UN environment programme | finance initiative

Principles for Sustainable Insurance

Insuring a Resilient Nature-Positive Future

Global guide for insurers on setting priority actions for nature

December 2024

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Position statement

The content of this guide does not constitute advice to members of the Principles for Sustainable Insurance (PSI) Initiative. Further, any views expressed in any developed guidance do not necessarily represent the views of each individual member, including those in the working group that assisted in the preparation of the guide. Participation in the PSI Working Group for Nature should not be interpreted as a commitment to assess, manage or disclose nature-related impacts, dependencies, risks or opportunities and should not commit working group members in any way, nor should it be construed as any form of collective action. This guide including the contained priority actions and general considerations represent recommendations for best practice and are not prescriptive as to actions or decisions to be taken by members, including when and how they are expected to address nature-related dependencies, impacts, risks and opportunities. Due to the fast-paced environment characterised by rapidly evolving scenarios, pathways, scientific advancements and developments, this publication should be regarded as a guide based on current insights, practices and knowledge.

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Abbreviations and acronyms

AGM	Annual General Meeting
AMR	Antimicrobial resistance
BFPs	Biodiversity Finance Plans
CBD	Convention on Biological Diversity
CISL	Cambridge Institute for Sustainability Leadership
COP	Conference of the Parties
CSDDD	Corporate Sustainability Due Diligence Directive
CSRD	Corporate Sustainability Reporting Directive
DIROs	Dependencies, impacts, risks and opportunities
D&O	Directors and Officers liability Insurance
EFRAG	Formerly the European Financial Reporting Advisory Group
EIDs	Emerging infectious diseases
EIOPA	European Insurance and Occupational Pensions Authority
EPPs	Environmentally Persistent Pharmaceutical Pollutants
ESG	Environmental, social, and governance
ESRS	European Sustainability Reporting Standards
Eco-DRR	Ecosystem-based disaster risk reduction
EbA	Ecosystem-based adaptation
EbM	Ecosystem-based mitigation
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIT	Forum for Insurance Transition to Net Zero
FPIC	Free, prior and informed consent
FSB	Financial Stability Board
GBF	Kunming-Montreal Global Biodiversity Framework
GDP	Gross Domestic Product
GFANZ	Glasgow Financial Alliance for Net Zero
GHG	Greenhouse gas
GFI	Green Finance Institute
GRI	Global Reporting Initiative
GRID–Geneva	Global Resource Information Database–Geneva
GWP	Gross written premiums
IAIS	International Association of Insurance Supervisors

IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
ISSB	International Sustainability Standards Board
IUCN	International Union for Conservation of Nature
IUU	Illegal, unreported and unregulated (fishing)
KPIs	Key performance indicators
LEAP	Locate, evaluate, assess and prepare
LPI	Living Planet Index
LPR	Living Planet Report
NBSAPs	National Biodiversity Strategy Action Plans
NCDs	Non-communicable diseases
NGFS	Network for Greening the Financial System
NbS	Nature-based solutions
NPI	Nature-positive initiative
OECD	Organisation for Economic Co-operation and Development
OHCHR	Office of the United Nations High Commissioner for Human Rights
OIE	World Organisation for Animal Health
ORSA	Own risk and solvency assessment
P&C	Property and Casualty insurance
PBAF	Partnership for Biodiversity Accounting Financials
PRB	Principles for Responsible Banking
PSI	Principles for Sustainable Insurance
PTSD	Post-traumatic stress disorder
SBTN	Science Based Targets Network
SCP	Sponge city program
SDGs	Sustainable Development Goals
SIF	Sustainable Insurance Forum
SMEs	Small and medium-sized enterprises
TNC	The Nature Conservancy
TNFD	Taskforce on Nature-related Financial Disclosures
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative

UNEP-WCMC	United Nations Environment Programme-World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
WBCSD	World Business Council for Sustainable Development
WCPA	World Commission on Protected Areas
WEF	World Economic Forum
WGN	PSI Working Group for Nature
WHO	World Health Organization
WOAH	World Organisation for Animal Health
WRI	World Resources Institute
WWF	World Wide Fund for Nature
ZSL	Zoological Society of London

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About UN Environment Programme's Principles for Sustainable Insurance Initiative

Endorsed by the UN Secretary-General and insurance industry CEOs, the Principles for Sustainable Insurance (PSI) serve as a global framework for the insurance industry to address environmental, social and governance risks and opportunities—and a global initiative to strengthen the insurance industry's contribution as risk managers, insurers and investors to building resilient, inclusive and sustainable communities and economies on a healthy planet.

Developed by UN Environment Programme's Finance Initiative, the PSI was launched at the 2012 UN Conference on Sustainable Development (Rio+20) and has led to the largest collaborative initiative between the UN and the insurance industry. As of November 2024, close to 300 organisations worldwide have joined the PSI, including insurers representing about one-third of world premium and USD 15 trillion in assets under management. The PSI represents the most extensive global network of insurance and stakeholder organisations committed to addressing sustainability challenges.

Learn more at: unepfi.org/psi

About the PSI Working Group for Nature

Building on the PSI's long-standing work in addressing nature-related risks over the years, the PSI Working Group for Nature was established in May 2024. The working group is a multistakeholder platform involving insurers, reinsurers, brokers, nature finance initiatives, environmental organisations, academic institutions, insurance regulators and supervisors, and insurance associations, among others.

The working group aims to advance risk management and insurance strategies, approaches, practices, products, services and solutions that address nature-related dependencies, impacts, risks and opportunities in order to value, conserve, restore and wisely use biodiversity and ecosystem services; and to promote economic, social and environmental sustainability. It also aims to actively contribute to achieving the mission of the Kunming-Montreal Global Biodiversity Framework (GBF) to halt and reverse nature loss by 2030, and its vision of a world living in harmony with nature by 2050.

Learn more at: www.unepfi.org/psi-nature

> **"The Principles for Sustainable Insurance provide a global roadmap to develop and expand the innovative risk management and insurance solutions that we need to promote renewable energy, clean water, food security, sustainable cities and disaster-resilient communities."**
>
> **UN Secretary-General (PSI launch, 2012 UN Conference on Sustainable Development)**

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Intact (Canada)
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Iris Global (Spain)
MS&AD (Japan)
NamibRe (Namibia)
NN Group (Netherlands)
Pelayo Vida (Spain)
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Executive summary

Aims and scope of the guide

The aim of the PSI Working Group for Nature is to develop strategies, technical guidance, and enhanced approaches to address nature-related issues in insurance underwriting portfolios.

The escalating pace of nature loss prompted the adoption of the Kunming-Montreal Global Biodiversity Framework (GBF),[1] which calls on the private financial sector to align with its mission of halting and reversing nature loss by 2030 and its vision of living in harmony with nature by 2050. This has led to an increasing demand from insurance companies to provide guidance on aligning with the goals of the GBF.[2]

This first-of-its-kind global guide aims to respond to that call and assist insurers in taking actionable steps to contribute to a resilient nature-positive future. The guide adopts the term "nature-positive" as the global societal goal rooted in the GBF's mission to "halt and reverse biodiversity loss by 2030."[3]

The guide is released at a critical juncture when wildlife populations have declined by a staggering 73% over the past 50 years, and the world approaches dangerous tipping points with far-reaching global consequences, such as the potential collapse of the Amazon rainforest and mass die-off of coral reefs.[4] Despite global multilateral environmental agreements, progress has been alarmingly slow and insufficiently ambitious. Ecologically vital and biodiversity-rich areas remain inadequately protected and conserved, with only 17.6% of terrestrial and inland waters and 8.4% of marine and coastal areas protected and conserved, far off the 30% by 2030 GBF target 2&3,[5] and a significant biodiversity funding gap persists.[6] Achieving the GBF targets requires urgent action, effective implementation, and a whole-of-society approach. This includes active participation from all financial sector stakeholders—particularly the insurance

1 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int
2 UNEP FI (2023): Nature-Positive Insurance: Evolving Thinking and Practices: unepfi.org
3 Nature Positive Initiative (2023). The Definition of Nature Positive: naturepositive.org
4 WWF, ZSL (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org
5 UNEP-WCMC, IUCN, WCPA, protected planet (2024). Protected Planet Report 2024: protectedplanet.net/
6 While some significant agreements have been reached during the 16th Conference of the parties to the CBD (COP16) such as in relation to strengthening the role of indigenous peoples and local communities, the establishment of a global fund for sharing benefits for digital sequence information on genetic resources, and a Global Action Plan on Biodiversity and Health, a strategy for resource mobilisation to close the biodiversity finance gap of USD 200 billion annually fell short. The Global Biodiversity Framework Fund (GBFF) and the Kunming Biodiversity Fund (KBF) have so far received only USD 600 million. A monitoring framework of the GBF to measure progress of implementation has still to be completed. cbd.int

industry, which plays a pivotal role in enabling economic activities and can steer them away from harmful practices while facilitating investments that protect, conserve, and restore nature.

While nature-related risks have historically been considered in specific insurance lines—for instance, pollution liability insurance for industrial operations, engineering and construction insurance for infrastructure projects, protection and indemnity insurance for vessels, and life & health insurance addressing zoonotic diseases—there has been a lack of the broader consideration of these risks across entire insurance underwriting portfolios. Furthermore, in the field of sustainable finance, nature-related impacts have primarily been assessed and addressed through the lens of investment and lending portfolios, rather than insurance underwriting portfolios.[7]

One key reason for this is how insurance has traditionally been viewed—as an instrument to absorb financial shocks. In this context, securing insurance coverage has been the central focus. As a result, the insurance risk management value chain—from understanding, preventing, and reducing risk to transferring risk through insurance—has been more closely associated with the climate adaptation and resilience agenda, which focuses on managing physical climate impacts, rather than the mitigation and decarbonisation agenda, which centres on reducing greenhouse gas emissions.

Over the past decade, UN Environment Programme's Principles for Sustainable Insurance Initiative (PSI) has undertaken various projects and activities to address aspects of nature-related risks and opportunities. Building on this foundation, the PSI has introduced the concept of insurance for a resilient nature-positive future, promoting the dual role and responsibility of insurance:

- As an enabler of economic activities, addressing nature-related issues, including negative externalities such as drivers of nature loss.
- As a risk manager and risk carrier addressing emerging risks from nature loss and absorbing financial shocks to build resilience for communities and economies.

This guide provides concrete and practical actions to help insurers fulfil this dual responsibility. It emphasises the need to address nature-related dependencies, impacts, risks, and opportunities across the insurance value chain.

The guide outlines possible actions for both non-life and life & health primary insurers, considering their interactions with other key actors in the insurance value chain. While the guide is not specifically tailored to other key actors—such as reinsurers, brokers, or suppliers—these groups are encouraged to review relevant actions, as many principles and strategies outlined for primary insurers can be equally applicable to them.

7 UNEP FI (2021): Insuring the net-zero transition: Evolving thinking and practices: unepfi.org

Making the case for non-life insurers to contribute to a resilient nature-positive future

Insurance plays an imperative role in enabling economic activities by protecting clients, property, and operations from insurable risks. Without insurance, many economic activities—such as maritime transport, infrastructure projects, and in some cases home ownership through mortgages—would not be possible. Insurance also serves as a critical enabler of financing and investments, facilitating the realisation of large-scale infrastructure and capital-intensive projects essential for economic progress.

Global gross written premiums (GWP) are projected to reach USD 7.6 trillion by 2024,[8] highlighting the extensive reach of insured activities that underpin the global economy. These activities often interface with nature, yielding both positive and mostly negative impacts. The correlation between economic activity and environmental impact is particularly evident in socio-economic systems such as food systems, energy, and infrastructure, which collectively drive 80% of global biodiversity loss.[9]

Insurance strategies, underwriting practices, and products are intricately linked to nature-related impacts through "what they are insuring" (e.g., high-impact sectors and activities), "where activities are being insured" (e.g., biodiversity-sensitive areas), and "how activities and assets are being insured" (e.g., policy terms and conditions).[10] Beyond underwriting, insurers also contribute indirectly to nature-related impacts through operational processes such as claims management, which can result in considerable pollution, waste and greenhouse gas (GHG) emissions. These factors underscore the industry's potential to influence and reduce pressures on nature.

Activities contributing to greenhouse gas (GHG) emissions often overlap with those driving nature loss. When engaging with clients in high-impact activities and sectors, insurers have an opportunity to address both GHG emissions and their associated impacts on nature. Achieving the goal of net zero emissions is inherently linked to nature-positive outcomes. The loss of key ecosystems accelerates climate change by disrupting the carbon, water and nitrogen cycle, while the destruction and degradation of ecosystems releases long-stored carbon and diminishes carbon sequestration and storage capacity.[11] Without protecting and restoring ecosystems, both biodiversity and climate goals seem virtually unachievable.[12,13]

8 Swiss Re Institute (2024). Sigma. World insurance : strengthening global resilience with a new lease of life. No 3/2024 : swissre.com

9 WEF (2020). New Nature Economy Report II. The Future of Nature and Business. weforum.org

10 WWF, Deloitte (2023): Underwriting our Planet. How insurers can address the crisis in climate and biodiversity: wwf.ch

11 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net

12 UNEP (2023). Emissions Gap Report 2023: unep.org

13 Rockström, J., Beringer, T., Hole, D., Griscom, B., Mascia, M.N., et.al. 2021.Opinion: We need biosphere stewardship that protects carbon sinks and builds resilience: pnas.org

Insurers therefore have a significant responsibility in enabling economic activity by absorbing financial shocks, and in halting and reversing nature loss.

The urgency to act is paramount. The loss of biodiversity and ecosystem integrity—the resilience of Earth's system—has led to the transgression of the safe operating space for humanity,[14] undermining biodiversity and the ecosystem services critical for business and economic stability. With 55% of global GDP—about USD 58 trillion—moderately or highly dependent on nature, significant economic value is now at risk.[15]

Nature loss directly threatens business operations, supply chains, and insured assets, impacting various insurance business lines. As biodiversity loss and ecosystem degradation escalate, insured assets and activities become more vulnerable to damage and loss, leading to increased claims frequency and severity, affecting the affordability and availability of insurance, and affecting the availability of insurable assets. Emerging threats also underscore the need for new or expanded insurance products to address nature, and climate-related risks, and help build community resilience and close the protection gap.[16,17]

The interconnectedness of ecosystem degradation and climate change compounds these challenges. Weakened ecosystems diminish climate regulation and reduce resilience to climate impacts such as storms and floods, amplifying risks to assets, communities, businesses and governments. In 2022, extreme weather events alone generated USD 143 billion in losses, of which only 40% were insured. This dual challenge is driving higher premiums, complicating risk diversification, and increasing reinsurance costs, threatening the affordability and availability of insurance and the availability of insurable assets.[18]

These risks can also take on systemic dimensions; for example, the collapse of critically important ecosystems—such as the Amazon rainforest or the Coral Triangle-can have global implications, making risk diversification impossible and which could lead to spillover effects to other parts of the financial sector and the real economy.[19]

To help build resilient communities and safeguard their own financial stability, insurers should actively promote risk prevention and reduction measures. By addressing nature- and climate-related risks insurers can better understand and reduce risk and seize opportunities to close the protection gap. Such actions might become imperative for protecting insurers' financial positions and supporting systemic resilience across economies and societies.

14 Azote for Stockholm Resilience Centre, based on analysis in Richardson et al. 2023, The 2023 Update to the Planetary Boundaries: stockholmresilience.org
15 Ewison, W., Low, L.P., and O'Brien, D. (2023): Managing nature risks, From understanding to action. PWC: pwc.com
16 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu
17 FSB (2024): Stock take on Nature-related Risks. Supervisory and regulatory approaches and perspectives on financial risks: fsb.org
18 Aon (2024): Climate and Catastrophe Insight: assets.aon.com
19 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net

Nature is a powerful ally to reduce risk. While the challenges posed by nature loss are significant, nature itself can be a powerful ally in reducing disaster risk due to natural hazards. Ecosystem-based interventions—such as mountain forests, wetlands, and coastal systems such as mangroves and coral reefs—are among the most effective methods for hazard mitigation. For example, mangroves reduce property damage by over USD 65 billion annually.[20]

This guide suggests adopting a comprehensive approach to nature-based solutions (NbS)[21] for loss prevention and risk reduction across various levels and scales (e.g., individual households, cities, urban areas, agricultural fields, ecosystem level, watersheds, or landscape scale). By helping reduce disaster risk and other environmental risks, NbS could improve affordability and availability of insurance, playing a crucial role in closing the protection gap, while enhancing ecosystem conditions and biodiversity. Public-private partnership and innovative financing and investment schemes will likely be required, to support the adoption and scaling up of ecosystem- and landscape-level nature-based solutions. Insurability can be a key lever to accelerate the financing and investment case for nature-based solutions.[22]

Insurance is essential to closing the biodiversity finance gap. Its relationship with natural assets extends beyond traditional risk reduction, positioning insurance as a key enabler in bridging the USD 700 billion annual biodiversity finance gap.[23] Insurance can de-risk investments in nature conservation, restoration, sustainable use of land and water resources, and other nature-based solutions. Insurance can enable the development, deployment and operations of nature-based solutions or help innovative projects for nature become more feasible and financially viable. In doing so, insurance inherently contributes to the operationalisation of the Global Biodiversity Framework (GBF) targets.

However, a fundamental shift in perspective is imperative. Nature should be treated as an asset deserving the same level of protection and investment as property or health. Healthy ecosystems underpin essential services relied upon by communities and economies, creating a shared responsibility to preserve and enhance these resources. Emerging public-private partnerships designed to insure natural assets bring to light the importance of protecting these resources for both private and public benefit.

Insurance provides vital asset protection for natural capital against perils such as natural hazards. For example, insurance solutions covering coral reefs, mangroves, forests and living levees can reduce disaster risks for communities. Insurance can also guarantee the protection of conservation efforts and ensure the successful delivery of ecological restoration projects. Pay-outs from these policies can be reinvested into restoration, building resilience and promoting positive outcomes for nature. Such mechanisms can also support carbon-credit projects and potentially future biodiversity-credit projects.

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20 Menéndez, P., Losada, I.J. and Torres-Ortega, S. et al. (2020): The Global Flood Protection Benefits of Mangroves: doi.org

21 As adopted in resolution 5/5 of 2 March 2022, at the fifth session of the United Nations Environment Assembly (UNEA 5.2) held in February 2022 in Nairobi.

22 UNDRR (2020): Ecosystem-Based Disaster Risk Reduction: undrr.org

23 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int

There is a significant "transition insurance" opportunity to support a nature-positive economy.[24] Virtually every business activity has an interface with nature, which means there is a need to transition existing business models and operations. Insurance is essential in enabling new business models, technologies, and solutions that can significantly reduce pressures on nature compared to business-as-usual activities, and transform value chains. This system-scale transformation and innovation is critical to creating a nature-positive economy.

Insurance provides risk analysis and risk transfer solutions that offer innovators the financial safety net needed to pioneer new methods and technologies, as well as to scale up emerging technologies and solutions for nature-positive. The World Economic Forum (WEF) estimates an annual USD 10 trillion opportunity in the transition toward a nature-positive economy, spanning sectors such as waste management, alternative proteins, vertical farming, bio-based materials, circular economy models, and new supply chains.[25] By helping make these emerging solutions and technologies insurable, insurers not only align with sustainability goals but also position themselves as key players in the future economy.

24 Note that while the concept of nature-positive, as defined by the Nature-Positive Initiative (NPI), is a global societal goal rooted in the GBF's mission to "halt and reverse biodiversity loss by 2030", the concept of "nature-positive economy" has not been defined, and is not part of the GBF, but has been inspired by its whole of society approach and inclusion of the private sector in targets 14 and 15.

25 WEF (2020): New Nature Economy Report II. The Future of Nature and Business: weforum.org

Insurance value chain enabling activities contributing to nature loss	
▪ Insurance enables economic activities, which in turn can negatively impact nature ▪ Insurance value chain can contribute to environmental pressures ▪ Achieving net zero depends on addressing nature loss and preserving ecosystems ▪ Insurance carries environmental responsibility to halt and reverse nature loss	**Global GWP enabling top 10 impacting sectors**
Increasing claims and impacts to insurability	
▪ Nature loss affects insurance business lines and amplifies climate change impacts ▪ Potential impact to financial resilience of insurance companies ▪ Potential systemic dimensions impacting: **Affordability / Insurability / Available insurable assets / Spill-over**	**USD 58 tr economic value at risk** **USD 60 bn ann. in insured losses from extreme weather events**
Nature as a powerful ally to reduce risks	
▪ Nature-based solutions—across different scales e.g., household, farm, urban, watershed, landscape level and ecosystem-based—can reduce risks and prevent losses ▪ Nature-based solutions could positively impact affordability and availability while enhancing biodiversity and ecosystem conditions ▪ Insurability as key lever to drive investments in nature-based solutions	**Mangroves preventing property damages of USD 65 bn ann.**
Insurance essential to closing the biodiversity finance gap	
▪ Insurance can de-risk investments into nature restoration, conservation, sustainable use of biodiversity, and biodiversity and carbon credit projects ▪ Nature and ecosystem services providing public and private benefits, merit protection equal to property or health	**USD 700 bn ann. biodiversity finance gap**
The transition insurance opportunity	
▪ Supporting existing business models and process in transition to nature-positive ▪ Insurance to scale new business models, technologies and solutions to transform value chains	**USD 10 tr opportunity to transition to a nature-positive economy**

Figure 1: Overview intersection between nature and non-life insurance business

Making the case for life & health insurers to contribute to a resilient nature-positive future

Life & health insurance provides essential services that help individuals, households, and businesses understand and manage risk. It offers financial security and resilience, and enables activities and solutions that promote sustainability.

Biodiversity is fundamental to human health, providing nutrition, agricultural biodiversity, water resources, medicinal plants and sustaining ecosystem functions (e.g., water purification, air quality and climate regulation, pest and disease regulation, and pollination). Contact with nature can be associated with positive mental and physical health benefits. Other indirect benefits include the contribution of biodiversity for a range of cultural ecosystem services such as spiritual values, educational value and social relations.[26] Biodiversity also underpins healthcare systems, with approximately 70% of cancer drugs and 75% of antimicrobials derived from natural sources.[27] But biodiversity can also be a source of pathogens and thus have negative impacts on health.[28] The health of humans, animals, plants, and ecosystems is closely linked and interdependent.[29]

Zoonotic diseases and antimicrobial resistance (AMR) highlight significant nature-related risks for human health. Approximately 75% of emerging infectious diseases are zoonotic, originating from animals and transmitted to humans.[30] Factors such as habitat destruction, biodiversity loss, and climate change exacerbate these risks by increasing human-wildlife interactions and reducing ecosystems' resistance to disease outbreaks. AMR further compounds these challenges, with widespread antibiotic use in livestock contributing to rising resistance. Without intervention, AMR could lead to up to 39 million deaths annually by 2050 and cause global livestock production losses equivalent to feeding two billion people, underscoring the interconnectedness of ecosystem, human and animal health.[31] Recognising this, the Global Action Plan on Biodiversity and Health, adopted at the 16th Conference of the Parties to the Convention on Biological Diversity (COP16), promotes a holistic "One Health" approach and aims to curb zoonotic and non-communicable diseases while fostering sustainable ecosystems. The plan addresses shared drivers like deforestation, pollution, and climate change, with the aim of benefiting both biodiversity and human health.[32]

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26 CBD, WHO, UNEP (2015): Connecting Global Priorities: Biodiversity and Human Health: cbd.int/health/SOK-biodiversity-en

27 WHO (2019): Global Report on Traditional and Complementary Medicine: iris.who.int

28 CBD, WHO, UNEP (2015): Connecting Global Priorities: Biodiversity and Human Health: cbd.int/health/SOK-biodiversity-en

29 UNEP, FAO, WHO, WOAH (2022). Quadripartite Memorandum of Understanding (MoU) signed for a new era of One Health collaboration as signed on April 2022: unep.org

30 Gebreyes, W.A., Dupouy-Camet, J., and Newport, M.J. et al (2014): The Global One Health Paradigm: Challenges and Opportunities for Tackling Infectious Diseases at the Human, Animal, and Environment Interface in Low-Resource Settings: ncbi.nlm.nih.gov/pmc/articles

31 Adamie, B, Akwar, HT. and Arroyo, M et al (2024): Forecasting the Fallout from AMR: Economic Impacts of Antimicrobial Resistance in Food-Producing Animals—A report from the EcoAMR series. Paris (France) and Washington, DC (United States of America): World Organisation for Animal Health and World Bank, pp. 170: woah.org

32 16th Conference of the Parties to the CBD (2024). Biodiversity and health. Draft decision submitted on 30 October 2024: cbd.int

Nature-related risks for life & health extend beyond disease transmission. Drivers of biodiversity loss and environmental degradation, such as air and water pollution, can directly harm human health while simultaneously degrading biodiversity and ecosystems. For example, poor air quality exacerbates respiratory diseases globally, while water pollution reduces access to clean drinking water and degrades freshwater systems and wetlands, amplifying water-borne illnesses and negatively affecting nutrition. The loss of biodiversity and ecosystem services can negatively impact nutrition and food security through soil degradation, pollution, reduced agricultural biodiversity, and decreasing availability of wild foods. It can also weaken ecosystems' capacity to reduce climate change impacts; for example, through the loss of forests that help regulate the local climate, potentially exacerbating heatwaves. Additionally, limited access to natural environments may contribute to physical and mental health issues. Climate change further intensifies all these risks.[33]

Biodiversity loss and ecosystem degradation can significantly impact human health and life in the short and long term. These impacts may include increased rates of illnesses, diseases, direct physical harm, death, and mental health issues and can in turn result in higher mortality, morbidity, and hospitalisation rates. Low-income, uninsured populations are likely to be disproportionately affected, as they are more exposed and vulnerable to these risks compared to those with insurance coverage.[34]

There is a risk of widening the protection gap. The COVID-19 pandemic did not undermine the insurability of pandemic risks, as on balance, insurers were able to manage the risk and their financial stability was not impaired. However, the pandemic highlighted a widening protection gap driven by reduced access to insurance amid the economic strain of the pandemic and rising healthcare costs.[35] Over the long term, climate change and nature-related risks could adversely impact the affordability, access and availability of life & health insurance products. The increasing exposure of vulnerable populations to nature-related risks is requiring a more holistic approach to risk management.[36]

Prevention is one of the most effective strategies to improve access to insurance and the insurability of health risks. Preventative care, combined with innovative and inclusive insurance products, is critical to close the protection gap. Measures such as healthy lifestyle behaviours, health screenings, vaccinations, early warning indicators for environmental risks and education, can lower healthcare costs and can support systemic resilience. With nature-related risks increasingly affecting human health, insurers can draw insights from innovative solutions addressing climate change impacts, such as parametric insurance for heatwaves.[37]

33 CBD, WHO, UNEP (2015): Connecting Global Priorities: Biodiversity and Human Health: cbd.int/health/SOK-biodiversity-en
34 The Geneva Association (2024): Climate Change: What does the future hold for health and life insurance?: genevaassociation.org
35 The Geneva Association (2020): An Investigation into the Insurability of Pandemic Risk: genevaassociation.org
36 UNEP FI (2023): Health is Our Greatest Wealth: unepfi.org
37 Ibid.

