affecting builders' risk insurance) and there is limited experience with the reaction of these buildings to moisture and natural hazards (with implications for fixed property insurance).⁷¹

Decommissioning carbon-intensive assets

Many carbon-intensive companies will need to decommission assets ahead of their projected lifetime as countries move to meet their climate goals. Insurers can support this with products which cover potential liabilities resulting from decommissioning, as well as ensuring that environmental restoration is completed. *Hiscox*, for example, offers products that enable companies to remove end-of-life assets that are environmentally damaging and return the environment to its natural state.⁷²

However, despite these positive real-life examples, innovative insurance products targeting green businesses or technologies generally represent only a small fraction of an insurer's overall product suite. The industry is thus still a long way from incorporating green considerations into all aspects of insurance product design and from identifying opportunities to support new businesses and technologies considered critical to the green, fast and fair transition.⁷³

3.1.2: INSURING NATURAL ASSETS, NATURE-BASED SOLUTIONS AND MITIGATING HUMAN-WILDLIFE CONFLICTS

Natural assets and nature-based solutions

Natural assets can provide important benefits to local communities and economies. For example, mangroves provide flood protection benefits exceeding an estimated US\$65 billion per year; if mangroves were lost, an additional 15 million people would be flooded annually.⁷⁴ Coral reefs and other iconic natural landscapes attract important tourist revenue. For example, the annual economic contribution of coral reefs to the tourism industry is valued at US\$36 billion.⁷⁵ Insurance companies are involved in the restoration of natural assets that have been destroyed and the insurance of existing natural assets so that any damage can be swiftly remediated.

Restoring degraded natural assets

Projects to restore or build new natural assets are often conceptualized as nature-based solutions (NbSs). These restore natural ecosystems and deliver concurrent social, climate and nature benefits.⁷⁶ Projects designed to build and restore such NbSs mostly need insurance to cover project operations in the same way as traditional infrastructure projects.

Such projects typically require engineering all-risk insurance to protect them against disruptions or delays, or they require environmental risk insurance. For instance, *Swiss Re* provided construction all-risk coverage to support the restoration of the Prince Hendrick sand dyke that protects a unique ecosystem on the Island of Texel in the Netherlands – a World Heritage Site. The project aims to prevent a major failure of the dyke due to rising sea levels, while simultaneously improving biodiversity and protecting the local community, which benefits from physical protection afforded by the dyke and income from tourism and fishing.⁷⁷

Another example is the canal restoration project in Kochi, India, also supported by *Swiss Re*. The canals currently flood periodically, and are polluted, posing hazards to health. The planned NbS includes planting mangroves, constructing wetlands and using porous surfaces for canal walls. The project is expected to benefit the local population through greater flood protection, reduced water pollution and by mitigating urban heat.⁷⁸

Insurance companies can also apply their risk management capabilities to support NbSs in the conceptualization phase. An example is the collaboration between *Munich Re* and *The Nature Conservancy (TNC)* on flood prevention along the lower Mississippi River. They propose to combine NbSs to reduce flooding with community-based insurance so that damages decrease, insurance becomes affordable and insurance coverage increases.⁷⁹

Insuring natural assets

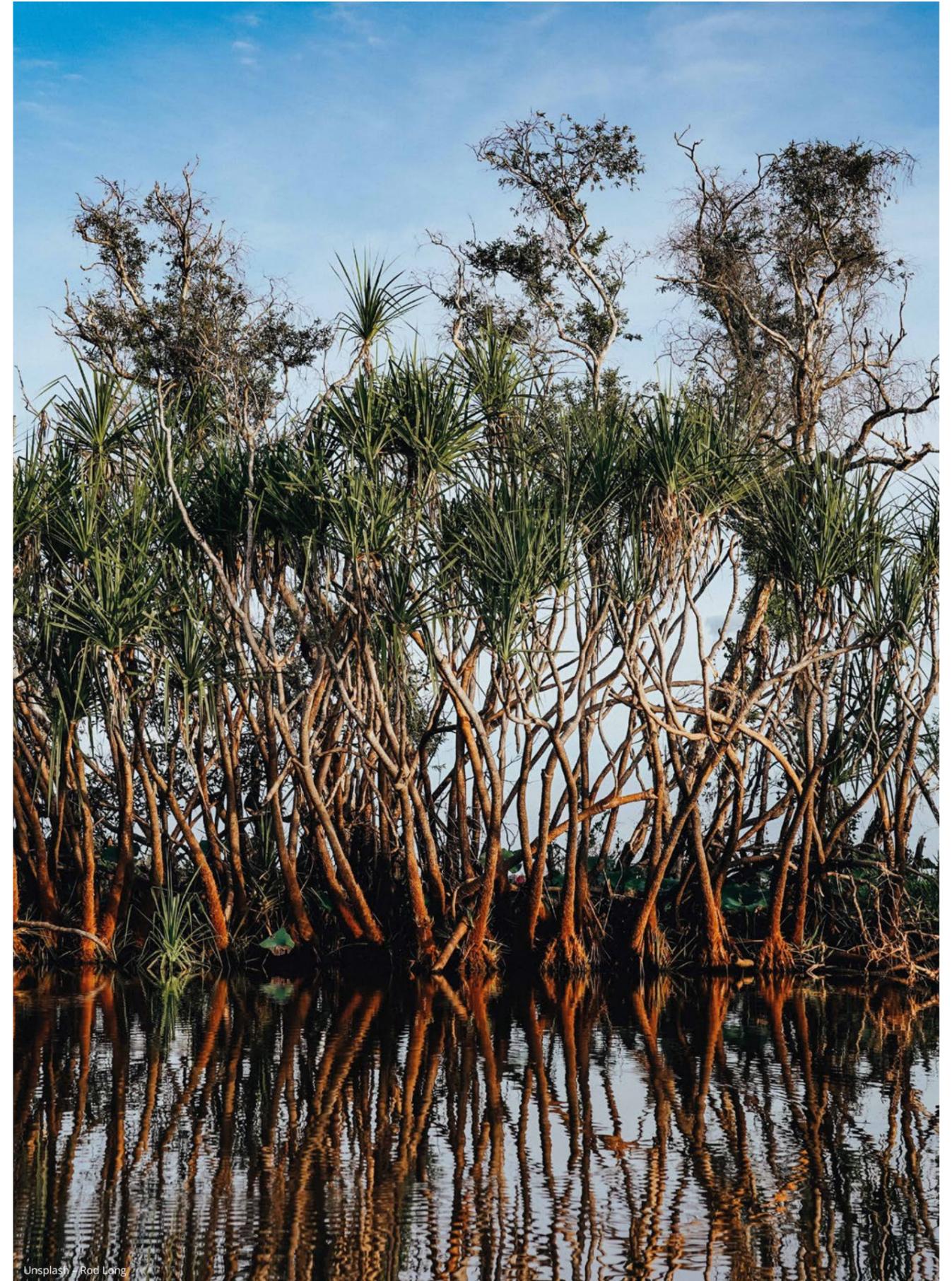
Insurance products can also be tailored to support restoration of natural assets after natural disasters have occurred. Parametric or index-based insurance products can be particularly effective in this regard. Their payouts are based on a predefined set of parameters – such as rainfall, windspeeds or flooding – rather than an after-the-fact assessment of damages and loss. This means they can provide instant access to funds to cover the costs of damage, allowing natural structures such as coral reefs, mangroves or forests to be rapidly repaired.

TNC offers a useful guide to how to approach such projects.⁸⁰ It gives as an example the partnership in Mexico between *TNC*, the government of Quintana Roo, the National Commission of Protected Areas and *Swiss Re*. They developed a parametric insurance product to protect a coral reef, where the payout is triggered when a threshold for peak windspeed is exceeded, thereby rapidly providing funds to support reef restoration and recovery.⁸¹

Human-wildlife conflicts

Human-wildlife conflicts arise when encounters between humans and wildlife lead to loss of property, livelihoods and even human life. Many people react with defensive and retaliatory killing that reduces wildlife populations and can even drive species toward extinction: in some European countries, wolves and bears have been locally extinct for many decades.

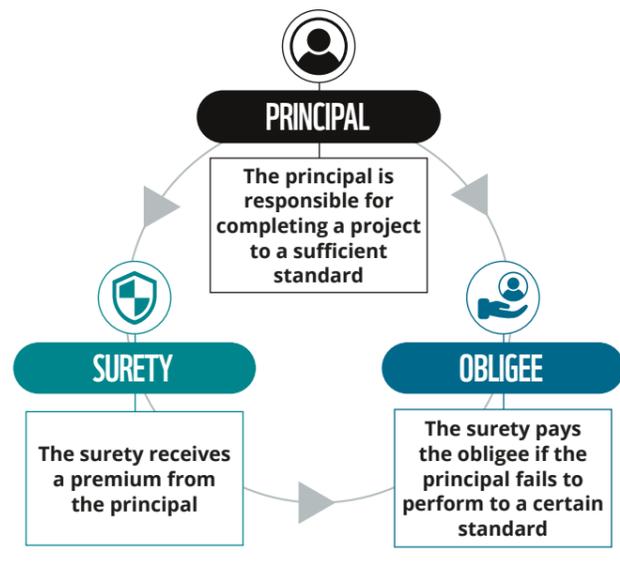
Insurance solutions for human-wildlife conflict have proven to be effective in preventing these retaliatory killings and supporting local conservation.⁸² Examples can be found around the world. In Pakistan, Project Snow Leopard covers livestock losses due to leopard attacks. In China, local authorities in collaboration with the *China Pacific Property Insurance Company* cover crop and property damage caused by elephants.⁸³



3.1.3: SURETY FOR RESTORATION

Surety is specialist insurance which involves an agreement between three parties: the principal, the obligee and the surety.^{xvii,84} Surety is used to ensure that large projects such as infrastructure developments are completed in the event of default of the company carrying out the project. The principal, normally a contractor carrying out the project work, is the purchaser of the policy. The obligee is the project owner, for whom the work is being carried out (usually a government agency). It requires the surety to be in place to ensure the project is completed to sufficient quality. The surety insurance company receives payment from the principal and, in return, covers losses if the principal defaults (see Figure 6).

FIGURE 6: SURETY MECHANISM



Surety can be used to cover environmental liabilities, for instance by guaranteeing that contractors will comply with environmental policies or that they will restore land to an agreed state at the end of the project. Surety business therefore has a role in supporting environmental restoration when projects with high climate and nature impacts reach the end of their economic lifespan. In that regard, it is important that environmental damages are properly assessed and the cost of restoration adequately anticipated. As with other product lines, surety underwriting also provides an opportunity for insurers to incorporate environmental considerations.

In the case of surety, the underwriting process involves

assessing the principal against the ‘three C’s’: capital (financial strength), capacity (ability to perform) and character (integrity and reliability in meeting obligations).⁸⁵ The ability to manage negative effects on biodiversity loss by the principal influences these factors, meaning that it must be considered to appropriately perform surety underwriting. Engaging with surety clients to mitigate biodiversity impacts therefore not only has the potential to improve environmental outcomes, it can also lead to reduced risks associated with the contract. This, in turn, may result in more competitive pricing for the principal.

Surety regarding environmental rehabilitation is most common in the mining sector. In fact, many jurisdictions legally require surety to ensure that, after the closure of a mine, financial resources are available to restore affected ecosystems.⁸⁶ However, these schemes are not without challenges, especially around ensuring that adequate funds are set aside to ensure restoration.⁸⁷ Surety is also commonly used in the energy sector, for both fossil and clean energy infrastructure. For example, *Aviva Canada* provides surety for an existing gas pipeline, providing a guarantee that reclamation work to remove the pipeline and restore the land will be carried out following pipeline closure.⁸⁸ *Zurich* provides surety cover for businesses involved in building renewable energy infrastructure.

Surety can deliver many benefits, allowing projects to go ahead that otherwise would not. Where cover is provided for projects that are already in use, such as ageing infrastructure, the cover increases the likelihood of nature restoration taking place. However, the types of projects that tend to benefit from surety cover (such as large-scale infrastructure and construction projects) often have inherently high climate change and biodiversity impacts, as well as social and governance risks, and should be considered for potential exclusion regarding new projects (see below). When providing cover for infrastructure required to facilitate decarbonization of the economy (such as renewable energy), trade-offs between the negative impacts on nature of the project and its climate benefits must be recognised and mitigated where possible.

For projects that are not aligned with climate and nature goals and are not already in progress, insurers should consider the negative climate and nature impacts that they are facilitating by providing surety guarantees. They should keep in mind that preventing damage from occurring in the first place (which may involve declining surety cover or putting conditions in place) is far superior to repairing damage after the event occurs. Lastly, insurance companies should advocate for adapting public surety requirements to cover all necessary restoration activities and costs.

xvii. The global surety market was valued at US\$16bn in 2021 and is projected to grow to US\$24bn by 2031.