Lifestyle choices are a key determinant for health and wellbeing, and provide an opportunity for insurers to positively influence more sustainable and healthier lifestyle choices.[38] Lifestyle choices, such as diet and mobility, are significantly connected to impacts on health and nature. Insurers have an opportunity to assess the negative environmental externalities associated with their underwriting portfolios and insurance value chain. For example, overconsumption of meat and dairy increases health risks while placing significant pressure on nature.[39] Life & health insurers can incentivise healthier, more sustainable behaviours, such as adopting a planetary health diet and sustainable and active mobility. Awareness and wellness programmes encouraging physical activity and sustainable diets can reduce healthcare costs and environmental pressures. By integrating these practices, insurers can drive systemic change to support human and planetary health.[40,41]

A life & health insurer's indirect nature-related impacts can extend across its entire value chain, particularly in upstream activities such as pharmaceutical manufacturing and healthcare system operations. The pharmaceutical supply chain, especially in the sourcing and production of medicines in biodiversity-sensitive areas as well as its downstream impacts (e.g., waste generation and pollution, especially through the overuse of antimicrobials and other pharmaceutical products), can exert significant environmental pressures. Similarly, healthcare providers contribute to environmental pressures through their procurement processes and the substantial waste generated during operations (e.g., generation of medical waste and single-use plastics, improper disposal and overuse of antimicrobials and other pharmaceutical products). Addressing these indirect nature-related impacts tackles the factors driving critical health and environmental issues, such as antimicrobial resistance, which poses a growing threat to human health and wellbeing.[42]

Restoring and conserving nature is vital for both planetary and human health. The Global Action Plan on Biodiversity and Health highlights that conserving, restoring, and sustainably using biodiversity directly supports human health by safeguarding essential ecosystem services. Organisations that benefit from nature's genetic resources, such as pharmaceutical companies, should actively participate in the equitable sharing of benefits and contribute to ecosystem restoration and conservation.[43,44]

Nature-based solutions (NbS) can also deliver significant health benefits, particularly in urban areas. Green and blue spaces reduce stress, promote physical activity, and enhance resilience to environmental risks, underscoring the importance of integrating NbS into urban planning and healthcare systems. Increasingly, the physical and mental health benefits of time in nature are being recognised, with some healthcare professionals prescribing it as part of patient treatment plans.[45]

38 Farhud, D.D. (2015): Impact of Lifestyle on Health: pmc.ncbi.nlm.nih.gov/articles/
39 WWF, ZISL (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org
40 Ibid.
41 UNEP FI (2023): Health is Our Greatest Wealth: unepfi.org
42 Health Care Without Harm (2020). Sustainable Procurement in Health Care Guide: greenhealthcarewaste.org
43 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int; CBD, 16th Conference of the Parties to the CBD (2024). Digital sequence information on genetic resources. Draft decision submitted: cbd.int
44 16th Conference of the Parties to the CBD (2024). Biodiversity and health. Draft decision submitted on 30 October 2024: cbd.int
45 WEF (2022). Health: What are green prescriptions and which countries offer them? weforum.org

Biodiversity is fundamental to human health	
▪ Biodiversity underpins ecosystem functions that provide e.g., clean air, water, nutritious food, climate regulation, and pest and disease control ▪ Biodiversity supports healthcare systems through medicine derived from natural resources and genetic information	**70% of cancer drugs & 75% of antimicrobials derived from natural resources**
Loss of biodiversity and ecosystems and the impact to life & health risks	
▪ Zoonotic diseases and antimicrobial resistance (AMR) are significant nature-related risks ▪ Environmental pressures like air and water pollution directly harm human health while leading to ecosystem degradation driving nature-related risks ▪ Nature-related risks can increase rates of illness, disease, physical harm, and mental health issues, increasing mortality, morbidity, hospitalisation rates, and insurance claims	**75% of emerging infectious diseases are zoonotic**
Insurability & widening protection gap from nature-related risks	
▪ Nature-related risks could affect access, affordability, availability of life & health insurance ▪ Nature-related risks will disproportionately impact the most vulnerable populations ▪ Preventative care and innovative, inclusive insurance can increase access to insurance and close the protection gap	**Global health protection gap USD 941 bn in premium equivalent terms**
Lifestyle choices as key determinant for health and environmental footprint	
▪ Lifestyles, diets, health and environmental impacts are closely linked, offering opportunities for insurers for positive influence ▪ insurer's value chain contributes indirectly to nature loss through pharmaceutical supply chains and healthcare systems	**Food system's hidden cost: USD 10–15 tr ann.**
Nature restoration and conservation for planetary and human health	
▪ Nature conservation, restoration and sustainable use directly supports human health ▪ Green and blue spaces reduce environmental exposure and improve health ▪ Spending time in nature improves physical and mental health	**Thousands of doctors prescribing time in nature**

Figure 2: Overview intersection between life & health insurance

Defining insurance for a resilient nature-positive future

Responding to the escalating nature loss and increasing risks to communities and economies, this guide further builds on the concept of insurance for a resilient nature-positive[46] and provides a concrete and practical set of possible actions that insurers can take to align with the aims and targets of the Global Biodiversity Framework (GBF).

At this early stage, it would probably be difficult for an individual financial institution—be it an insurer, a bank or an investor—to be able to claim that it is already nature-positive. However, a financial institution can definitely contribute to nature-positive outcomes. In this vein, in 2023, the PSI in its briefing paper, defined insurance for nature-positive as "risk management and insurance strategies, practices, products, services, and solutions that address nature-related dependencies, impacts, risks, and opportunities, while promoting economic, social, and environmental sustainability."[47]

Furthermore, the definition includes the overarching aim to "actively contribute to the mission of the Kunming-Montreal Global Biodiversity Framework (GBF) by halting and reversing nature loss by 2030, and in alignment with its long-term vision of living in harmony with nature by 2050."[48]

As shown above, insurance for nature-positive extends beyond responding to nature-related impacts. It encompasses risk management and insurance strategies that **address nature-related risks and opportunities**. This is in line with the GBF's targets to enhance resilience through risk reduction and adaptation, leveraging ecosystem-based approaches and nature-based solutions.

Building on the definition of **insurance for nature-positive**, this guide outlines priority actions aimed at achieving **the following overarching goals for insurers:**

- **Avoid, reduce and manage negative impacts on nature, contributing to biodiversity gains, and transformation of value chains.**[49]
- **Contribute to preventing and reducing nature-related risks, and building resilience.**
- **Create opportunities for insurers to support a just transition towards nature-positive outcomes and to enhance insurability.**

It is recommended that insurers prioritise understanding and reducing the existing negative impacts within their portfolios. Avoiding biodiversity loss by 2030 is the most urgent priority. Throughout this guide, there is a focus on avoiding harm to nature as a first-order priority for insurers.

However, the overall economic transformation towards the nature-positive goal also requires supporting biodiversity conservation and restoration, as well as implementing

46 The concept of "nature-positive," as defined by the Nature-Positive Initiative (NPI), is a global societal goal rooted in the GBF's mission to "halt and reverse biodiversity loss by 2030" based on a 2020 baseline, with the ultimate objective of achieving full recovery by 2050.

47 UNEP FI (2023): Nature-Positive Insurance: Evolving Thinking and Practices: unepfi.org

48 Ibid.

49 UNEP FI and Finance for Biodiversity Foundation (2024). Discussion Paper Working Model Finance for Nature Positive: unepfi.org

solutions that transform value chains. It is not necessary to wait to start restoring nature until all negative impacts have been reduced to the greatest extent possible. What is key is that there should be a plan in place and there are active efforts towards avoiding harmful activities and reducing drivers of nature loss.

This guide is designed to support insurers in addressing nature-related risks in line with the insurance risk management continuum—from understanding, preventing, and reducing risk; to transferring risk (via insurance). The guide does not specifically address insurers' own nature-related financial risks such as underwriting or business risks. However, as recommendations in the guide focus on managing nature-related risks to help reduce insured losses, and to help improve the availability and affordability of insurance and insurability of assets and activities, these measures may also reduce underwriting risk for the insurer.

Furthermore, by aligning underwriting activities with nature-positive outcomes, insurers can potentially reduce their own nature-related transition risks, including reputational and legal risks.

Insurers should recognise that environmental impacts of today can become significant financial risks in the future. Proactively responding to these impacts is ultimately sound risk management.[50]

Key enablers for insurers to take action on nature across the insurance value chain

This guide incorporates a theory of change that identifies key enablers across the insurance value chain. These key enablers should allow insurers, in their roles as **risk managers and risk carriers** to contribute to nature-positive outcomes and enhance resilience for communities and societies in the face of nature-related risks.

Actions have been defined for each of the key enablers, tailored to both **non-life insurance and life & health insurance** based on their distinctive business models.

The guide acknowledges the global diversity of insurers in terms of size, business models, and maturity regarding nature-related actions. It categorises actions into **general priority actions** (broad recommendations applicable to most insurers), **general considerations** (additional approaches and areas for exploration), and **company-specific actions** (relevant only for insurers offering applicable products and services, and relevant client categories).

These possible actions and considerations represent concrete and practical recommendations and are not prescriptive in terms of decision-making by individual insurance companies, including when and how they are expected to address nature-related impacts and risks. Each company should evaluate these actions based on its business model, geographical context, and regulatory environment, ensuring the adoption of actions that align with its specific strategy and objectives.

50 UNDP SIF (2021): Nature-related Risks in the Global Insurance Sector: sustainableinsuranceforum.org

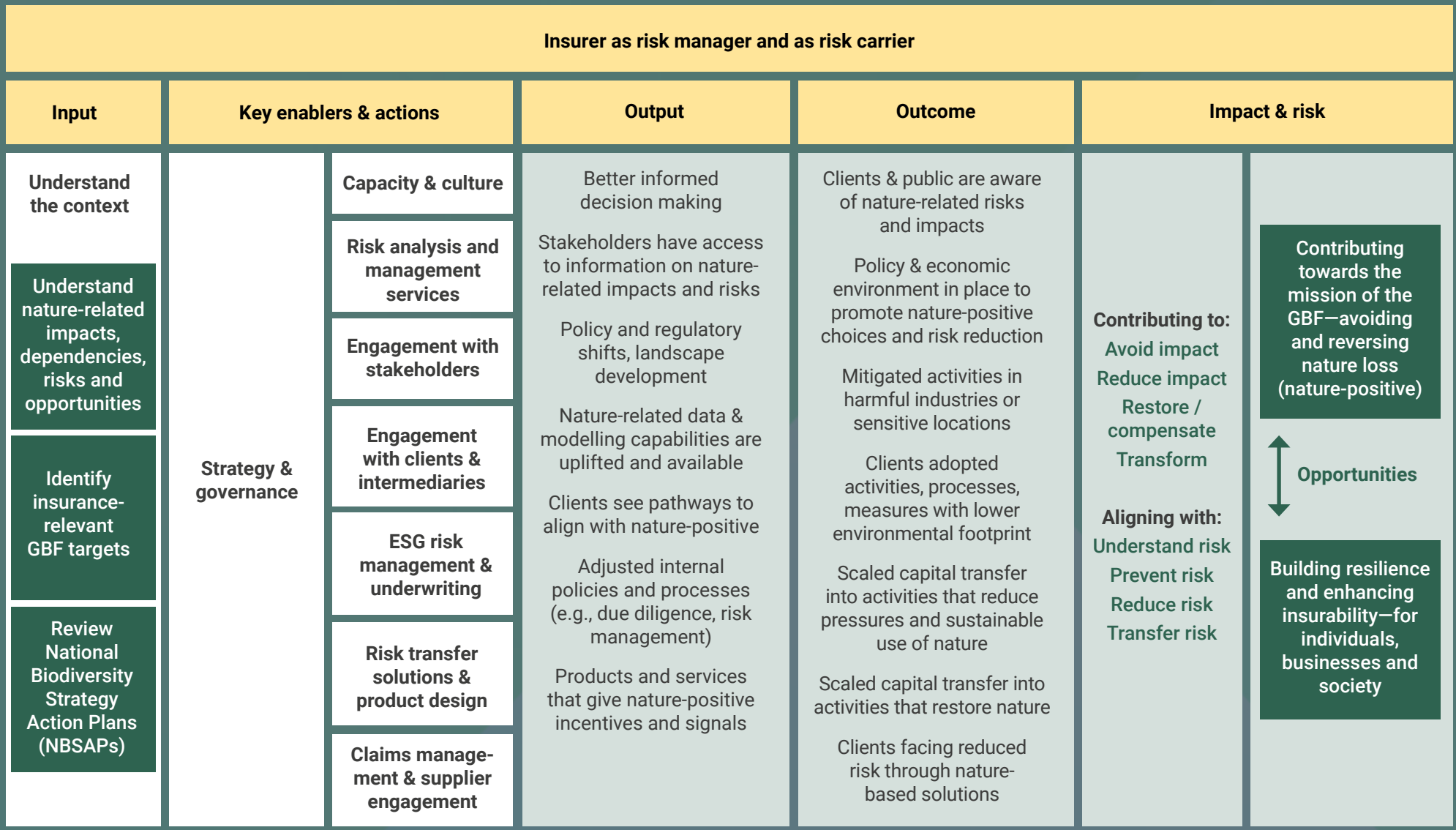


Figure 3: Insurance for nature-positive—theory of change

Summary of cross-cutting general priority actions for non-life and life & health insurance business

While most general priority actions are tailored to non-life and life & health insurance business segments, the actions related to the key enablers—understanding the context, capacity and culture, strategy, and governance—are broadly applicable across both business segments, with minor adjustments in the detailed description of the priority actions.

The table below provides a summary of these cross-cutting general priority actions. For relevant details for each of the general priority actions, along with additional general considerations and company-specific actions, refer to the Chapters 4.2, 5 and 6.

Insurer as risk manager and as risk carrier	
Understand nature-related dependencies, impacts, risks and opportunities	▪ Progressively analysing the underwriting portfolio for nature-related issues, applying double materiality approach ▪ Progressively disclosing in line with the internationally-accepted disclosure frameworks or standards (e.g., TNFD, ESRS, ISSB, GRI)
Capacity and culture	▪ Training of key teams on nature-related issues and organisation-wide awareness raising ▪ Securing buy-in from Board and executive management ▪ Training and awareness programmes for clients, brokers, and agents
Strategy and governance	▪ Embedding nature-related issues in the ESG risk governance framework ▪ Board oversight and clear responsibilities for senior management ▪ Integrating nature-related issues into sustainability strategy and transition plans ▪ Incorporating nature-related issues into key frameworks such as underwriting policies and risk management frameworks

Figure 4: Summary cross-cutting general priority actions non-life insurance and life & health insurance

The role of non-life insurers as risk managers and risk carriers in the transition to a resilient nature-positive future

Achieving the goals of the Global Biodiversity Framework will be difficult without the key role of insurers in managing risk, catalysing action, and serving as agents of change.

The guide for non-life insurers distinguishes actions between their roles as risk manager and risk carrier while explicitly addressing both nature-related impacts and risks.

As risk managers, insurers can assist individuals, communities and businesses in understanding, preventing, and reducing their nature-related impacts by leveraging risk research, data and analytics. For example insurers offer environmental sensitivity analyses to help businesses better understand their interactions with and potential impacts on nature. Additionally, insurers can engage in planning and advisory roles, particularly in biodiversity-sensitive areas, collaborating with policymakers on building regulations and land-use planning to prevent negative environmental impacts—such as avoiding construction in ecologically critical areas. Insurers can also provide insights on technologies and solutions that need to be scaled up, and can partner with stakeholders to advocate for sustainable practices and policy reforms that promote nature-positive solutions and reduce harmful subsidies.

Insurers can develop advanced nature-related risk models and can enhance their natural catastrophe risk models to assist clients and communities in assessing their exposure to these risks and provide advice on loss prevention measures. Insurers can also advocate for nature-based risk reduction strategies, such as incorporating rain gardens into urban landscapes or applying ecological forestry practices, and collaborate with policymakers, governmental agencies, and local communities to implement ecosystem-based disaster risk reduction initiatives, such as restoring mangroves for coastal resilience.

As risk carriers, insurers have the opportunity to avoid and reduce negative impacts on nature while supporting activities that deliver positive outcomes for nature. Insurers can establish underwriting policies, criteria and guidelines for activities in biodiversity-sensitive areas and high-impact activities and sectors on nature. By implementing environmental guidelines through due diligence, and policy terms and conditions, insurers can help ensure that the activities they underwrite avoid or reduce harm to biodiversity and ecosystems. Risk and impact-based pricing models enable insurers to incentivise sustainable behaviours by clients, such as undertaking biodiversity risk assessments or adopting measures to reduce their environmental footprint. Insurers can also support the technologies, solutions and business models associated with the transition to a nature-positive economy. NbS and restoration and conservation-driven projects also depend on insurance to catalyse greater financial and investment flows needed for their successful implementation.

Insurers also protect households, businesses and public entities by absorbing economic shocks related to nature-related risks, building both physical and economic resilience. They can provide insurance coverage for emerging nature-related risks, while harnessing nature's risk reduction capacity. Insurers can combine risk reduction efforts with risk transfer solutions, such as community-based insurance schemes and ecosystem-based disaster risk reduction.

Moreover, insurers can reduce their environmental footprint through sustainable claims management by offering green claims options, such as favouring repairs over replacements and integrating "build back greener" and more resilient approaches. Insurers can also engage with suppliers and repairers to avoid and reduce negative environmental impacts.

Summary of general priority actions for non-life insurance business

General priority actions have been defined for non-life insurance business in the context of key enablers—risk analysis and risk management services, engagement with stakeholders, engagement with clients and intermediaries, ESG risk management and underwriting, risk transfer solutions and product design, and claims management and supplier engagement.

The table below provides a summary of these general priority actions. For further details, refer to Chapter 5.

As risk manager	As risk carrier
Risk analysis and management services ▪ Risk research, analytics and risk models ▪ Data sharing with potentially affected parties ▪ Risk management services for nature-related risks ▪ Risk advisory in early stages of projects	
Engagement with stakeholders ▪ Advocacy for policy reforms for a just transition to nature-positive, insurance role in NBSAPs ▪ Stakeholder collaboration on risk reduction and building resilience through NbS ▪ Cooperation with Indigenous Peoples & Local Communities on global and local levels ▪ Development of standards, methodologies and collaboration on research	
Engagement with clients & intermediaries ▪ Engagement in case of new projects or expansion of operations ▪ Engagement on clients' nature-positive journey, build on net-zero engagements ▪ Engagement with client as part of "policy compliance" ▪ Engagement as part of the claims process ▪ Engagement with clients directly or via broker ▪ Engagement programmes via associations for retail lines	
ESG risk management & underwriting ▪ Expectations on nature-related impact and risk prevention and reduction measures	▪ Risk assessment and due diligence for high-impact sectors and biodiversity-sensitive or material locations ▪ Policies for high-impact sectors and biodiversity-sensitive and material locations ▪ Integration of nature in underwriting strategies
	Risk transfer solutions & product design ▪ Regular product review process on nature interface ▪ Product design features to avoid harm & moral hazards ▪ Risk transfer solutions for mainstreaming nature ▪ Risk transfer solutions for nature-positive outcomes ▪ Risk transfer solutions for emerging nature-related risks ▪ Product design to promote green and resilient choices
	Claims management & supplier engagement ▪ Claims process with circular economy principles ▪ Adoption of build back greener and more resilient ▪ Enhanced third party due diligence for key suppliers ▪ Suppliers to ensure free, prior, informed consent from Indigenous Peoples and Local Communities

Figure 5: Summary of general priority actions for non-life insurance business

The role of life & health insurers as risk managers and risk carriers in the transition to a resilient nature-positive future

For life & health insurers, the contribution to a resilient nature-positive future aligns with the insurance risk management continuum of understanding, preventing, reducing and transferring risk. This first-of-its-kind global guide also examines the negative externalities relevant to life & health underwriting portfolios, leveraging the influence of life & health insurers on policyholders and key stakeholders within the healthcare value chain to reduce pressures on nature.

As risk managers, insurers can enhance awareness and understanding of nature-related risks among individuals, group policyholders, and public health officials through targeted education, awareness initiatives, and tailored programmes. This includes raising awareness of environmental footprints and their connection to health impacts through lifestyle choices. Insurers can also advocate for policies that improve environmental standards such as in the health care industry and that increase stewardship plans on nature-related risks for public health across different levels of policy making.

As risk carriers, insurers can promote risk prevention and reduction by offering preventative healthcare solutions and designing insurance products and services that incentivise healthier, more sustainable lifestyles. By developing innovative risk transfer solutions, insurers can address emerging nature-related risks and health impacts and help close the protection gap, particularly for communities most vulnerable to nature loss. Furthermore, insurers have an opportunity to collaborate with key actors along the healthcare value chain to mitigate environmental pressures from pharmaceutical practices and healthcare system operations.

Summary of general priority actions for life & health insurance business

General priority actions have been defined for the life & health insurance business in the context of key enablers—engagement with stakeholders, engagement with clients, ESG risk management and underwriting, risk transfer solutions and product design and supplier engagement.

The table below provides a summary of these general priority actions. For relevant details, refer to Chapter 6.

As risk manager	As risk carrier

Engagement with stakeholders

- Awareness raising on emerging nature-related risks
- Advocacy for "one health" and "planetary health diet", sustainable practices in healthcare
- Collaboration and promotion of integration of nature-based solutions in urban areas
- Collaboration to produce data on nature-related risks and mortality/morbidity rates
- Engage with Indigenous Peoples, Local Communities and affected stakeholders

Engagement with clients

- Expansion of existing education or awareness programmes (e.g., nutritional, fitness and mental health)
- Client awareness programmes to promote understanding of how lifestyle choices impact nature and health risks

ESG risk management & underwriting

- Group insurance policies: integration of nature nature-related-issues in ESG due diligence processes
- Investment-linked products: investment policies and criteria for high-impact sectors and biodiversity sensitive and material locations
- Integration of nature-related issues into ESG risk management and underwriting framework

Risk transfer solutions & product design

- Innovative risk transfer solutions for emerging nature-related risks (e.g., parametric insurance air pollution)
- Insurance solutions incentivising risk prevention and reduction (e.g., preventative healthcare, time in nature)
- Insurance solutions incentivising more sustainable lifestyles (e.g., plant-based diets, active mobility)

Supplier engagement

- Enhanced third party due diligence for key suppliers
- Suppliers to ensure free, prior, informed consent from Indigenous People and Local communities

Figure 6: Summary of general priority actions for life & health insurance business

How to read this guide

This guide is organised into three main sections. First, it provides a comprehensive understanding of the intersections between nature and the insurance industry, explaining why taking action on nature-related issues is critical for insurers. Second, it defines key concepts relevant to the insurance industry, including nature-related dependencies, impacts, risks, and opportunities, and it defines "insurance for a resilient nature-positive future"—the overall framework to setting actions. Third, it presents recommended actions (provided in green boxes) along the key enablers of the insurance value chain to guide insurers in addressing nature-related issues. Each of the sections is split into guidance for the non-life insurance business (relevant chapters shaded light blue) and the life & health insurance business (relevant chapters shaded light yellow).

1. Scope of the guide

Context

Over the past decade, the Principles for Sustainable Insurance (PSI) Initiative has undertaken many projects and activities to address certain aspects of nature-related risks and opportunities—from tackling illegal, unreported, and unregulated (IUU) fishing,[51] environmental pollution liability,[52] plastic pollution[53] and high-impact hydropower projects;[54] to protecting UNESCO World Heritage Sites[55] and building climate resilience by protecting ecosystems such as coral reefs and mangrove forests.[56] This work culminated in the agenda-setting PSI Nature-Positive Insurance Series in 2021 co-organised by the UN Convention on Biological Diversity (CBD),[57] as well as the development of the first-ever environmental, social and governance (ESG) guides for non-life insurance[58] and life & health insurance produced by the PSI.[59]

Acknowledging the rapidly changing landscape in the financial sector, the PSI, in collaboration with the UNEP FI Nature Team, published a briefing paper on "Nature-Positive Insurance" in September 2023.[60] This paper shared the increasing demand for guidance within the insurance industry to assess nature-related risks and opportunities and to develop actionable responses. It also laid the foundation for establishing a PSI Working Group for Nature, aimed at developing strategies and technical guidance and enhancing insurance-specific approaches to nature, through a multi-stakeholder platform. As the core business of insurers is to manage risk, insurers have been addressing nature-related risks in certain lines of business over the years. For example, environmental pollution liability insurance for industrial operations, engineering and construction insurance for infrastructure projects, protection and indemnity insurance for vessels, and life & health insurance and risks from zoonotic diseases. However, in the field of sustainable finance, historically, the topic of nature-related impacts, just like decarbonisation, has been primarily assessed and addressed from the perspective of investment and lending portfolios—not insurance underwriting portfolios. While there has been consid-

51 UNEP FI (2019): Risk assessment and control of IUU fishing for the marine insurance industry: unepfi.org
52 UNEP FI (2022): Harnessing environmental pollution liability insurance for a sustainable economy: unepfi.org
53 UNEP FI (2019): Unwrapping the risks of plastic pollution to the insurance industry: unepfi.org, UNEP FI (2022): The Price of Plastic Pollution: unepfi.org
54 WWF (2022): Insuring a Nature-Positive World: An Insurer's Guide to Hydropower: worldwildlife.org
55 UNEP FI (2019): Protecting our World Heritage, insuring a sustainable future: unepfi.org
56 UNEP FI (2014, 2015): Global Resilience Project (GRP): unepfi.org
57 UNEP FI (2021): Nature Positive Insurance Series, co-hosted UNEP FI PSI and CBD (CBD): unepfi.org
58 UNEP FI (2020): Managing environmental, social and governance risks in non-life insurance business: unepfi.org
59 UNEP FI (2022): Managing environmental, social and governance risks in life & health insurance business: unepfi.org
60 UNEP FI (2023): Nature-Positive Insurance: Evolving Thinking and Practices: unepfi.org

erable amount of work on nature and decarbonisation approaches for investment and lending, there has been insufficient work done on insurance.[61]

A fundamental reason for this situation is the way insurance has been viewed and treated over the years. Insurance has been largely viewed as an instrument to absorb financial shocks. In this context, having insurance coverage is the central point. This is why the insurance risk management value chain—from understanding, preventing and reducing risk; to transferring risk through insurance—has been much more closely linked, for example, to the climate change adaptation and resilience agenda which deals with the physical impacts of climate change—not the mitigation and decarbonisation agenda which deals with reducing GHG emissions.[62] Applying this to nature, insurance has largely been viewed as a financial shock absorber for nature-related risks as described above, and not about insurance as a lever to reverse nature loss and protect biodiversity.

In this regard, UNEP's work on insurance has broadened the perspective by also looking at insurance as an enabler of economic activities and to what extent it addresses environmental, social and governance (ESG) issues, including negative externalities such as GHG emissions, impact drivers of nature loss and human rights violations. The question is no longer just about having insurance coverage or not. Now the question is also about what assets and activities are being insured and their impacts on the environment and society.[63] Concrete manifestations of this work are UNEP's Forum for Insurance Transition to Net Zero (FIT)[64] and the PSI Working Group for Nature (WGN).

This is why there is now a golden opportunity for insurers to better manage nature-related dependencies, impacts, risks and opportunities (DIRO's), and align their underwriting portfolios with the mission of the Global Biodiversity Framework (GBF) to halt and reverse nature loss, alongside ongoing efforts by banks, asset managers, and asset owners.[65]

Aims

Building on the PSI's prior work and the work by key stakeholders,[66] the guide at hand synthesises efforts that address nature-related dependencies, impacts, risks, and opportunities, as defined by the Taskforce on Nature-related Financial Disclosures (TNFD)[67] and aims to establish a roadmap for insurers to align with the mission of the Global Biodiversity Framework (GBF) to "halt and reverse nature loss by 2030 and living in harmony with nature by 2050".[68]

61 UNEP FI (2021): Insuring the Net-Zero Transition: Evolving thinking and practices: unepfi.org
62 Ibid
63 Ibid
64 Please refer for more details to: Forum for Insurance Transition to Net Zero (FIT): unepfi.org/
65 See examples: UNEP FI (2023): PRB Nature Target-Setting Guidance: unepfi.org, Finance for Biodiversity Foundation (2024): Nature Target-Setting Framework for Asset Managers and Asset Owners: financeforbiodiversity.org
66 WWF, Deloitte (2023): Underwriting our Planet. How insurers can address the crisis in climate and biodiversity: wwf.ch
67 TNFD (2023): TNFD (TNFD) Recommendations: tnfd.global
68 UNEP FI (2023): Global Biodiversity Framework and the finance sector. Resources for the financial sector: unepfi.org

The guide responds to the escalating loss of nature, aiming to provide scientifically aligned and market-relevant guidance on how insurers can take action on nature through their underwriting activities. It reinforces insurers' roles as risk managers and risk carriers, building resilience for people, communities, businesses and society at large.

The guide outlines priority actions for insurers to transform their business models, strategies and products so that they can contribute to nature-positive outcomes and enhance resilience.

In this regard, insurance for nature-positive should avoid, reduce and manage negative impacts on nature while contributing to biodiversity gains, and transformation of value chains. Insurers should help prevent and reduce risk while building resilience. These efforts create opportunities for insurers to support a just transition towards nature-positive outcomes while enhancing insurability.

Key enablers for insurers to contribute to these objectives include capacity building and culture, strategy and governance, risk analysis and management services, stakeholder engagement incl. advocacy, engagement with clients and intermediaries, ESG risk management and underwriting, risk transfer solutions and product design, and claims management and supplier engagement.

Additionally, this guide lays the foundation for the PSI Working Group for Nature to advance nature-related methods, approaches and metrics for underwriting portfolios.

Scope

As risk managers, risk carriers and institutional investors, insurance companies play a pivotal role in advancing economic, social, and environmental sustainability—in other words, sustainable development. The scope of this guide focuses on insurers' roles as risk managers and risk carriers, particularly as their role as investors is already being covered by other initiatives.[69] The only exception is for life insurers offering investment-linked policies, where limited guidance is provided on relevant nature-related due diligence processes or tailored products that can promote nature-positive outcomes.

This guide outlines specific actions for both non-life (also known as property & casualty insurance or general insurance) and life & health insurers.[70]

The working group believes there is a need for a deeper exploration of the life & health insurance industry's role in addressing nature-related issues. Historically, life insurer's efforts on sustainability issues have focused on their role as institutional investors, with less attention given to their core insurance business, especially on nature-related issues. However, the degradation of nature has direct implications for human wellbeing, contributing to physical and mental health risks. This highlights the need for the life & health insurance industry to engage more deeply with these issues.

69 For example on nature action for insurers in their role as asset owners or investment managers see UNEP FI Principles for Responsible Investment (PRI) Guidance as well as Finance for Biodiversity Foundation Guidance

70 In some jurisdictions, health insurance is categorised under non-life insurance.

Beyond the distinction between life & health and non-life insurance, the guide does not prescribe actions for specific lines of insurance business, except where the nature of the activity or insurance coverage requires further clarification (e.g., liability/casualty insurance, such as environmental pollution liability and directors' & officers' (D&O) insurance). This is critical to avoid sending misleading signals regarding the appropriate actions to take.[71]

In providing insurance coverage, multiple actors within the insurance value chain are involved, including insurers, reinsurers, brokers, agents, and others, with each actor playing a key role. For example, insurers are central to underwriting and risk management, reinsurers help spread risks, and brokers and agents facilitate the development and sale of insurance products and sometimes help manage claims. Additionally, stakeholders such as banks, risk assessors, claims adjusters, captive insurance advisors, and legal advisors are key contributors within the value chain.

Therefore, it is important to note the following points:

a. The actions recommended in this guide consider the interaction between insurers and other key actors in the insurance value chain, where insurers have the potential to exert positive influence. This covers brokers, agents and suppliers, and includes therefore specific actions and strategies for engaging these stakeholders, where relevant.

b. This guide is not tailored specifically to other actors in their distinct roles, such as reinsurers, brokers, or suppliers. However, these actors should review the relevant actions and consider adopting them, as many of the principles and strategies outlined for insurers can be equally applicable and important for them. This is particularly relevant for areas like ESG risk management (e.g., brokers performing due diligence on their clients to ensure that the business they place complies with the criteria set by insurers) and client engagement (e.g., brokers collaborating with clients and insurers to understand how insurance can support evolving risk profiles). For reinsurance companies, the priority actions can be relevant where they act as primary insurers or in their risk advisory role for insurance companies, however, are not tailored to their capacity as reinsurer.

Considering the interconnected dynamics between primary insurers and reinsurers regarding the impact of rising climate and nature-related risks on the availability and affordability of insurance, this presents a potential area of future work to explore for the insurance industry.

71 For additional information also refer to UNEP FI (2022): Harnessing environmental pollution liability insurance for a sustainable economy: unepfi.org

Nature in scope

It is essential to clarify the definition of "nature" as used in this guide. This definition aligns with that of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES),[72] which has also been adopted by the Taskforce on Nature-related Financial Disclosures (TNFD).[73]

Nature refers to the natural world, with an emphasis on the diversity of living organisms, including humans, and their interactions with each other and their environment. This includes biodiversity, ecosystems, and the biosphere.[74]

Biodiversity is defined as the variability among living organisms from all sources—terrestrial, marine, and other aquatic ecosystems—and the ecological complexes of which they are part. This encompasses diversity within species, between species, and of ecosystems. Biodiversity is a key feature of nature, enabling ecosystems to remain productive, resilient, and adaptive.[75]

Ecosystems are dynamic complexes of plant, animal, and microorganism communities interacting with the non-living environment, functioning as a unified system.[76]

Ecosystem services refer to the benefits that people derive from ecosystems, including provisioning services (food, water, biomass), regulating & maintenance services (flood control, disease management), and cultural services (recreation, spiritual and educational value, sense of place).[77]

72 Díaz, S., Demissew, S., and Carabias, J. *et al.* (2015) "The IPBES Conceptual Framework—connecting nature and people.": ipbes.net

73 TNFD (2023): TNFD Recommendations: tnfd.global

74 Díaz, S., Demissew, S., and Carabias, J. *et al.* (2015) "The IPBES Conceptual Framework—connecting nature and people.": ipbes.net/; Simplified summary of difference between definition of biodiversity and nature: CBD (2022): Biodiversity and Nature, close but not quite the same: cbd.int/ difference-biodiversity-nature.

75 *CBD* (1992): *CBD*, Article 2. Use of Terms: cbd.int

76 TNFD (2023): Guidance on the identification and assessment of nature-related issues: the LEAP approach: tnfd.global, adapted from UN SEEA EA (System of Environmental-Economic Accounting—Ecosystem Accounting): seea.un.org

77 UNEP-WCMC defines 21 ecosystem services, whereas IPBES defines 18 categories of Nature's Contributions to People (NCPs). The TNFD uses definitions from the United Nations System of Environmental-Economic Accounting—Ecosystem Accounting (UN SEEA EA).

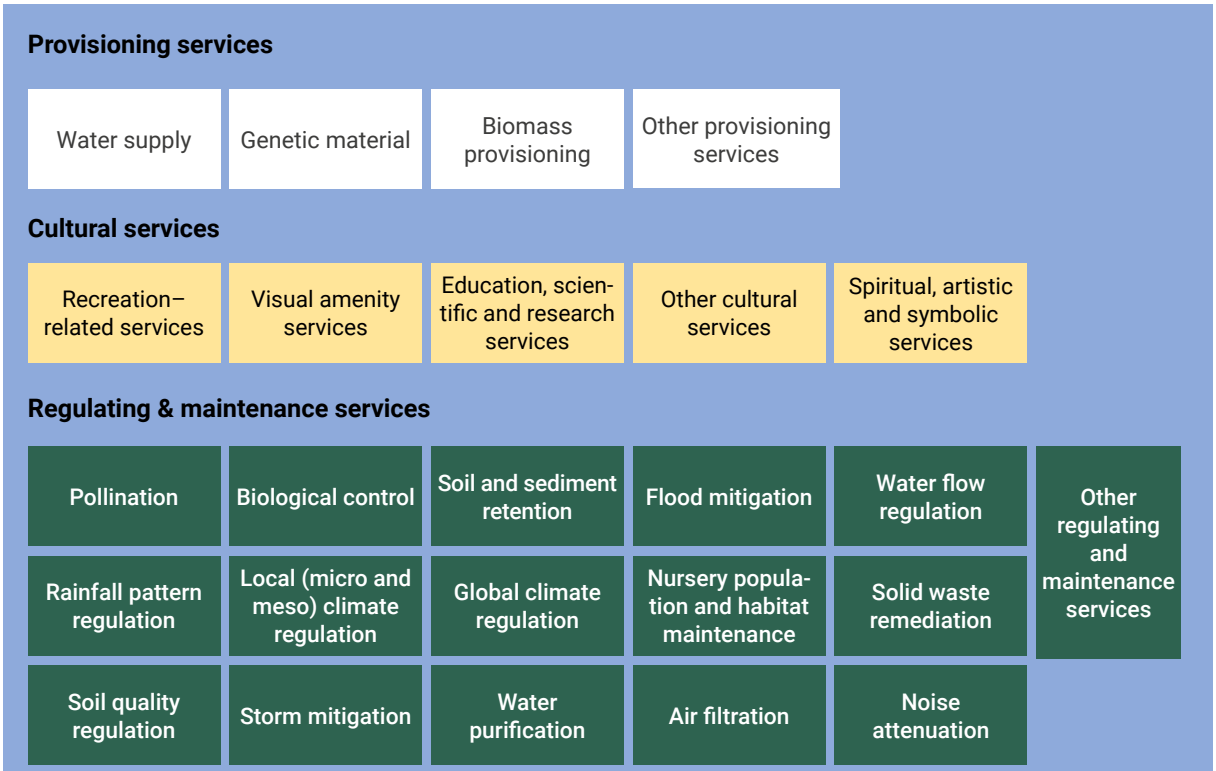


Figure 7: List of Ecosystem Services as defined by TNFD,[78] adapted from UN SEEA EA[79]

As outlined later in this guide, the document addresses both the impacts of business activities on nature (ecosystem condition and species) and their dependencies on ecosystem services (provisioning, regulating & maintenance, cultural ecosystem services[80])—both of which can create risks and opportunities for businesses and individuals, ultimately, for financial institutions.

Previous insurance-related publications or areas of work have often focused on specific business activities that impact nature (e.g., high-impact hydropower) or specific drivers of impact (e.g., pollution, or deforestation). Many organisations have taken this approach, with initial efforts typically targeting specific nature-related issues such as deforestation, pollution or circular economy principles. In contrast, this guide adopts a broader perspective, considering all relevant impact drivers on nature, as defined by the IPBES.[81] It reviews these drivers in the context of their collective impact on the state of nature, including ecosystems and biodiversity.

78 TNFD (2023): TNFD Recommendations: tnfd.global

79 IUCN (2020): Global Ecosystem Typology 2.0: iucn.org/ descriptive profiles for biomes and ecosystem functional groups; UN *et al.* (2021): System of environmental-economic accounting—Ecosystem accounting: seea.un.org/ecosystem-accounting; and as adopted by the TNFD.

80 Ibid.

81 Díaz, S., Demissew, S., and Carabias, J. *et al.* (2015) "The IPBES Conceptual Framework—connecting nature and people.": ipbes.net and as adopted by the TNFD.

Moreover, the risks resulting from individuals' and businesses' impacts or dependencies on ecosystem services are considered more comprehensively in this guide. While previous publications have addressed some of these risks directly—such as through liability insurance, the impacts of pollution on various insurance lines, or implications of zoonotic diseases on health insurance—they have generally given less attention to the broader implications of ecosystem service loss. This guide expands that scope by considering relevant actions to the degradation of ecosystem services and their effect on human wellbeing, business processes, and the economy, with significant consequences for the insurance industry. It takes a wide-ranging view, encompassing all ecosystems and their services, including the role of ecosystems in climate regulation and climate adaptation, with a particular focus on the local climate regulation provided by intact ecosystems.

2. The critical interplay between nature and insurance

2.1 Nature: The resilience of the planet at risk

Scientists have identified nine biophysical systems that regulate the overall health and stability of the planet. For each system, planetary boundaries define the thresholds within which human activities can safely operate. Alarmingly, six of these nine boundaries have already been crossed, signalling an urgent need for action. Among these, the biosphere integrity boundary—which includes genetic biodiversity and the functional integrity of ecosystems—is the most critically transgressed, having entered the high-risk zone. Biodiversity is fundamental to the stability of Earth's systems, and its degradation threatens all life and ecological balance.[82]

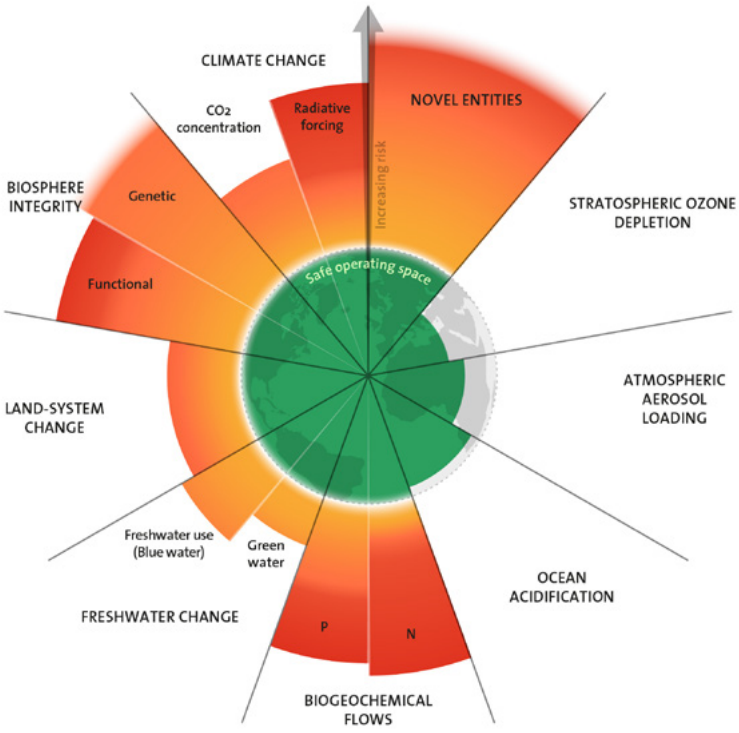


Figure 8: The 2023 Update to the Planetary Boundaries[83]

82 Azote for Stockholm Resilience Centre, based on analysis in Richardson *et al.,* 2023, The 2023 Update to the Planetary Boundaries: stockholmresilience.org

83 Ibid.

> **"Ultimate determinant to regulate the stability of the planet is Nature. Nature is the resilience of the planet, the buffering capacity of all the richness of nature which determines the final state of the planet. Biodiversity undermines that resilience of ecosystems. The loss of biodiversity makes these ecosystems more prone to tipping"**
>
> **Rockström, J, DLD Conference, Munich, 2024**

Recent studies underscore the alarming state of biodiversity. The WWF Living Planet Index (LPI) shows the average size of monitored wildlife populations has shrunk by **73%** over the past 50 years (1970 to 2020). Freshwater populations have suffered the heaviest declines, falling by **85%**, followed by terrestrial (**69%**) and marine populations (**56%**). Latin America and the Caribbean have seen the sharpest decline in biodiversity (**95%**), followed by Africa (**76%**) and Asia-Pacific (**60%**), while Europe and Central Asia (**35%**) and North America (**39%**) show smaller declines, reflecting early large-scale impacts before 1970, with some populations stabilising or recovering due to conservation efforts.[84]

According to the IPBES Global Assessment Report (2019), "nature across most of the globe has now been significantly altered by multiple human drivers," with the majority of indicators showing a rapid decline. This includes a **50%** decline in the extent and condition of natural ecosystems, the loss of over **85%** of wetlands, and an alarming 1 million species, or **25%** of global species, are at risk of extinction. Furthermore, more than three-quarters of ecosystem services, as defined by IPBES, which are vital for people, culture, and economies, have also shown significant decline over the past 50 years.[85]

Nature is disappearing rapidly, with cumulative environmental impacts pushing ecosystems toward tipping points—self-perpetuating shifts that can cause abrupt, irreversible changes. If current trends persist, global tipping points like the collapse of coral reefs and the Amazon rainforest could trigger catastrophic consequences, destabilising ecosystems, disrupting weather patterns, and threatening human life-support systems.[86]

84 WWF, ZSL (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org
85 IPES (2019) : Global assessment report on biodiversity and ecosystem services: zenodo.org
86 WWF, Zoological Society of London (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org

Dominant drivers of nature loss

According to the IPBES, and as illustrated in figure 9, the dominant drivers of biodiversity loss include land and sea-use change, the direct exploitation of organisms, climate change, environmental pollution, and the invasion of alien species.[87] The latest WWF Living Planet Report (LPR) further emphasises the role of diseases in driving nature loss. Species expanding their range or being introduced into new areas can carry diseases previously absent from the local environment. Human activities also facilitate the global movement of new diseases.[88]

Land-use change—primarily driven by agriculture, forestry, and urbanisation—has the greatest impact on terrestrial and freshwater ecosystems, contributing approximately **30%** of global biodiversity loss. Agriculture alone is responsible for approximately 80% of global deforestation, and biomass extraction—such as livestock, agricultural crops and forestry—accounts for over 90% of land-use-related biodiversity loss. It is also a major contributor to water stress, with more than 75% of global freshwater resources used for crop and livestock production.[89] In marine environments, the exploitation of fish and seafood is the most significant threat, contributing around 23% to global biodiversity decline. While climate change, pollution, and invasive species have had relatively lower impacts, contributing approximately 14%, 9%, and 11% respectively, their influence is accelerating, placing additional pressure on ecosystems.[90]

WWF's Living Planet Report (LPR) also provides the proportion of dominant drivers of nature loss by region. Habitat degradation and loss, driven primarily by our food system, is the most reported threat in each global region, followed by overexploitation, invasive species and diseases. Other threats include climate change (most cited in Latin America and the Caribbean) and pollution (particularly in North America and Asia and the Pacific).[91]

These direct drivers of biodiversity loss are compounded by several indirect drivers, including demographic and economic factors, technology, institutions and governance, international trade, and cultural values. Economic growth, unsustainable consumption patterns, and population increases have intensified the demand for natural resources, leading to the overexploitation of ecosystems.[92]

87 IPES (2019): Global assessment report on biodiversity and ecosystem services: ipes.net
88 WWF, Zoological Society of London (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org
89 IPES (2019): Global assessment report on biodiversity and ecosystem services: ipes.net
90 Ibid.
91 WWF, Zoological Society of London (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org
92 IPES (2019): Global assessment report on biodiversity and ecosystem services: ipes.net

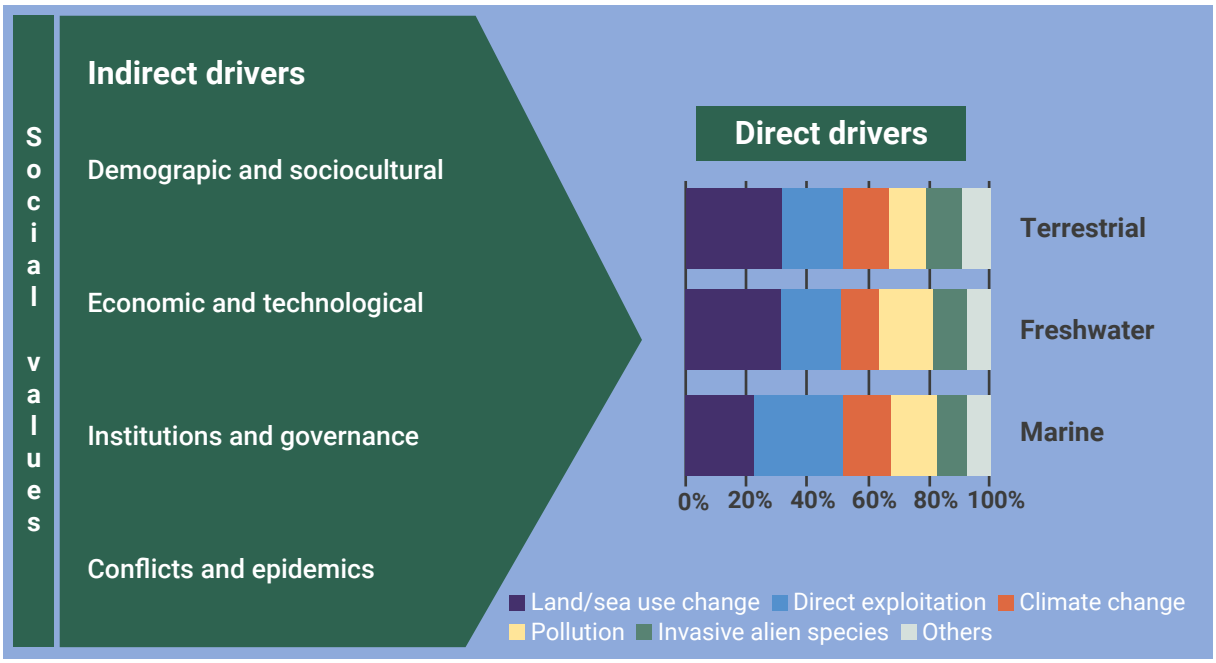


Figure 9: (Adopted from) IPBES indirect and direct drivers of nature loss[93]

The economic case to halt nature loss

Human societies and economies are fundamentally dependent on biodiversity and ecosystem services. According to a widely cited study by PWC, **55% of global GDP—equivalent to about USD 58 trillion**—is moderately or highly dependent on nature.[94]

The loss of biodiversity presents significant risks to businesses, impacting operations, supply chains, and markets, as various studies underpin:

- Research from the Oxford University estimates that the global economy could shrink by USD 2.7 trillion by 2030 due to partial ecosystem collapses in critical sectors such as timber, pollination, and fisheries, reducing global GDP by 2.3%.
- A study conducted by the Green Finance Institute (GFI) estimates that nature-related risks could cost the United Kingdom of Great Britain & Northern Ireland alone 12% of its GDP by 2030.[95]
- Furthermore, the International Food Policy Research Institute (IFPRI) warns that unsustainable water management could put 45% of the projected global GDP by 2050—equivalent to USD 63 trillion—at risk.[96]

93 IPES (2019): Global assessment report on biodiversity and ecosystem services: ipes.net
94 Ewison, W., Low, L.P., and O'Brien, D. (2023): Managing nature risks, From understanding to action. PWC: pwc.com
95 Green Finance Institute (2024): Assessing the Materiality of Nature-Related Financial Risks for the UK: greenfinanceinstitute.com
96 Ranger, N., Alvarez, J., and Freeman, A. *et al.* (2023): The Green Scorpion: the Macro Criticality of Nature for Finance: eci.ox.ac.uk

The triple planetary crisis: Nature loss, climate change and pollution and waste

Nature loss must be understood as part of the triple planetary crisis—the interconnected challenges of nature loss, climate change, and pollution and waste. These crises are central to insurers, both in mitigating pressures and managing the risks they present. For instance, even with immediate reductions in greenhouse gas (GHG) emissions, the global economy is committed to an income reduction of 19% by 2049, with global damages estimated to reach USD 38 trillion annually due to increasing weather variability, storms, and wildfires.[97]

Placing nature at the centre of climate action is critical. According to the Intergovernmental Panel on Climate Change (IPCC), conserving 30–50% of Earth's land, freshwater, and ocean areas is essential for maintaining biodiversity resilience. However, with 50% of nature already destroyed, urgent action is needed to meet the Paris Agreement. For instance, biosphere loss alone could push temperatures beyond the 2°C threshold, as demonstrated by the shift of the Amazon rainforest from a carbon sink to a net emitter.[98]

Understanding the interconnectedness of climate and nature is key when considering tipping points. For instance, the Amazon rainforest is at risk of large-scale collapse with 3–5°C warming, but even at 1.5–2°C, if deforestation reaches 20–25%, the tipping point could be reached.[99]

Halting nature loss and restoring ecosystems are fundamental to achieving the goals of the Paris Agreement on Climate Change. Reducing pressures on natural systems, mitigating negative impacts, and facilitating nature-positive outcomes are crucial steps. It is therefore widely recognised that there is no net zero without a nature-positive future. Two things are clear. First, achieving climate targets requires a nature-positive approach. Second, to ensure that Earth's systems remain resilient and operate within safe limits, we must urgently transition to nature-positive.

To address this, the Global Biodiversity Framework (GBF) was adopted in 2022, taking a whole-of-society and government approach, addressing the key drivers of biodiversity loss.[100] In addition to the GBF and the Paris Agreement, other important policy initiatives have emerged to address the triple planetary crisis. These include the United Nations Convention to Combat Desertification (UNCCD)[101], the Global Framework on Chemicals,[102] and the Global Treaty on Plastic Pollution currently in development.[103]

97 Kotz, M., Levermann, A. and Wenz, L. (2024): The economic commitment of climate change. Nature 628, 551–557: doi.org

98 IPCC (2022): Special Report. Global Warming of 1.5C: ipcc.ch

99 Flores, B.M., Montoya, E., and Sakschewski, B. *et al.*. Critical transitions in the Amazon forest system. Nature 626, 555–564 (2024). nature.com

100 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int

101 UNCDD as established in 1994: uncdd.int

102 United Nations Global Framework on Chemicals—For a Planet Free of Harm from Chemicals and Waste adopted in 2023: unep.org

103 United Nations Plastic Pollution Treaty resolution to develop an international legally binding instrument on plastic pollution adopted in 2022: unep.org

2.2 Intersections between nature and non-life insurance

Insurance's role in enabling economic activities

Insurance plays a fundamental role in economic development by enabling and driving economic activity through the protection of clients, property and operations from insurable risks. Without insurance, many economic activities would not be possible. Insurance is fundamental to the operation of many activities—for example, maritime transport relies on insurance coverage, and in some markets, individuals cannot secure a mortgage without insurance. Furthermore, insurance also plays a critical role in enabling investment, without it, large infrastructure projects, complex and risky processes, and capital-intensive industries would not be realised. As risk managers, insurers promote standardised risk management practices that help reduce risks, facilitating the adoption and scaling of new technologies and supporting innovation, thereby fostering innovation and economic progress.

According to the Swiss Re Institute Sigma 'World Insurance' report (2024), global gross written premiums (GWP) will grow to USD 7.6 trillion in 2024. Life insurance remains the largest segment, expected to grow to USD 3 trillion by the end of 2024, while non-life insurance is estimated at USD 4.3 trillion in 2023. The United States and China continue to be the largest insurance markets globally, with combined total premiums of USD 3.2 trillion in 2023.[104]

The economic activities that insurers underwrite at the same time can significantly contribute to nature loss. The three socio-economic systems—food, energy, and infrastructure—are responsible for around 80% of threats to biodiversity.[105] A WWF analysis further identifies ten high-impact sectors on nature, including agriculture, fishing and aquaculture, paper and forest products, metals and mining, oil, gas and consumable fuels, land development, construction, transportation services, and electricity energy production (including hydropower and fossil fuel-based power generation).[106] This reflects a number of sectors in which risks are traditionally underwritten by insurers.

Studies, such as UNEP's "State of Finance for Nature" report, continue to highlight how the private financial sector remains largely misaligned with nature-positive outcomes. It is estimated that around USD 5 trillion of private finance contribute to nature negative outcomes.[107] According to WWF, redirecting just 7.7% of harmful financial flows could close the biodiversity funding gap, unlocking benefits for nature, climate, and human wellbeing through the protection, restoration, and sustainable management of land and water resources.[108]

104 Swiss Re Institute (2024). Sigma. World insurance : strengthening global resilience with a new lease of life. No 3/2024 : swissre.com
105 WEF (2020). New Nature Economy Report II. The Future of Nature and Business. weforum.org
106 WWF, Deloitte (2023): Underwriting Our Planet: wwf.ch/sites
107 UNEP (2023): State of Finance for Nature 2023: unep.org/resources/state-finance-nature-2023
108 WWF, Zoological Society of London (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org

While a similar study for insurance underwriting portfolios is still lacking, the Sustainable Insurance Forum (SIF) hosted by the United Nations Development Programme (UNDP), analysed the total gross written premium (GWP) distributed across 18 major sectors in 2019. The largest sectors, with more than USD 50 billion in distributed premiums, overlap with many of the most impactful sectors on nature, including automotive, real estate, manufacturing, transportation, and storage. Other key sectors, with GWP ranging between USD 30–50 billion, include utilities, forestry products, agriculture, fisheries and livestock, and tourism. Adding health insurance business lines adds sectors like pharmaceuticals, healthcare, life sciences, and biotechnology.[109]

Furthermore, insurers have an indirect environmental impact through processes like claims handling, which can contribute to environmental pollution and can generate considerable waste. For instance, car repairs often involve the use of toxic paints, as vehicles typically need repainting after damage repairs. In North America, one insurer reported generating 116,000 tonnes of waste through its claims process, with 98%—including drywall, carpets, and furniture—ending up in landfills.[110]

This underscores that while the insurance industry has a critical role in sustaining economic activities, it also carries a significant environmental responsibility. The private financial sector, including insurers, is increasingly acknowledging its role in halting and reversing nature loss. For insurers, this responsibility will manifest directly in their approach to underwriting high-impact activities and sectors ("what is being insured") and activities in biodiversity-sensitive areas ("where it is being insured"), as well as in "how activities and assets are being insured". It is also evident indirectly through their operational processes, such as claims handling.