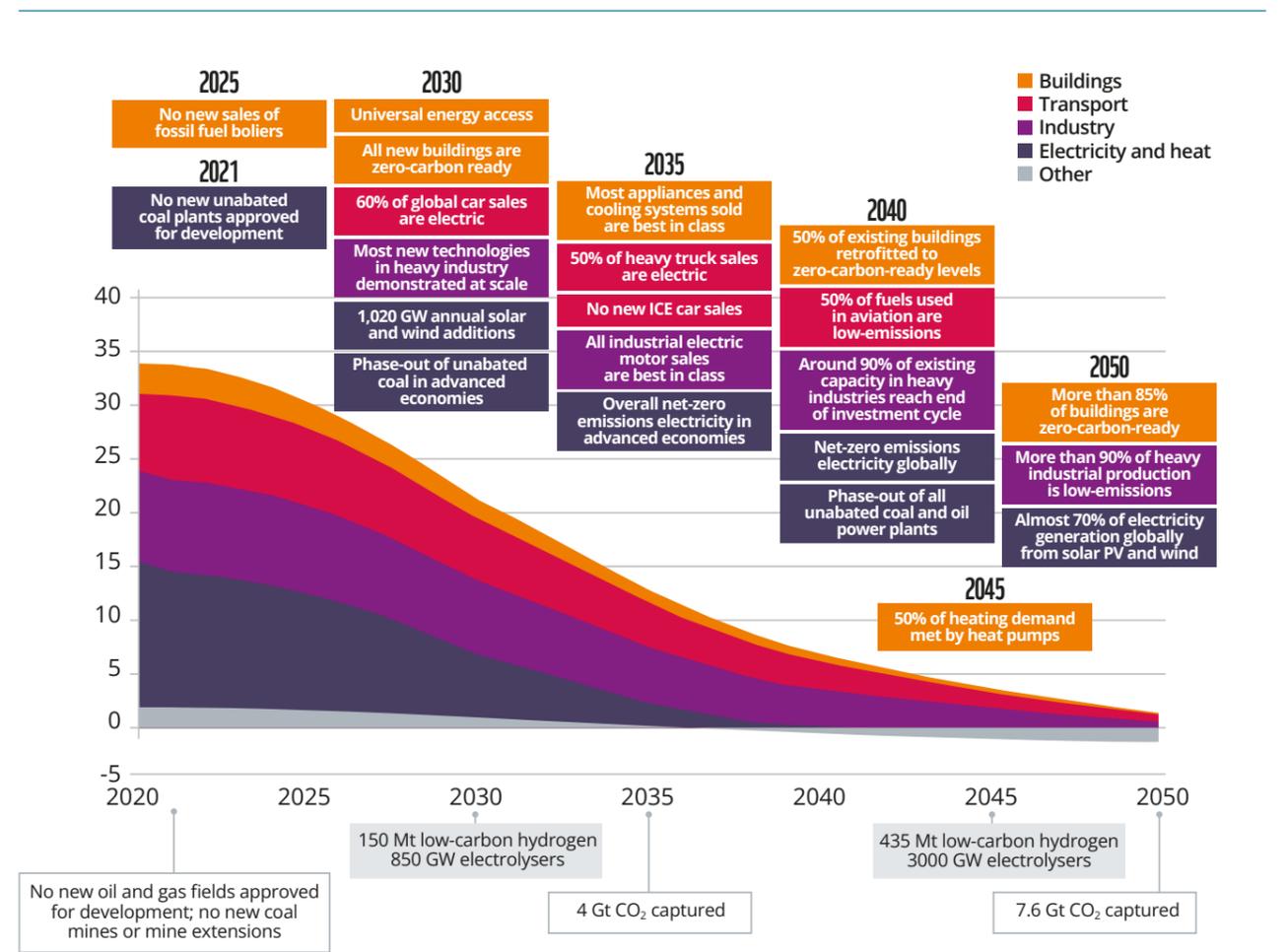
3.1.4: EXCLUSION AND PHASE-OUT POLICIES

Exclusion policies set criteria under which an insurance company decides to exclude specific activities, businesses, entire sectors, or countries from its underwriting activities. Here, we focus on insured activities that contribute heavily to the main drivers of biodiversity loss, including climate change. Phase-out policies refer to plans to stagger exclusion policies to reach a desired endpoint, such as no coal-fired electricity plants in OECD countries after 2030. The Net Zero 2050 scenario, developed by the International Energy Agency (IEA), provides a useful high-level guide for the phase-out of

certain energy-related activities and technologies that are not aligned with global climate goals (see Figure 7).

As more and more large insurers make commitments to climate or biodiversity goals, credible and comprehensive exclusion policies are becoming increasingly relevant for them to deliver on these pledges. Exclusion and phase-out policies are especially helpful for activities that have a severe negative effect on biodiversity and climate and whose function can be replaced by other economic activities, for example replacing the combustion of fossil fuels for electricity and heating with renewables, or halting destruction of natural habitat, in favour of sustainable agricultural practices.^{xviii}

FIGURE 7: SELECTION OF GLOBAL MILESTONES FOR POLICIES, INFRASTRUCTURE AND TECHNOLOGY DEPLOYMENT IN THE INTERNATIONAL ENERGY AGENCY'S 'NET ZERO EMISSIONS BY 2050' (NZE) SCENARIO⁹



Source: Adapted from International Energy Agency (2021)⁹⁹

xviii. For economic activities that cannot be replaced, other strategies, such as following a science-based decarbonization pathway, should be pursued.



However, where such policies are in place, important loopholes and exceptions often remain. For example, the sixth annual Scorecard on Insurance, Fossil Fuels and the Climate Emergency shows that while some large, mostly European, insurers have now backed away from insuring new coal projects, only a handful of insurance companies have adopted comprehensive phase-out policies related to oil and gas.⁹⁰ By not strictly excluding or decisively phasing out the underwriting of fossil fuel infrastructure projects, particularly those involved in extraction, insurance companies are continuing to enable fossil fuel consumption. Moreover, few insurance companies have started to specifically address other sectors and nature-related activities beyond climate in their exclusion policies.

A good example of how impactful exclusion policies can be is the decision of Australian insurers such as *QBE* and *IAG* to stop supporting the project to lift the Warragamba dam in New South Wales, Australia, on fears that raising the dam would negatively impact the cultural and natural value of the Blue Mountains World Heritage Site. In 2023, the New South Wales government decided not to proceed with the project due to its huge costs and environmental and heritage concerns.^{91,92,93}

A study by the consultant Guidehouse also demonstrates the effects of exclusion policies. It looked at the factors driving insurance premiums for companies active in the coal industry in North Dakota in the USA. The study found that pressure on insurers from “climate-focused organizations” to exit the industry was a factor in premium increases.⁹⁴ The study thus supports the argument for strong exit policies as a means to accelerate the green transition. Similar findings have been observed by Insure Our Future. Since the launch of its campaign in 2017, at least 39 insurance companies have phased out coverage for new coal projects. As a result, *KEPCO*, the largest electric utility in South Korea and a major owner of coal-fired power plants, is faced with significant underwriting challenges.⁹⁵

Exclusion and phase-out policies should be pursued alongside engagement with the companies subject to such policies, to encourage them to change the behaviour. However, it must be noted that engagement is not as valid a strategy for all insurance underwriting transactions as it is for investments. First, insurance underwriters are not shareholders with legal rights to vote or to file shareholder resolutions. Second, in the case of insurance coverage for a specific project, once the project is insured, an insurance company cannot engage the client to not implement the project. Hence, arguments that insurers should continue to underwrite new oil and gas fields because doing so enables them to engage with the client on climate change do not stand up to scrutiny. However, an engagement strategy consistent with an exclusion policy and consistent across investment and underwriting can be a very powerful tool, as is discussed on page 53.

Priority areas for exclusion and phase-out policies

Generally, priority for exclusion and phase-out policies should be given to economic activities that are most detrimental to biodiversity and climate.

WWF has identified the environmental economic activities, companies and industry subsectors that it considers “Always Environmentally Harmful”;⁹⁶ this list offers a starting point to identifying these activities, which might then be considered as priorities for exclusion and phase-out.^{xix}

Any exclusion and phase-out policy not addressing these activities and sectors falls short of the goal of limiting global warming to 1.5°C above pre-industrial levels and halting and reversing nature loss by 2030.

To provide a more detailed assessment, this report sheds light on economic activities connected to the four main drivers of biodiversity loss: land and sea use change; climate change; direct exploitation of organisms; and pollution. To do so, the following sections discuss four priority themes: 1) fossil fuel production and infrastructure, and its impact on climate change; 2) the land-use activities driving land conversion, including deforestation; 3) the contribution of fishing to the direct exploitation of organisms; and 4) the effects of some of the most harmful pollutants.



Deforestation and grasslands for cattle. Rondônia, Amazon © Ubiratan G. Surti / WWF-Brazil

xix. It is important to note that the current elements are defined as minimum requirements for the sectors most relevant to biodiversity and climate at this time.

BOX 4: WORLD HERITAGE SITES AND OTHER IMPORTANT AREAS



Galapagos sea lion, Ecuador | © Martin Harvey / WWF

World Heritage Sites (WHSs) are priceless and irreplaceable assets. They are defined by their “cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity”.⁹⁷ There are currently 1,157 WHSs listed by UNESCO, among them 900 cultural sites and 218 natural sites.⁹⁸ Famous examples include the Galápagos Islands, the Grand Canyon, the Great Barrier Reef, Mount Kilimanjaro and the Pyramids of Egypt. Natural WHSs perform many ecological services, including providing food and water, stabilising soils, preserving fisheries, preventing floods and capturing carbon. They are significant reservoirs of biodiversity; some of the world’s most endangered plants and animals are only found in WHSs. Around 11 million people living in or around WHSs are directly or indirectly dependent on the sites for income, whether from farming and fisheries, or tourism and its associated services.⁹⁹ Unfortunately, even these sites, representing less than 1% of our planet’s surface, are often threatened by unsustainable development activities, such as mining, oil and gas extraction, hydropower plants, road construction, port development, deforestation, agricultural expansion or industrial fisheries.

Insurance companies have a crucial role to play within the protection of WHSs. By selling coverage for risks, insurers can enable economic activity within a WHS. Not offering insurance to an activity that impinges on a WHS sends a powerful signal to the wider financial markets, may deter lenders and cause investors’ concern.¹⁰⁰ Recognizing that insurance companies face increased risks in insuring and/or investing in companies or projects whose activities could damage

World Heritage Sites, the Principles for Sustainable Insurance, WWF and UNESCO worked with the insurance industry to deliver in 2018 the world’s first insurance industry statement of commitment to protect the outstanding universal value of WHSs. The statement has been signed by 24 companies, among them large international insurers and re-insurers such as AXA, Swiss Re, Peak Re and Allianz.^{101,102}

The statement was followed in 2019 by the first WHS guide for the insurance industry, from the PSI, UNESCO and WWF, and co-developed with insurance companies.¹⁰³ The guide highlights the important role that the industry needs to play in protecting WHSs, explains the risks that insurers face and provides practical tools and a set of basic and advanced recommendations that insurers can implement to protect WHSs. It also highlights which economic activities should not be pursued in WHS at all (severe-risk sectors) and which can be undertaken with additional precautions (high-risk sectors). Building on this work, WWF and the Swiss Re Institute launched in 2021 a report on the role of spatial finance in natural WHS protection that discusses how spatial finance can be integrated into financial risk analysis and decision-making in the context of natural WHSs.¹⁰⁴

To ensure that they are not contributing to economic activities that are potentially damaging to a WHS, insurers should follow the PSI/UNESCO/WWF guidelines to protect WHSs, and the recommendations from the WWF and Swiss Re Institute report. In particular, insurers should:

1. Introduce no-go policies and/or more stringent due diligence policies for WHSs and other protected areas into their sustainability policies;
2. Develop, or obtain from intelligence providers, the UNESCO World Heritage Centre and/or civil society organizations – where possible – a watchlist of companies and projects that have potential or actual negative impacts on WHSs; and
3. Screen prospective underwriting and investment opportunities against such a watchlist.

World Heritage Sites are the tip of the iceberg. There are many more areas with great value for biodiversity and, therefore, humanity. For example, the TNFD Beta-Framework v0.4. asks companies to disclose operations that are, among other things, in “high-integrity ecosystems” or “areas of high biodiversity importance”.



BOX 5: INDIGENOUS PEOPLES AND LOCAL COMMUNITIES

Indigenous Peoples and local communities are among those most affected by the impacts of nature degradation and global warming, while at the same time being least responsible for causing them. An estimated 1.2 billion people globally are members of Indigenous Peoples or local communities, inhabiting more than 50% of the world's land. While most of these communities manage their land and resources sustainably, they are often in vulnerable situations and are rarely recognized or compensated for their stewardship of Earth's natural resources. In fact, many infrastructure and extractive projects, and even some conservation projects, are implemented in ways that violate the rights of Indigenous Peoples and local communities. Specifically, they are frequently faced with acquisition of their lands without their consent and consequent law enforcement actions, unjustified arrests, or forced relocations, and the intimidation and persecution of those defending their right, alongside the destruction of their habitats. For instance, financial institutions that provided services to a consortium of cement companies in Indonesia are faced with allegations regarding environmental damage as the cement plants have led to decreasing water infiltration, causing local droughts and floods. Moreover, these financial institutions have also been criticized for ignoring a local vote in which the majority rejected the factory being built.^{105,106} (See Box 3: The role of brokers for an additional example.)

Respecting the rights of Indigenous Peoples and local communities is a social responsibility and should be a non-negotiable matter. However, only 10% of community land is legally acknowledged as owned by Indigenous Peoples and local communities. This is especially problematic since these community lands – beyond providing livelihoods for rural populations – often contribute tremendous amounts of ecosystem services and climate benefits. According to the World Resources Institute, community land accounts for over 36% of intact forest and 80% of the world's remaining biodiversity, and as such these areas are home to a vast number of endangered or threatened species.^{107,108} At the same time, community forests often exhibit lower deforestation and degradation rates, thereby providing a cost-effective way to sequester carbon dioxide and preserve biodiversity. Altogether, community land provides an estimated US\$1.16 trillion worth of a selected subset of ecosystem services.¹⁰⁹



Woman watering plants at an agroforestry farm in East Usambara, Tanzania
© Juha-Pekka Kervinen / WWF

Efforts to respect and protect Indigenous Peoples and local communities and conserve community lands are thus key not only from a social perspective but are also instrumental to achieve our global biodiversity and climate goals. This was acknowledged in the Kunming-Montreal Global Biodiversity Framework, which throughout the document recognizes the rights of Indigenous Peoples and local communities and their essential role in halting and reversing biodiversity loss. However, despite all the benefits provided by Indigenous Peoples and local communities and their lands, both are under massive threat, due to increased land competition, conflicts, illegal activities and resettlements.¹¹⁰

Insurance companies should thus ensure they and their clients respect the rights of Indigenous Peoples and local communities, including equitably sharing the benefits provided by ecosystem services. This includes implementing sound human rights policies based on respect for free, prior and informed consent, as outlined in the UN Global Compact's guidance on the subject.¹¹¹ Beyond adopting a human rights-based approach in their underwriting business, insurance companies can protect and strengthen the resilience of Indigenous Peoples and local communities against the effects of climate change and biodiversity loss by offering specific insurance solutions, such as parametric insurance products.

Energy, especially fossil fuels

The science is clear that, to keep global warming below the 1.5°C threshold and avoid the worst impacts of climate change, the transition to a net-zero energy system must happen without any further delay. In its flagship Net Zero Emissions report from May 2021, the IEA emphasized that, to keep warming below 1.5°C, there can be no new investments in oil, gas and coal extraction from 2021.¹¹² This implies that all fossil fuels must be phased out as quickly as possible. Moreover, an emphasis on energy efficiency and energy saving is crucial, as some renewable energy sources put pressure on biodiversity that we need to mitigate through holistic energy strategies.

Given that coal is the single biggest source of CO₂ emissions from energy, it is critical to immediately stop any insurance for new coal-fired power plants and to phase out insurance underwriting for all existing coal-fired power plants, mines and associated infrastructure. Also, any support for retrofitting existing coal plants to extend their lifetimes must be stopped. In addition, insurance companies should phase out coverage for companies that generate more than a specific threshold of their revenues from the coal value chain. As per the IEA's Net Zero 2050 scenario, all coal should be phased out by 2030 in OECD countries and by 2040 for the rest of the world. Urgewald's Global Coal Exit list identifies companies accounting for about 90% of the thermal coal value chain and offers key statistics to define and implement exclusion policies.¹¹³ Importantly, the phase-out by insurance companies should encourage and support decommissioning of existing production assets and infrastructure, rather than its sale.

A number of insurance companies, including *Allianz*,¹¹⁴ *Aviva*¹¹⁵ and *AXA*,¹¹⁶ have started to define coal underwriting exclusion policies, and currently exclude single-site or stand-alone insurance coverage related to coal-fired power plants and coal mines, as well as for coal-related infrastructure. They also tend to exclude companies if their revenue derived from mining coal or producing electricity from coal is above a certain threshold. However, even where such thresholds are in place, insurance companies often make use of significant leeway, for example by defining exceptions for certain lines of business or by setting extended deadlines for their fossil fuel phase-outs.