Convergence of nature and climate risks: Implications on insurability and the protection gap

The private sector, including the insurance industry, is increasingly recognising the significant risks that nature deterioration and biodiversity loss pose to economies and businesses.[111,112] Insured assets and activities depend on ecosystem services, heightening exposure to biodiversity loss and ecosystem degradation, which can impact multiple insurance lines. When insured assets or activities suffer nature-related damage or losses, insurers may see a rise in claims frequency and severity, potentially increasing underwriting risks.[113]

109 UNDP (2021): Nature-Related Risks in the Global Insurance Sector: sustainableinsuranceforum.org
110 Park, C. (2023): The insurance industry has a waste problem: building.ca accessed 6 November 2024
111 FSB (2024): Stock take on Nature-related Risks. Supervisory and regulatory approaches and perspectives on financial risks: fsb.org
112 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net
113 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu

A clear example of nature-related risks impacting the insurance industry is agricultural insurance, which highlights the intricate relationship between insured activities and nature loss.[114] The reduction or loss of essential ecosystem services—such as pollination, water availability, and soil fertility—can lead to decreased farm productivity, potentially resulting in increased claims related to loss of revenue in agricultural insurance lines.[115] According to the IPBES Global Assessment Report (2019), land degradation has diminished productivity in 23% of global terrestrial areas. Additionally, declining pollinator populations could lead to annual global crop output losses ranging from USD 235 billion to USD 577 billion.[116] These declines can create cascading effects, with reduced agricultural productivity impacting food production value chains.[117]

Ecosystem degradation and climate change are closely interconnected, often reinforcing each other as weakened ecosystem functions diminish climate regulation and reduce resilience to climate impacts, such as storm and flood protection, thereby amplifying climate-related risks. Coastal habitats, which provide essential storm and flood protection, are increasingly degraded due to human activities and extreme weather events. Without these natural defences, rising natural catastrophe losses can affect property and business interruption insurance lines.[118] The importance of natural coastal barriers like mangroves, marshes, and coral reefs is evident: their loss removes critical protections, exposing 100–300 million people in 100-year coastal flood zones to greater flood and hurricane risks.[119] For example, the absence of coral reefs during 100-year storm events could increase flood damages by 91%, reaching USD 272 billion.[120]

Insurers face mounting exposure to the dual challenge of climate and nature-related risks, leading to a rise in the frequency and severity of loss events, and potentially higher insured losses. In Brazil, for instance, adverse effects of nature-related risks have started materialising with significant droughts resulting in insurance payments exceeding USD 1 billion in 2022.[121] These challenges are particularly pressing as rising insured losses contribute to increasing insurance premiums. The localised nature of many ecological processes can intensify risk concentration and disrupt risk pooling across regions. However, the global acceleration of ecosystem degradation can complicate risk diversification and increase reinsurance costs. These trends can impact the affordability and availability of insurance and pose challenges to the insurability of assets in high-risk areas and for policies covering climate and nature-related risks.[122]

114 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu
115 Ibid.
116 IPES (2019): IPBES Assessment Report on Pollinators, Pollination, and Food Production: ipbes.net
117 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu
118 Ibid.
119 IPES (2019): Global assessment report on biodiversity and ecosystem services: ipes.net
120 Beck, M.W., Losada, I.J., Menéndez, P. *et al.* (2018): The global flood protection savings provided by coral reefs: pmc.ncbi.nigh.gov
121 FSB (2024): Stock take on Nature-related Risks. Supervisory and regulatory approaches and perspectives on financial risks: fsb.org/
122 EIOPA (2023): The role of insurers in tackling climate change: challenges and opportunities:

While non-life insurance products can often be repriced or withdrawn annually to manage risks and maintain individual insurers' resilience, the increasing frequency and severity of climate and nature-related events, combined with future uncertainties, could challenge insurers' ability to price risks adequately and could impact individual insurer's financial stability.[123]

This escalating risk landscape can have systemic dimensions for economies, the financial sector, including the insurance industry, and society as a whole.[124,125] For example the collapse of systemically important biomes (e.g., the Amazon rainforest, coastal ecosystems within the Coral Triangle reef system and the boreal forests of North America and Eurasia) would have potentially wider systemic impacts for climate regulation and could make risk diversification impossible.[126]

Climate change already generates approximately USD 143 billion in economic losses annually due to extreme weather events.[127] Of the 66 natural catastrophes that caused more than USD 1 billion in damages in 2023, 63 were weather-related. However, only 40% of these losses were covered by insurance, highlighting a growing trend of uninsured climate-related losses. The gap between insured and uninsured losses is projected to continue widening as both the frequency and severity of extreme weather events increase.[128]

Some areas are already experiencing significant loss of coverage as insurers withdraw from high-risk markets, unable to provide insurance for nature- or climate-related risks, which contributes to a widening protection gap. According to WWF, flood insurance premiums in Florida, United States of America, have doubled or tripled for homeowners in high-risk zones, with 15 insurers halting new policies or renewals and seven companies declaring insolvency.[129] Similarly, in California, United States of America, escalating wildfire risks have intensified challenges in the insurance market, leading to rising premiums, higher deductibles, reduced coverage, and, in some cases, policy discontinuance.[130]

123 FSB (2020). The Implications of Climate Change for Financial Stability: fsb.org
124 UNDP (2021): Nature-Related Risks in the Global Insurance Sector: sustainableinsuranceforum.org
125 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net
126 EIOPA (2023): The role of insurers in tackling climate change: challenges and opportunities:
127 Newman, R. and Noy, I. (2023): The global costs of extreme weather that are attributable to climate change. doi.org
128 Aon (2024): Climate and Catastrophe Insight: assets.aon.com
129 WWF, Deloitte (2023) Underwriting Our Planet: wwf.ch/sites
130 Dixon, L., Flavia, T., and Gary, F. (2018). The Impact of Changing Wildfire Risk on California's Residential Insurance Market: A Report for California's Fourth Climate Change Assessment: rand.org

Conversely, there is a growing need for innovative forms of financial protection to address increasing climate-related risks. This need is particularly pronounced in developing countries, where there is a significant protection gap that is widening due to climate-related risks. In this context, public-private partnerships and multi-stakeholder approaches are increasingly vital for developing disaster risk financing mechanisms and innovative risk transfer solutions to address both climate and nature-related risks.[131,132]

In response to rising premiums or discontinuance of insurance in some high-risk areas, government-backed programmes have stepped in as primary insurers of last resort or as reinsurers in high-risk regions. Examples include state-supported programmes in Florida, United States of America, and reinsurance mechanisms like Flood Re in the United Kingdom of Great Britain & Northern Ireland and the cyclone reinsurance pool in Australia. While these initiatives address immediate challenges related to affordability and availability, questions remain about their long-term effectiveness.[133,134]

Potential spillover effects could extend beyond insurance markets and into the broader economy and other parts of the financial sector. For instance, an inability to renew property insurance might lead to reduced home values, while rising insurance costs may strain household finances and affect mortgage repayment capacity. Increasing rates of underinsurance and non-insurance may also affect access to the mortgage market.[135,136] Nature-related physical and transition risks can lead to stranded assets. Businesses that rely heavily on natural resources and ecosystem services are particularly vulnerable, and industries or regions could face significant risks from the loss of these services.

Such risks could be concentrated in specific sectors or geographies where insurance companies have exposure, potentially significantly reducing the pool of insurable assets.[137,138]

131 Refer to initiatives such as the PSI-managed V20 Sustainable Insurance Facility hosted by UNEP FI unepfi.org, Global Shield against Climate Risks globalshield.org and UNDP Insurance & Risk Finance Facility irff.undp.org.

132 Refer to growing recognition by insurance supervisors, on the role of multi-stakeholder approaches to address natural catastrophe protection gaps. International Association of Insurance Supervisors (IAIS). (2023): A call to action: the role of insurance supervisors in addressing natural catastrophe protection gaps: iaisweb.org/

133 McAneney, J., McAneney, D. and Musulin, R. *et al.* (2016). Government-sponsored natural disaster insurance pools: A view from down-under: sciencedirect.com

134 OECD (2020). Transition effects of Flood Re in the United Kingdom: oecd.org

135 Ge, S., Johnson, S. and Tzur-Ilan, N. (2024). Climate Risk, Insurance Premiums, and the Effects on Mortgages: papers.ssrn.com

136 CIEL (2024). Climate Crisis Triggers Dangerous Domino Effect: Insurance, Housing, Financial Crises ciel.org/climate-crisis-domino-effect accessed on 3 November 2024.

137 UNDP (2021): Nature-Related Risks in the Global Insurance Sector: sustainableinsuranceforum.org

138 Lloyd's (2017). Stranded Assets: the transition to a low carbon economy. Overview for the insurance industry: assets.lloyds.com

These systemic dimensions could impact the financial resilience of the non-life insurance industry. Although further analysis is needed on the compounded implications of climate and nature-related risks on the industry's financial stability.[139]

It should be in insurers' interest to actively promote nature and climate-related loss prevention and risk reduction measures. Such efforts are crucial not only to improve the affordability and availability of insurance, but also to contribute to insurers' own financial resilience and stability.

Nature-based solutions (NbS): Reducing risk and preventing losses

Nature-based solutions (NbS) and healthy ecosystems play a vital role in reducing disaster risks and preventing losses from natural perils and environmental hazards.[140] These solutions help mitigate the effects of extreme weather and support long-term climate adaptation. For insurers, they can offer significant benefits by directly reducing climate and nature-related risks and preventing losses, and positively impacting the affordability and availability of insurance and the insurability of assets and risks.

139 Refer to International Association of Insurance Supervisors (IAIS) 2025–2029 Strategic Plan and Roadmap (2024), also considering wider risks associated with environment and sustainability: iaisweb.org

140 UNDRR (2020): Ecosystem-Based Disaster Risk Reduction: undrr.org/

Key terms for "nature-based risk reduction"[141]

Table 1: Definitions Nature-based Solutions and Ecosystem-based Disaster Risk Reduction

Nature-based Solutions (NbS)[142]	**Ecosystem-based Mitigation (EbM)**
Actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human wellbeing, ecosystem services, resilience and biodiversity benefits.	The use of ecosystems for their carbon storage and sequestration service to aid climate change mitigation.
Ecosystem-based Disaster Risk Reduction (Eco-DRR)	**Green-blue Infrastructure (GI) or Natural Infrastructure**
The sustainable management, conservation and restoration of ecosystems to reduce disaster risk, with the aim to achieve sustainable and resilient development.	A strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services such as water purification, air quality, space for recreation, climate mitigation and adaptation, and management of wet weather impacts that provides many community benefits.
Ecosystem-based Adaptation (EbA)	**Ecological Engineering**
The use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change.	The design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both.

141 Table has been derived and adopted from UNDRR (2020): Ecosystem-Based Disaster Risk Reduction: undrr.org

142 As adopted in resolution 5/5 of 2 March 2022, at the fifth session of the United Nations Environment Assembly (UNEA 5.2) held in February 2022 in Nairobi.

Ecosystem-based interventions are among the most effective methods to mitigate natural hazards. These solutions include ecosystems such as mountain forests, vegetation on hillsides, wetlands and floodplains, and coastal systems like mangroves, coral reefs, salt marshes, and sand dunes.[143] Among these, mangroves (80%), forests (77%), and coastal ecosystems (73%) have proven to be the most widely applied in hazard reduction.[144]

For instance, mangroves can reduce wave height by up to 66% over a 100-metre-wide belt and by 50–100% over a 500-metre-wide belt, significantly reducing the risk of flooding for coastal areas. Studies across 50 countries highlight that mangroves alone reduce risk to more than 15 million people and prevent over USD 65 billion in property damage each year.[145] During Hurricane Sandy, for example, coastal wetlands in the north-eastern United States of America prevented USD 625 million in flood damages.[146] Similarly, coral reefs play a critical role in protecting coastlines, reducing wave energy by up to 97% in some cases.[147]

The United Nations Environment Programme (UNEP) and Global Resource Information Database—Geneva (GRID) have collaborated to create a tool to visualise the opportunities for restoration and protection of ecosystems to reduce disaster risk. The 'opportunity mapping' tool is realised globally and has been provided for national implementation of ecosystem-based disaster risk reduction (Eco-DRR) but could equally highlight areas for insurers to harness nature's ability to reduce risk and enhance insurability.[148]

Pairing "nature-based risk reduction and resilience" in insurance

Nature-based solutions (NbS) can reduce risks. A nature-based solution (NbS) that directly mitigates risks is ecosystem-based disaster risk reduction (Eco-DRR). However, other approaches exist, such as integrated fire management or protective forests, which are aimed at reducing the risk of specific natural hazards.[149]

This guide suggests adopting a comprehensive approach by considering NbS broadly for risk reduction and loss prevention across various scales and levels—from households, buildings, urban areas and cities, to agricultural fields, villages, river basins and coastal

143 UNDRR (2020): Ecosystem-Based Disaster Risk Reduction: undrr.org
144 Vicarelli, M., Sudmeier-Rieux, K. and Alsadadi, A. *et al.* (2024): On the cost-effectiveness of Nature-based Solutions for reducing disaster risk: sciencedirect.com
145 Menéndez, P., Losada, I.J. and Torres-Ortega, S. *et al.* (2020): The Global Flood Protection Benefits of Mangroves: doi.org
146 Narayan, S., Beck, M.W. and Wilson, P. *et al.* (2017): The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA: doi.org
147 Ferrario, F., Beck, M.W. and Storlazzi, C.D. *et al.* (2014): The effectiveness of coral reefs for coastal hazard risk reduction and adaptation: nature.com
148 UNEP-GRID: Opportunity mapping tool for Ecosystem-based Disaster Risk Reduction (Eco-DRR)
149 Nehren, U., Acre-Mojica, T. and Barrett, A.C. *et al.* (2023): Towards a typology of nature-based solutions for disaster risk reduction: sciencedirect.com

ecosystems.[150] Nature-based solutions have the potential to reduce losses and in that positively impact affordability and availability of insurance, while enhancing ecosystem conditions and biodiversity, contributing to insurability of assets and risks and playing a role in closing the protection gap.

Exploring NbS for urban areas could reveal their potential for loss prevention and can lead to reduced insurance premiums over time. For example, natural green and blue infrastructure—such as rainwater gardens and water catchment systems for businesses or homes—are being explored to enhance asset resilience.[151] To further reduce flood risk across urban areas, wider adoption is necessary. A key challenge is who will bear the initial investment in nature-based solutions.

Similarly, nature-based risk reduction practices in forestry and agriculture, such as crop rotations, cover crops, and water protection strips, not only improve farm productivity but also create biodiversity co-benefits. These practices could become requirements for insurance coverage or be incorporated into risk-based pricing models that incentivise their adoption or penalise non-compliance (e.g., where conventional practices contribute to increased risks).[152]

Landscape- or ecosystem-based risk reduction measures—such as investments in ecological forestry or the restoration and conservation of coastal areas like mangroves and coral reefs—could be integrated into insurance risk models and policies, helping to potentially reduce premiums and contribute to asset and risk insurability (e.g., natural catastrophes and secondary perils). For instance, a study by The Nature Conservancy (TNC) and WTW in California, United States of America, revealed that ecological forestry led to a 41% reduction in insurance premiums for homes and decreased the likelihood of extreme wildfires in those communities.[153] Another study on coral reef restoration estimated that 44% of the initial restoration costs could be offset by insurance premium reductions within the first five years, with benefits exceeding six times the initial costs over 25 years.[154]

This combined approach of nature-based risk reduction and risk transfer (through insurance) aligns environmental and risk management goals while positively impacting the affordability and availability of insurance.

In this context, insurance can serve as both risk manager and risk carrier. For instance, community-based insurance models designed to preserve coastal ecosystems like coral reefs and mangroves facilitate restoration efforts after damage, with premiums funded by local communities. The California Department of Insurance, United States of America, exemplifies this approach by exploring innovative insurance solutions to finance and insure coastal flooding adaptation strategies in a coastal town, aiming to protect both

150 Chausson A, Smith A, Seddon N, Coath M and Matheson S (2020) The Role of Nature-based Solutions for Climate Change Adaptation in UK Policy. NbSI, University of Oxford, WWF-UK and RSPB: naturebasedsolutionsinitiative.org

151 World Bank (2021). A Catalogue of Nature-based Solutions for Urban Resilience. Washington: worldbank.org

152 EIOPA (2023): Impact Underwriting: eiopa.europa.eu/system

153 WTW, The Nature Conservancy (2020): Wildfire resilience insurance: quantifying the risk reduction of ecological forestry with insurance: wtwco.com

154 Reguero, B.G., Beck, M.W. and Schmid, D., *et al.* (2020): Financing coastal resilience by combining nature-based risk reduction with insurance: sciencedirect.com

residents and natural ecosystems.[155] Another notable example is the analysis by The Nature Conservancy (TNC) and Munich Re focused on flood prevention along the lower Mississippi River. Their review integrates nature-based solutions (NbS) with community-based insurance, aiming to reduce flood damage, improve insurance affordability, and expand coverage.[156]

However, implementing NbS as a risk reduction and loss prevention measure also presents challenges. The modelling of their risk reduction value is still underdeveloped, and initial investments are necessary to support the adoption of ecosystem- or landscape-level NbS. Public-private partnerships and innovative investment schemes will likely be essential to overcome these barriers.

Insurance as a catalyst to close the biodiversity financing gap and facilitate investments in nature-based solutions

The international community has emphasised the crucial role of the private financial sector in halting and reversing biodiversity loss by 2030, including a specific target to close the USD 700 billion biodiversity finance gap annually. This is reflected in Goal D of the GBF and Target 19, which underscores the need to gather financial resources from "all sources".[157] Positive financial flows toward nature-based solutions currently amount to only USD 200 billion. With the majority coming from public sources which are directed towards biodiversity and landscape protection, sustainable agriculture, forestry and fishing, water resources and wastewater management.[158]

Insurance plays a key, yet often undervalued, role in closing this finance gap. Historically, discussions have focused on de-risking nature-based solutions or nature finance using public funds or philanthropic capital and through blended finance and other mechanisms. However, insurance can provide critical risk transfer solutions. De-risking public and private sector investment in nature conservation, restoration and sustainable use of land and water sources, while making innovative projects more attractive and bankable, inherently contributes to operationalising the goals and targets of the GBF.

Nature-based solutions, like traditional infrastructure projects, often require insurance coverage to protect against operational risks. They typically rely on engineering all-risk insurance to mitigate risks such as delays or disruptions and may also need environmental risk insurance to safeguard against potential environmental liabilities. For example, insurers have provided construction all-risk coverage for large dyke restoration projects aimed at preventing structural failure due to rising sea levels, while also enhancing biodiversity and supporting local community livelihoods through tourism and fishing.[159]

155 Department of Insurance State of California (2024). City of Imperial Beach awarded first-ever grant to study innovative insurance protections from sea level rise. Press release: insurance.ca.gov accessed 9 November 2024
156 WWF, Deloitte (2023): Underwriting Our Planet: wwf.ch/sites
157 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int
158 UNEP (2023): State of Finance for Nature: unep.org/resources/state-finance-nature-2023
159 For details see example by Swiss Re who provided construction all-risk coverage for the restoration of the Prince-Hendrick sand dyke on the Island of Texel in the Netherlands, a World Heritage Site: swissre.com

The insurance industry, in its role as a risk manager, can also offer valuable data and early insights during the planning stages of nature-based projects, advising on risk reduction measures. For instance, insurers have provided planning support for green-grey infrastructure projects, aimed at reducing flood risks and enhancing the resilience of low-income communities by integrating nature-based solutions with traditional civil infrastructure.[160]

Moreover, insurance products such as political risk and credit insurance are valuable for investors in nature-based projects, particularly in developing and emerging markets. This has been demonstrated in high-profile deals such as the nature-debt swap in Ecuador, where credit insurance played a critical role.[161]

Nature should be treated as an asset that warrants the same level of protection and investment as property or health. The public and private sectors, along with communities, rely on healthy ecosystems to deliver essential services and should therefore share a vested interest in preserving and enhancing these natural assets. Emerging public-private partnerships aimed at insuring natural assets highlight the collective importance of protecting these resources for both private and public benefit.[162] Insurance offers asset protection for natural capital against various perils, including natural disasters. For example, insurance solutions can provide risk cover for nature-based solutions such as coral reefs, mangroves and living levees that reduce natural disaster risk to communities.[163] Insurance can also guarantee the protection of conservation availability of insurance[164] and successful delivery of ecological restoration projects,[165] ensuring pay-outs in the event of damage, which can be reinvested into conservation and restoration efforts. Such protection of natural assets in the case of reversal events or non-delivery of outcomes due to extreme weather events can also become relevant for carbon-credit projects, and potentially in the future biodiversity-credit projects.[166,167]

As these frameworks continue to evolve, the insurance industry's involvement is likely to expand, particularly as carbon and biodiversity markets grow and new laws, such as the European Union's (EU) Nature Restoration Law,[168] are implemented to support nature restoration.

160 For details see example by Swiss Re who provided planning support for a green-grey infrastructure pilot project in Kochi, India: swissrefoundation.org
161 CISL and ClimateWise, Howden (2024): Nature-related financial opportunity use case: cisl.cam.ac.uk/
162 Wharton, J. (2021). The Mesoamerican Reef: A Cornerstone of Sustainable Development: marfund.org accessed on 9 November 2024
163 The Nature Conservancy (2024). Insuring Nature to Ensure a Resilient Future nature.org accessed 15 November 2024
164 CISL and ClimateWise, Howden (2024): Nature-related financial opportunity use case: cisl.cam.ac.uk
165 For details see example by SCOR (2024): A new insurance product to support Ecological Restoration: the Restore Product by SCOR
166 Ping An (2023): First ocean carbon sink index insurance policy for marine ecosystem protection launched by Ping An
167 MarshMcLennan (2023). Rooted in Resilience Innovations in nature insurance for business: marshmclennan.com
168 European Parliament and Council (2024). Regulation (EU) 2024/1991 of 18 October 2024. Official Journal of the European Union: eur-lex.europa.eu

Insuring the transition to a nature-positive economy[169]

The availability of insurance products is an essential element in driving economic sustainability, by providing risk analysis and risk transfer solutions that offer innovators the financial safety net needed to pioneer new methods and technologies.

The World Economic Forum (WEF) estimates a USD 10 trillion opportunity in the transition towards a nature-positive economy. This transition includes investments in areas such as waste management, alternative proteins, vertical farming, bio-based materials, circular economy models, and new supply chains, alongside the creation of new job profiles.[170] These advancements will require insurance coverage to scale successfully, just as innovations in the climate space have shown.[171] There is now a clear opportunity for the insurance industry to develop solutions that support the nature-positive transition—which can be referred to as "transition insurance for nature". This approach can create substantial long-term value for insurers. What is considered innovative today is likely to become the standard model in the future. By insuring these emerging solutions and technologies now, insurers position themselves as valued players in the future economy.

In the context of the transition to a net-zero economy, UNEP's Forum for Insurance Transition to Net Zero (FIT) states that "transition insurance can be viewed as insurance capacity allocated to entities, activities or assets that support the goals of the Paris Agreement. Transition insurance can be applicable to many lines of business (across non-life and life & health insurance) and focuses on climate solutions and enablers, including low, zero or negative-emission solutions, technologies and projects; or activities contributing to the early retirement and managed phaseout of high-emitting or emissions-intensive assets or activities. Transition insurance can target portfolio corporates or individual clients, offering them enhanced support to advance their climate objectives through underwriting terms and conditions. It can also target new clients with climate-compatible business models or practices."[172]

This view on transition insurance can also be applied to the nature-positive transition. Transition insurance can involve providing enhanced transition support through tailored products and underwriting terms and conditions to help insurance clients achieve their nature-related goals (e.g., sustainability-linked insurance products with nature-related key performance indicators (KPIs)). It may also involve providing coverage for the risks associated with transitioning business activities and operations. Additionally, transition insurance can include supporting and underwriting companies which are transforming value chains to avoid or reduce negative impacts compared to business as usual (e.g., alternative proteins or circular economy approaches). Transition insurance can also cover businesses or assets in relation to sustainable management and use of nature,

169 Note that while the concept of nature-positive, as defined by the Nature-Positive Initiative (NPI), is a global societal goal rooted in the GBF's mission to "halt and reverse biodiversity loss by 2030", the concept of "nature-positive economy" has not been defined, and is not part of the GBF, but has been inspired by its whole of society approach and inclusion of private sector in the targets 14 and 15.

170 World Economic Forum (2020): New Nature Economy Report II. The Future of Nature and Business: weforum.org

171 Geneva Association (2024): Bringing Climate Tech to Market: The powerful role of insurance: genevaassociation.org

172 UNEP (2024): Closing the gap: The emerging global agenda of transition plans and the need for insurance-specific guidance: unepfi.org

aligned with nature-positive outcomes (e.g., agroforestry, regenerative agriculture).[173] Insurance for natural assets and nature-based solutions may not be strictly categorised as transition insurance but as nature-positive-aligned initiatives aimed at conserving and restoring biodiversity and ecosystems.

The insurance industry, in their role as risk manager, also supports the nature-positive transition by providing essential risk models, research, and data, helping to scale emerging technologies.

Insurers as risk managers: better risk identification and management

As risk managers, insurers can assist businesses in understanding, preventing, and reducing their nature-related impacts by leveraging their knowledge and research on specific industries. Through risk advisory services, insurers offer environmental sensitivity analyses to help businesses better comprehend their interactions and potential impact on nature. Additionally, insurers can engage in planning and advisory roles, particularly in biodiversity-sensitive areas, collaborating with policymakers on building regulations and land-use planning to minimise environmental impact—such as avoiding construction in ecologically critical zones. Insurers can also provide insights on technologies and solutions that need scaling, while partnering with stakeholders to advocate for sustainable practices and policy reforms that promote nature-positive solutions and reduce harmful subsidies.

Insurers also help communities and businesses reduce nature-related risks through risk research, data, and analytics. They develop advanced nature-related risk models and can enhance their natural catastrophe models to assist clients and communities in assessing their exposure to these risks and provide advice on loss prevention measures. Insurers can advocate for nature-based risk reduction strategies, such as incorporating rain gardens into urban landscapes, and collaborate with policymakers, governmental agencies, and local communities to implement ecosystem-based risk reduction initiatives, such as restoring mangroves for coastal resilience.

Insurers in their traditional role as risk carriers

As risk carriers, insurers have the opportunity to avoid and reduce their impact on nature while supporting activities that deliver positive outcomes for nature. Insurers can establish underwriting policies, criteria and guidelines for activities in high biodiversity sensitive areas and high-impact sectors and activities on nature. By implementing environmental guidelines through due diligence, policy terms, and conditions, insurers can ensure that the activities they underwrite avoid or reduce harm to biodiversity and ecosystems. Risk (impact)-based pricing models enable insurers to incentivise sustainable behaviours by clients, such as undertaking biodiversity risk assessments or adopting measures to reduce

173 Additional guidance for business models and activities contributing or aligned with nature-positive outcomes, refer to emerging taxonomies that include specific objectives (and technical screening criteria) for nature such as protection, conservation and pollution prevention (EU taxonomy for sustainable activities), the International Finance Corporation (IFC) Biodiversity Finance Reference Guide, providing a indicative investment opportunities eligible for biodiversity finance, and the World Business Council for Sustainable Development (WBCSD) Roadmaps to Nature Positive, setting out which actions key sectors can take to avoid and mitigate impact on nature, and which practices and activities within these sectors are contributing to nature-positive outcomes.

their environmental footprint. Insurers can support the technological and business models associated with the transition to a nature-positive economy. Nature-based solutions (NbS), restoration- and conservation-driven projects also depend on insurance to unlock the investments needed for their successful implementation.

Insurers also protect households, businesses, and public entities by absorbing economic shocks related to nature-related risks, building both physical and economic resilience. They can provide insurance coverage for emerging nature-related risks, including transition and physical risks, while also harnessing nature's risk reduction capacity. Insurers can combine risk reduction efforts with risk transfer solutions, such as community-based risk transfer and ecosystem-based risk reduction. Risk-based pricing can signal the need for risk-reducing measures, encouraging the adoption of nature-based strategies for homes.

Moreover, insurers can reduce their environmental footprint within the claims management process by offering green claims options, such as favouring repairs over replacements and integrating "build back greener" and more resilient approaches. Insurers can also engage with suppliers and repairers to avoid and reduce their environmental impact.[174]

174 WWF, Deloitte (2023): Underwriting Our Planet: wwf.ch/sites

2.3 Intersections between nature and life & health insurance

Life & health insurance offers critical services that help individuals, households, and businesses understand, prevent, and reduce risk. It provides financial security and resilience, especially in the face of health challenges. Equally, insurance coverage acts as an enabler of activities and solutions that can promote sustainability.[175]

Human health and wellbeing are underpinned by life & health insurance through preventative care, financial security, and resilience when health issues arise. The COVID-19 pandemic highlighted the devastating impact of zoonotic diseases on public health, emphasising the importance of access to healthcare and preventive measures. It revealed a widening global healthcare protection gap due to the economic burden and rising healthcare costs.[176] The pandemic has also illustrated how nature-related risks affect life & health insurance.[177] Approximately 75% of emerging infectious diseases (EIDs) are zoonotic,[178] originating from animals and transmitted to humans. A combination of factors is exacerbating the risk. Habitat destruction increases human-wildlife interaction,[179] climate change, biodiversity loss decreases resistance of ecosystems to disease outbreaks and species introduction.[180] The widespread use of antibiotics, particularly in livestock, has led to rising antimicrobial resistance (AMR), complicating the control and prevention of zoonoses.[181] Without intervention, AMR could cause up to 39 million deaths from antibiotic-resistant infections by 2050,[182] and could cause annual

175 UNEP FI (2022): Managing environmental, social and governance risks in life & health insurance business: unepfi.org

176 UNEP FI (2023): Health is Our Greatest Wealth: unepfi.org

177 Zoonotic diseases are seen as 'nature-related risks' as their emergence is closely linked with deforestation and habitat destruction which can bring humans and wild animals into closer contact.

178 Gebreyes, W.A., Dupouy-Camet, J., and Newport, M.J. *et al.* (2014): The Global One Health Paradigm: Challenges and Opportunities for Tackling Infectious Diseases at the Human, Animal, and Environment Interface in Low-Resource Settings: ncbi.nlm.nih.gov/pmc/articles

179 Drivers amongst these are climate change, habitat loss, animal agriculture and industrial farming, wildlife trade and exploitation of natural resources. For example, climate change and habitat loss can force or facilitate the migration of animal populations, facilitating the spread of any foreign diseases. Other practices that result in dense populations of animals living in compact spaces—such as animal agriculture and wildlife trade—also increase the chances of a spillover event. Biodiversity also arguably plays a more direct role in the transmission of zoonotic diseases. Greater biodiversity of species can potentially reduce the transmission of disease as there are several species the disease has to pass through to reach humans. cambridge.org/core/journals/british-actuarial-journal/article/importance-of-biodiversity-risks-link-to-zoonotic-diseases/

180 Mahon, M.B., Sack, A., and Aleuy, O.J. *et al.* (2024): A meta-analysis on global change drivers and the risk of infectious disease: nature.com

181 The over- and misuse of antibiotics in animals raised for food is widespread and increases the potential for drug-resistant strains of zoonotic pathogens capable of spreading quickly in animal and human populations. Intensive livestock farming commonly leads to the administering of antimicrobials to animals: in the United States, an estimated 80% of all antibiotics sold are used in animal agriculture. cambridge.org/core/journals/british-actuarial-journal/article/importance-of-biodiversity-risks-link-to-zoonotic-diseases

182 Naghavi, Mohsen *et al.* (2024): Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050: thelancet.com

livestock production loss equal to the consumption needs of two billion people, leading to a cumulative GDP loss of USD 953 billion between 2025 and 2050, underscoring the interconnectedness of ecosystem health, human health, and the insurance industry.[183]

Zoonotic diseases are one aspect of nature-related risks. As ecosystems deteriorate, other significant risk indicators emerge, particularly through the loss of essential ecosystem services like clean water, air, and nutritious food, all of which are crucial for human health. These risks, driven by environmental pressures and the loss of biodiversity, go beyond zoonoses, increasingly impact morbidity and mortality patterns. The guide highlights the need for the life & health insurance industry to address these nature-related risks holistically, recognising their direct impact on public health and wellbeing. For example, on the issue of AMR, insurance companies have shown leadership in engagement with key stakeholders to advocate for policies that tighten the standards for using antimicrobial treatments in supply chains and increasing stewardship plans in different levels of policy making.[184]

Effective risk management for life & health insurers includes understanding and reducing nature-related impacts across the insurance value chains. Insurers can play a key role by promoting nature-positive outcomes through their interactions with healthcare providers and policyholders.

The critical role of nature in human health and wellbeing

Biodiversity is essential for maintaining critical ecosystem functions that provide foundational services supporting human health, including access to clean air, water, and nutritious food. Ecosystem services like water filtration by wetlands, pollination by insects, and air quality and temperature regulation by forests, are vital for sustaining public health.[185] Provisioning services are generally better understood by the public, policymakers and companies compared to regulating and maintenance and cultural services, which are often harder to grasp, but are equally vital.

The physical and mental health benefits of exposure to nature are well documented, with green spaces reducing stress, anxiety, and depression.[186] In addition to these health benefits, many cultures rely on ecosystems for spiritual wellbeing, demonstrating the comprehensive importance of biodiversity to human welfare.[187]

183 Adamie, B, Akwar, HT. and Arroyo, M *et al.* (2024): Forecasting the Fallout from AMR: Economic Impacts of Antimicrobial Resistance in Food-Producing Animals—A report from the EcoAMR series. Paris (France) and Washington, DC (United States of America): World Organisation for Animal Health and World Bank, pp. 170: woah.org

184 See further details in the UNEP FI report 'Health is our Greatest Wealth': unepfi.org

185 CBD, WHO, UNEP (2015): Connecting Global Priorities: Biodiversity and Human Health: cbd.int/health/SOK-biodiversity-en

186 A growing body of epidemiological evidence indicates that greater exposure to, or 'contact with', natural environments (such as parks, woodlands, and beaches) is associated with better health and well-being, at least among populations in high income, largely urbanised, societies. While the quantity and quality of evidence varies across outcomes, living in greener urban areas is associated with lower probabilities of cardiovascular disease, obesity, diabetes, asthma hospitalisation, mental distress, and ultimately mortality, among adults; and lower risks of obesity and myopia in children. mcpress.mayoclinic.org/mental-health/the-mental-health-benefits-of-nature-spending-time-outdoors-to-refresh-your-mind

187 United Nations Educational, Scientific and Cultural Organization (2018): Connecting People and Nature for Sustainable Development: unesdoc.unesco.org

Biodiversity also underpins healthcare systems in often unrecognised ways. The Convention on Biological Diversity (CBD) reports that approximately 70% of cancer drugs and 75% of antimicrobials are derived from natural sources. Moreover, 40–59% of the population worldwide rely primarily on natural medicines for their healthcare, underscoring the inseparable link between biodiversity and human health.[188]

Typology of biodiversity-health interactions (CBD/WHO/UNEP):[189]

There are three primary ways in which biodiversity interacts with human health:

- Biodiversity can provide health benefits, such as through nutrients and medicinal plants, and underpins ecosystem functioning. On the other hand, biodiversity can be a source of pathogens, leading to negative health outcomes. Changes in biodiversity can lead to changes in the health benefits.
- Environmental changes driven by human activities, like air and water pollution, affect both biodiversity and health. For example, pollution can lead to biodiversity loss and directly impact human health. Deforestation can lead to the loss of species and habitats and increase the risk of disease for humans.
- The third type of interaction can arise from impacts of the health sector on biodiversity. For instance, pharmaceuticals released into the environment can harm species and ecosystems, indirectly affecting human health. This could be seen in connection with the overuse of antimicrobial agents in humans and livestock, resulting in a compounding issue with the emergence of resistant pathogens.

The growing risks to human health and wellbeing from nature loss

Environmental impact drivers such as air and water pollution directly contribute to health risks. However, they can also negatively impact biodiversity and ecosystem services further exacerbating poor health outcomes.[190] Poor air quality, for instance, has increased respiratory diseases globally, while the degradation of wetlands has amplified the spread of water-borne illnesses. Climate change compounds these risks by creating favourable conditions for diseases in previously unaffected regions.[191]

The degradation of ecosystems can exacerbate the impacts of climate change on human health and wellbeing. For instance, deforestation in tropical regions has significant local climate effects, leading to higher average and extreme temperatures. The loss of trees, absence of cooling green spaces and urban heat islands further intensifies the frequency and severity of heatwaves in urban areas.[192,193]

188 WHO (2019): Global Report on Traditional and Complementary Medicine: iris.who.int
189 CBD, WHO, UNEP (2015): Connecting Global Priorities: Biodiversity and Human Health: cbd.int/health/SOK-biodiversity-en
190 Ibid.
191 Ibid.
192 WRI (2023). Global Emissions and Local Deforestation Are Combining to Create Dangerous Levels of Heat Stress in the Tropics. wri.org accessed on 10 November 2024
193 Department of Insurance, State of California (2024). Impacts of extreme heat to California's people, infrastructure, and economy: insurance.ca.gov/

Environmental impacts, such as air pollution on health are well documented, but others—such as ecosystem service loss and emerging risks like malnutrition due to declining food quality—are generally less understood. Nature-related risks to human health presents a growing challenge for life & health insurers. These risks can translate into higher health-care costs and insurance claims and affect insurability, potentially impacting the affordability and availability of insurance. This could widen the protection gap for vulnerable populations and regions disproportionately affected by environmental degradation.[194]

Excerpt: Loss of biodiversity and ecosystems as risk to human health and wellbeing (CBD/WHO/UNEP):[195]	
Decline of air quality:	▪ Air pollution causes 6.7 million prematurely deaths annually, with the leading causes being heart disease, stroke, respiratory infections, and lung cancer. ▪ The 2019–2020 Australian bushfire season resulted in healthcare costs of AUD 1.95 billion. The impact of PM2.5 on mortality within the US Medicare population puts the annual mortality cost of wildfire smoke at just over USD 6 billion.[196] ▪ Major sources include fossil fuel emissions, which are linked to 5.13 million excess deaths annually.[197] Fire-linked deforestation and biomass burning contributes to increased pollution.[198] ▪ Decreased vegetation cover leads to higher levels of air pollution through reduced ability to trap dust, pollutants, and particular matters, contributing to respiratory and cardiovascular diseases.[199]
Extreme heat:[200]	▪ Extreme heat poses significant health risks, including increased mortality, heat-related illnesses, and exacerbation of chronic conditions, disproportionately affecting vulnerable populations such as the elderly, children, outdoor workers, and those with pre-existing health issues.

194 Gochfeld, M. and Burger, J. (2011). Disproportionate Exposures in Environmental Justice and Other Populations: The Importance of Outliers: pmc.ncbi.nlm.nih.gov; Rentschler, J. and Leonova, N. (2023). Global air pollution exposure and poverty: nature.com

195 CBD, UNEP, WHO (2015): cbd.int/health/SOK-biodiversity-en

196 Ranger, N., Alvarez, J., and Freeman, A. *et al.* (2023): The Green Scorpion: the Macro-Criticality of Nature for Finance: ngfs.net

197 Lelieveld, J., Haines, A., and Burnett, R. *et al.* (2023): Air pollution deaths attributable to fossil fuels: observational and modelling study: bmj.com/content

198 Zhou, M., Huang, Y. and Li, G. (2021): Changes in the concentration of air pollutants before and after the COVID-19 blockade period and their correlation with vegetation coverage: https://link.springer.com/article

199 Ibid.

200 Department of Insurance, State of California (2024). Impacts of extreme heat to California's people, infrastructure, and economy: insurance.ca.gov

Excerpt: Loss of biodiversity and ecosystems as risk to human health and wellbeing (CBD/WHO/UNEP):[195]	
Deterioration of water quality and accessibility:	▪ Pollution of water bodies and extensive use of water driven by urbanisation, industrial developments, agriculture, and climate change. Compounding degradation of terrestrial and aquatic ecosystems like forests and wetlands reduces their ability to filter water. ▪ Poor drinking water quality has led to the occurrence of water-borne diseases. According to a World Health Organization (WHO) survey, 80% of the world's diseases are related to poor drinking water quality.[201]
Increased disease transmission:	▪ Biodiversity loss can lead to higher transmission of diseases from animals to humans (zoonotic diseases) as deforestation and habitat destruction bring humans and wild animals into closer contact and ecosystem changes disrupt natural disease control mechanisms.
Food insecurity and malnutrition:	▪ Loss of pollinators and soil fertility reduces agricultural productivity and loss of genetic diversity in production systems such as monocropping results in less resilient systems with the risk of large production losses. ▪ The diversity of species used in agricultural and livelihood systems is essential for human nutrition and sustainable food systems. Adequate management and use of biodiversity can help to restore ecosystems and address micronutrient deficiencies in vulnerable populations.[202] ▪ Declining biodiversity puts nutrient supplies at risk for people dependent on wild foods such as inland fisheries.[203]
Mental health impacts:	▪ The concept of "nature-deficit disorder" suggests that the growing separation between humans and nature contributes to a range of psychological problems. ▪ Reduced access to natural environments negatively affects mental health, increasing stress, anxiety, and depression. ▪ The 'nature-deficit' can be associated with lack of empathy toward nature, identification with natural life-beings, and sensation to nature.[204]

201 Lin, L., Yang, H., and Xu, X. (2022): Effects of Water Pollution on Human Health and Disease Heterogeneity: A Review: frontiersin.org

202 Lachat, C., Raneri, J.E., and Smith, K.W. *et al.* (2017): Dietary species richness as a measure of food biodiversity and nutritional quality of diets: doi.org

203 Heilpern, S.A., DeFries, R. and Fiorella, K. *et al.* (2021): Declining diversity of wild-caught species puts dietary nutrient supplies at risk: pmc.ncbi.nlm.nih.gov

204 Dong, X., and Geng, L. (2023): Nature deficit and mental health among adolescents: A perspective of conservation of resources theory: sciencedirect.com

Excerpt: Loss of biodiversity and ecosystems as risk to human health and wellbeing (CBD/WHO/UNEP):[195]	
Loss of climate regulation services:	▪ Degradation of ecosystems reduces their capacity to regulate the climate (e.g., lack of green spaces increasing vulnerability to climate-related health issues and extreme weather events).
Reduced natural disaster protection:	▪ Ecosystem degradation diminishes natural defences against floods, storms, and landslides, leading to more frequent and severe natural disasters with direct impacts to health and life.
Loss of medicinal resources:	▪ Biodiversity loss reduces natural remedies used in traditional practices and limits the discovery of new treatments and medicines for modern medical research.

Insurability of emerging nature-related risks

Nature-related risks could significantly affect mortality and morbidity rates in both the short and long term, potentially driving increased claims and impacting the affordability and availability of insurance.

Acute nature-related events, such as pandemics, can impact mortality and morbidity rates in the short term, while longer-term environmental factors may take years to materialise in health outcomes. Chronic risks, such as soil degradation, progress more slowly but can lead to gradual health impacts over time.[205]

To date, the short-term environmental impacts on life & health insurers—such as those from climate change—have been generally considered to be modest. The COVID-19 pandemic, while substantial for public health, has remained a manageable risk for insurers. Life & health insurers typically do not exclude pandemics from coverage, and the private insurability of pandemic risks remains viable due to historical data supporting models for excess mortality. Additionally, the impact has been mitigated through effects on longevity and limitations in the healthcare system, such as reductions in non-pandemic-related procedures.[206]

On balance, while COVID-19 did not undermine the affordability and availability of life & health insurance products or the financial stability of insurers, it highlighted challenges such as reduced access to healthcare services and insurance, which widened the protection gap.[207] Similarly, over the long term, climate change and nature-related risks—individually or combined—are recognised as factors that could affect the affordability, access, and availability of life & health insurance products.[208] These impacts may vary

205 FAO and UNEP (2021): Global assessment of soil pollution: fao.org
206 Geneva Association (2020): An Investigation into the Insurability of Pandemic Risk: genevaassociation.org
207 UNEP FI (2023): Health is Our Greatest Wealth: unepfi.org
208 The Geneva Association (2020): An Investigation into the Insurability of Pandemic Risk: genevaassociation.org

depending on geographic location, socio-economic conditions, policy preparedness, and health system resilience. Insured populations may be better positioned to mitigate these risks compared to the general population.[209]

There is broad consensus that prevention is one of the most effective ways to improve access to insurance. In 2023, the PSI published the report "Health is our Greatest Wealth", which highlights that preventative care, combined with innovative and inclusive insurance products, is key to closing the protection gap. Preventative healthcare models focus on reducing disease incidence and promoting overall wellbeing through healthy lifestyle behaviours, health screenings, vaccinations, education, and early warning systems—all contributing to lower healthcare costs and to closing the protection gap.[210] This underlying principle has also been applied to derive priority actions for life & health insurers on nature.

The contribution of human lifestyles and healthcare systems to nature loss

There is a strong link between lifestyle choices, human health, wellbeing, and the environmental footprint of individuals. Lifestyle factors are now a key determinant in life & health insurance risk assessments, with research underscoring their significant impact on health outcomes. The World Health Organization (WHO) estimates that 60% of factors influencing individual health and quality of life are directly correlated to lifestyle choices.[211]

Diet, physical activity, sleep, stress management, and substance abuse shape an individual's health. For example, dietary habits, while often shaped by socio-economic factors, play a critical role. The food we consume has profound implications for our health, and the link between poor diet and chronic diseases is well established.[212] Emerging data highlight the risks tied to overconsumption of red meat, processed meats, and dairy. Excessive intake of these foods is associated with heightened risks of non-communicable diseases (NCDs) such as cardiovascular disease, type 2 diabetes, and cancer.[213] These findings are consistent with national dietary guidelines, which advocate limiting red and processed meat intake to mitigate NCD risks.

209 The Geneva Association (2024): Climate Change: What does the future hold for health and life insurance?: genevaassociation.org
210 UNEP FI (2023): Health is Our Greatest Wealth: unepfi.org
211 Farhud, D.D. (2015): Impact of Lifestyle on Health: pmc.ncbi.nlm.nih.gov/articles/PMC4703222
212 Saleem, F. (2023): The Impact of Lifestyle Choices on Health: iomcworld.org
213 Gu, X., Drouin-Chartier, J.-P., Sacks, F.M. *et al.* (2023): Red meat intake and risk of type 2 diabetes in a prospective cohort study of United States females and males: nutrition.org

However, overconsumption continues to be a significant issue. In regions like Europe, Oceania and North America red and processed meat consumption exceeds recommended levels by up to 790%.[214] These dietary patterns contribute substantially to rising healthcare costs. In the United States of America alone, red, and processed meat consumption led to healthcare costs of USD 285 billion in 2020 due to chronic diseases.[215]

There is substantial scientific evidence that links diets with human health and environmental sustainability. Beyond health outcomes, dietary choices exert significant environmental pressures. According to the IPBES Global Assessment Report (2019), indirect drivers like socio-cultural trends, economic and technological changes, and government regulation enable business activities that contribute to direct drivers of nature loss,[216] particularly in the food system.[217]

The production of animal-based foods, especially in intensive systems, is inefficient and environmentally harmful. Livestock farming drives deforestation, overuses water resources, and contributes significantly to greenhouse gas (GHG) emissions. Research shows that while animal products supply just 17% of calories and 37% of global protein, they occupy 83% of agricultural land, account for over 55% of food related GHG emissions (estimated at 33% of global GHG emissions) and for 41% of agriculture-related water use (estimated at 70% of global water use).[218,219,220,221]

WWF—Living Planet Report (2024)[222]

"The global food system is inherently illogical. It is destroying biodiversity, depleting the world's water resources and changing the climate, but isn't delivering the nutrition people need."

"The **hidden costs of ill health and environmental degradation** in the current food system amount to **USD 10–15 trillion annually, representing 12% of global GDP in 2020.**"

214 Springmann, M., Mozaffarian, D. and Rosenzweig, C. *et al.* (2022): Global Nutrition Report, Chapter 2: globalnutritionreport.org

215 Springmann, M., Mason-D'Croz, D. and Robinson, S., *et al.* (2018): Health-motivated taxes on red and processed meat: A modelling study on optimal tax levels and associated health impacts. PLoS One 13, e0204139 (2018). ncbi.nlm.nih.gov

216 IPES (2019): Global assessment report on biodiversity and ecosystem services: ipes.net

217 WWF, Zoological Society of London (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org

218 Kesse-Guyot, E., Allès, B. and Brunin, J. *et al.* (2023). Environmental pressures and pesticide exposure associated with an increase in the share of plant-based foods in the diet. Sci Rep 13, 19317: nature.com/articles

219 Harwatt, H. (2024). Options for A Paris-Compliant Livestock Sector, Animal Law & Policy Program, Harvard Law School: animal.law.harvard.edu/wp-content/uploads/Paris-compliant-livestock-report.pdf

220 Poore, J. and Nemecek, T. (2018). 'Reducing food's environmental impacts through producers and consumers', Science, 360(6392), pp. 987–92, pubmed.ncbi.nlm.nih.gov/29853680

221 Heinke, J., (2020). Water Use in Global Livestock Production—Opportunities and Constraints for Increasing Water Productivity: agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2019WR026995

222 WWF, Zoological Society of London (2024): 2024 Living Planet Report. A System in Peril: worldwildlife.org

EAT Lancet Commission—"Planetary health diet"[223]

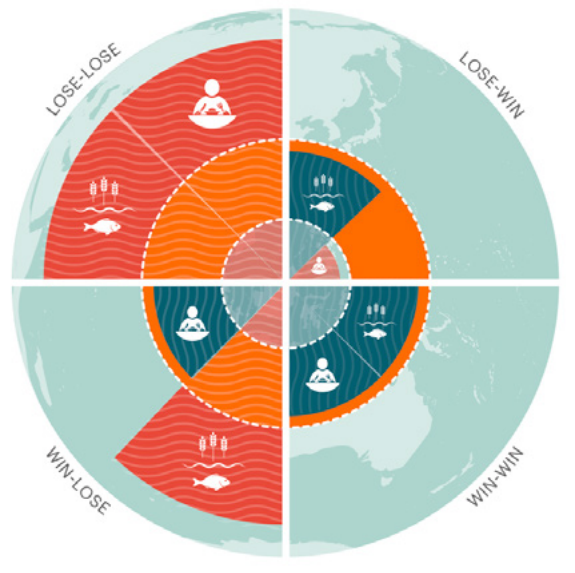
> **"Global food production threatens climate stability and ecosystem resilience. It constitutes the single largest driver of environmental degradation and transgression of planet boundaries. A radical transformation of the global food system is urgently needed."**
>
> **J. Rockström**

Food is the single strongest lever to optimise human health and environmental sustainability on Earth. The EAT-Lancet Commission convened 37 leading scientists from 16 countries to develop global scientific targets for healthy and sustainable food production.

Food forms an inextricable link between human health and environmental sustainability. The global food system needs to operate within the planetary boundaries and boundaries for human health to achieve healthy diets from sustainable food systems for 10 billion people by 2050.

Figure 10: Inextricable link between human health and environmental sustainability through food

223 Ibid.



The commission developed integrated scientific targets, a common framework, that defines a safe operating space for food systems within the planetary and health boundaries. This allowed to identify the "Planetary Health Diet" a healthy and environmentally sustainable diet, providing clear guidance on daily caloric intakes for individuals.

Diets rich in plant-based foods and low amounts of animal sources lead to improved health outcomes and environmental benefits, as a win-win for both people and the planet.

Figure 11: Safe operating space for food systems

The broader shift towards sustainable diets and consumption patterns aligns with the UN Sustainable Development Goals (SDGs), especially those targeting hunger, health, climate action, and the protection of ecosystems (SDGs 2, 3, 13, 14, and 15). The GBF also underscores the need for sustainable consumption to address the indirect drivers of nature loss, particularly through target 16.[224]

Insurers are already offering wellness incentives, rewarding policyholders for healthier habits, such as balanced diets, regular exercise, and avoiding harmful substances like tobacco and excessive alcohol. These programmes are aimed at reducing mortality and morbidity risks, and could help lower insurance premiums and making coverage more affordable and accessible. Life & health insurers are well positioned to positively influence individual lifestyle choices that also support environmentally sustainable behaviours. For instance, they could offer incentives for activities such as walking or cycling, benefiting both personal health and the environment. Encouraging non-polluting modes of transport in urban areas can improve air quality, reducing health risks linked to pollution.

By emphasising the connection between a healthy lifestyle and a healthy environment, insurers can play a key role in tackling the dual challenge of rising healthcare costs and environmental degradation.

224 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int

Nature as our ally for good health

Several risk factors influence health beyond lifestyle choices, including genetics, socio-economic conditions, healthcare access and environment. The environment also can be a key factor in reducing certain health risks.[225] For instance, spending time in nature has been shown to improve physical and mental health. Studies suggest that at least 120 minutes per week in nature is associated with enhanced wellbeing.[226] Doctors in several countries are prescribing time in nature, known as "green prescriptions", to enhance patients' physical and mental health. For example, in Canada, physicians provide patients with passes granting access to national parks, marine conservation areas, and historic sites, promoting outdoor activities as part of their treatment plans.[227] Nature-based therapy programs have demonstrated effectiveness in managing conditions such as post-traumatic stress disorder (PTSD).[228]

For urban environments, incorporating nature-based solutions (NbS) offers a variety of health benefits. Green and blue spaces contribute to local climate regulation and help reduce heat stress[229] and exposure to storm and flood risks. Sustainable urban drainage systems, such as swales and rain gardens, not only manage water sustainably but also reduce flood risks and enhance community health. The Smart Property Institute in Canada has explored NbS integration into urban planning, and how various pathways such as physical activity or environmental exposure can influence health benefits.[230]

Urban nature-based solutions are diverse, encompassing community gardens, rooftop gardens, vertical farms, and systems like hydroponics, aeroponics, and aquaponics. For example, China has expanded urban green spaces through its Sponge City Program (SCP), which leverages green infrastructure—such as rain gardens, urban parks, and forests—to address water resource challenges and environmental issues. A study in China highlighted the multiple benefits of community gardens, including job creation, food security, physical activity, and climate regulation.[231]

For insurers, promoting and supporting nature-based solutions in urban infrastructure and health systems is crucial. These solutions can be integrated into risk management services and insurance products, fostering incentives for healthier and more sustainable lifestyles.

225 UNEP FI (2023): Health is our Greatest Wealth: unepfi.org

226 White, M.P., Alcock, I. and Grellier, J. *et al.* (2019). Spending at least 120 minutes a week in nature is associated with good health and wellbeing. Sci Rep 9, 7730: nature.com/articles

227 World Economic Forum (WEF) (2022). Health: What are green prescriptions and which countries offer them? weforum.org

228 Bettmann, J.E., Prince, K.C. and Ganesh, K., *et al.* (2021). The effect of time outdoors on veterans receiving treatment for PTSD. J Clin Psychol 77, 2041–2056: ncbi.nlm.nih.gov

229 Department of Insurance, State of California (2024). Impacts of extreme heat to California's people, infrastructure, and economy: insurance.ca.gov

230 Twigg, M. (2021): he Nature of Health: Accelerating the integration of health considerations in urban nature-based solutions. Smart Prosperity Institute: institute.smartprosperity.ca

231 Chan, F.K.S., Griffiths, J.A. and Higgitt, D. (2018). "Sponge City" in China—A breakthrough of planning and flood risk management in the urban context. Land Use Policy. Volume 76, July 2018, Pages 772–778: sciencedirect.com

Integrating NbS in urban planning—Smart Property Institute in Canada (excerpt)

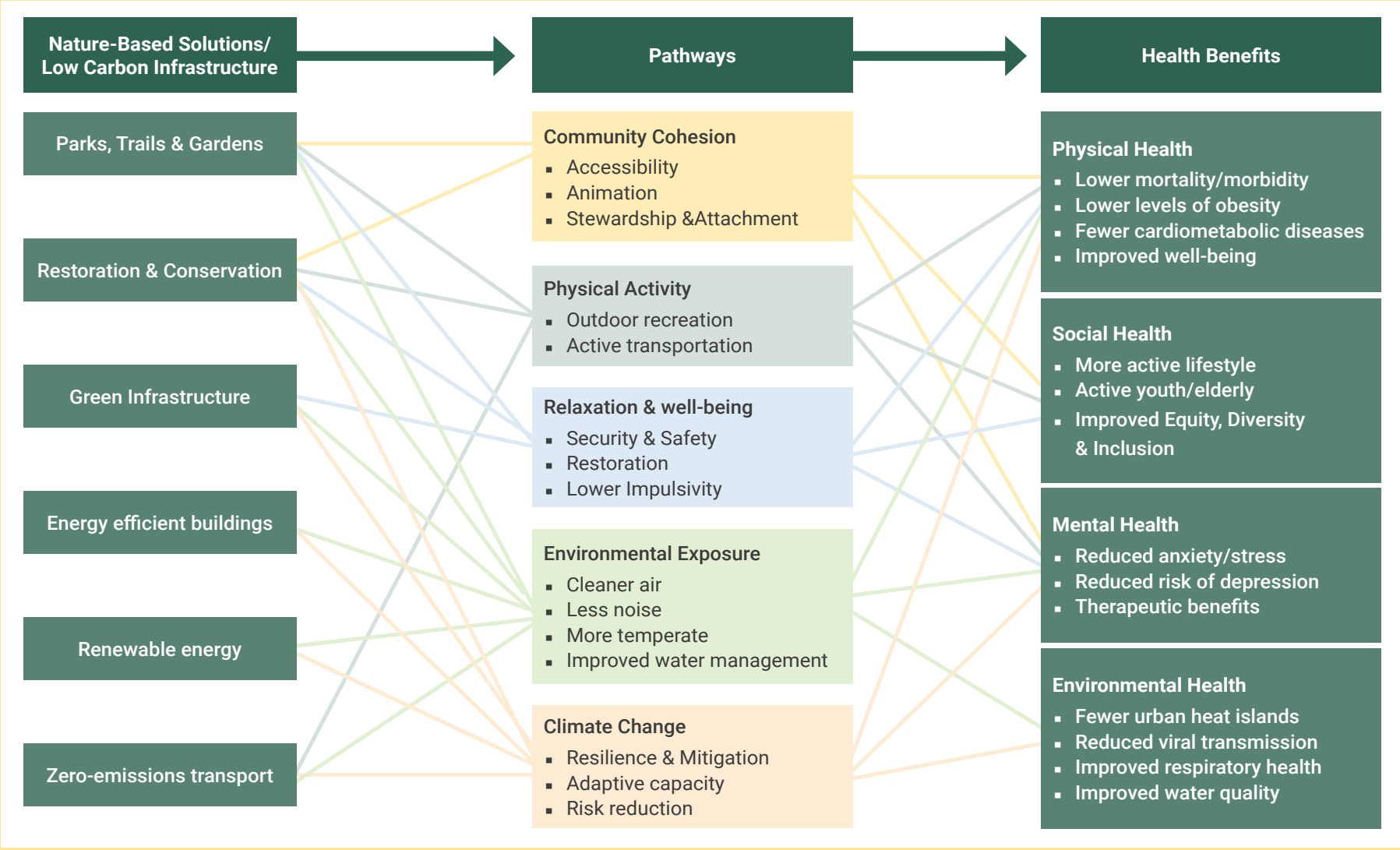


Figure 12: Overview of pathways connecting nature-based solutions to health benefits (Smart Property Institute)[232]

232 Twigg, M. (2021): The Nature of Health: Accelerating the integration of health considerations in urban nature-based solutions. Smart Prosperity Institute: institute.smartprosperity.ca

3. Insurance for a resilient and nature-positive future

3.1 What is insurance for nature-positive?

The concept of "nature-positive," as defined by the Nature-Positive Initiative (NPI), is a global societal goal rooted in the GBF's mission to "halt and reverse biodiversity loss by 2030" based on a 2020 baseline,[233] with the ultimate objective of achieving full recovery by 2050. In other words, it calls for a clear path towards more nature in the world, with thriving ecosystems, species, and genetic diversity.[234]

Excerpt: Finance for nature-positive working model[235]

Achieving the "nature-positive goal" requires delivering nature-positive outcomes, which are improvements in the state of nature, including the provision of ecosystem services. This goal is typically illustrated by an upward trajectory in biodiversity indicators from 2020 to 2050. Positive outcomes from individual actions should be aligned with the collective objective of generating more nature in 2030 than in 2020.

The finance for nature-positive working model, developed by UNEP FI and the Finance for Biodiversity Foundation, aims to operationalise these definitions and guide private finance practices to contribute to the Global Biodiversity Framework (GBF). The model seeks to build consensus on how private finance can meaningfully support the nature-positive goal.

The model builds on World Bank definitions, such as "nature impact mitigation finance" and "nature mainstreaming finance", emphasising improvements above the 2020 baseline. Financial institutions are encouraged to monitor their contributions by phasing out harmful activities, promoting biodiversity gains, and transforming value chains. The discussion paper clarifies definitions and limitations, offering a framework to scale nature finance effectively while reducing greenwashing risks. It does not allow a financial institution or portfolio to claim to "be" nature-positive. Instead, it builds an understanding of how to justify whether a strategy or transaction is delivering positive outcomes to contribute to the global nature-positive goal.[236]

233 Using 2020 as a baseline is recommended by the NPI, and implied at the global policy level by the post 2020 GBF.
234 Nature Positive Initiative (2023). The Definition of Nature Positive: naturepositive.org
235 UNEP FI and Finance for Biodiversity Foundation (2024). Discussion Paper Working Model Finance for Nature Positive: unepfi.org
236 Ibid.