The transition away from oil and gas use is similarly critical if we are to have any chance of staying below 1.5°C of global warming.¹¹⁷ In essence, this means there should be no exploration of new oil and gas resources and no new

infrastructure for production, refining, transport or use of oil and gas – and hence these activities should no longer be financed or insured.^{xx,118} Refusing insurance support for oil and gas projects is particularly important in areas of high biodiversity importance (e.g., protected areas, key biodiversity areas, the Arctic and intact forest landscapes) as they directly threaten endangered species and sensitive ecosystems. The same is true for unconventional fossil resources such as shale gas and oil, tar sands and deep-sea mining, which have particularly severe environmental impacts and thus must be prioritised in exclusion policies.^{xxi,119} For oil and gas fields already under production, insurance companies must take immediate action to align their policies with the goal of completely phasing out oil and gas support by 2040 at the latest in upper-middle and high-income countries, and by 2050 globally. The same caveat regarding decommissioning applies for coal companies.

The number of insurance companies adopting oil and gas restrictions is growing each year, as demonstrated by the Insure our Future 6th annual scorecard.¹²⁰ For instance, in May 2023, the German insurer *Talanx Group* announced the introduction of additional restrictions on insurance for new oil and gas projects, taking effect from July 2023.¹²¹ Likewise, the world's largest reinsurer *Munich Re* resolved in October 2022 to refuse insurance coverage for new oil and gas fields, new mid-stream oil infrastructure and new oil-fired power plants, in a bid to play its part in meeting the targets of the Paris Agreement.¹²² However, the scope and quality of these restrictions are highly uneven. In addition, they are mostly focused on excluding new oil and gas development projects and less on phasing out existing insurance coverage. In addition, and despite these individual cases heralding a shift away from oil and gas, many insurance companies continue to enable new oil and gas projects: a recent report from Greenpeace Nordic found that 69 insurance companies are directly or indirectly insuring oil and gas companies planning to establish new offshore oil and gas fields in Norway.¹²³

Lastly, it is important to consider downstream actors in the fossil fuel value chain, such as commodity traders, infrastructure providers or the transport sector, when defining fossil fuel underwriting policies. For example, insurers should phase out coverage for new internal combustion engine cars by 2035 (while continuing to insure previously produced vehicles), in line with the phase-out of that technology outlined in the IEA's Net Zero Emissions by 2050 Scenario (see Figure 7). The date should be considered as a global average, with higher ambitions for countries with ample renewable electricity supply and functioning public transportation.

xx. It is worth stressing that, in light of the remaining carbon budget aligned with the 1.5°C threshold, there is no more space for expanding the development of natural gas as a "bridge fuel" for the energy transition, as is often touted by the fossil fuel industry. See endnote 118 for a summary of the five natural gas mistruths.

xxi. This also applies to the extraction of other minerals in the deep sea. For additional information, see the Deep-Sea Mining – WWF's Guide for Financial Institutions report (see endnote 119).



Hydroelectric dam | Freepik - user27955914



BOX 6: HYDROPOWER PROJECTS

Dams can sustain functions important for human development, including water supply, irrigation, renewable electricity generation, and flood and drought management, as well as stimulate economic development. However, hydropower projects frequently have a high impact on local communities, food security and livelihoods.¹²⁴ According to the Business and Human Rights Resource Centre, hydropower is the subsector within renewable energy with the highest number of allegations of breaches of human rights, including abuses of Indigenous People's rights, displacement, and loss of livelihoods.¹²⁵

Hydropower can also put nature at risk. A recent study found that nearly two-thirds of the world's longest rivers are no longer free-flowing, and that hydropower dams are the primary cause.¹²⁶ This loss of river connectivity is one of the major reasons behind the 84% collapse in freshwater species populations since 1970.¹²⁷

Insurance companies act as risk managers, insurers and investors, and provide support for the development of hydropower projects in all three of these roles. Hydropower projects are complex and costly: in most cases, private companies will not engage in the construction of new hydropower projects without insurance coverage, and private investors will insist on relevant insurance being in place.

This is why WWF, with the support of the PSI initiative, published in June 2022 a first-of-its-kind guide to hydropower to facilitate sustainable infrastructure projects and prevent high-impact hydropower plants for the long-term protection of rivers.

The guide proposes several actions that insurance companies can implement. They should:

1. Support the transition to low-carbon, low-cost and low-conflict energy systems by favouring renewable energy projects that are part of an integrated, system-wide renewable energy plan;
2. Create a company ESG policy for underwriting and investing in hydropower;
3. Decline cover for hydropower projects in protected areas;
4. Require an independent and credible social and environmental impact assessment for any hydropower projects;
5. Require that stringent frameworks and standards are applied to any lending to or investments in hydropower projects;
6. Require calculations of a hydropower project's greenhouse gas emissions and set a maximum threshold; and
7. Consistently screen hydropower as a potential controversial activity in investment decision making.

To support insurers in developing their own ESG policies on hydropower, the guide also provides an assessment matrix that includes information on red flags, recommended requirements or assessment criteria, and suggested questions for engaging with hydropower clients across a range of ESG topics.¹²⁸

Deforestation and land conversion

While fossil fuels and energy-related issues are attracting considerable attention from insurance companies, underwriting policies covering more direct biodiversity impacts are generally subject to much less scrutiny. To address the overarching goal of the Kunming-Montreal Global Biodiversity Framework of halting and reversing biodiversity loss by 2030, a good starting point is to tackle deforestation and land conversion. The food system, extractive industries and infrastructure development should therefore be at the heart of any no-deforestation strategy, as they contribute most to this driver of biodiversity loss. For instance, agriculture,^{xxii} land use and forestry are responsible for 18% of global GHG emissions, and land conversion is the largest driver of biodiversity loss.¹²⁹

Insurance companies should aim to halt deforestation within their investments and underwriting businesses by 2025. This is in line with sector guidance from the Science Based Target initiative (SBTi)¹³⁰ and the "Financial Sector Commitment Letter on Eliminating Commodity-Driven Deforestation", published at the COP26 climate talks by major financial institutions including AXA, Aviva and SCOR.¹³¹ Signatories pledged to eliminate commodity-driven deforestation from their investing and financing by 2025; however, they should also apply this commitment to their underwriting business. This implies excluding companies from underwriting that drive deforestation and land conversion (either directly or through their supply chains) unless they demonstrate effective prevention measures by 2025. Companies and activities damaging protected areas (i.e., UNESCO World Heritage Sites, Key Biodiversity Areas, etc.) should be excluded immediately.

To date, only a few insurance companies have started to address the topic of deforestation and land conversion in their policies. Examples can be found in the policies of Aviva¹³² and AXA.¹³³

The WWF report *Seeing the forest for the trees* provides a more extensive guide for financial institutions to tackle the subject of deforestation and land conversion, suggesting a five-step approach of: 1) identifying material risks; 2) defining appropriate deforestation policies; 3) integrating the topic into the due diligence process and monitoring; 4) client engagement; and 5) disclosure.¹³⁴ In addition, the WWF report *Beyond Forests* explains the importance of preventing the conversion of other key ecosystems, such as grasslands, savannah, peatlands, shrublands and wetlands.¹³⁵ Finally, the WWF report *Deforestation Fronts* identifies 24 areas around the world where deforestation is advancing most rapidly, offering maps for insurance companies to be able to identify if a client is active in or sources materials from these areas.¹³⁶

Fishing and the overexploitation of marine biodiversity

Oceans support a vast array of economic activities, from tourism to international shipping, as well as regulating our climate and acting as a massive carbon sink. Moreover, oceans also provide food and livelihood for billions of people worldwide,¹³⁷ with the number of people employed in fisheries around the world at an estimated 200 million.¹³⁸ However, ocean ecosystems are at threat from pollution, coastal development, tourism and their overexploitation.¹³⁹ As a response to these challenges, the Sustainable Blue Economy Finance Principles, launched in 2018 and hosted by UNEP FI, provide a global guiding framework for banks, insurers and investors to protect the core functions and overall health of marine ecosystems.¹⁴⁰

Almost all assessed marine fish stocks are fully exploited, overexploited or depleted. Illegal, unreported, and unregulated fishing (IUU), which accounts for an estimated 20% of global catch,¹⁴¹ is putting additional pressure on already overfished populations and is destroying marine habitats and ecosystems.¹⁴² Addressing IUU fishing is therefore of high importance to promoting sustainable fishing, restoring marine ecosystems and protecting the industry's workers (with IUU fishing frequently linked to human right abuses).¹⁴³

Guidance for the insurance industry regarding IUU is provided by the PSI and Oceana. They recommend denying cover to vessels engaged in IUU fishing, including their catch and other related assets.¹⁴⁴ Some insurance companies have started to deny insurance services for vessels related to IUU,¹⁴⁵ and several insurers have now pledged to use a new IUU tracking tool, called Ocean Viewer, to facilitate this process.¹⁴⁶ In at least one case, the use of this tool resulted in an investigation, followed by the ending of coverage provided by *Hydor*, a Norway-based marine and energy insurance firm, for a fleet of three vessels, whose operators are now exposed to the risk of financial losses.¹⁴⁷

In addition to avoiding IUU fishing, insurance companies can promote sustainable fishing by considering avoiding fisheries where there is overfishing occurring or where there are overfished stocks. In particular, refusing to insure vessels that target fish stocks that are overfished would make sense from both a sustainability and a business risk perspective.

Insurance companies may also choose to limit their engagement with particularly harmful fishing practices, such as bottom trawling within vulnerable, sensitive or fragile marine habitats. Insurance companies should consider refusing coverage for vessels equipped for bottom trawling. At a minimum, insurance companies should implement covenants that minimize risk of bottom trawling in the deep sea and in vulnerable marine ecosystems.

xxii. The agricultural sector alone is responsible for 53% of deforestation and 18% of global GHG emissions, driven by farming animals for meat and dairy in particular and our unsustainable food system more generally. As one of the sectors with the highest impacts on both biodiversity and climate change, it thus deserves close attention from the insurance sector. Due to the intensive use of pesticides and artificial fertilizers, the sector is also a major source of pollution and may facilitate the importation of certain invasive species. Insurance companies should also assess supply chains that depend on agriculture, such as commodity trading, food processing and the retail sector, ensuring that they trace and sustainably source their raw materials.

These should include seamounts,¹⁴⁸ cold water coral reefs, gardens of soft corals and deep-sea sponge fields, as these shelter long-lived organisms with slow recovery rates. Similar covenants should be developed for other harmful fishing practices.

Lastly, bycatch also poses a threat to vulnerable marine species. Bycatch is the unintentional capture of marine species. It affects endangered, threatened and protected species such as marine mammals, turtles, seabirds, sharks and rays as well as other fish species, and including juveniles and important invertebrates. Adoption of bycatch mitigation measures should be required by insurance companies underwriting fishing activities, as well as traceability and transparency efforts. These measures should include, for example, the use of turtle excluder devices in shrimp trawl fisheries,¹⁴⁹ use of circle hooks in longline fisheries, and seabird bycatch mitigation measures and comprehensive independent validation systems such as use of observers or electronic monitoring.¹⁵⁰

Pollution and persistent organic pollutants

Pollution is one of the five main drivers of biodiversity loss. Persistent organic pollutants (POPs) are particularly hazardous because of four characteristics: they are toxic; they are persistent, meaning that they resist normal processes that break down contaminants; they accumulate in the body fat of animals and people and are passed from mother to foetus; and they can travel great distances on the wind and water currents.

In 2004, the Stockholm Convention came into force, banning or severely restricting the production and use of 12 POPs by its 152 signatory countries. Since then, the lists of POPs covered under the Convention has increased to over 20.¹⁵¹ Because these are such damaging pollutants, as agreed by the international community, insurance companies should not offer coverage for companies or facilities that produce or use such chemicals, according to the schedules set out within the Convention.

More recently, per- and polyfluoroalkyl substances (PFASs or ‘forever chemicals’) have been linked to various cancers, with effects on the immune system, pregnancy, etc.¹⁵² Several of these have been added to the Stockholm Convention in recent years. Moreover, in some jurisdictions like the EU¹⁵³ and the USA,¹⁵⁴ regulators and public agencies are discussing or preparing rules to further restrict or ban such chemicals. This has caught the attention of insurance companies that anticipate regulatory and litigation risks. *Zurich Insurance*, for example, has published a brochure to raise awareness among its clients and has started to train risk engineers to assess clients’ risk from PFAS.¹⁵⁵ Anticipating stronger regulations on PFASs in the future, insurance companies should prepare for the phase-out of those chemicals.

Finally, as regards nutrient pollution, insurance clients should be asked to follow guidance from the Science Based Targets for Nature (SBTN) on freshwater.¹⁵⁶ Additional guidance from the SBTN concerning toxic chemicals is also expected.



To summarize, insurance companies should define and implement robust science-based exclusion and phase-out policies starting with, but not limited to, the issues above. In addition, insurers who publicly disclose their exclusion policies in line with international standards also help to raise public awareness, holding themselves and others to account and encouraging others in the industry to act: transparency is a key criterion of any credible exclusion policy.

Workers unloading tuna fish catch, largely skipjack, Tema port, Ghana | © Kyle LaFerriere / WWF-US

3.2: PRODUCT DESIGN AND CLAIMS MANAGEMENT (HOW IS IT INSURED?)

The insurance business introduces a typical principal-agent problem. Once an insurance contract is in place, the insured party (the agent) has reduced incentives to take precautions to prevent the insured damages. In contrast, the insurance company (the principal) has an interest in these damages not occurring in the first place. To tackle this ‘moral hazard’, insurance companies structure their products to incentivize their costumers to prevent damages from taking place.

In the context of climate change and biodiversity loss, combating moral hazard is especially relevant for insurance products that protect against environmental liability, i.e., which confer responsibility for remediating environmental damage on those who have caused it. But the same mechanism used to align incentives between insurance companies and their customers with regards to risk taking can also be used to incentivize green behaviour. Insurance companies can therefore leverage product design and claims management to encourage sustainable behaviour by their clients. If sustainable behaviour goes hand in hand with risk reduction, there is even a clear business case for insurance companies to offer such products. Insurance companies can thus reduce impacts on nature and climate through the characteristics and design of their products.

Two main types of potential chains of effects linked to moral hazard can be distinguished, both of which can potentially impact drivers of biodiversity loss and climate change. The first type is riskier behaviour leading to direct destruction of ecosystems or excessive carbon emissions. Such behaviour by insurance clients can be potentially incentivized due to environmental liability, D&O and legal protection insurance. The second type of chain of effects is more indirect. It relates to replacement costs, since recurrent repair or reinstatement of damaged property will in turn have a material environmental impact.