At this early stage, it would probably be difficult for an individual financial institution—be it an insurer, a bank or an investor—to be able to claim that it is already nature-positive. However, a financial institution can definitely contribute to nature-positive outcomes. In this vein, in 2023, the PSI in its briefing paper, defined insurance for nature-positive as **"risk management and insurance strategies, practices, products, services, and solutions that address nature-related dependencies, impacts, risks, and opportunities, while promoting economic, social, and environmental sustainability."** [237]

While this includes relevant practices that insurers can implement, its ultimate aim is to **"actively contribute to the mission of the Kunming-Montreal Global Biodiversity Framework (GBF) by halting and reversing nature loss by 2030, and in alignment with its long-term vision of living in harmony with nature by 2050."**[238]

Insurance for nature-positive also extends beyond avoiding and reducing impacts on nature. It encompasses risk management and insurance strategies that **address nature-related risks and opportunities**, forming a broader framework that extends beyond the definition of the Nature-Positive Initiative.

This aligns with the GBF's targets on resilience and adaptation, such as target 8, which emphasises enhancing resilience through mitigation, adaptation, and disaster risk reduction, leveraging nature-based and ecosystem-based approaches. Similarly, target 11 underscores the importance of restoring and maintaining ecosystem functions and services, reducing disease risk, and protecting against natural hazards and disasters, all of which are supported by nature-based solutions and ecosystem-based approaches.[239]

3.2 Theory of change and approach to derive priority actions

Building on the definition of **insurance for nature-positive**, which addresses nature-related dependencies, impacts, risks, and opportunities, while contributing to the GBF's mission of halting and reversing nature loss, this guide outlines priority actions aimed at achieving **the following overarching goals for insurers**:

- **Avoid, reduce and manage negative impacts on nature while contribute to biodiversity gains, and transformation of value chains.**[240]
- **Contribute to preventing and reducing nature-related risks and building resilience.**
- **Create opportunities for insurers to support a just transition towards nature-positive outcomes and enhance insurability.**

237 UNEP FI (2023): Nature-Positive Insurance: Evolving Thinking and Practices: unepfi.org
238 Ibid.
239 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int
240 UNEP FI and Finance for Biodiversity Foundation (2024). Discussion Paper Working Model Finance for Nature Positive: unepfi.org

The guide acknowledges the diversity of insurers globally in terms of size, business models, and maturity. As such, the guide has been structured into the following categories of actions:

- **General priority actions:** These are broad recommendations applicable to many insurance companies. However, companies should still conduct their own assessments to ensure that these actions align with their specific strategies, objectives, risk appetite, global/regional/national context, regulatory environments, and maturity.
- **General considerations:** These are additional consideration providing further clarity on potential approaches as well as areas that insurance companies could explore for future development (Note: general considerations are highlighted in yellow text in the priority action sections).
- **Company-specific actions:** These actions recognise that not all insurance companies will be equipped to adopt every action, including due to the differences in their business models (e.g., some insurers do not provide insurance for businesses and corporations).

The actions and considerations represent recommendations for effective practice and are not prescriptive in terms of individual member decision-making, including when and how they are expected to address nature-related impact and risk. Each company should evaluate these actions based on its business model, geographical context, and regulatory environment, ensuring the adoption of actions that align best with its specific strategy and objectives.

This guide incorporates a theory of change (see figure 13), that identifies key enablers across the insurance value chain.[241] These key enablers should allow insurers, in their roles as risk managers and risk carriers to contribute to nature-positive outcomes and enhance resilience for communities and society in the face of nature-related risks.

The guide will be complemented by an upcoming compilation of case studies, identifying lessons learned from members of the PSI Working Group for Nature and highlighting emerging practices and practical guidance based on the current environment.

241 This approach aligns also with other nature guidance issued for banks—see UNEP FI PRB Nature Guidance, and asset owners and managers—see Finance for Biodiversity Foundation Target Setting for Asset Owners/Managers.

Insurance for nature-positive theory of change

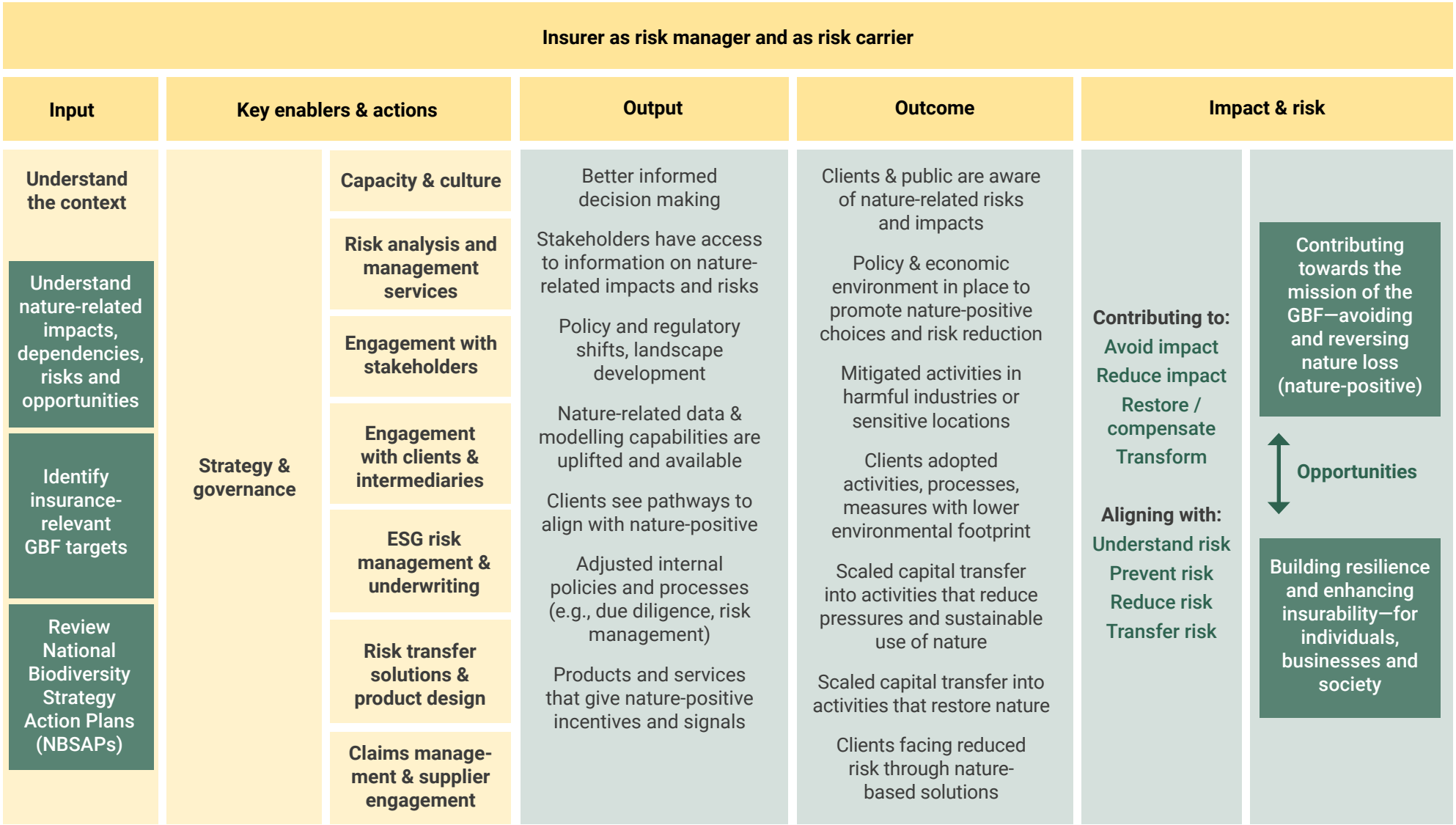


Figure 13: Overview insurance for nature-positive theory of change

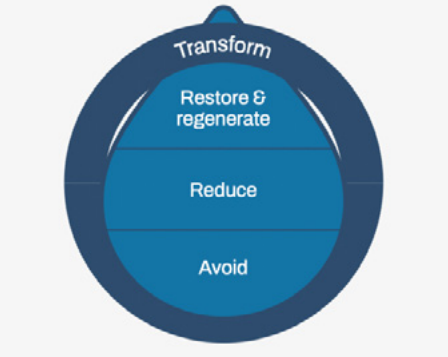
Priority actions outlined in the guide reflect the dual roles of insurers, as risk managers and risk carriers, following both the extended impact mitigation hierarchy and the insurance risk management continuum. All actions provided are linked to insurance-relevant GBF targets.

The impact mitigation hierarchy and transformative actions to contribute to GBF implementation

In order to align with the GBF's mission of halting and reversing nature loss, it is crucial to adopt the impact mitigation hierarchy as a guiding framework. The impact mitigation hierarchy is an established approach in conservation science, designed to address biodiversity risks at the project level and develop appropriate responses.

The mitigation hierarchy comprises four action steps to be implemented sequentially: "to anticipate and avoid impacts on biodiversity and ecosystem services; and where avoidance is not possible, minimise; and, when impacts occur, rehabilitate or restore; and where significant residual impacts remain, offset." It also implies that positive impacts resulting from restoration measures cannot compensate for negative impacts unless the full potential of the mitigation hierarchy is fully realised.

However, following the mitigation hierarchy alone is not enough to contribute to the nature-positive goal. Financial institutions, including insurers should actively seek opportunities to support the GBF through insurance for sustainable use, conservation, restoration, and transformative actions.



The "finance for nature-positive working model" encourages strategies to shift away from negative impacts following the extended mitigation hierarchy to comply with the mitigation hierarchy and by taking transformative actions for GBF implementation.[242] This is aligned with the extended mitigation hierarchy by the Science-based Targets Network (SBTN) Action Framework (AR3T: avoid, reduce, regenerate, restore, and transform) approach.[243]

Figure 14: SBTN Action Framework

It is recommended that financial institutions, including insurers, prioritise understanding and reducing the existing negative impacts within their portfolios. Avoiding biodiversity loss by 2030 is of the most pressing urgency. Throughout this guide, there is a focus on avoiding harm to nature as a first-order priority for insurers.

However, the overall economic transformation toward the nature-positive goal also requires supporting biodiversity conservation and restoration, as well as implementing solutions that transform value chains. It is not necessary to wait to start restoring nature

242 UNEP FI and Finance for Biodiversity Foundation (2024). Discussion Paper Working Model Finance for Nature Positive: unepfi.org

243 Science-based Targets Network (2020): Science-based Targets for Nature. Initial Guidance for Business: science-basedtargetsnetwork.org

until all negative impacts have been reduced to the greatest extent possible. What is key is that there should be a plan in place and there are active efforts towards avoiding harmful activities and reducing drivers of nature loss.

The insurance risk management continuum

The insurance risk management continuum—comprising risk assessment and quantification, loss prevention and risk reduction, and risk sharing and transfer through insurance—plays a crucial role in responding to nature-related risks and building resilience for businesses, economies, and communities.

Nature-related risks arise from the impacts or dependencies that individuals, businesses, or public entities have on nature. These risks can manifest as physical risks due to the loss or degradation of ecosystem services, which can affect the operation of businesses and assets. They can also emerge through the downstream impact on affected stakeholders relying on ecosystem services, leading to financial risks for the businesses involved and when materialised can result in insured losses, potentially leading to other financial risks for the insurance companies underwriting these activities.

Nature-related risks can also take the form of transition risks when the activities of the insured are misaligned with a nature-positive economy.[244] This misalignment can lead to reputational damage, liability risks or impact to the business model for the insured entities and can result in financial risks for the insurance companies underwriting these activities.[245]

This guide is designed to support insurers in addressing nature-related risks in line with the insurance risk management continuum. The guide does not specifically address insurers' own nature-related financial risks, nor does it incorporate responses related to prudential regulation.[246]

However, as recommendations in the guide focus on preventing and reducing nature-related risks to minimise insured losses, and help improve the availability and affordability of insurance and insurability of assets and activities, these measures may also indirectly reduce underwriting risk for the insurer. Further analysis is required to understand how nature-related risk prevention and reduction and adaptive actions might contribute to managing underwriting risk.[247]

Furthermore, by aligning underwriting activities with nature-positive outcomes, insurers can potentially reduce their own nature-related risks such as reputational and legal risks.Aligning insured activities with nature positive could also potentially reduce underwriting risks.

244 Note that while the concept of nature-positive, as defined by the Nature-Positive Initiative (NPI), is a global societal goal rooted in the GBF's mission to "halt and reverse biodiversity loss by 2030", the concept of "nature-positive economy" has not been defined, and is not part of the GBF, but has been inspired by its whole of society approach and inclusion of private sector in the targets 14 and 15.

245 For full terminology of nature-related risks in the context of insurance underwriting portfolios, please see Chapter 4.2

246 Also refer to International Association of Insurance Supervisors (IAIS) workplan 2025–2029 aiming to consider wider environmental and sustainability risk: iaisweb.org as well as a "call to action for insurance supervisors in addressing the natural catastrophe protection gap: iaisweb.org

247 EIOPA (2024). Prudential Treatment of Sustainability Risks: eiopa.europa.eu

The smooth functioning of the insurance industry is underpinned by the conservation, restoration, and sustainable use of nature. As illustrated in figure 15, nature-positive or nature-neutral business activities insured or financed by the insurance industry contribute to the preservation of nature. This, in turn, reduces physical and transition risks for businesses, which might otherwise translate into financial risks for insurers. Therefore, it is critical for the insurance industry to assess whether and how it is contributing to nature loss. [248]

Insurers should recognise that environmental impacts today can become significant financial risks in the future. Proactively responding to these impacts is ultimately sound risk management.

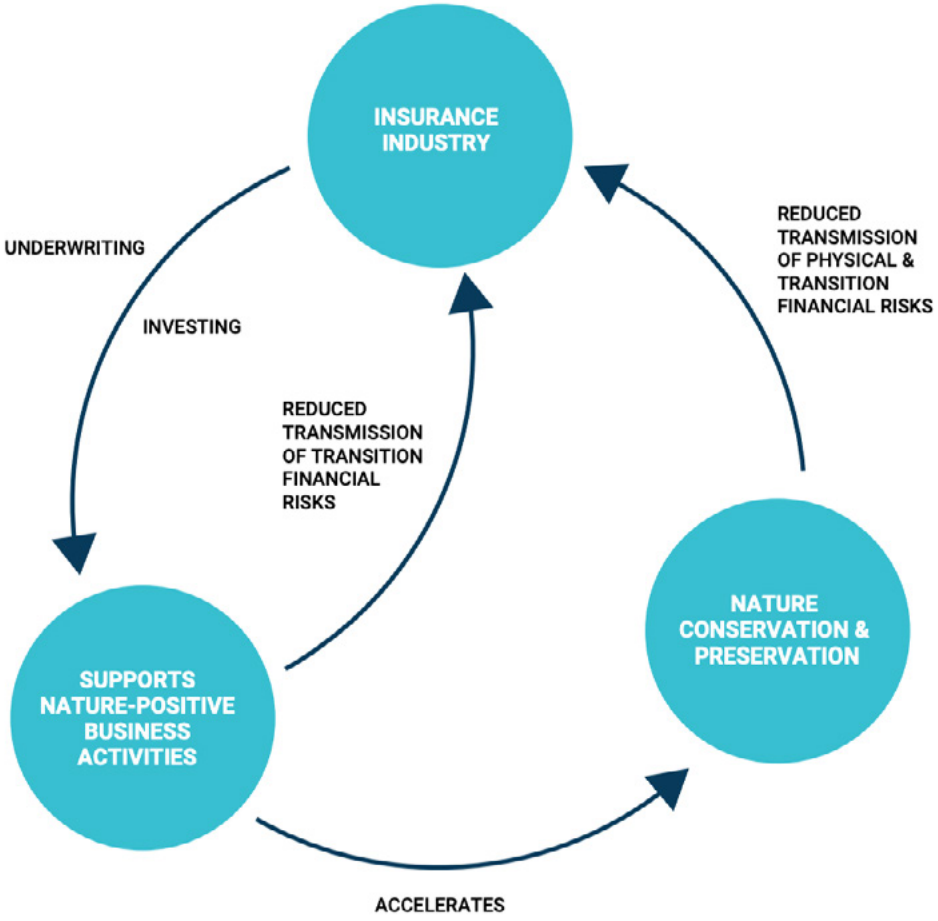


Figure 15: Reducing financial risks through feedback loops

248 UNDP Sustainable Insurance Forum (2021): Nature-related Risks in the Global Insurance Sector: sustainableinsuranceforum.org

4. Foundation to determine actions: Understand your context

4.1 Insurance-relevant targets of the Global Biodiversity Framework and role of National Biodiversity Strategy Action Plans

The Global Biodiversity Framework (GBF) is supported by 23 action-oriented targets, which serve as key inputs to achieving the overarching mission of the GBF of halting and reversing biodiversity loss by 2030. These targets emphasise a "whole of society and government" approach, encouraging not only governments but also the private sector and financial institutions to align their strategies with the biodiversity goals.

The GBF's targets are integral for insurance companies to guide their alignment with the mission of the GBF and provide a structured path to avoid the loss of biodiversity areas, reduce pressures on ecosystems, promote sustainable management of biodiversity, contribute to biodiversity restoration, reduce risk, and build resilience.

The need to progressively close the biodiversity finance gap of USD 700 billion per year and align financial flows is included in Goal D of the GBF, while the need to gather financial resources from "all sources" is mentioned in target 19.

The GBF targets can further inform insurance companies in determining their priorities. Details how each of the listed GBF targets are relevant for insurance can be found in Chapter 7.

Table 2: Overview insurance-relevant GBF targets

GBF targets: categories relevant for insurance	Targets #	Overview of targets mostly relevant for insurance companies
Avoid the loss of biodiversity areas	#1	Actions to reduce the loss of areas of high biodiversity importance close to zero by 2030, respecting the rights of Indigenous Peoples and Local Communities.
	#3	Conserving and protecting 30% of terrestrial, inland waters and marine ecosystems particularly important for biodiversity by 2030, respecting the rights of Indigenous Peoples and Local Communities.
	#4	Minimising human-wildlife conflicts for co-existence.
Reduce pressures on biodiversity	#5	Sustainable use, harvesting and trade of wildlife species, reducing the risk of pathogen spillover.
	#6	Reducing introduction of invasive species.
	#7, #8	Actions to reduce pressures on biodiversity (from all sources of pollution and minimize impacts of climate change).
	#16	Sustainable consumption choices to reduce food waste, overconsumption and waste generation.
Sustainable use and management	#9, #10	Sustainable use and management of biodiversity in agriculture, aquaculture, fisheries, and forestry.
	#12	Enhancing green and blue spaces in urban planning.
	#13	Fair and equitable sharing of benefits from the utilisation of genetic resources and from digital sequence information on genetic resources.
Restoring biodiversity areas	#2	Restoring 30% of degraded terrestrial, inland waters, and marine ecosystems by 2030.
Resilience and risk reduction	#8, #11	Actions to improve ecosystem functions, risk reduction and building resilience through nature-based solutions and ecosystem-based approaches.
Mainstreaming nature in the organisation	#14, #15, #21	Actions to mainstream nature in all aspects of the organisations to align financial flows with the GBF.
Mobilising financial flows	#19	Actions to mobilise financial flows from all sources to implement national biodiversity strategies.

The GBF and its targets shall be translated into national-level policies through updates to National Biodiversity Strategy and Action Plans (NBSAPs). [249]

Therefore, insurers need to understand the specific nature-related challenges in the countries they operate, ensuring that their strategies are aligned with both global biodiversity goals as well as regional and national frameworks. It's important to understand that action on biodiversity loss could be much more locally embedded than insurers may be accustomed from addressing climate change, particularly in terms of reducing GHG emissions.

Additionally, NBSAPs will be supported by Biodiversity Finance Plans (BFPs), which include opportunities for private finance mobilisation and offer guidance on the most effective financing strategies to reach national biodiversity goals.[250] The leading methodology for BFPs is via the Biodiversity Finance Initiative (BIOFIN) and addresses harmful financial flows.[251]

Countries might also set up dedicated councils or working groups, to further increase private finance to invest in nature. It will be important for insurers to have a seat at the table given their ability to de-risk and contribute to mobilising investments into biodiversity.[252]

4.2 Understand nature-related dependencies, impacts, risks, and opportunities

Insurance companies should first understand their exposure to nature-related dependencies, impacts, risks, and opportunities (DIROs) within their business models and value chains in order to identify the most relevant responses and deriving appropriate actions to address their nature-related issues. The TNFD LEAP (Locate, Evaluate, Assess and Prepare) approach offers a guiding framework for the assessment of nature-related dependencies, impacts, risks and opportunities for organisations.[253,254]

249 Since COP15, all Parties to the CBD (196 countries) have committed to revising and updating their National Biodiversity Strategies and Action Plans (NBSAPs) following guidance provided to align with the GBF goals and targets, including those related to means of implementation, and to submit them in time for the 16th COP October 2024. Any Parties who cannot fulfil this requirement are asked to, at a minimum, communicate their national targets reflecting all the goals and targets, in advance of the full submission of the updated NBSAP. At the time of this report writing, 44 countries have submitted their updated NBSAPs and 119 countries have submitted national biodiversity targets: ort.cbd.int

250 To the best knowledge of the working group, insurance has not specifically been invited or engaged in the development of Biodiversity Financing Plans.

251 The Biodiversity Finance Initiative (BIOFIN), a global partnership launched by UNDP and the European Commission, supports countries to enhance their financial management of biodiversity and ecosystems: BIOFIN Overview

252 For example, in Australia the Nature Finance Council (Council) has been established to increase private sector financial flows to benefit nature.

253 TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global

254 For additional guidance on the assessment of DIRO's in insurance underwriting portfolios refer to the forthcoming UNEP FI PSI Supplemental guide for nature-related risk assessments for insurance underwriting portfolios.

Definition of nature-related dependencies, impacts, risks, and opportunities (DIROs)

The definitions used in this guide align with those by the Taskforce for Nature-Related Financial Disclosures (TNFD),[255] the Network for Greening the Financial System (NGFS)[256] and the European Insurance and Occupational Pensions Authority (EIOPA).[257]

Organisations and businesses rely on nature and, through their activities, impact natural systems, resulting in nature-related risks and opportunities. Collectively, these concepts are referred to as "**nature-related issues**".

For financial institutions, exposure to nature-related issues occurs both through their direct operations and their value chains, with the most significant exposure stemming from their lending, investment, and underwriting activities in support of various economic activities.

Impact and dependency pathways—as defined by the TNFD[258]

It is essential to understand nature-related issues through the lens of dependency and impact pathways, as this determines how these issues are identified and measured.

Dependency pathway: This describes how a business activity depends on ecosystem services. It identifies how changes in the state of nature and ecosystem services due to business activities or external factors could affect operations, leading to nature-related physical risks.

Impact pathway: This explains how a business's activity through its impact drivers leads to changes in the state of nature and ecosystem services, affecting various stakeholders.

Impact drivers or pressures refer to the measurable aspects of natural resources used as inputs in production processes or non-product outputs that affect nature. Impacts, whether positive or negative, result from changes in the state of nature and can create risks (e.g., transition risks) or opportunities (e.g., mitigating negative impacts on nature).

255 TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global

256 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net

257 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu

258 TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global

Impact drivers are categorised into the five drivers of nature change:

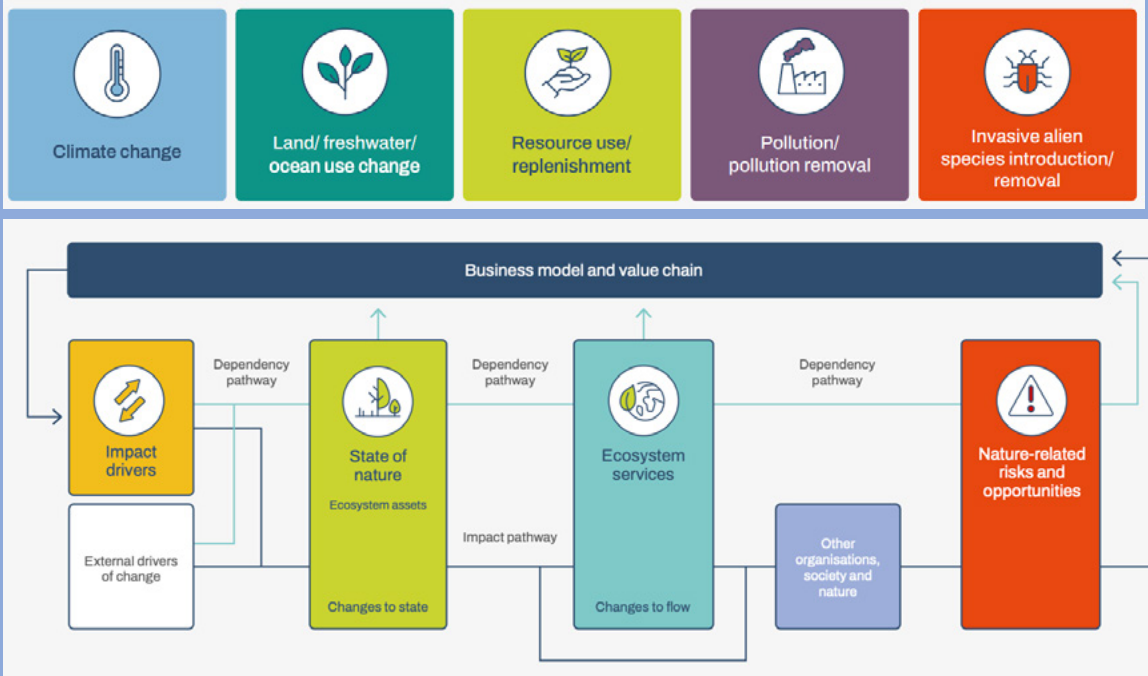


Figure 16: Impact and dependency pathways[259]

Nature-related risks to businesses

From these impacts and dependencies, nature-related risks can emerge for businesses and through their value chain.

Nature-related physical risks are threats to organisations that arise from the degradation of ecosystems and the subsequent loss of ecosystem services. These risks can be **acute** (e.g., natural disasters or sudden environmental events) or **chronic** (e.g., long-term environmental degradation such as soil erosion or deforestation).

Nature-related transition risks occur when organisations fail to align with nature-positive actions, potentially facing policy risk, market or technology risk, reputational and liability risk.

Nature-related systemic risks are risks to an organisation that arise from the breakdown of the entire system, rather than the failure of individual parts. Includes two categories—ecosystem stability risk and financial stability risk.

Nature-related opportunities to businesses

Opportunities arise when businesses undertake activities that create positive outcomes for nature and themselves by reducing negative impacts or actively contributing to nature-positive outcomes.

259 Ibid.

Translation of nature-related DIROs to financial risks for the financial sector

Nature-related risks can pose financial risks that can affect both the resilience of individual insurers and stability of the global financial system.

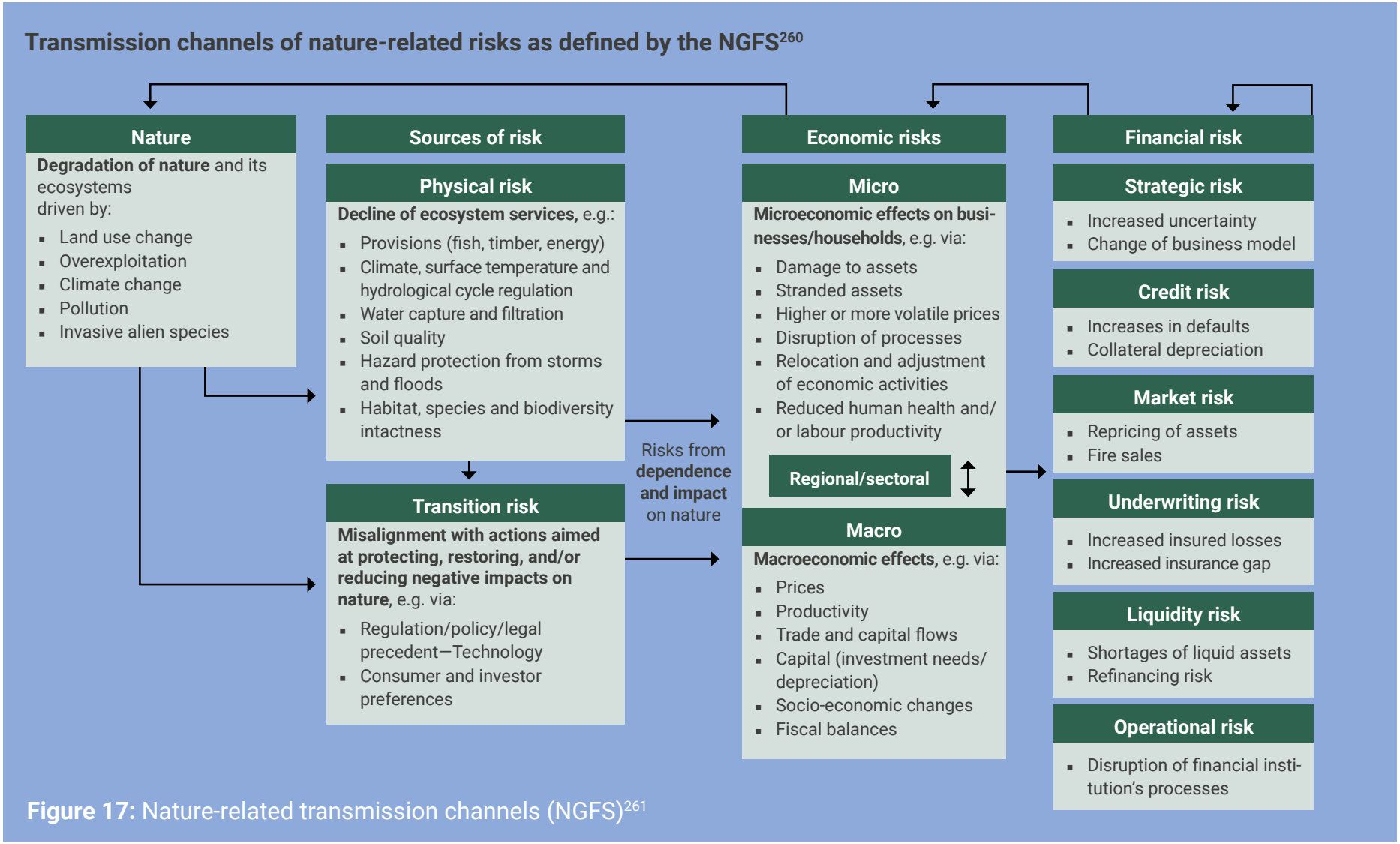


Figure 17: Nature-related transmission channels (NGFS)[261]

260 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net
261 Ibid.