Environmental liability insurance and moral hazard

Environmental liability insurance creates potentially significant moral hazard for biodiversity and climate. For example, a company working with highly polluting chemicals may not take every possible measure to prevent and mitigate leaks because it reasonably expects environmental damages to be financially covered by its insurance policy. A famous real-world example is the Deepwater Horizon oil spill in 2010, regarded as one of the largest environmental disasters ever. While the rig was insured for US\$560 million, involved companies also held several liability policies.¹⁵⁷ It remains debatable if the poor platform governance and the high-risk tolerance of management could have been averted with stricter covenants.

Two conflicting aspects must be considered when assessing the overall impact of liability insurance products. On the one hand, they may lead to increased risk-taking by limiting the responsibility for the risks the policyholder takes. On the other hand, they ensure the financial means for clean-up and restoration when pollution occurs (especially in cases where the polluting company may not be solvent). A UNEP FI study concludes that very broad coverage of such contracts is key to making sure the compensation mechanism is sufficient for restoring the environment.^{xxiv,158}

3.2.1: PRODUCT DESIGN TO PREVENT MORAL HAZARD

Moral hazard describes a situation where an economic actor has an incentive to increase its exposure to risk because it does not bear the full costs of that risk-taking.^{xxiii} Product design is key to prevent or reduce moral hazard. Insurance companies can use several tools in their contractual terms and conditions, such as requiring prevention and mitigation measures, introducing deductibles, setting exclusions, such as for reckless behaviour, or imposing caps on the maximum losses insured. Addressing moral hazard is also essential when discussing the impacts of insurance underwriting activities on biodiversity and the climate, because a more careless attitude from insured individuals and corporations is likely to result simultaneously in additional damage to the environment (external impacts) and additional claims to the insurance company (financial materiality).

xxiii. We do not consider here other related issues, such as over-reporting of claims by the policyholder, which straddles a fine line between moral hazard and insurance fraud.
xxiv. It is important to note that environmental liability is often subject to rather strict regulation that might not always create the best incentive structure. For example, in the EU, the issue is governed by the Environmental Liability Directive, with the result that nearly all companies buy the minimum legally required coverage. For this and similar reasons, the directive has been criticized by NGOs such as Birdlife.

Moreover, realistic assumptions about the (potential long-term) damage to people and nature and the costs of related restoration and reparations are crucial.

The UNEP FI study further discusses the interplay between environmental pollution liability insurance and moral hazard. Of course, companies usually have incentives to avoid accidents because of business interruption, reputational and litigation risk, and deductibles to be paid out of pocket. But this is not always the case in practice, since the impact of the interruption can be insured as well, and the deductible is not always high enough to create proper financial incentives. Therefore, environmental liability insurance terms and conditions are crucial and should mandate thorough prevention and risk reduction measures.

First, insurers should require certain environmental standards as a precondition for coverage (such as carbon scrubbing filters) and enforce them by, for example, on-site inspections. Insurance companies should also engage with their clients, as outlined in section 4.3.1. Second, as set out in a discussion paper from the Actuarial Association of Europe about the EU Environmental Liability Directive, insurers should apply deductibles and require that their policyholder maintains significant self-insured retentions: “Without such mechanisms there is a risk that insureds will simply see the premium as a cost of doing business (or a license to pollute!) and are not appropriately incentivized to manage and minimize risk.”¹⁵⁹

While environmental liability coverage should be maintained for existing projects, new projects should also be evaluated against exclusion criteria (see page 37) as certain harmful activities should not take place, regardless of the availability of insurance coverage.

To sum up, environmental liability insurance should be sufficiently broad and include high maximum losses to cover all necessary clean-up, restoration and compensation costs, require the most advanced environmental standards, and include important deductibles. These conditions reduce risks for insurance companies and nature alike.

Climate change liabilities and D&O cover

While classic environmental liability products cover issues like pollution, the question of liabilities due to climate change is becoming ever more relevant as climate change litigation increases.¹⁶⁰ Generally, the risks associated with climate change litigation can be covered by environmental liability (e.g., cover compensation for victims), D&O liability insurance to cover the personal liability of executives, and legal protection insurance to cover legal costs.

Assessing whether climate change liability insurance creates excessive moral hazard that risks accelerating climate change, or whether it is valuable as it can ensure that compensation and restoration payments are made, is a difficult question. The risk of moral hazard is especially high in D&O insurance, as it undermines the personal accountability of management and

can encourage decisions that lead to a disregard of impacts on biodiversity or excessive GHG emissions. In this latter regard, the first climate lawsuit seeking to hold personally liable the directors of a major carbon emitter (*Shell UK*) was launched in February 2023.¹⁶¹ With increasing numbers of climate-related lawsuits around the world, this raises the question of which cases are covered by existing insurance contracts or are excluded based on existing covenants that address pollution. For example, *Aloha Petroleum* is currently suing *AIG* for refusing to cover its legal costs in a climate litigation process, while *AIG* argues that climate change litigation is not covered as it falls under a covenant regarding pollution.¹⁶²

Covering climate change liabilities therefore not only creates risks for the planet, it also creates risks for insurance companies.¹⁶³ For example, the climate stress test carried out by the Bank of England in 2021 found that some insurance products, especially D&O insurance, expose their underwriters to climate change litigation risks. Moreover, it seems that the uncertainty related to climate change liability may reduce the appetite for insuring these risks.¹⁶⁴ In 2021, *Lloyd's of London*, a global insurance market, proposed to its member firms a new model climate change exclusion clause for liability insurance.¹⁶⁵ One leading consultancy has therefore concluded that there is no certainty that insurance companies will cover climate litigation costs in future.¹⁶⁶

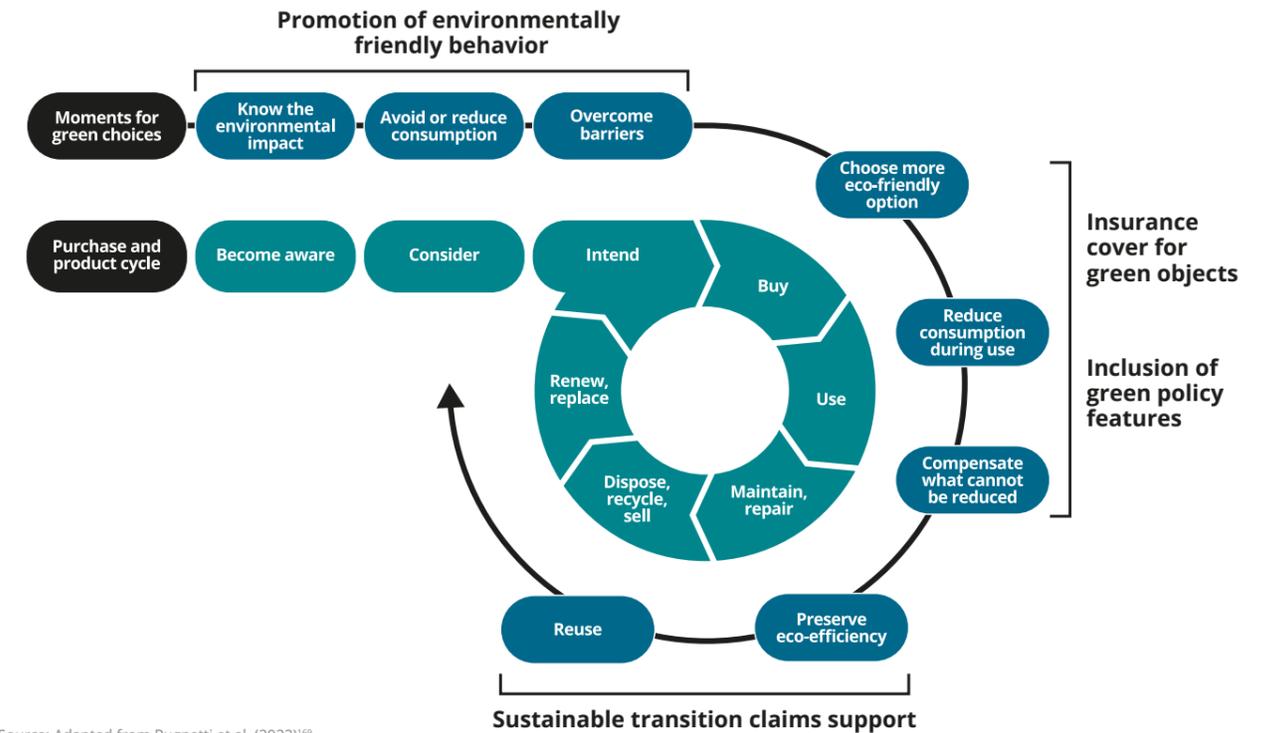
Insurance related to climate change liability thus creates important moral hazard for companies and their management. To mitigate incentives for excessive GHG emissions, insurance companies should engage with companies prior to underwriting such policies and include in covenants that companies are only covered if they follow a decarbonization path in line with holding global warming to 1.5°C. A step in that direction can already be seen, with UK insurance companies increasingly investigating climate strategies before underwriting D&O policies.¹⁶⁷ If companies refuse to align with global climate goals, insurance companies should not cover any risk related to the climate change liability they face.

Moral hazard and increased consumption

The second type of issue around moral hazard created by insurance contracts is more general in nature. It relates to an overall increase in consumption due to riskier behaviour and therefore higher or more frequent damages. For example, collision insurance with a low deductible could cause drivers to drive more recklessly, ultimately leading to multiple repairs to keep the car in good condition. A scratch on a car without insurance cover leads to no immediate impact on the environment if the owner decides not to repair the scratch. Conversely, if the car is fully insured, this can routinely lead to the production of new car parts, or additional use of paint and other chemicals.

Insurance companies should therefore carefully think about their terms and conditions to limit both their own risks and the risks to the environment when crafting their products.

FIGURE 8: GREEN INSURANCE CHOICES ALONG PRODUCT LIFE CYCLES



Source: Adapted from Pugnetti et al. (2022)¹⁶⁹

3.2.2: PROMOTING GREEN CHOICES

Insurers have a broader role to play than simply insuring against losses when it comes to addressing environmental and climate risks.¹⁶⁸ To foster and accelerate the green, fast and fair transition, insurance products can include environmentally-friendly features to promote green choices. As shown in Figure 8, such incentives can influence the choices customers make to buy or invest in eco-friendly solutions and reduce damaging behaviour or consumption. Moreover, and discussed on page 49, when claims occur, insurance companies can favour restoring over replacing and support upgrades to more environmental-friendly and resilient solutions.

Commercial insurance

A few examples of existing and potential products from commercial insurance with incentives for greener behaviour include:

- A study by *TNC* and *Willis Towers Watson* found that ecological forestry management in northern California, which includes prescribed burns and the removal of smaller trees and other vegetation in overgrown forests, can lower

home insurance premiums significantly by reducing the risk of severe wildfires. According to the authors, these savings could be used to fund further investment in sustainable forest management, thus creating a virtuous cycle.¹⁷⁰ Following that study, the state of California made it mandatory for insurance companies to offer lower premiums to homeowners taking measures to protect their homes from wildfires.¹⁷¹ Nevertheless, as mentioned in the introduction, some insurers have stopped underwriting new property policies in the meantime due to increasing wildfire risk.

- A reduced deductible (25%) on environmental risk policies offered by *AXA XL* for French clients if they conduct an independent ecological assessment of nearby natural areas as a baseline and integrate these results into the company’s accident prevention and management plans. The idea is that this can encourage the preservation of ecosystem services, such as the prevention of soil erosion, that can protect facilities.¹⁷²

Products of this type are still in their infancy, but they could be explored and rolled out more systematically by insurers looking to make a positive impact through their underwriting activities.

Motor insurance

Another economic area where behaviour matters is mobility. The transportation sector is both a major source of premium income (US\$810 billion in 2021¹⁷³) and a significant contributor to GHG emissions. The transition to a more sustainable mobility sector provides insurers with great leverage for decarbonization. There are several offerings to incentivize this transition:

Incentives for driving less

- Pay-as-you-drive insurance provides drivers with an incentive to drive less as the premium paid is relative to the kilometres or hours driven. *Zurich's MyWay* insurance product is an example of such a scheme.¹⁷⁴

Incentives for not owning a car and using alternative means of transportation

- Insurance companies can support and incentivize the use of other means of transport or the shared use of cars, with solutions such as insurance products for infrequent drivers of someone else's car, insurance products for rented and shared cars, insurance coverage for e-bikes and bikes, or insurance solutions for users of public transport.
- Moreover, insurance companies can offer general mobility insurance that covers all means of transport. McKinsey calls this a multimodal insurance product, also referred to as 'pay as you move' insurance.^{175,176}

Incentives for switching to hybrid or electrical cars¹⁷⁷

- Many insurance companies offer an insurance premium discount for hybrid and electric vehicles. For example, *The Hartford* offers discounts of between 1-5%,¹⁷⁸ while *Helvetia* offers a temporary discount (10% until end of 2024) for online clients.¹⁷⁹

Property insurance

Similarly, insurance companies offer discounts for property insurance premiums if a property is ecologically certified. For example, *Travelers Insurance* and *Kin Insurance* in California offer up to a 5% premium discount for buildings that are Leadership in Energy and Environmental Design (LEED) certified.^{180,181} Additional incentives with regards to property insurance offered by various insurance companies include advisory services for the installation of solar panels, or photovoltaic performance warranty insurance.^{xxv,182,183}

Crop insurance

The agricultural sector also presents opportunities for product innovation to incentivize greener practices. This sector is faced with the challenge to reduce GHG emissions and nature

loss through more sustainable practices. At the same time, farmers need to become more resilient in response to the increasing effects of climate change.

Parametric or index-based insurance offers one such opportunity. It can increase insurance coverage among smaller farmers in developing countries, offering clear social impact. For instance, products have been sold with pay-outs when precipitation exceeds or falls below certain levels, protecting incomes and supporting recovery. A recent study shows that such schemes are being increasingly offered in Europe.¹⁸⁴ These schemes may create an incentive for more resilient farming as farmers with fewer losses receive the same pay-out, based on the weather index, while traditional indemnity-based insurance risks moral hazard, as pay-outs are linked to losses.

To support the agricultural transition more strategically, insurance companies and governments – which often subsidize agricultural insurance schemes (e.g., crop insurance) – should consider the incentives they create. Most importantly, crop insurance reduces the need for risk diversification. Risk diversification on farms is often implemented through the cultivation of many different crops. With the need for risk diversification decreasing, fewer crops are cultivated, thereby reducing biodiversity overall. Additionally, crop insurance in the US tends to incentivize large monoculture farms using unsustainable practices and producing just a few staples like corn, wheat or sugar,¹⁸⁵ although the exact effects are debated.¹⁸⁶ A study of crop insurance and pesticide use found that, in Switzerland, insured agricultural businesses spend on average 11% more on pesticides than their uninsured equivalents.¹⁸⁷ This higher pesticide use might be in the (short-term) interest of the insurance company, as it might make the insured crops more resistant to pests. Yet in the longer term, over-use of pesticides risks destroying natural pollinators and species which control pests.

Insurance companies should work with governments and agricultural institutions to find solutions and develop insurance products that increase agricultural resilience while simultaneously preserving the ecosystem services that agriculture relies on. Crop insurance could instead offer farmers incentives to increase crop diversity, plant cover crops, reduce tillage and use less pesticides and herbicides. These practices are elements of 'regenerative agriculture' which can simultaneously increase yields, especially in the face of increasingly harsh weather conditions, store carbon in the soil and benefit biodiversity. Moreover, transforming a whole sector or – in this case – a farm always entails risks and uncertainties. As many farmers are – similarly to other actors – generally risk-averse, insurance companies can play an important role in accelerating the transition by absorbing these risks. As an example, *AXA Climate* is testing an insurance scheme for winegrowers that encourages reduced pesticide use while absorbing the risks associated with this practice.¹⁸⁸

A whole value chain approach

Overall, when insurance companies decide which products and solutions they want to promote, it is important that they consider the pressures on climate and biodiversity along the total value chain and product lifecycle. For instance, owning and using an electric vehicle should not only be compared to a combustion-engine vehicle but also to alternative mobility behaviours like sharing a car, biking, using public transportation and travelling less. Because insurance companies are often active in several economic sectors, along entire value chains and across business models, they are well-positioned to understand and promote systematic transformation.

However, incentives from insurance companies alone will not be enough to switch individuals and companies towards more sustainable practices. But the interplay of incentives from banks, insurance companies, local utility companies, local infrastructure and the regulatory landscape can be transformative. Insurance companies should build strategic partnerships and be active in multistakeholder initiatives among actors that share the goal of facilitating the transition to a green economy.

3.2.3: REPAIR OVER REPLACE

As is shown in Figure 8, the moment a claim is filed, the insurance company assumes an important role and

can use this opportunity to improve its customer's impact on climate and biodiversity. Insurance products that favour repairing the old instead of replacing with new can provide significant benefits.

Repairing goods increases their lifespan and generally reduces environmental impacts because fewer raw materials are required and less waste is produced. As summarized by Frans Timmermans, Executive Vice-President for the European Green Deal, "repair is key to ending the model of 'take, make, break and throw away' that is so harmful to our planet, our health and our economy."¹⁸⁹ An AXA-commissioned analysis by Empa, the Swiss Federal Laboratories for Materials Science and Technology, estimates that replacing rather than repairing a single windshield accounts for an additional 15.3 kg CO₂ eq., and 14.5 kg CO₂ eq. for bumpers.¹⁹⁰ Co-benefits include preventing waste from ending up in landfills¹⁹¹ as well as reduced costs for car owners.^{192,193} Using recycled parts for the repairs can further reduce the environmental footprint.

The industry is making progress in this area, with some insurers already offering products that incorporate repair over replacement considerations. For example, *Allianz* has a repair-over-replace scheme in the UK for vehicle repairs that also speeds up the claims process. It also offers a green parts initiative, which gives customers the choice of recycled parts for their repairs.¹⁹⁴ *Tokio Marine* offers a similar product.¹⁹⁵ AXA encourages the garages it works with in Switzerland to repair defective car parts where possible to avoid unnecessary use of replacements. This requires training for technicians and upskilling to enable these repairs to be carried out.¹⁹⁶



xxv. Solutions also exist for larger commercial and utility-scale solar installations. See, for example, the PV warranty insurance offered by Munich Re (see endnote 182) and solar insurance from Travelers (see endnote 183).

Insurance companies have also started to implement similar schemes in other areas, such as home insurance, where policyholders can decide to repair instead of replacing damaged elements in the house or flat.¹⁹⁷

However, these practices are far from mainstream across the industry. In richer countries, repairing may be materially more expensive than shipping in a replacement manufactured in a developing country, due to the differences in salary costs and despite the significant environmental externalities. Obsolescence planned by industrial product manufacturers can also make repairs purportedly more difficult and costly (or simply impossible) due to artificial constraints such as unnecessary seals, unavailable or expensive spare parts, or special screws requiring hard-to-find tools.

A natural starting point for insurers is to identify areas where solutions to repair defective components already exist and have the highest potential for material and emission savings. In areas where no practical solution exists, insurance companies could team up with manufacturers to define industry standards that make restoring and repairing easier or more cost-effective for consumers. In addition, legislators should encourage repair-over-replace initiatives in the insurance industry by promoting circular economy approaches and legally enshrining the right to repair, as proposed by the EU Commission¹⁹⁸ or introduced in the State of New York.¹⁹⁹

3.2.4: BUILD BACK BETTER AND GREEN FOR OLD

In the reconstruction phase following a natural disaster, the idea of ‘build back better’ comes into play. Institutions such as the OECD and the UN have used the term to advocate the incorporation of environmental sustainability in strategies for economic recovery from the COVID-19 crisis. It was also attached by President Joe Biden’s administration to proposed legislation to support the American middle class and to address climate change.²⁰⁰

The idea is also used by insurance companies. For the insurance sector, it refers to using the claims management process to build resilience in response to natural disasters. Through the claims process, insurers can incorporate resilience measures into the rebuilding process to increase adaptive capacity (such as installing flood gates on windows and doors, improving outdoor drainage, fitting no-return valves on toilets, raising electrical sockets or installing air brick covers) and help prevent future damages. Moreover, under the same label, or sometimes referred as ‘green for old’, insurance companies can promote upgrades to more environmentally-friendly solutions through claims management. For property insurance, this can include

making homes greener using sustainable building materials, improving energy efficiency, upgrading heating systems and meeting requirements for certification. Furthermore, any waste after a claim should be recycled if possible or properly disposed of.

If these improvements are not part of the insurance contract, governments could step in with subsidies to encourage customers to combine insurance payments, government funding and their own money to build back better.

Harnessing the opportunity presented by a natural disaster to build more resilient and environmentally-friendly buildings is especially relevant for biodiversity and climate, as GHG emissions from constructing and operating buildings represent as much as 39% of the global total, according to the World Economic Forum.²⁰¹ Moreover, the sourcing of building material creates pressure on biodiversity, notably through pollution and deforestation,²⁰² and construction is a major source of waste. Research published by *Aviva* showed that restoring flooded homes has a major carbon footprint.²⁰³ However, *Aviva* also found that protecting homes with flood-resilient measures could reduce carbon emissions created by repair work by up to 64%.²⁰⁴

Flood Re is a joint reinsurance initiative between the UK government and major UK insurers to make flood cover more widely available and affordable. It aims to “reduce the cost and impact of future floods by including property resilience measures as part of flood repairs”,^{205,206} This means that, instead of repairing homes to the same state as before, the ‘build back better’ scheme from *Flood Re* allows homeowners to install flood resilience measures worth up to £10,000 when repairing their property. A shortcoming of the scheme is that it does not include specific measures to align reconstruction with environmental sustainability aspects such as building materials, renewable heating and energy production systems, meaning the programme falls short of addressing sustainability in a broader sense.

Critically, these initiatives help decrease the probability and the severity of future claims for insurance companies, while generating environmental benefits. It is especially important for insurers to reduce their exposure to natural disasters, because claims are triggered by a single event, which makes such risk harder to manage through diversification. Moreover, the frequency and severity of natural disasters are expected to increase due to global warming. Reducing exposure to natural disasters will allow insurers to reduce or stabilise their proportion of high-risk insured business. In conclusion, insurers who implement ‘build back better’ approaches can reduce their impact on biodiversity and climate, lower the likelihood and severity of future claims, and foster long-term relationships with their clients.



Wind farms are seen behind the Bada Bagh, north of Jaisalmer, Rajasthan, India | © Shutterstock / ostill / WWF

3.3: SUPPORTIVE ACTIVITIES

In addition to exerting positive impacts on biodiversity and climate through the business they underwrite, insurance companies can take action at the corporate level. These include:



ENGAGEMENT WITH CLIENTS, PEERS AND POLICYMAKERS



RESEARCH AND DATA SHARING



FINANCING PROJECTS FOR PEOPLE, NATURE AND CLIMATE

While some of these activities are common to other sectors of the economy, we focus here specifically on how they relate to insurers' underwriting.



Reforestation | Freepik

3.3.1: ENGAGEMENT WITH CLIENTS, PEERS AND POLICYMAKERS



Many insurance companies are multi-billion-dollar enterprises, employing tens of thousands of staff and paying large amounts of tax. They collectively manage approximately US\$40 trillion assets (2021) and have public and private clients all around the world.²⁰⁷ They are thus powerful actors and can use this clout to either accelerate or slow down the transition to a green economy.

Engaging with clients

Engagement activities with underwriting clients to speed up the green, fast and fair transition are often integrated with incentives as discussed on page 50. Insurers can also develop specific engagement programmes that target both investee companies and underwriting clients or they can be linked to the risk-advisory services that many insurance companies provide.

Specific engagement programmes are often targeted at companies involved in the most harmful activities for climate and nature, such as coal and unconventional oil and gas. Such engagement should be broadened to other harmful activities, such as deforestation and land conversion, as discussed on page 43. As an example, *Aviva* integrates subjects such as plastics, deforestation, hazardous pollution, sustainable protein, and the circular economy into its engagement programmes.²⁰⁸

For such programmes to be credible and effective, it is important that they set out clear escalation measures and that underlying criteria are harmonised across the investment and underwriting businesses. Within the investment side, escalation measures should include filing and voting on shareholder resolutions, voting against management, withholding the discharge of the board and, as a last resort, divestment of holdings in the company. For insurers' underwriting activities, escalation could involve refusing to provide clients with new coverage.

Transparent communication about engagement activities is crucial. Naming specific companies that have been excluded can send important signals to the market, especially to smaller asset owners that have less research and engagement capacity. As an example, following a two-year engagement campaign with 55 companies on thermal coal, oil sands and shale oil, *Zurich Insurance Group* added five companies to its exclusion list for investment and underwriting; these companies' progress against their stated transition plans was no longer considered credible by Zurich.²⁰⁹ While this is encouraging, the criteria used by Zurich to define a credible transition plan do not require a company to meet science-based targets and the excluded companies are not named.

Good risk management and prevention measures are in the interest of both insurance companies and their clients. Insurance companies therefore provide risk management services as part of their underwriting products or as additional advisory services.^{210,211} One way in which they can support biodiversity and reduce impacts on climate is through risk inspections and early warning systems linked to activities that pose a risk to the environment. For example, insurance companies can work with their clients to identify activities or sectors that present a particular threat to biodiversity and climate and develop risk mitigation measures.²¹²

Responses that combine benefits to the environment with reductions to the risk of an incidence are especially effective. For example, dangerous chemicals can be substituted for more sustainable solutions, or nature-based solutions, such as mangrove restoration or forest management, can be deployed as discussed on page 34. An interesting case is the close involvement of *German insurance companies* and their trade associations in the development and deployment of renewable energy. As early renewables technologies were error-prone, insurance companies worked with the industry to make them more resilient and reliable, to limit subsequent insurance claims.²¹³

Furthermore, a policyholder can be rewarded for implementing risk prevention measures through reductions in the premium charged, a practice promoted as 'impact underwriting' by the EU supervisor.²¹⁴ However, we note that this term can be misleading, as a decrease in the actuarial risk incurred by the insurance policyholder may not always translate into a reduction in its external impacts on nature or climate.

Insurance companies generally engage first with large corporate clients, as it is more expensive and less practical to have the same level of engagement with retail insurance and personal lines on a client-by-client basis. However, this challenge can be overcome, and solutions developed by some insurance companies to simplify claims management for motor or home insurance could provide a starting point for engagement and prevention measures. For example, the client could receive advice for a sustainable repair solution when submitting a claim through the insurer's web portal. Such online platforms for claims management are already used by many insurers, and online questionnaires enabling self-assessment and specific recommendations for more sustainable repair methods to car workshops are also already available.²¹⁵ Moreover, many insurers provide information via brochures and FAQs to smaller clients.^{216,217} It can therefore be practical and economically viable for insurers to creatively engage and advise on prevention and sustainability through their existing digital ecosystems (and, where relevant, based on satellite imagery and remote sensing) for their retail and small corporate clients.

Engaging with peers

In addition to engagement with their clients, insurance companies should also actively engage with their peers or contribute to multi-stakeholder initiatives to help mitigate risks and improve their impacts on climate and biodiversity. Such initiatives can be split into two categories:

- Those directed at creating standards for (but not limited to) the insurance sector;
- Those that try to produce multi-stakeholder solutions to decrease risks affecting many stakeholders simultaneously, e.g., due to natural catastrophes,²¹⁸ and which therefore warrant a collaborative approach.

Initiatives such as the TCFD, the TNFD, the PCAF, the PSI and the NZIA fall within the first category. While the TCFD, the TNFD and the PCAF aim to standardise how companies and financial institutions disclose their climate- and nature-related risks and impacts, the PSI and the NZIA seek to share ideas and set minimum expectations of how best to contribute to global climate-, nature- and human rights-related agendas. Such initiatives can prove particularly useful in defining joint solutions and reaching systemwide acceptance of certain measures and standards from the insurance sector.

The second category includes, for example, *Zurich Insurance's* Flood Resilience Alliance, which aims to prevent damages to communities from flooding.²¹⁹ Another noteworthy example is the *Ocean Risk and Resilience Action Alliance*, which brings together insurance companies such as *Swiss Re* and *AXA* with NGOs and scientific and government agencies to raise investment to protect and restore ocean and coastal ecosystems in the global South. So far, nearly 50 projects have been supported through private and public investment, including from insurance and reinsurance companies, to address the biodiversity and climate crises.²²⁰

Engaging with policymakers

Finally, engagement with policymakers – i.e., governments, their agencies and international organizations – is critical. Public entities are often in the best position to create effective and efficient solutions to challenges related to the biodiversity and climate crisis which involve (global) public goods. Historically, the insurance industry has been instrumental

in founding fire brigades and has lobbied for improved building codes, for example. Today, insurance companies should – in their own interest – advocate for a green, fast and fair transition to reach global biodiversity and climate goals. Otherwise, claims will keep rising and more and more risks will become uninsurable.

Here, insurance companies should also reconsider their membership of associations and trade organizations which lobby against sustainable finance policies. LobbyMap, an InfluenceMap platform, offers insights about which companies are members of which associations and organizations and provides information about these organizations' lobbying activities.²²⁹ In the area of public advocacy, an interesting example is the collaboration between WWF UK and *Aviva*.²³⁰ For the last few years, they have published joint reports urging the UK government, among others, to make climate transition plans mandatory for financial institutions and calling upon the parties of the Convention on Biological Diversity to adopt ambitious goals ahead of COP15 in December 2022.

More specific engagement opportunities lie in the agricultural sector, which is both driving the biodiversity and climate crises and, at the same time, is highly exposed to them. In many countries, the agricultural sector is highly subsidized, making public financial incentives crucial to decisions made by farmers; advocacy by insurance companies should focus on aligning public subsidies, especially the subsidies related to crop insurance, with biodiversity and climate goals.