The Network for Greening the Financial System (NGFS)

Nature-related physical and transition risks can be transmitted through micro-, regional/sectoral, and macroeconomic channels, ultimately leading to financial risks for financial institutions, including those in the insurance industry.

In line with the NGFS's approach for climate change, litigation risk is seen as a subset of both physical and transition risks. These risks may arise from factors such as liability claims, policy and regulatory changes, and misconduct.

The NGFS defines systemic dimensions of nature-related risks, where local impacts and dependencies can trigger broader implications through spillover and feedback effects. The degradation of one ecosystem may lead to the collapse of others, while physical and transition risks may cascade along value chains. This means risks to individual financial institutions could spread across the financial system and create feedback loops to the real economy. [262]

European Insurance and Occupational Pensions Authority (EIOPA) has put nature-related risks in the context of the insurance industry: [263]

- The direct impact of the (re)insurance industry on nature is limited, as the industry neither heavily impacts nor consumes natural resources compared to other sectors.
- However, (re)insurers primarily experience indirect nature-related risks through their investments and liabilities. By investing in or providing coverage to companies that are not aligned with a low-impact, nature-positive environment, (re) insurers face indirect transition or physical risks stemming from reduced biodiversity and ecosystem services.

262 Ibid.

263 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu/

Translation of nature-related DIROs for non-life underwriting portfolios

It is important to put the nature-related DIROs in the context of the insurance value chain.[264]

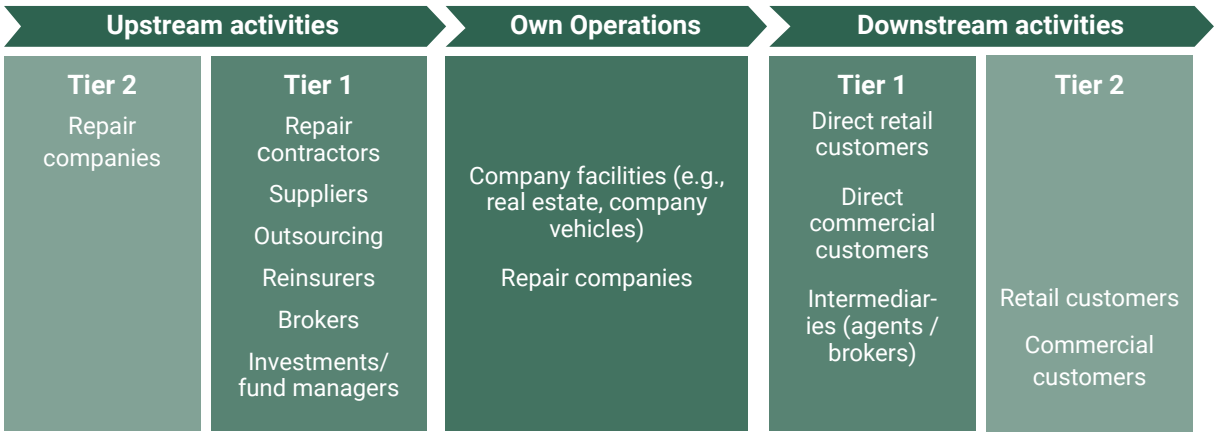


Figure 18: Illustrative high-level view of value chain for non-life insurance

Nature-related impacts: For insurance companies, it is essential to assess the impact of the five drivers of nature change, which can stem from their operations, upstream, and downstream activities. The impact of non-life insurance activities on nature can be both negative and positive. Distinction can be made between direct impacts and indirect impacts. Direct impacts can arise from the operations of the insurance company. The impacts through an insurer's upstream and downstream activities can be categorised as indirect impacts, as contracting suppliers or underwriting clients enables these activities to occur. Some insurance solutions have a more material interface with nature (e.g., environmental pollution liability insurance, or insurance for natural assets) compared to others (e.g., accident insurance for workers). Impacts may also be divided into actual impacts (e.g., already taking place through the insured activities) and potential impacts (e.g., which may take place in the future through loss events and claims).

The scale of indirect impacts might vary based on "what is insured" (i.e., the asset, activity or risk), "how it is insured" (i.e., product design) and "where the insured activity operates or takes place", factors for insurers to consider when determining appropriate actions.

Environmental pollution liability insurance or other liability products covering environmental impacts or restoration following decommissioning of assets have unique considerations.[265] In these cases, the insured risk is directly linked to potential environmental impacts. These risks can be seen as potential indirect nature-related impacts. While such insurance provides essential financial resources to manage pollution incidents and support restoration efforts, it is important to implement safeguards to manage potential moral hazard.

264 For additional guidance on the assessment of DIRO's in insurance underwriting portfolios refer to the forthcoming UNEP FI PSI Supplemental guide for nature-related risk assessments for insurance underwriting portfolios.

265 WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites

Nature-related dependencies: Upstream dependencies could involve repairers relying on natural resources, while downstream dependencies involve policyholders depending on ecosystem services for production processes (e.g., businesses reliant on natural resources as input) or insurance coverage for natural perils, relying on regulating ecosystem services such as storm or flood protection.

Nature-related physical risks: Nature-related physical risks, such as floods following the loss of ecosystem services (e.g. the degradation of the water retention service of an ecosystem surrounding a community may lead to supply chain or business interruptions, and resulting in more severe floods can directly damage assets), they can materialise in increased frequency and severity of insured losses. If these risks are not adequately modelled or priced, they can create financial risks for insurers (i.e., underwriting risk).[266] Increasing losses may lead to insurance becoming more expensive and potentially unaffordable or assets or risks may no longer be insurable, which can in turn widen the protection gap.

Nature-related transition risks: Nature-related transition risks—stemming from regulatory, policy, market, technology and consumer changes—affect insured assets and activities by potentially limiting or requiring change to business processes. If these risks are insured (indirect nature-related transition risk), they can increase the frequency and severity of claims or shift risk profiles and potentially result in a misalignment of risk and premium (i.e., underwriting risk). Additionally, operations or assets unable to adapt to these changes can lead to stranded assets, potentially leading to reduced available insurable assets (i.e., business risk).

Transition risks can lead to increasing claims from policies that cover liabilities. For example, Directors & Officers (D&O) or environmental pollution liability insurance may face higher claims as awareness about ecosystem health grows or following a tightening policy environment. As global sustainability issues such as plastic and PFAS pollution,[267] become more prominent, companies could be held liable for their contributions. Where relevant risks and activities are not excluded, insurers may face increased underwriting risks.

Nature-related systemic risks: Compounding nature- and climate-related risks, such as ecosystem collapse and their effect on global climate regulation, as well as cascading impacts through value chains and across borders, can affect economies and businesses at a global scale. These interconnected risks could significantly impact the ability to diversify risks,[268] leading to systemic vulnerabilities in the insurance industry and potentially spilling over into the broader financial system, impacting public finances, mortgages, cost of living, and widening the protection gap, with significant economic and social repercussions.[269]

Financial risk to the insurance company: Nature-related risks can directly impact insurers. For instance, associations with clients engaged in activities that negatively affect nature, such as deforestation or operations in biodiversity-sensitive areas, regardless of the insured risk, may result in reputational risks. Additionally, operating within regu-

266 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu
267 Perfluoroalkyl and Polyfluoroalkyl Substances
268 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu
269 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net

latory environments that require due diligence can expose insurers to legal risks (i.e., direct nature-related transition risk). Both scenarios can lead to risks for the insurance company (i.e., operational risks).[270]

Nature-related risks can also affect insurers indirectly, through the activities and risks they insure. Nature-related physical and transition risks can lead to underwriting risk (stemming from inadequate pricing and reserving assumptions), reinsurance risk (such as challenges in diversification, rising reinsurance costs, and limited availability) as well as business risk (including stranded assets and loss of insurable assets) as well as operational risks. These factors collectively impact insurers' financial resilience, including difficulties in adequately pricing nature-related risks, challenges through risk concentration, liquidity pressures, and potential solvency concerns.[271]

While this guide does not provide specific strategies for managing these financial risks within insurance companies, actions such as ESG risk management to mitigate negative impacts or insuring the transition through risk transfer solutions can help reduce both direct and indirect transition risks for insurers.

Nature-related opportunities: Emerging nature-related risks—such as physical risks (e.g., crop insurance and soil health) and risks from transitioning (e.g., shifting from conventional to regenerative farming practices)—present new opportunities for insurers to provide innovative risk transfer solutions. These opportunities can unlock growth markets and help close the protection gap, provided they are managed with appropriate safeguards to prevent adverse environmental impacts and new underwriting risks.

Through risk reduction and product innovation, insurers can seize opportunities by designing policies that reduce resource use in claims management, promote sustainable behaviours, and enhance the sustainability performance of insured businesses, as well as provide insurance for new forms of business models and assets that are contributing to sustainable management, restoration or conservation of nature.

Insuring emerging nature-related risks can contribute to building resilient communities and economies; however, this requires robust risk management practices and accurate risk models to ensure that new coverage does not increase underwriting risks.

Context analysis: Assessing nature-related DIROs for non-life underwriting portfolios

To identify priority actions, non-life insurers should evaluate the nature-related DIROs across their underwriting portfolio. This initial assessment is crucial for recognising risk exposure, defining impact and risk reduction strategies, and enhancing resilience to nature-related threats.

270 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu

271 UNDP Sustainable Insurance Forum (2021): Nature-related risks in the global insurance sector : sustainableinsuranceforum.org

The assessment of nature-related issues should consider the location of insured assets and economic activities that interact with nature, as nature-related issues are spatially explicit. However, it should be kept in mind that local impacts and dependencies can have systemic implications due to spillover and feedback effects.[272]

Insurance intermediaries, who are key in facilitating insurance transactions, should focus on the environmental impacts of the insured activities of their clients, especially if these impacts are directly linked to the insured risks.

General priority action (GBF Target #15): Analyse the underwriting portfolio for nature-related dependencies, impacts, risks, and opportunities (DIROs). Consider scoping the most material business lines and/or sectors for an initial analysis. Review if insured assets or actors withing the value chain have operations or activities in biodiversity sensitive or material locations.[273] The approach should involve a phased expansion into other parts of the portfolio as well as deepening the analysis over time.[274]

Consider analysing a meaningful number of insurance products, clients or underlying assets in identified priority sectors or business lines for a more in-depth analysis of the insurance value chain (i.e., including upstream actors and activities) and insured activities.

When conducting this analysis, apply the principles of double materiality, assessing not only the translation of nature-related risks into financial risks and opportunities for the organisation, but also the indirect impacts through both upstream activities and actors (e.g., suppliers, repairers, brokers) and downstream activities, assets, and actors (e.g., clients and affected communities).

General priority action (GBF Target #15): Progressively disclose in line with the internationally-accepted disclosure frameworks or standards (e.g., TNFD,[275] ESRS,[276] ISSB,[277] GRI[278]).[279] **For example, this can include the core global risk and opportunity disclosure metrics provided in Annex 1 (table 7) of the TNFD recommendations.[280] Insurers are also encouraged, where feasible, to disclose the core global dependency and impact disclosure metrics for the financial institutions' portfolios (which are provided in Annex 1 of the TNFD recommendations).[281]**

272 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net/
273 As per TNFD recommended disclosures—Strategy D: tnfd.global
274 See PSI Supplemental guide for nature-related risk assessments for insurance underwriting portfolios.
275 TNFD (2023): TNFD Recommendations: tnfd.global
276 European Commission (2023). Commission Delegated Regulation (EU) 2023/2772 as of July 2023. European Sustainability Reporting Standards (ESRS): eur-lex.europa.eu
277 ISSB (2023). Issued Standards. IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information: ifrs.org
278 GRI (2024): Full set of GRI Standards: globalreporting.org
279 Refer to UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi/org
280 TNFD (2023): TNFD Recommendations: tnfd.global
281 Ibid.

In light of the current data limitations for financial institutions to report on the TNFD core global metrics for their portfolios, the Taskforce proposes an adaptation of the TNFD disclosure metrics architecture for financial institutions. The financial institution specific impact and dependency metrics that are defined when data limitations apply, are as follows:[282]

- **Financial exposure to a defined set of sectors considered to have material nature-related dependencies and impacts (For insurers: absolute amount or percentage of net premiums written, or total sums insured)**
- **Financial exposure to companies with activities in sensitive locations (For insurers: absolute amount or percentage of net premiums written, or total sums insured)[283]**

Translation of nature-related DIROs for life & health underwriting portfolios

It is important to put the nature-related DIROs in the context of the insurance value chain. Life & health insurers' value chain span both upstream (e.g., pharmaceutical companies, service providers, investments) and downstream (e.g., brokers, agents, policyholders) activities, each presenting distinct nature-related issues.

282 TNFD (2024): Sector guidance: Additional guidance for financial institutions: tnfd.global

283 Examples and further insights on observed disclosure metrics and scope for disclosure can be taken from PSI Supplemental guide for nature-related risk assessments for insurance underwriting portfolios—forthcoming.

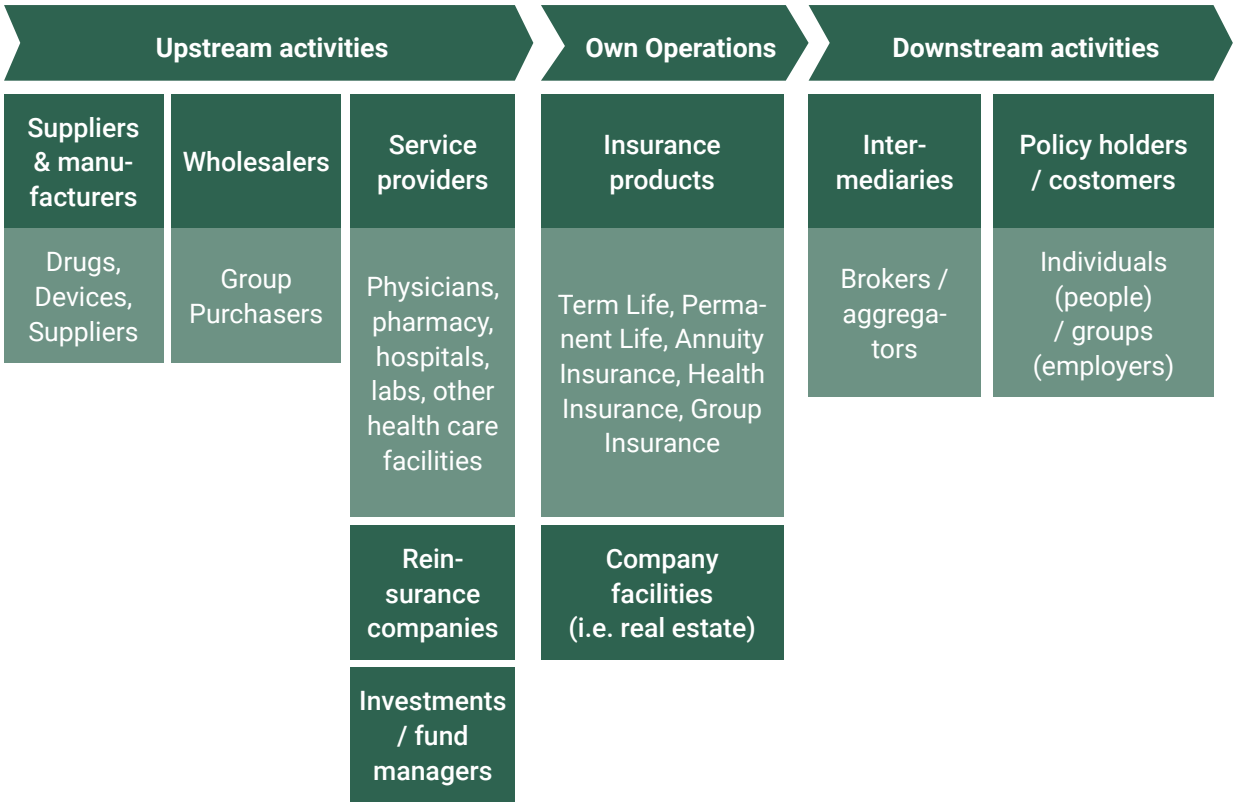


Figure 19: Illustrative high-level view of value chain for life & health insurance

Nature-related impacts: This guide expands the focus to include both nature-related risks and the indirect environmental impacts of insurers' activities. These impacts span the entire value chain, particularly in their upstream activities. For example, the sourcing of bio-based feedstock and raw materials for pharmaceutical production often require significant land use, which, if not managed sustainably, can lead to detrimental environmental effects like soil degradation, land conversion, deforestation, and water pollution.

Additionally, the issue of environmentally persistent pharmaceutical pollutants (EPPs) can exacerbate soil and water contamination.[284]

Generally, the environmental impacts of intermediaries, policyholders, and downstream activities have not yet been extensively explored by insurers.[285] Understanding and reducing these impacts present a significant opportunity for insurers to contribute to nature-positive outcomes.

Nature-related physical risks: Nature-related physical risks arise from the dependencies and impacts on ecosystems of actors in the insurance value chain, such as those of pharmaceutical companies or policyholders. These risks may materialise as higher morbidity and mortality and resulting increased claims (e.g., from respiratory diseases, heat-related deaths, and mental health disorders due to the eradication of green spaces or lack of nature-based solutions, along with zoonotic diseases resulting from habitat

284 Considered through direct impact drivers as per IPBES: Land/Sea-use change, Pollution, Resource Use, Climate Change, Invasive Species.

285 Impact considered through direct impact drivers as per IPBES, as well as indirect impact drivers as per IPBES including Socio-Cultural & Demographic Trends, Economic & Technological, Culture, Government & Regulation.

loss).[286] In this regard, the PSI global ESG guide for life & health insurance provides a useful heatmap of ESG risks and their materiality to mortality, morbidity, longevity, and hospitalisation risks.[287] It can provide initial guidance of which nature-related issues could be material for life & health insurers to be prioritised for analysis and action.

The pharmaceutical industry's reliance on natural resources like biomass may face supply chain disruptions due to biodiversity loss, impacting drug production costs and availability. Pharmaceutical pollutants can also lead to antimicrobial resistance (AMR), harming ecosystems and human health while increasing healthcare costs.[288]

Biodiversity loss also impacts agricultural productivity by degrading soil quality and reducing crop yields. This, in turn, leads to a less diverse food supply, heightening risks of malnutrition, disease, and premature deaths. These risks can spill over into life & health insurance lines, increasing mortality, morbidity, and hospitalisations, thereby driving up healthcare costs and claims. [289]

Nature-related transition risks: Nature-related transition risks for life & health insurers can arise through the misalignment of their insurance value chain with actions aimed at preventing nature loss and restoring ecosystems. This area remains largely unexplored. However, significant risks may emerge upstream, especially within the pharmaceutical industry. For instance, as AMR grows, increasing regulatory measures—such as requirements for urban wastewater treatments or agreements to protect marine and terrestrial biodiversity—could lead to higher compliance and production costs for pharmaceutical companies.[290] Insurers also may face direct nature-related transition risks such as through reputational and business risks if group policies are provided to entities misaligned with nature-positive outcomes.

Financial risk to the insurance company: Nature-related risks can impact the life & health insurers through complex transmission channels. Nature-related risks could lead to financial impacts for life & health insurers through their underwriting portfolio and associated value chain. [291]

Nature-related opportunities: Opportunities for insurers exist through innovative insurance products and services, fostering growth, enhancing market presence, and supporting sustainability goals. Aligned with the overall theory of change of insurance for nature-positive, the goal is to mitigate negative impacts and contribute to positive outcomes for nature while building resilience for public health and health insurance systems. This involves addressing nature-related risks, ensuring the insurability of these risks, and leveraging opportunities for insurers to support nature-positive initiatives.

286 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu
287 UNEP FI (2022): Managing environmental, social and governance risks in life & health insurance business: unepfi.org
288 TNFD (2024): Sector Guidance on Biotechnology and pharmaceuticals: tnfd.global
289 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eu
290 TNFD (2024): Sector Guidance on Biotechnology and pharmaceuticals: tnfd.global
291 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net

Context analysis: Assessing nature-related DIROs for life & health underwriting portfolios

To identify priority actions, life & health insurers should evaluate the nature-related DIROs across their portfolios. This initial assessment is crucial for recognising risk exposure, defining impact and risk reduction strategies, and enhancing resilience to nature-related threats.

While non-life insurers have piloted the application of frameworks such as the TNFD LEAP approach, this is still underdeveloped in life & health insurance. Recognising this major gap, the PSI Working Group for Nature is exploring how life & health insurers can apply similar assessments to their underwriting portfolios.[292]

General priority action (GBF Target #15): Analyse the underwriting portfolio for nature-related dependencies, impacts, risks, and opportunities. Consider scoping the most material lines of insurance business in terms of size and/or potential exposure to nature-related issues for an initial analysis (e.g., refer to the ESG risk heatmap of the PSI ESG guide on life & health insurance[293]). The approach should involve a phased expansion into other parts of the underwriting portfolio over time.

When conducting this analysis, apply the principle of double materiality, assessing not only the translation of nature-related risks into financial risks and opportunities for the insurer, but also the broader indirect impacts through both upstream (e.g., pharmaceuticals, healthcare providers) and downstream activities (e.g., policyholders and affected communities).

General priority Action (GBF Target #15): Consider, progressively disclosing in line with the internationally-accepted disclosure frameworks or standards (e.g., TNFD,[294] ESRS,[295] ISSB,[296] GRI[297]).[298]

292 See PSI supplemental guide for nature-related risk assessments for insurance underwriting portfolios —forthcoming

293 UNEP FI (2022): Managing environmental, social and governance risks in life & health insurance business: unepfi.org

294 TNFD (2023): TNFD (TNFD) Recommendations: tnfd.global

295 European Commission (2023). Commission Delegated Regulation (EU) 2023/2772 as of July 2023. European Sustainability Reporting Standards (ESRS): eur-lex.europa.eu

296 ISSB (2023). Issued Standards. IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information: ifrs.org

297 GRI (2024): Full set of GRI Standards: globalreporting.org

298 UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi/org

5. Priority actions on nature: Non-life insurance business

5.1 Capacity and culture

While non-life insurers have begun to build capacity around broader environmental risk, this has been primarily through climate change considerations, net-zero commitments, and climate risk assessments. Broader nature-related risks remain a relatively new concept for the industry. Insurers which write environmental pollution liability, marine or agriculture and forestry insurance have some experience, but much work remains to integrate nature-related issues fully into underwriting portfolios.

Certain drivers of nature loss, such as climate change and pollution, are already familiar to insurers. Environmental risks, such as climate change and sector-specific issues in agriculture, fisheries, aquaculture, infrastructure, and shipping are common areas where insurers provide coverage. Examples include insuring against environmental pollution liability, crop failures, livestock diseases, or mortality risks in aquaculture.

It is important to identify individuals and teams already engaged in climate and environmental issues, such as those in risk consulting, environmental pollution liability lines of business, sectors with a strong interface with nature, and crisis management teams. However, concepts like biomes, ecosystems, biodiversity, and indirect impacts remain areas for further development and capacity building.

Sustainability teams responsible for strategy and action plans, along with business lines such as underwriting, risk management, product development, and procurement, will require in-depth training. This training should be industry-specific and focus on understanding nature-related dependencies, impacts, risks and opportunities.

Capacity building should extend to the entire non-life insurance value chain, including upstream actors and customers, to ensure effective strategies to reduce impacts and building resilience. Additionally, it is crucial to understand how these risks could impact insurability and translate into financial risks and, or in turn could create opportunities for the industry.

Training should also address nature-based solutions as potential allies in reducing nature-related risks and the worst impacts of climate change. Staff should be trained on nature-positive activities and opportunities, and how de-risking investments can support the transition towards nature-positive value chains.

Insurers should also enhance their understanding of multilateral agreements, relevant policy and regulatory frameworks (e.g., Global Biodiversity Framework (GBF), the Paris Agreement, EU's Corporate Sustainability Reporting Directive (CSRD)[299] and Corporate Sustainability Due Diligence Directive (CSDDD)[300]) and disclosure frameworks, standards and other initiatives (e.g., Taskforce on Nature-related Financial Disclosures (TNFD), European Sustainability Reporting Standards (ESRS), the International Sustainability Standards Board (ISSB), and the Global Reporting Initiative (GRI)). Tools like the TNFD LEAP assessment approach will provide the understanding on how nature-related issues can materialise in the insurance value chain, particular business lines, clients, and locations.

Building awareness and securing buy-in from senior leadership—including the Board of Directors, executive management, and middle management—is critical. Regular training sessions will help ensure that nature-related priorities are integrated across the organisation. Leadership should be kept informed of emerging policies, regulations, risks, trends, potential impacts on financial stability, and the business case for insurance for nature-positive. Addressing resource and capacity gaps will further empower organisations to act on these risks.

It will also be important to create the relevant incentive structures with senior leadership and throughout the organisation to prioritise actions that reduce the harm to nature and contributes to nature-positive outcomes.

A comprehensive capacity-building programme should include outreach to and training of intermediaries such as brokers and agents as well as awareness raising with clients. Clients should understand how nature-based solutions can reduce risks related to climate change and nature loss. This could include awareness raising and training programmes, possibly delivered through industry associations and institutes. Small and medium-sized brokers should be trained on the same issues as internal staff, such as the dependencies, impacts, risks, and opportunities associated with nature-positive strategies and their benefits for people and businesses.

Fostering a culture of sustainability and nature-positive practices within an organisation can also serve as a strong driver for attracting top talent.

299 European Commission (2023). Corporate sustainability reporting directive (CSRD): finance.ec.europa.eu
300 European Commission (2024). Corporate sustainability due diligence directive (CSDDD): commission.europa.eu

General priority action (GBF Targets #14–15, #21): Evaluate the current understanding of nature-related risks across teams, focusing on filling identified knowledge gaps. Deliver targeted training for key teams (e.g., sustainability, risk management, underwriting, product development, procurement) on how non-life insurance can help prevent and reduce nature loss across the insurance value chain through interactions with upstream actors and clients. The training should also cover industry-specific impact and risk profiles, helping teams better understand how different sectors contribute to and are impacted by nature-related issues. This can be derived from the organisation's TNFD LEAP assessment that provides an understanding of implications for different lines of business.

Capacity building should also focus on equipping teams with effective strategies to reduce nature-related risks, while building the resilience of clients and communities. Furthermore, it could highlight the business case for supporting the transition and insuring nature-positive activities, and enhance understanding of relevant multilateral agreements, policy and regulatory frameworks (e.g., GBF, Paris Agreement, CSRD, CSDDD) and disclosure frameworks, standards and other initiatives (e.g., TNFD, ESRS, ISSB, GRI)[301] alongside the latest insights on nature-related risks, informed by loss data, available tools, and decision-making methodologies.

Provide general awareness training for other staff on the global biodiversity crisis and its relevance to the non-life insurance business model.

General priority action (GBF Target #14–15, #21): Engage the Board of Directors, executive management, and middle management through focused awareness initiatives.[302] Emphasise the emerging risks posed by nature loss and the insurance industry's exposure to these risks, as well as the long-term implications for insurability. Highlight the role of non-life insurers in supporting the transition to nature-positive outcomes, building resilience, and corresponding commercial opportunities.