Other potential areas for government engagement are cases where a (new) green activity or technology is associated with more risk than the less environmentally-friendly alternative it is meant to replace. This is the case with recycling compared with burning rubbish,²³¹ or for mass timber construction compared with steel and concrete (see page 33). In these cases, insurance companies should coordinate with their clients and the government to reduce the risks associated with novel technologies and explore if there is a case for subsidizing coverage of the additional risk of the green solution, as long as environmental externalities are not adequately taxed.

Finally, insurance companies can help government agencies better understand global, regional and country-level climate and nature-related risks. Reinsurance companies, in particular, have considerable expertise in the field and invest a lot of resources into their risk models.



BOX 7: THE NET-ZERO INSURANCE ALLIANCE (NZIA) AND ITS CHALLENGES

The Net-Zero Insurance Alliance (NZIA) is an UN-convened group of insurance companies committed to transitioning their underwriting portfolios to net zero GHG emissions by 2050. It is one of the youngest of the family of net zero industry groups within the UN Race to Zero campaign and launched its inaugural target-setting protocol in January 2023.

Once counting 30 leading insurance companies as members, the NZIA has faced criticism in recent months from diametrically opposed perspectives. On the one hand, its target-setting protocol drew criticism from NGOs, as its weak minimum target requirements fail to meet Race to Zero standards and are not aligned with global decarbonization goals.²²¹ On the other hand, the anti-ESG movement in the US has mounted legal challenges regarding possible antitrust violations, resulting in public pressure towards NZIA members doing business in the US. After major insurers began leaving the NZIA in March 2023, a letter²²² signed by 28 attorneys general from Republican-led US States and addressed to the NZIA and its members resulted in an exodus. In response to this pressure, UNEP announced in July 2023 that the hitherto compulsory target-setting protocol would become voluntary guidance.²²³ Nonetheless, by mid-2023, more than half of the 30 insurance companies had left the alliance, including some of the largest founding members.

However, their departure does not necessarily signal a weakening of their climate commitments, as many of the companies leaving the NZIA simultaneously confirmed their individual climate strategies, or even announced further steps. For example, SCOR announced on the same day new coal, oil and gas policies, excluding additional activities from coverage.^{224,225} For our planet and humanity, it is irrelevant if a company acts as a member of an alliance or independently, as long as decisive

and goal-oriented measures are pursued by the whole sector. However, the building of collective momentum, the adherence to uniform accounting and disclosure methodologies and the exchange of knowledge and ideas within such initiatives is valuable and should be pursued by all available routes. We also note that the threat of legal action by ESG opponents underlines how powerful determined and collaborative action by the insurance industry on the real economy can be, and that some policymakers fear significant impact on selected industries from exclusion policies.

This development also shows that inconsistencies between climate goals and our current legal, political and economic systems continue to exist and need to be addressed. As meeting climate and nature goals requires long-term collective action, anti-trust laws need to be adapted so they do not prevent such valuable efforts. In that regard, some authorities are already taking action. For example, in February 2023, the UK Competition and Market Authority published draft guidance which proposes a more flexible approach to enforcing competition law with regards to climate agreements.²²⁶ In addition, the EU Commission adopted new guidance^{xxvi} to ease competition law for sustainability standard agreements in June 2023.^{227,228}

Overall, insurance companies should continue to collaborate (as far as legally permissible) with peers or in multi-stakeholder initiatives. Moreover, they can individually adhere to global standards such as the SBTi and should advocate for legislative changes so that collaboration for reaching global biodiversity and climate goals is not hindered by competition law. Finally, these challenges also show the limitations of private-sector collaboration and the need for ambitious environmental and sustainable finance policy including mandatory climate reporting and science-based emission targets for insurance companies.

xxvi. Specifically, the EU Commission adopted the revised Horizontal Block Exemption Regulations on Research and Development and Specialisation agreements, accompanied by revised Horizontal Guidelines regarding Art. 101 (1) Treaty of the Functioning of the European Union.

3.3.2: RESEARCH AND DATA SHARING



Whether individually or through professional associations, the insurance sector is adept at conducting scientific research to identify, assess and address nature-related risks, dependencies and impacts, with a view to making more informed decisions. Such research, especially when related to natural disasters or environmental liabilities, can offer valuable insights for addressing climate change and reversing biodiversity loss. More specifically, insurance is by nature a data-driven business, with insurance companies collecting large amounts of data on physical hazards and estimating their probability and severity of occurrence.

These capabilities primarily serve insurers' own underwriting practices, but they can also be leveraged to support others in their own risk assessments or to promote the development of industry-wide standards, tools and methodologies. WWF encourages insurance companies to share whenever possible their insights and data with the scientific community, NGOs, government entities and the public. *Munich Re* is a good case in point in that it has provided detailed data about natural catastrophes, damages and claims for several decades.²³²

Another example of scientific research to address environmental challenges is the *AXA Research Fund*.²³³ It finances a wide variety of research projects related to the environment, for example on pollution, up-cycling, wildfires, mangroves and air pollution. Furthermore, the *Swiss Re Institute's* Biodiversity and Ecosystems Services Index (BES) shows the economic risks each country faces from biodiversity loss, in terms of its percentage of GDP that is dependent on nature.²³⁴ This helps governments, investors, companies and the public to understand the importance of protecting and restoring ecosystems. The *Swiss Re Foundation*, with the *AXA Research Fund*, *EY* and *WWF*, additionally launched in March 2023 their Biodiversity and Ecosystem Services Scenarios Modelling Challenge, a call for grant proposals for biodiversity scenarios – similar to climate scenarios – that are urgently needed to better estimate the effects of the loss of biodiversity, and to design resilient solutions to mitigate and adapt to it.²³⁵

Although insurance and reinsurance companies are gearing up on research activities, there are still several limitations and challenges. For example, there is a lack of understanding as to how climate- and nature-related risks are likely to interact with geopolitical and macro-economic risks. This is especially relevant as those risks can affect claims and asset values, leading to double losses on insurance companies' balance sheets.

3.3.3: FINANCING PROJECTS FOR PEOPLE, NATURE AND CLIMATE



Insurance companies can contribute to climate and biodiversity goals by undertaking or financing projects for people, nature and climate. Such action can also build resilience and support adaptation, helping reduce insurers' exposure to physical risks.

To avoid the risk of greenwashing, such efforts need to be embedded in a comprehensive, science-based climate and nature strategy, and can never be a substitute for reducing GHG emissions in line with science-based targets, or halting and reversing biodiversity loss caused by insurance companies' main business activities. The WWF recommendations for corporate climate strategies that are "Fit for Paris" explain how companies can sensibly finance projects for people, nature and climate beyond their value chain.²³⁶ These recommendations can be similarly applied to nature.

As an example, nature-based solutions, as discussed on page 34, "leverage nature and the power of healthy ecosystems to protect people, optimise infrastructure and safeguard a stable and biodiverse future".²³⁸ Through investing in nature-based solutions, insurance companies can both support climate and biodiversity goals as well as potentially reduce claims.

Several insurers are already beginning to make such investments. Japanese insurance company *Tokio Marine & Nichido* has been involved in mangrove restoration since 1999 as part of its sustainability strategy, recognizing the benefits delivered in terms of carbon sequestration and biodiversity preservation. Mangrove forests also protect local communities through reduction in flooding, since mangrove trees help absorb storm surges.²³⁹ Another example is WWF Canada's Nature and Climate Grant programme, which *Aviva Canada* is supporting as presenting partner. The programme helps local groups and Indigenous organizations restore degraded lands and shorelines to improve habitats and capture carbon. Supported activities include planting trees, native seeds and plants, restoring natural saltwater flows, bank stabilization and habitat creation, and enhancement of coastal zones, former agricultural sites, riparian zones, wetlands and forests.²⁴⁰ However, there are important qualitative differences among such NbS projects, meaning that insurers should take care when funding them.

Insurance companies can also support and finance transformational activities, including advocacy and climate innovation projects. As an example, *Swiss Re* has partnered with *Climeworks*, a pioneering specialist in direct air carbon capture technology. The latter captures CO₂ from the air, dissolves it in water and injects it underground, where it reacts with basalt rock to form stable carbonate minerals. *Swiss Re* has signed a 10-year purchase agreement with *Climeworks* worth over US\$10 million to reach its net zero goals for its own

operations by 2030. Moreover, *Swiss Re* and *Climeworks* are also collaborating on risk management practices to transfer knowledge to the fledgling start-up. Ideally, insurers should pursue a portfolio approach that includes financing projects

for people, nature and climate, innovation, and advocacy for beyond value chain mitigation.^{xxvii} For advocacy, the previously mentioned *WWF Aviva* partnership can serve as an example (see page 54).

FIGURE 9: PRINCIPLES FOR PROJECTS, SUCH AS NATURE-BASED SOLUTIONS

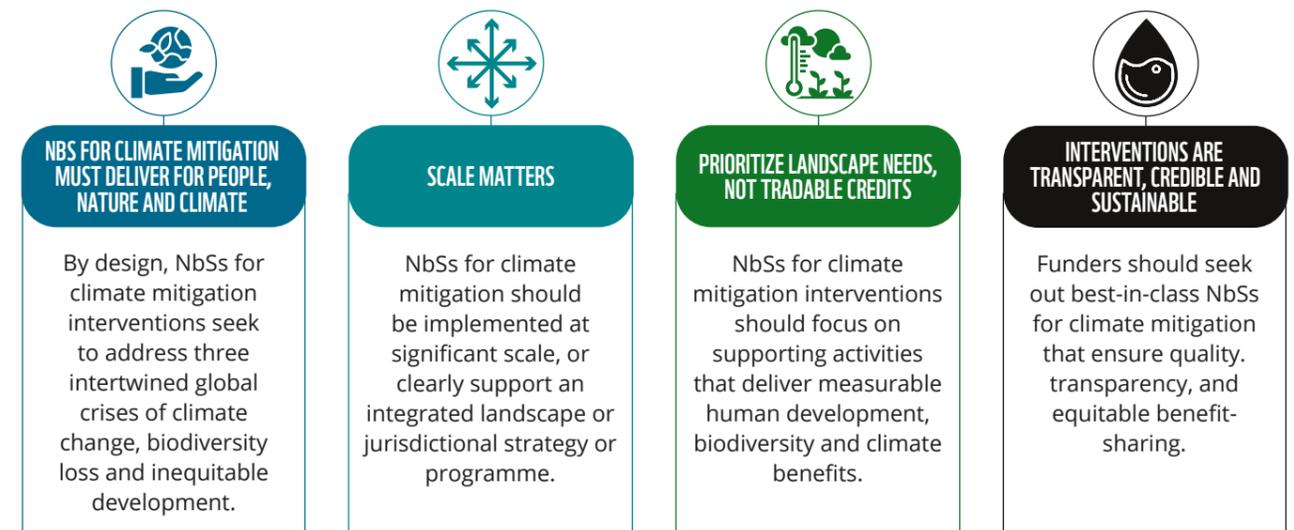
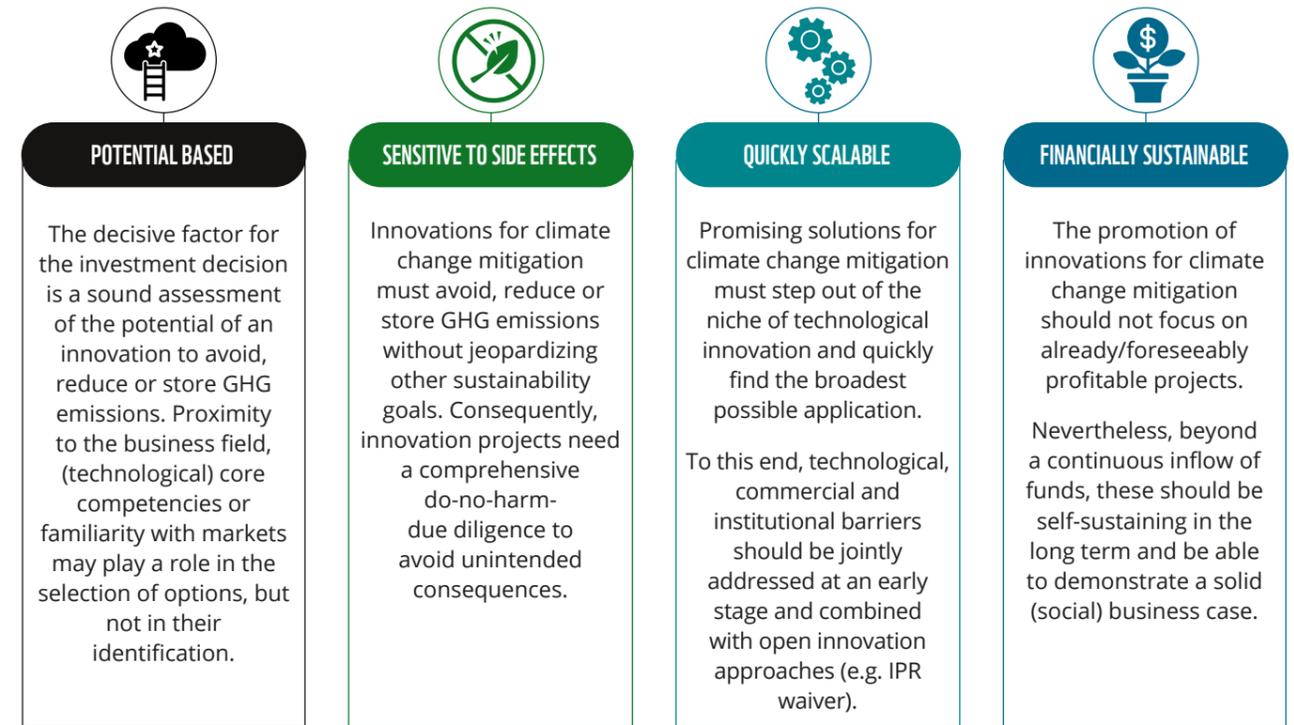


FIGURE 10: PRINCIPLES FOR CHOOSING CLIMATE INNOVATION PROJECTS



Source: Adapted from WWF (2021)²³⁷

xxvii. At the time of compiling this report, SBTi is developing its Beyond Value Chain Mitigation Guidance. Once published, this guidance is expected to provide further direction on how to treat carbon removal projects.



04: PRACTICAL CHALLENGES

Insurance underwriting can enable either positive or negative impacts on nature. As this report has discussed, there are concrete actions insurance companies can take to contribute to global biodiversity and climate goals. However, they face several challenges in doing so.

Hurricane Ida hits US east coast with flash floods | © 2021 Anadolu Agency



CLIMATE AND ECOSYSTEM SERVICES AS PUBLIC GOODS AND THE FREE-RIDING PROBLEM

First and foremost, if environmental goals are only pursued by a few leading insurance groups, less environmentally aware competitors – especially those based in jurisdictions with weak environmental regulation or which are directly financed by private investors or governments – may continue to underwrite activities in environmental harmful sectors, generating additional profits through increased premiums while further contributing to the destruction of the environment.

This free-riding problem stems from the fact that ecosystem services are mostly public goods.²⁴¹ Furthermore, in a free market with multiple insurance providers, premium and contractual conditions can vary, meaning that clients will generally gravitate towards the ones that offer the lowest prices and/or the least demanding contractual conditions.

In addition, and as opposed to investment activities where the investor chooses the investee, the underwriting relationship is inverted: in general, it is the policyholder who chooses the insurer and not vice versa. Nevertheless, insurance companies have the power to exclude certain activities, projects and even clients, from underwriting. Moreover, they can use collective action to pursue global climate and biodiversity goals, as discussed on page 54. Furthermore, companies or sectors no longer supported by insurance companies might decide to self-insure or create captive insurers. This latter approach is, for example, suggested by Guidehouse for the lignite sector in North Dakota, which is finding itself excluded by a growing number of insurers.²⁴² However, such alternative solutions usually come at a higher cost that may make excluded businesses riskier and/or less profitable, especially in relation to more sustainable alternatives.

Ultimately, the most effective way to address the free-riding problem lies not in voluntary individual actions or limited business coalitions, but in proactive regulation that mandates the whole insurance sector to contribute to the fight against climate change and nature loss. In this context, we also refer to WWF's GFRi initiative²⁴³ and the related SUSREG tracker that evaluates the 'greenness' of financial regulators, supervisors and regulatory frameworks.²⁴⁴



THE SHORT-TERM HORIZON OF NON-LIFE INSURANCE CONTRACTS

Another obstacle to implementing some of the suggested concepts, for example 'build back better' approaches, is the short-term nature of most non-life insurance contracts. The ability to reprice or exclude insurance cover every year is a central risk and profitability management tool for non-life insurance companies. For policyholders, it has its roots in consumer protection law (which confers the right to cancel a contract and change providers), although climate risk creates a new paradigm whereby consumers may be unable to find a new insurance provider.

For instance, 'build back better' coverage often involves an initial investment to upgrade the damaged property, which may only pay off and make financial sense over several years. The fact that the insurance cover may be cancelled annually by either party before reaching this break-even point constitutes a major reason why insurance companies are generally reluctant to support upgrades that are likely to provide benefits only after a few years. Overcoming this obstacle may require the creation of new tax or capital incentives for insurers offering multi-year 'build back better'-type covers.^{xxviii} At the same time, policyholders may also be rewarded with appropriate benefits (in the form of lower premiums and/or property upgrades) to compensate them for being tied to a specific insurance provider for several years. Alternatively, sector-wide product templates could be created to enable the transfer of multi-year insurance cover from one insurance provider to another before the term of the contract. Finally, introducing regulatory requirements that make 'build back better' clauses mandatory for claims management would greatly benefit wider take-up in the market.



LACK OF COMPLETE, ACCURATE AND CONSISTENT DATA

Inadequate data on climate- and biodiversity-related risks and impacts of insured activities is often cited by insurance companies as a major obstacle to implementing impactful policies to support climate and biodiversity goals. Data availability regarding climate change mitigation is relatively more advanced, due to the existence of a single metric – i.e., tonnes of CO₂-equivalent emitted – and the availability of standard methodologies, such as the Greenhouse Gas Protocol's Scope classification,²⁴⁵ the CDP's disclosure system,²⁴⁶ or PCAF's Global GHG Accounting and Reporting Standard for the Financial Industry.²⁴⁷ In addition, a growing number of jurisdictions require large corporations to publish TCFD-aligned reports and disclose their GHG emissions.²⁴⁸ Also, a Net Zero Data Public Utility has been proposed at the international level, which would allow all stakeholders to freely access climate transition-related data, commitments and progress of businesses and financial institutions towards those commitments.²⁴⁹

For biodiversity, however, standardized methodologies and comprehensive data are still lacking or in development.^{xxix} While comprehensive environmental impact assessments are generally available for large construction projects, this is often not the case for other types of insurance and lines of business. Moreover, insurance companies are not used to systematically collecting asset-level and geospatial biodiversity data from policyholders, outside of specific examples of directly nature-related contracts (such as environmental liability). Whether due to true data challenges or to a lack of willingness, interest and ambition to tackle nature-related issues, many insurance companies are still 'flying blind' regarding their impacts on nature.

To overcome these challenges, prioritization, simplification and creativity are necessary. Insurers can start developing guidelines and approaches to data for the sectors and companies with the highest biodiversity and climate impacts and finetune their approach over time. Where direct location-specific data points linking negative impacts on nature to insurance companies are missing, proxies can be used that, for instance, verify the existence of credible deforestation policies or science-based climate and nature targets and transition plans. In addition, a number of developments are in train that will help companies overcome biodiversity-related data challenges:

- Voluntary and mandatory standards such as the TNFD, the ISSB, the GRI or the EU CSRD/ESRS will increase the reporting of company-specific data, such as the amount of water or land used, as well as where a company has production facilities.
- Commercial and open-source initiatives and data providers are gathering and distributing more company-specific and geospatial biodiversity data. For example, the Integrated Biodiversity Assessment Tool²⁵⁰ or WWF's Biodiversity Risk Filter²⁵¹ can provide valuable insights into the state of biodiversity across the globe. Here, WWF UK suggests creating 'data lakes' for biodiversity-related data. These pool existing nature-related information at company-, sector- or area-level (including unstructured data) to improve data coverage and make it accessible in a one-stop shop.²⁵²
- Technological advances make data collection and aggregation easier and less costly. For several years, data providers have been using artificial intelligence (AI) and natural-language processing for gathering company data from across the internet or from investor calls. More recently, ex-situ data approaches, particularly geo-satellite imagery and remote sensing (and related AI-supported data analysis), have become a key means of gathering location-specific data and building open-source (and commercial) data infrastructure on biodiversity impact-related data.²⁵³

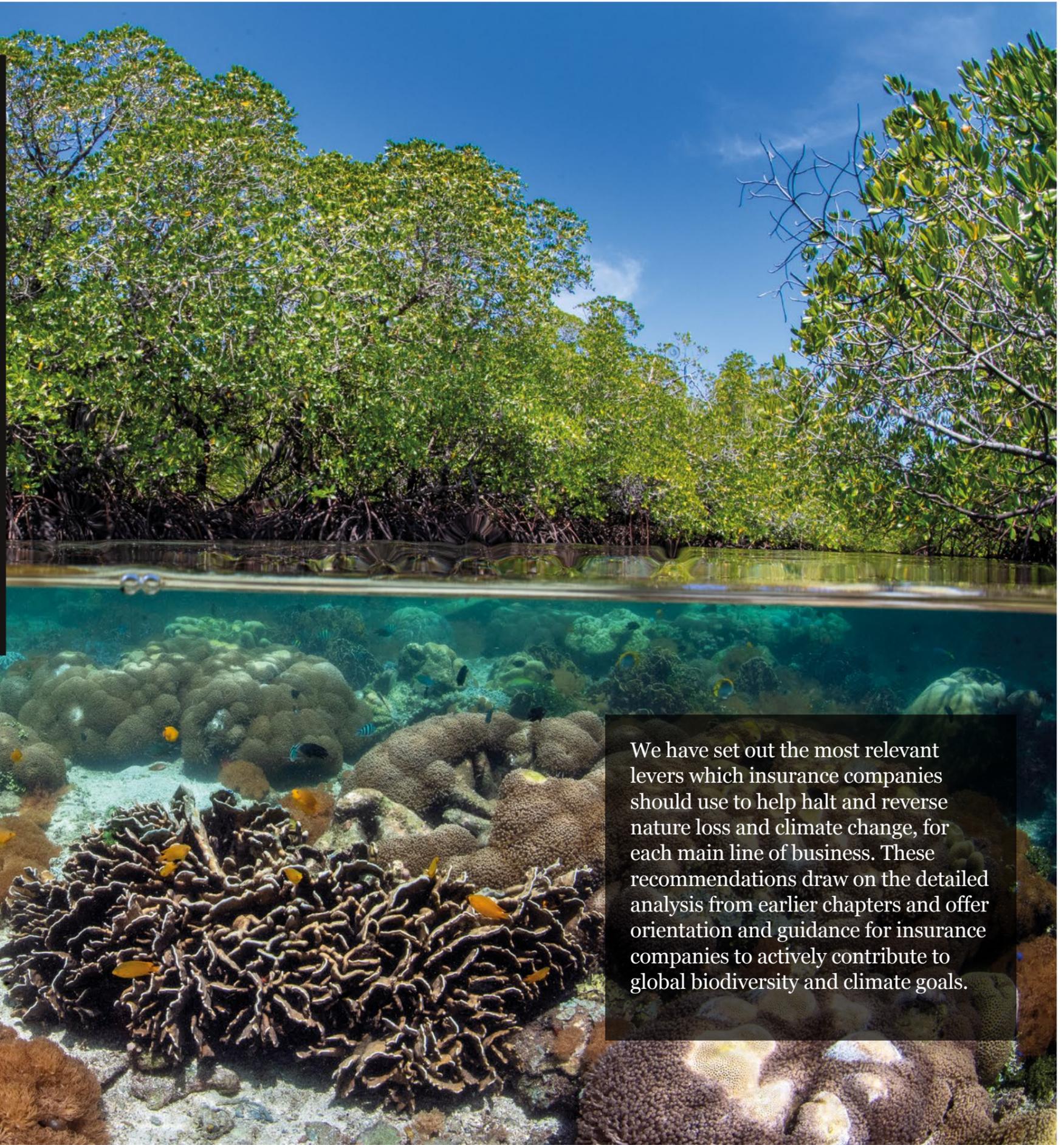
Most large insurers like AXA²⁵⁴ or Aviva,²⁵⁵ for instance, have started gathering additional nature-related data to implement policies for specific issues such as deforestation or business taking place in protected natural areas. In future, all insurers should systematically enquire about the impacts on climate and biodiversity of the goods and services that they enable through their underwriting and factor this information in their business decisions. This ask is consistent with recommendations outlined in the WWF Report *Tackling Biodiversity Risk*, which calls for more transparency and disclosure of location specific data, at the portfolio-, company- and supply chain-level.²⁵⁶

For commercial lines, this should gradually extend to requiring science-based transition plans and TNFD-aligned disclosures from the companies insured. Like many sustainability issues, regulatory requirements and supervisory expectations on nature-related data need to be introduced across the whole insurance sector to avoid the risk that nature-oriented data requests from insurers cause them to lose clients to less inquisitive competitors.

xxviii. We also note that there are already a few examples of well-functioning multi-year non-life contracts, such as 10-year construction insurance in France, and fire insurance in Japan.
xxix. For instance, the TCFD was created in 2015 and has already issued its framework and detailed sector recommendations, whereas the TNFD was only formed in 2020, with its final framework due to be published in September 2023.

05:

WWF RECOMMENDATIONS: HOW THE INSURANCE INDUSTRY CAN CONTRIBUTE TO GLOBAL BIODIVERSITY AND CLIMATE GOALS



We have set out the most relevant levers which insurance companies should use to help halt and reverse nature loss and climate change, for each main line of business. These recommendations draw on the detailed analysis from earlier chapters and offer orientation and guidance for insurance companies to actively contribute to global biodiversity and climate goals.

Mangrove scenery, with hard corals, Raja Ampat, West Papua, Indonesia | © naturepl.com / Alex Mustard / WWF



WWF RECOMMENDATIONS:



A. COMMERCIAL LINES OF BUSINESS: ENGINEERING, CONSTRUCTION ALL-RISK

Set exclusion and phase-out policies: Insurance companies should not offer insurance for the most environmentally harmful construction and infrastructure projects. They should:

- a. Exclude any activities from insurance services which support the expansion of coal, oil and gas production.²⁵⁷
- b. Communicate clear phase-out dates for any fossil fuel-related business, in line with the IEA's Net Zero Emissions by 2050 Scenario, and terminate contracts with any customers from the fossil fuel sector that are not aligned with a credible 1.5°C pathway.
- c. Exclude any activities related to unconventional oil and gas extraction, e.g., fracking, tar sands, Arctic drilling, as well as deep sea-bed mining.
- d. Exclude severe-risk activities that may negatively impact World Heritage Sites or other areas of high biodiversity importance and follow the guidance in the *Protecting our World Heritage, insuring a sustainable future* report.²⁵⁸

- e. Exclude new dam projects that are built in or impact areas of high biodiversity importance, and otherwise follow *WWF's Insuring a nature-positive world, an insurers' guide to hydropower* report.²⁵⁹
- f. Exclude projects that have not received free, prior and informed consent by affected Indigenous Peoples and local communities or that in any other way infringe on their formal or customary rights, including by involuntary displacement.

Engage with clients and review terms and conditions: Insurance companies should require the highest environmental and safety standards and criteria when setting up or renewing insurance contracts to prevent moral hazard. They should engage with their clients to ensure that they meet these requirements.

Promote green choices and offer new products and services: Insurance companies should, through their product offerings and engagement, foster the transition to a greener economy by offering additional capacity to green construction and infrastructure projects that make a demonstrable contribution to halting and reversing nature loss and climate change. In addition, through their risk management, research and innovation capabilities, insurance companies should contribute to the development and adoption of renewable energy and other climate/nature solutions.

FIGURE 11: LEVERS OF INSURANCE UNDERWRITING TO SUPPORT GLOBAL CLIMATE AND BIODIVERSITY GOALS





B. COMMERCIAL LINES OF BUSINESS: AGRICULTURE, AQUACULTURE AND FISHING

Set exclusion policies and engage with clients:

Insurance companies should actively engage with their clients in the agricultural sector and the corresponding value chain to understand their environmental impacts, require tracing of raw materials and orient them to more sustainable practices. Exclusions should apply to businesses driving deforestation and land conversion after 2025 directly or within their supply chains, as well as companies producing and using persistent organic pollutants, in contravention of the Stockholm Convention, and vessels engaged in illegal, unreported or unregulated fishing.

Partner for innovation: With their risk management and data capabilities, insurance companies should support the development and adoption of new technologies and practices such as precision farming, commodity tracing or enforcement of no-conversion policies via satellite imagery and remote sensing.

Promote resilience and green choices: Insurance products should incentivize sustainable and resilient agricultural practices such as agro-forestry, no/low use of pesticides and herbicides, soil formation etc., as well as a general transformation of the food system towards more plant-based diets.



C. COMMERCIAL LINES OF BUSINESS: TRANSPORT (MOTOR, AVIATION, MARINE)

Set exclusion policies and engage with clients:

Insurance companies should ask their clients in the transportation sector to draw up proper science-based targets and transition plans, monitor the implementation of these, and exclude companies that are not following transition strategies. Moreover, underwriting conditions should include clear standards for the most detrimental effects on biodiversity. For shipping, these should cover oils spills, pollutants, air emissions like black carbon, disturbance of maritime mammals' migration, underwater noise pollution, invasive species, habitat destruction and disruption of food security for Indigenous Peoples and local communities.²⁶⁰



D. COMMERCIAL AND PERSONAL LINES OF BUSINESS: PROPERTY

Build resilience: Insurance companies should prioritize measures to prevent environmental damage (e.g., wildfire and flood prevention; construction requirements for disaster resilience in risky areas).

Build back better: Rebuilding measures after a claim should bring buildings up to the highest environmental standards with regards to heating/cooling systems, energy efficiency, ecological building materials and resilience. Additional improvements, such as the use of photovoltaic panels, should be incentivised. Furthermore, any waste should be recycled if possible or properly disposed of.

Repair over replace: Whenever environmentally worthwhile, restoration should be prioritized over replacement and other circular economy approaches should be considered.

Promote green choices and offer new products and services: Insurance companies should, through their product offerings and engagement, incentivize environmentally-friendly decisions when real estate owners make investment decisions. For example, they should offer reduced premiums for green buildings. New products and risk management support should be offered for (new) environmentally-friendly construction or recycling techniques, such as geothermal heating and mass timber.



E. COMMERCIAL LINES OF BUSINESS: ENVIRONMENTAL LIABILITY

Set exclusion policies: As some damage cannot be reversed, insurance companies should stop offering liability cover for new projects or activities within severe-risk economic sectors in areas of high biodiversity importance such as World Heritage Sites. Insurance companies should also stop underwriting new environmental liability cover for highly damaging activities such as deep-sea mining and oil exploration in the Arctic region or the production of chemicals specified as persistent organic pollutants under the Stockholm Convention. For existing projects without expansion plans, environmental liability insurance coverage should however be maintained to ensure restoration.

Review terms and conditions: Environmental liability products should combine broad coverage and ample pay-out limits to ensure that enough funding for clean-up and restoration is available in case damages occur, with the inclusion of important deductibles to reduce the risk of moral hazard. Insurance companies should also include strict environmental and safety standards in terms and conditions and enforce them through remote sensing and on-site inspections.



F. COMMERCIAL LINES OF BUSINESS: DIRECTORS' AND OFFICERS' LIABILITY

Review terms and conditions and set exclusion policies:

Insurance companies should either require ambitious climate and biodiversity-related practices or exclude liabilities, especially climate change liabilities related to a company's GHG emissions, from its insurance D&O liability coverage, to prevent moral hazard.



G. COMMERCIAL LINES OF BUSINESS: SURETY

Set exclusion policies: Insurance companies should apply the same exclusion policies as in Recommendation A for new projects. For existing high-risk projects without expansion plans, surety cover should however be maintained to ensure restoration.

Engage with clients: Insurance companies should engage with their clients to limit any negative impacts on biodiversity.

Review terms and conditions: Insurance policies should include strict environmental and safety standards in their terms and conditions. These should be enforced through remote sensing and on-site inspections to make sure the highest environmental standards are respected.



H. PERSONAL LINES OF BUSINESS: MOTOR

Repair over replace and build back better:

Insurers should favour repairing a vehicle or its parts over replacing it. If replacement is necessary, they should incentivize electric vehicles or vehicles that use less energy (e.g. smaller and more efficient vehicles).

Promote green choices: Mobility insurance products should incentivize bicycles, public transportation and shared mobility solutions to support the transition away from individually owned cars. Where cars cannot be avoided, incentives should favour small and energy-efficient (e-)vehicles.

Set phase-out policies: Insurers should plan to phase out insurance coverage for new combustion engine cars from 2035 onwards – such as demanded by the IEA Net Zero Emissions 2050 Scenario – if such exclusion is legally allowed.



I. REINSURANCE: TREATIES

Integrate nature and climate in all aspects of reinsurance business: Reinsurers should engage more actively with their clients (the direct insurance companies) and business partners (governments, brokers and other reinsurers) to ensure that all actors across the insurance value chain are taking the necessary measures to halt and reverse nature loss and mitigate climate change. Reinsurers should accelerate their efforts to gather more data about the underlying insurance activity they are reinsuring, to be able to implement their climate and nature strategies with the same level of ambition as in facultative reinsurance business.

Set exclusion policies and engage with clients:

As insurers of last resort for a number of nature-related risks, reinsurers have both a critical interest in maintaining insurability and significant leverage over the whole global insurance system. They should use this leverage to actively promote more environmentally conscious insurance products through terms and conditions, engagement and incentives and, when necessary, set exclusions to ultimately stop insurance cover for the most environmentally harmful activities, as outlined in Recommendation A.



J. NATURE-BASED SOLUTIONS AND RESTORATION OF NATURAL ASSETS

Insurance companies should actively **promote the development of nature-based solutions** and the restoration of natural assets by:

- **Increasing research activities** regarding data collection and analysis to assess the impact and effectiveness of nature-based solution projects.
- **Developing offerings to underwrite nature-based solutions and natural assets**, preferably with beneficial conditions to promote protection and resilience.
- **Cooperating with governments, conservation and restoration organizations** and other stakeholders to implement nature-based solutions to foster landscape resilience by providing data, risk management know-how, and/or financing.
- **Integrating nature-based solutions into their investment strategies** and directly financing climate and innovation projects.



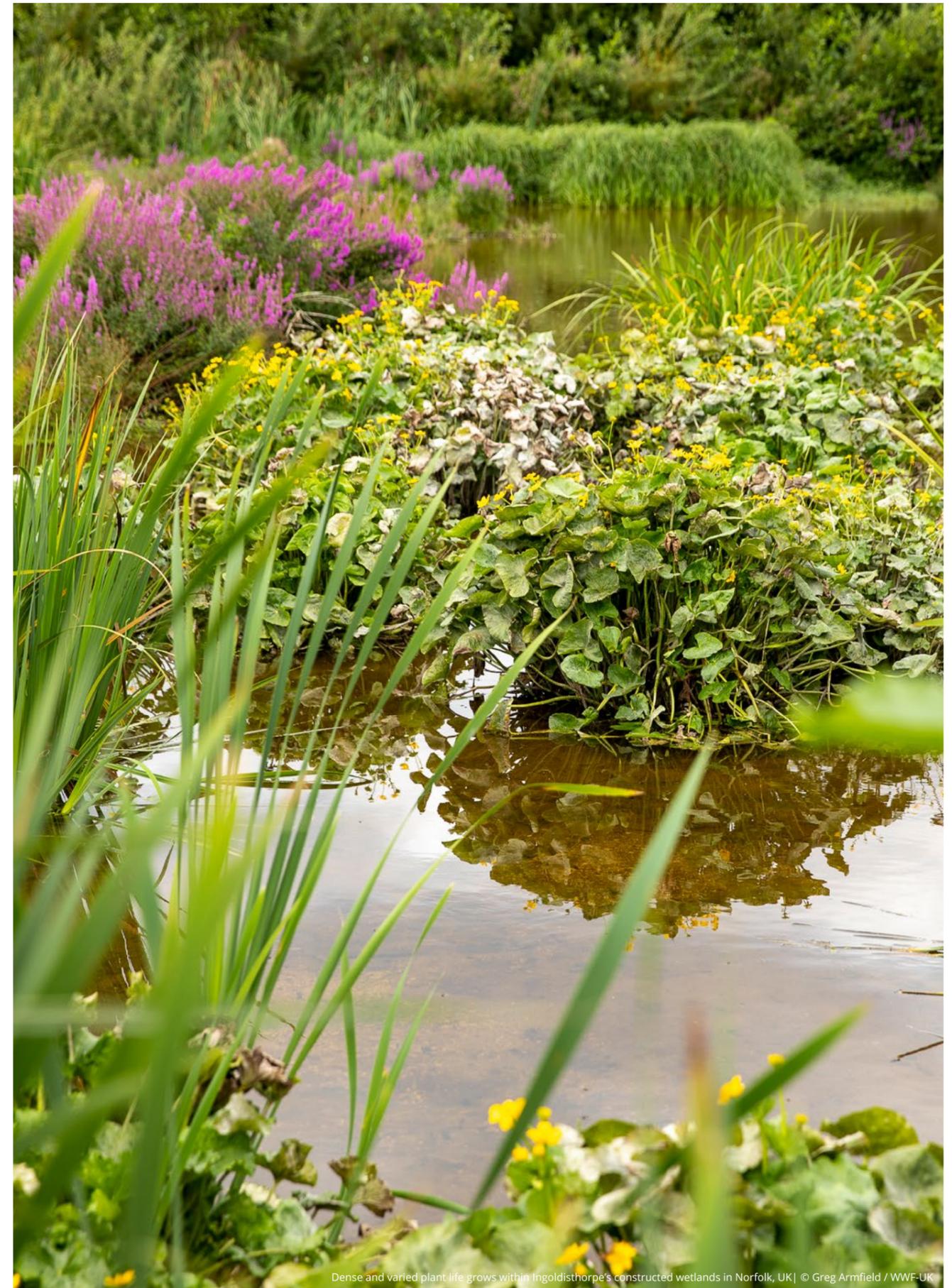
K. BUSINESS-WIDE RECOMMENDATIONS

Insurance companies should adopt company-wide biodiversity and climate strategies and corresponding policies that, in addition to the recommendations above, involve the following:

- Setting science-based targets (for climate preferably via the SBTi) and publishing credible transition plans (combining climate and nature).

- Requiring that underwriting clients set science-based climate and nature targets and develop and implement associated transition plans.
- Implementing effective governance structures for biodiversity and climate risks and impacts, including KPIs and incentives aligned with the biodiversity and climate goals of the company.
- Fostering transparency through state-of-the-art climate and nature-related reporting and disclosure (for example via the CDP, the EU CSRD, the GRI, the TCFD, the TNFD, etc.).
- Aligning all investment activities with global climate and biodiversity goals and using their leverage as shareholders and asset owners to actively contribute to those goals.²⁶¹
- Engaging with brokers with regards to their biodiversity and climate goals, phase-out and exclusion policies and safety and environmental standards. For high-impact insurance deals led by brokers, the insurance companies involved should perform their own environmental due diligence and not solely rely on the brokers' due diligence.
- Supporting clients in understanding risks from climate change and nature loss, e.g., by leveraging inhouse knowledge and research capacities to advance innovation, mitigation and adaptation measures.
- Advocating for ambitious and stringent environmental policies, including effective fiscal incentives, at national and international level, and supporting regulatory disclosure requirements for companies (covering climate- and biodiversity-related metrics and asset-level disclosure).
- Collaborate in initiatives with peers, other sectors, public entities, NGOs and academia to advance a green, fast and fair transition.

These recommendations address the most relevant levers for insurance companies and relevant policymakers to consider when seeking to align the impacts of the insurance industry with global biodiversity and climate goals. The most important lever for each actor to deliver change will depend on specific circumstances, such as the size and the specialization of the insurance company, or the economic development of a specific country and the maturity of its insurance sector.



Dense and varied plant life grows within Ingoldisthorpe's constructed wetlands in Norfolk, UK | © Greg Armfield / WWF-UK

06: FINAL REMARKS

The report has outlined how insurance companies, especially through their underwriting business, are closely linked to climate change and biodiversity loss, including extensive examples of good practice of how to reduce their negative impact and improve their positive effects.



As most of these practices have not yet been widely adopted, insurance companies need to step up and accelerate their efforts if they want to be part of a green, fast and fair transition rather than supporting the unsustainable status quo. Addressing the crises in climate and nature is in the long-term interests of insurance companies, in terms of reducing risks faced by them and their clients and maintaining well-functioning economies and societies.

However, while in some areas the tools that insurance companies have at their disposal to address climate and biodiversity are well-known, other areas are still under-researched and undervalued. This has meant the present report could not cover them in sufficient depth. For example, agriculture is having devastating effects on biodiversity, yet the strategies that insurance companies could adopt to address these are still in their infancy, and it is unclear what the most effective approaches and products to support the transition of the food and agriculture system are. Trade, especially with regards to fossil fuels or agricultural commodities, is another sector that this report could not cover in enough detail. We would welcome any feedback and input to further analyze and understand these under-researched areas where insurance underwriting practices could play an important role.

It is also important to stress that voluntary action by individual insurance companies will never be an adequate substitute for comprehensive, ambitious laws and regulations that protect the climate and nature. **While the private insurance sector can and should increase its own efforts, collaboration with and intervention from policymakers and regulators is also needed to make sure that the whole insurance industry – and not just a few leading companies – acts coherently to make a systemic impact.** This could take the form of stricter environmental regulation, financial incentives in forms of subsidies and taxes, reporting requirements, financial regulation and the creation of public-private partnerships.

To conclude, addressing the physical and transition risks of the climate and biodiversity crises, ending the support for the unsustainable status quo and promoting a sustainable and resilient future is essential for the insurance sector and ultimately for humankind as a whole. Insurance companies have an urgent responsibility to use all their business functions, power and resources to be part of the solution to reach the global climate and biodiversity goals and help steer society towards a more sustainable future, rather than simply attempt to insure and finance a world in deepening crisis.

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LIST OF ABBREVIATIONS

| | |
|----------------|--|
| CDP | Carbon Disclosure Project |
| CSR | Corporate Sustainability Reporting Directive |
| D&O | Directors & Officers |
| EACOP | East African Crude Oil Pipeline |
| EIOPA | European Insurance and Occupational Pensions Authority |
| ENCORE | Exploring Natural Capital Opportunities, Risks and Exposure |
| ESG | Environmental, social and governance |
| ESRS | European Sustainability Reporting Standards |
| GFANZ | Glasgow Financial Alliance for Net Zero |
| GHG | Greenhouse gases |
| GRI | Global Reporting Initiative |
| IEA | International Energy Agency |
| IPBES | Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services |
| ISSB | International Sustainability Standards Board |
| IUU | Illegal, unreported and unregulated |
| LEED | Leadership in Energy and Environmental Design |
| NbS | Nature-based solution |
| NGOs | Non-governmental organizations |
| NZAM | Net-Zero Asset Managers (initiative) |
| NZAOA | Net Zero Asset Owner Alliance |
| NZE | Net zero emissions |
| NZIA | Net-Zero Insurance Alliance |
| OECD | Organization for Economic Co-operation and Development |
| PCAF | Partnership for Carbon Accounting Financials |
| POPs | Persistent organic pollutants |
| PSI | Principles for Sustainable Insurance |
| P&C | Property and casualty |
| SBTI | Science Based Targets initiative |
| SBTN | Science Based Targets Network |
| SMI | Sustainable Markets Initiative |
| SUSREG | Sustainable Financial Regulations and Central Bank Activities |
| TCFD | Task Force on Climate-related Financial Disclosures |
| TNFD | Taskforce on Nature-related Financial Disclosures |
| TNC | The Nature Conservancy |
| UNEP | United Nations Environment Programme |
| UNEP FI | United Nations Environment Programme Finance Initiative |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| WEF | World Economic Forum |
| WHS | World Heritage Site |



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Our Mission

Together, we protect the environment and create a future worth living for generations to come.

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