Securing buy-in from the Board and executive management is critical for setting actionable goals and embedding nature considerations in the company's sustainability strategy. **Consider integrating nature related KPI's (e.g., level of insurance for nature-related risks, nature-based solutions, transition insurance for nature-positive outcomes) into senior management's remuneration policies to further drive leadership and commitment.**

301 UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi.org

302 UNEP FI (2024). Nature in the Boardroom: unepfi.org

General priority action (GBF Target #14–16 #21): Identify opportunities to deliver training and awareness programmes for (potential) clients. This could include tailored programmes for mid-sized (and where still required large) companies in high-impact sectors on emerging nature-related risks, as well as offering training through industry associations and institutes and access to existing programmes focused on risk prevention and reduction. Training should encompass intermediaries, including brokers and agents, to ensure they understand the nature-related issues and the organisation's strategy to address them.

5.2 Strategy and governance

Some insurers already have comprehensive sustainability strategies, with some having dedicated net-zero commitments on their operations, investment portfolios and/or underwriting portfolios. On underwriting portfolios, these strategies typically include underwriting policies and guidelines and engagement strategies on specific activities, assets, and locations, with a growing focus on insuring green and sustainable assets and activities.

A nature-focused strategy should be integrated with existing sustainability commitments, aligning with the objectives outlined in this guide. Such a strategy should focus on two key pillars: (a) avoiding and reducing harmful impacts on nature, while supporting the transition to nature-positive outcomes, and (b) building resilience and enhancing insurability in the face of increasing nature-related risks. Insurers can derive specific actions from this guide, tailoring them to their business models, national or regional contexts, and risk appetites.

As organisations deepen their understanding of nature-related dependencies, impacts, risks, and opportunities, they will likely expand their nature strategy over time. The increasing availability of data, tools, and policy and regulatory frameworks will support the further integration of nature-related issues into the insurance business. Initial biodiversity and nature policies—usually established through investment activities—are now evolving to cover a broader range of actions within the scope of this guide.

Feedback from industry participants and key stakeholders suggests that integrating biodiversity and nature considerations into existing climate strategies is essential for success. This integration can include commitments to underwriting policies and guidelines that address deforestation, insuring green and natural assets, and restoring ecosystems to support climate mitigation and adaptation efforts. These objectives should be reflected in both internal processes and external advocacy efforts. Eventually all strategic actions on nature should be integrated into the company's transition plan.[303]

303 In terms of nature transition plans, see draft guidance on nature-related transition plans by TNFD (2024). Discussion paper on nature transition plans: tnfd.global and by GFANZ (2024). Supplemental Guidance. Nature in Net-zero Transition Plans: gfanzero.com In terms of insurance-specific transition plans addressing climate-related issues, including nature and pollution, see UNEP (2024): Closing the gap: The emerging global agenda of transition plans and the need for insurance-specific guidance: unepfi.org

Governance structures should ensure that nature-related risks receive Board-level oversight, with regular discussions on emerging risks and their implications for customers, financial stability, and long-term insurability. Management teams should be empowered to address these risks through existing sustainability committees and decision-making processes. Clear escalation pathways should be established to manage nature-related issues effectively at appropriate organisational levels.

Nature considerations should be integrated into existing environmental, social, and governance (ESG) frameworks, with clear roles and responsibilities for decision-making and risk escalation. Underwriting policies and guidelines and ESG risk management frameworks should be updated to include nature-related issues.

A growing number of organisations are establishing dedicated teams or centres of excellence to lead the development and implementation of nature strategies in core business strategies and operations. These teams help ensure coherent, organisation-wide adoption of nature-positive practices. Moreover, roles and responsibilities related to ESG governance—including sustainability committees and enhanced due diligence processes—should be extended to incorporate nature-related considerations.

General priority action (GBF Target #14–15, #21): Non-life insurers should establish Board oversight for nature-related dependencies, impacts, risks, and opportunities (collectively "nature-related issues") by integrating nature-related issues into existing ESG governance framework.[304] This includes:[305]

- Regular Board-level discussions on nature-related issues and implications for clients and the organisation.
- Assigning clear responsibilities to senior management for assessing and managing nature-related issues, including defining clear escalation processes.
- Assigning clear responsibility to senior management for implementing priority actions for nature.
- Ensuring sustainability committees regularly include nature-related issues in their discussions and track progress on actions.

304 UNEP FI (2020): Managing environmental, social and governance risks in non-life insurance business: unepfi.org
305 TNFD Recommendations—Governance A, B tnfd.global

Consider appointing a dedicated individual to take overall responsibility for managing and overseeing nature-related issues within the organisation.[306]

General priority action (GBF Targets #14–15, #21): Non-life insurers should integrate nature-related actions into their sustainability strategy and over time into their transition plan and update stakeholders through their disclosures (e.g., TNFD,[307] ESRS, ISSB, GRI).[308] Such a nature-related strategy and transition plan should focus on two key pillars: (a) avoiding and reducing negative impacts on nature, while supporting the transition to nature-positive outcomes, and (b) building resilience and enhancing insurability in the face of increasing nature-related risks. Insurers can derive specific actions from this guide, tailoring them to their business models, national and regional contexts, and risk appetites.[309]

Non-life insurers should incorporate nature-related issues into key organisational strategies and frameworks such as underwriting policies and guidelines and risk management frameworks.

5.3 Risk analysis and management services

As risk managers, insurers can play an important role in helping communities understand, prevent, and reduce nature-related risks. Their expertise in risk research, analytics, natural catastrophe risk models, and loss prevention measures allows them to contribute significantly to risk management practices across sectors.

This involves risk assessments and quantification of nature-related risks, and risk reduction and loss prevention advice and measures. This guide also emphasises understanding of nature-related impacts and how these impacts can be managed, in line with risk reduction and loss prevention strategies.

306 UNEP FI (2024). Nature in the Boardroom: unepfi.org
307 TNFD Recommendations—Strategy B, C tnfd.global
308 UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi/org
309 In terms of nature transition plans, see draft guidance on nature-related transition plans by Taskforce for Nature-related Financial Disclosures (2024). Discussion paper on nature transition plans: tnfd.global and by Glasgow Financial Alliance for Net Zero (2024).Supplemental Guidance. Nature in Net-zero Transition Plans: gfanzero.com In terms of insurance-specific transition plans addressing climate-related issues, including nature and pollution, see UNEP (2024): Closing the gap: The emerging global agenda of transition plans and the need for insurance-specific guidance: unepfi.org

Data and risk analytics and capabilities

A key challenge in advancing action on nature is the lack of decision-useful data. Insurers require a range of data types to effectively assess and manage nature-related risks. Biodiversity and nature-related data may vary, but in this context, insurers need data that aligns with internationally-accepted disclosures frameworks or standards (e.g., TNFD, ESRS, ISSB, GRI)[310] covering impact drivers (pressures) and the state of natural ecosystems and species. This data should also include risk metrics such as exposure to biodiversity-sensitive locations, valuation and resilience indicators for ecosystem services, and risk likelihoods or loss scenarios. To be decision-useful, most of these datasets require a spatially explicit perspective.

Risk analytics capabilities and models are critical in assessing these increasing nature-related risks and evaluating the effectiveness of nature-based solutions in reducing them. Expanding natural catastrophe models, especially in order to address the climate-nature nexus in natural catastrophe risk, as well as building specific risk models or scenarios for stand-alone nature-related risks (e.g., pollination loss, soil health, nitrogen/fertiliser or pesticides use) will be important. Insurers should consider incorporating into these models the effects of nature loss and ecosystem degradation, as well as the impact on physical structures, contents and business processes under various scenarios. Furthermore, nature-based risk reduction solutions can be included as attenuation factors within these models to better account for their benefits.

Research should also extend to new solutions, such as technologies that can reduce pressures on ecosystems. For example, some insurers have established initiatives that finance environmental research projects, including those focused on pollution, wildfires, mangroves, and up-cycling. Such initiatives help address some of the critical environmental challenges insurers face.

Insurance companies can support standardising risk management practices for emerging technologies, making it easier and more cost-effective for these technologies to scale. For certain innovations, such as recycling technologies, insurance brokers can face challenges in placing risks due to the complexity and novelty of hazards involved. In such cases, insurers are essential for improving risk management practices, for example in addressing toxic substances and fire hazards at recycling facilities. Other example include bio-based materials used in homes which face insurability challenges due to the lack of standardisation, concerns over durability, and perceived risks of these materials.

Insurers should make relevant risk information available to the public, where appropriate, in order to help reduce exposure to nature-related risks and to encourage the implementation of risk reduction measures. Sustainable land-use planning and zoning are particularly important to avoid further harm to vulnerable ecosystems and ensuring that people are aware of areas prone to nature-related risks (refer to the section on "engagement with stakeholders").

310 UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi.org

Risk management services

Risk management services (including risk advice) are becoming progressively more essential in supporting corporate clients, particularly in light of emerging policy, regulatory and disclosure frameworks and other initiatives (e.g., GBF, EU CSDDD, EU CSRD, TNFD, ISSB, GRI). With growing requirements to understand and reduce nature-related risks, insurers are positioned to offer these services, helping clients assess, manage, and reduce their exposure to biodiversity loss and ecosystem service degradation.

These risk management services are particularly relevant for businesses in sectors highly dependent on natural resources, (e.g., agriculture) or those facing physical risks like water scarcity and natural disasters. Insurance companies can leverage advanced data analytics, environmental risk assessments, and scenario-based risk models to assess these nature-related risks, offering tailored risk reduction strategies. This includes reviewing impacts across various potential scenarios and identifying opportunities to integrate nature-based solutions to protect ecosystems and reduce risk.

Beyond corporate risk assessments, insurers providing environmental pollution liability insurance have developed specialised capabilities and risk assessment tools,[311] which involve identifying pollution sources, their pathways of travel and potentially impacted parties and areas, thereby evaluating their potential nature-related impacts. This existing expertise in environmental risk assessments could be further expanded for other insurance products covering sectors and activities where nature-related risks and impacts are closely linked. Insurers could enhance their capabilities in assessing how business activities contribute to nature-related impacts, ensuring that their risk management services align with evolving sustainability requirements.

Brokers also play an integral advisory role and can provide critical insights into sustainability practices and risk management strategies. By working together with brokers, insurers can help their clients develop more comprehensive and innovative solutions to tackle the risks associated with nature loss and environmental degradation.

To further enhance their impact, insurers should work towards making their risk management services more accessible to a wider audience, including small and medium-sized enterprises (SMEs). This could democratise access to advanced risk reduction strategies, fostering resilience at multiple levels within the economy.

311 As an example refer to AXA XL environmental sensitivity tool accessed on 10 November 2024

Company-specific action (GBF targets #1, #8, #11, #14–15, #19, #21):

- **Research, data and analytics:**
  Insurers should develop and enhance their research, data, and analytical capabilities to provide clients, public sector entities, and communities with crucial information on nature-related risks and opportunities, including biodiversity scenario development.

  Insurers should focus on scientific research and risk management practices for business solutions, methodologies and technologies that need to be scaled for a successful transition to nature-positive (e.g., pollution prevention, re-cycling, up-cycling, alternative materials), to ensure risk transfer capabilities will be available to deploy such solutions and technologies.

  Insurers should enhance their data, tools and risk models for example by expanding their natural catastrophe models or developing new risk models particularly for nature-related risks. This should include data and analysis for emerging nature-related risks from ecosystem degradation (e.g., Swiss Re BES Index[312]) or the risk reduction capacity and value of natural ecosystems (e.g., mangroves, coral reefs, ecological forestry, rain gardens), which could incentivise restoration and conservation activities (e.g., Costal Risk Index[313]), as well as research and data on nature-related issues that could be leveraged for land-use planning and zoning processes.

  Insurers should share the results of such research with vulnerable communities and government agencies as this can help protect public health and essential infrastructure.

312 For the example refer to the Swiss Re Institute Biodiversity and Ecosystems Services (BES) Index accessed on 10 November 2024

313 For the example refer to the Ocean Risk and Resilience Action Alliance (ORRAA) Coastal Risk Index (CRI) accessed on 10 November 2024

- **Risk management services:**
  Insurers should create or integrate specific nature-related indicators into their existing risk assessment methodologies and risk models. These approaches should take into account ecosystem service decline (e.g., water availability, storm protection) under different scenarios to help corporate customers understand and manage the physical risks associated with nature degradation. Insurers should offer risk management plans and loss prevention advice rooted in credible, science-based recommendation, including nature-based risk reduction measures, helping clients enhance resilience against nature-related risks.

  Insurers should proactively engage in the early stages of corporate projects, including those involving nature-based solutions. By assessing these projects from the outset, insurers can leverage their risk advisory expertise to provide innovative risk management tools that enhance companies' awareness of potential risks and strengthen their resilience against environmental impacts.

  Insurers could develop or enhance their existing analytical capabilities to provide clients not only with insights on their nature-related risks but also their (potential) nature-related impacts.

5.4 Engagement with stakeholders

To effectively integrate nature-positive practices into their business strategies, insurers should actively collaborate with a diverse range of key stakeholders, including policymakers, industry peers, trade associations, civil society, academia, and Indigenous Peoples and Local Communities. These engagements help create an enabling environment that promotes public policy changes, encourages the adoption of sustainable practices, and recognises the essential role natural ecosystems play in risk reduction.

This is closely aligned with the UN Principles for Sustainable Insurance,[314] which include, among others, working with governments, regulators, and other key stakeholders promote widespread action on sustainability issues.

Governments, regulators, and policymakers:

- Raise awareness about the relevance of nature-related issues.
- Develop frameworks that encourage risk reduction, innovation, and effective management of nature-related issues.
- Facilitate dialogue to create integrated risk management approaches and risk transfer solutions
- Engage on specific public policies where the company has relevant knowledge and there is an existing collaboration between insurance companies and public policy (e.g., building code, subsidies for insurance products[315])

314 UNEP FI (2012): The Four Principles for Sustainable Insurance: unepfi.org

315 WWF, Deloitte (2023): Underwriting our Planet. How insurers can address the crisis in climate and biodiversity: wwf.ch

Other key stakeholders:

- Engage with intergovernmental and non-governmental organisations to provide risk management and transfer expertise that supports sustainable development.
- Work with business and industry associations to better understand and manage nature-related issues across sectors and geographies.
- Foster dialogue with academia and scientific communities to advance research and educational initiatives that incorporate nature-related risks into insurance business practices.[316]

Figure 20: Overview relevant stakeholders and engagement areas

316 Examples of academia and scientific communities: Potsdam Institute for Climate Impact Research (PIK); Stockholm Resilience Centre; Grantham Research Institute on Climate Change and the Environment

General priority action (GBF target #19): Identify relevant engagement objectives in line with the organisation's nature-related business strategy and objectives. Understand and map relevant stakeholder groups for engagement and derive engagement strategy.

General priority action (GBF targets # 1–3, #8–13, #14–15, #19; #21): Engage with key stakeholders as relevant for the organisation's business model, national and regional context, and the organisation's objectives and action plan on nature. This can include:

- **Develop standards and methodologies for nature and insurance:** Collaborate and advocate for standardised metrics to measure and report nature-related issues from underwriting activities, building on frameworks such as the Partnership for Biodiversity Accounting Financials (PBAF)[317] and TNFD. For example, participate in initiatives such as the PSI Working Group for Nature.
- **Cooperate with Indigenous Peoples and Local Communities (IP & LC):** Actively engage with Indigenous Peoples and Local Communities to incorporate their insights into biodiversity and ecosystem management and the development and deployment of risk transfer solutions for nature on global, national and regional level.[318] For nature-based risk reduction solutions and the integration of nature restoration and conservation in insurance solutions, promote community-led approaches, and ensure engagement with Indigenous Peoples and Local Communities on local level and as part of project development and delivery.
- **Engage with Indigenous Peoples, Local Communities and Affected Stakeholders** in the UN Guiding Principles on Business and Human Rights, and directly engage civil society, local resource users and communities, and other relevant stakeholder groups in applying this guide (or similar).[319]
- **Advocate for the role of insurance in biodiversity plans:** Promote the importance of insurance to contribute to the achievement of biodiversity plans (e.g., GBF, NBSAPs) and the role of insurance in de-risking nature investments and supporting the transition to sustainable practices.

317 Partnership for Biodiversity Accounting Financials website: pbafglobal.com accessed on 15 November 2024

318 The 16th Conference of the Parties (COP 16) also set a landmark decision to establish a new permanent subsidiary body for Indigenous People and Local Communities, to enhance the engagement and participation of Indigenous Peoples and Local Communities in all convention processes. cbd.int accessed on 15 November 2024

319 United Nations Human Rights, Office of the High Commissioner (2011). Guiding principles on business and human rights: ohchr.org

- **Facilitate stakeholder collaboration for risk reduction and resilience:** Engage with policymakers and governmental agencies on the integration of natural assets into national and community-level land-use planning/zoning and asset management. Bring together public and private stakeholders to invest in and to scale nature-based solutions that reduces risk and build resilience. For example, establish partnerships to promote investments in restoration and conservation of ecosystems such as restoration of wetlands for natural flood management to reduce natural disaster risk.[320]
- **Advocate for policy reforms for a just transition to nature-positive:** Engage with policymakers to support science-based, socially just transitions to nature-positive practices including relevant regulatory and economic reforms to scale insurance solutions for transition to nature-positive (e.g., new technologies). Advocate with legislators to encourage repair-over-replace initiatives by promoting circular economy approaches in the insurance industry.[321] Advocate for reallocating subsidies to support sustainable agricultural practices and green infrastructure. For example, work with governments to promote policies for sustainable land-use planning and green technologies, and to enhance the building codes for resilient and net zero/low emission building standards using sustainable building materials. Engage with policymakers to foster a policy environment that supports insurance products designed to incentivise nature-positive outcomes.
- **Enhance understanding through research:** Collaborate with civil society, research institutions, and governments to improve the understanding of nature-related dependencies, impacts, risks, and opportunities through scientific research and data provision.
- **Improve data availability and tools:** Partner with peers and data providers to develop robust, standardised data and metrics for assessing nature-related dependencies, impacts, risks, and opportunities. For example, by enhancing natural hazard mapping and utilising environmental and spatial data for accurate risk assessment and modelling.

320 This also includes relevant awareness of activities and engagement with the UNDP Insurance & Risk Financing Facility, UN Disaster Risk Reduction and World bank Disaster Risk Financing and Insurance (DRFI) Program on a global level, amongst other more national focused initiatives such as the Natural Asset Initiative in Canada.

321 WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites

5.5 Engagement with clients and intermediaries

In general, beyond the topic of climate change adaptation and resilience, the concept of client engagement on sustainability issues is still in the early stages of development for many insurers. However, a growing number of insurers have started implementing engagement strategies focused on climate mitigation (i.e., decarbonisation). Some organisations have even set specific client engagement targets for particular lines of business, especially those related to the net-zero transition. This provides a key opportunity to broaden these engagements to include nature-positive goals.

Activities that drive GHG emissions often indirectly or directly contribute to nature loss, so when clients are engaged on GHG emissions reduction, related issues such as land-use change or water use—which often coincide with industries such as fossil fuel extraction—can also be addressed. Moreover, while actions to reduce GHG emissions can mitigate climate risks, they must be balanced against their potential impact on biodiversity (e.g., hydropower projects in biodiversity-sensitive locations). Insurers can ensure that climate-related engagements also include considerations for biodiversity protection, ensuring that efforts to reduce emissions do not inadvertently harm nature.[322]

Clients are increasingly confronted by the consequences of nature-related risks, impacting their business operations and assets. Through engagement, insurers can help clients understand and address the risks stemming from nature loss, while guiding them to integrate nature-related considerations into their operations and activities.

Insurers can also play a role in encouraging conservation and restoration activities that contribute positively to nature, insurers' net-zero targets and risk reduction, for example, through ecosystem-based risk reduction strategies.

The concept of double materiality is central here as it requires insurers to assess both the risks posed by ecosystem degradation on business operations and the impacts that businesses have on nature. Therefore, the objectives of client engagement strategies for insurers should be twofold: to avoid and reduce nature-related risks and impacts, as well as to identify opportunities for new products and services, such as insurance solutions that support businesses during their transition and offer protection against nature-related risks.

Engaging clients on nature-related issues comes with unique challenges for insurers compared to asset owners and investment managers. While insurers do not directly control their customers' activities, they can exert influence by underwriting business operations. Insurance enables businesses to operate, which gives insurers an indirect role in encouraging clients to reduce their environmental footprint. As asset owners and shareholders, insurance companies can, for example, enhance engagements with investee companies in the context of public equities, supported by their voting rights at Annual General Meetings (AGMs). Aligning engagement targets and strategies across underwriting and investment activities and portfolios can strengthen positive impact.

322 NGFS (2023): Nature-related Financial Risks: a Conceptual Framework to guide Action by Central Banks and Supervisors: ngfs.net

Early engagement with clients, particularly at the onset of new projects or when innovative solutions are being developed and deployed, allows insurers to contribute to comprehensive risk assessments. This helps insurers accurately model emerging risks and offer risk reduction strategies. Early involvement is also critical for expansions of operations and activities, where environmental risk assessments can guide clients in making sustainable decisions, such as selecting appropriate project locations.

Engagement strategies can vary based on the stage within the client lifecycle and client segment. For existing clients, engagement ahead of policy renewal offers insurers the chance to assess whether clients comply with nature-related risk management standards. When clients fall short, this engagement becomes an opportunity to influence their practices, helping to align them with sustainability goals. For clients actively pursuing nature-positive actions, insurers can provide enhanced data and risk assessments to support their transition and improve resilience to environmental risks.

Engagement strategies also vary by client segment. For large corporate clients, insurers can offer in-depth risk assessments and tailored solutions to manage complex environmental risks. Insurers have extensive knowledge of their clients' operations through risk management partnerships, which can be leveraged to address nature-related issues.

Individual and small to medium-sized clients are often less aware and knowledgeable about nature-related issues, yet they can represent a substantial portion of an insurer's portfolio. For retail and personal lines, engagement efforts should prioritise raising awareness and incentivising nature-positive behaviours. Considering the diversity and scale of these clients, insurers can customise engagement strategies by aligning potential solutions with the characteristics of the insurance products offered.

Insurers can monitor and adapt their engagement approaches throughout the client lifecycle, from the initial policy setup to risk management services, renewals, and claims handling.

Brokers, who serve as intermediaries between insurers and clients, can play a key role in the engagement process. By partnering with brokers, insurers can refine their approach to client engagement and ensure that nature-related issues are effectively addressed.

In all of this, it is essential that insurers recognise client engagement as a collaborative process. The transformation towards nature-positive practices requires joint efforts from insurers, clients and intermediaries. This aligns with the UN Principles for Sustainable Insurance (Principle 2) asking for insurers to be working together with clients and business partners to raise awareness of environmental, social, and governance (ESG) issues, manage risks, and develop sustainable solutions.[323]

323 UNEP FI (2012): The Four Principles for Sustainable Insurance: unepfi.org

The following entry points of engagement can be considered:

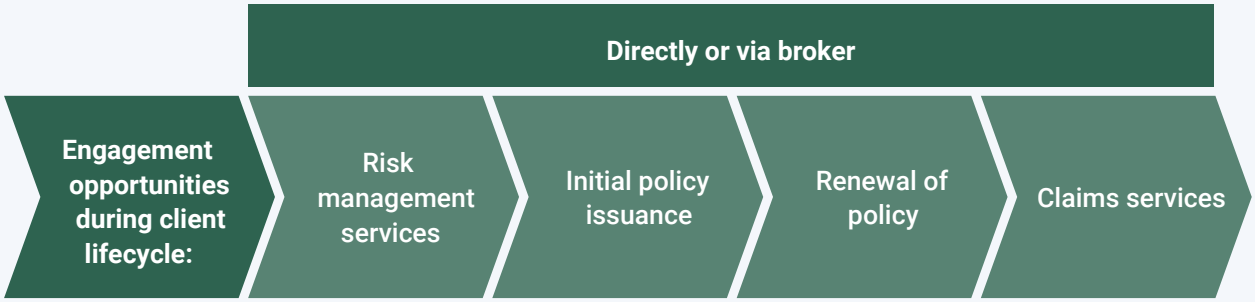


Figure 21: Overview engagement opportunities during client lifecycle

General priority action (GBF targets #1-4, #7-11, #14-16, #21): Consider engagement opportunities across business lines and along the client lifecycle, directly or via intermediaries, where feasible.

Engagement in the case of new projects or expansion of operations:

- Engage with clients to ensure involvement at the early stages of new projects, particularly when innovative solutions are being deployed. Early participation allows more thorough risk assessment and management, enabling an insurer to better understand risks associated with emerging practices. This can also extend to any other projects or operational expansions, in order to promote a comprehensive environmental risk assessments and allowing the insurer to provide suggestions for risk reduction measures from the outset (e.g., before selecting a location that could negatively impact nature or be exposed to nature-related risks)

Engagement on clients' nature-positive journey:

- Identify clients for engagement on their nature-positive journey, particularly those operating in biodiversity sensitive or material locations or in high-impact sectors and activities, either directly or through intermediaries (e.g., brokers), taking into account the TNFD LEAP assessment approach.[324]
- Ensure that existing client engagements on sustainability issues such as climate are being leveraged and that the right people are involved in the engagement process. Build strong relationships with clients, positioning engagement as a collaborative effort. When brokers manage the client relationship, collaborate with them to design, and implement the engagement programme, agreeing on their specific roles in the process.
- Ensure that engagement approaches and strategies are aligned across the insurer's underwriting and investment activities and portfolios.

324 Note that insurance companies can also set client engagement goals, a development that has been observed in relation of insurers climate strategy.

- **As part of the engagement, consider the following actions:**
  - **Determine specific engagement topics based on the insurer's context analysis and client assessment.**
  - **Develop a deeper understanding of clients' existing plans and strategies related to nature, including information on engagement topics, relevant indicators, and nature-related issues throughout the customer lifecycle.**
  - **Share available information on location with the client, if insured assets are in or nearby biodiversity sensitive areas and/or exposed to other nature-related risks (e.g., risk inventory for client), or where available / relevant request additional information from the client.**
  - **Encourage clients to conduct assessments aligned with relevant frameworks (e.g., TNFD LEAP approach) and support them in disclosing findings. This can be facilitated through an insurer's risk analytics capabilities including leveraging risk advisory tools.**
  - **Set clear expectations around impact and risk reduction measures, including ongoing monitoring and escalation processes if expectations are not met. Additionally, consider providing incentives, such as risk (impact)-based pricing or lower deductibles, when clients meet these expectations.**
  - **Encourage clients to set science-based targets for nature (SBTs) (where science-based standards are available)[325] and support them in developing transition plans.[326] This can include identifying opportunities for products and services that facilitate the nature-positive transition and building resilience (e.g., insurance for emerging nature-related risks).**

Engagement as part of "policy compliance":

- Before renewals, review clients in line with nature-related policies, focusing on those operating in protected areas or involved in high-impact sectors or activities. Engage with them to assess their progress, set clear expectations for compliance, and outline escalation processes. Where expectations are not met, establish an engagement approach through the offboarding process for non-compliant clients.

Engagement as part of the claims process:

- Consider an awareness programme or engagement process with clients during the claims process so they will have the best available information to choose greener and more resilient options (refer to the section on "claims management and supplier engagement").

Intermediaries should consider following the same engagement approaches listed above.

325 Please refer to Science based Targets Network—initial corporate standards to set science based targets as per 2024: sciencebasedtargetsnetwork.org/

326 In terms of nature transition plans, see draft guidance on nature-related transition plans by TNFD (2024). Discussion paper on nature transition plans: tnfd.global/ and by GFANZ (2024). Supplemental Guidance. Nature in Net-zero Transition Plans: gfanzero.com/. In terms of insurance-specific transition plans addressing climate-related issues, including nature and pollution, see UNEP (2024): Closing the Gap: The emerging global agenda of transition plans and the need for insurance-specific guidance: unepfi.org/

Company-specific action (GBF targets #1-4, #7-11, #14-16, #21): Engagement with personal and retail business (including SMEs), directly or via industry and trade associations or intermediaries (e.g., brokers, agents).

Engage with personal and retail business lines through access to awareness and training programmes as well as through brokers and agents, leveraging digital platforms to reach personal line clients effectively. Engagement programmes should encourage sustainable practices (e.g., repair over replace) as well as measures to reduce nature-related risks and to build resilience (e.g., how nature-based solutions such as raingardens, ecological forestry practices can reduce risks from floods and wildfires). Collaborate with industry and trade associations to further enhance these efforts, providing a broader platform for encouraging sustainable and resilient practices among individual and small retail/SME clients.

General priority action (GBF targets #1-4, #7-11, #14-16, #21): Engage with intermediaries (e.g., brokers, agents) and insurance marketplaces so that they can encourage clients to conduct nature-related risk assessments and review measures for risk prevention and reduction based on defined standards. For example, for clients with industrial or project sites, insurers can promote to intermediaries the use of nature-related risk analytics and the integration of findings into clients' risk management plans and practices. Engage brokers on the insurer's policy regarding environmental risks and objectives to ensure they are well-informed about the required standards and can effectively communicate them to clients. Ask intermediaries to include nature-related indicators in their ESG/sustainability risk assessments of clients.

5.6 ESG risk management and underwriting

Insurance enables economic activities, which can both positively and negatively impact nature. As enablers, insurers have the capacity to influence and support other entities' operations, ownership, or management of certain economic activities, directly or indirectly.

Insuring companies or activities that have not adapted to a low-impact, neutral or nature-positive environment, or that face growing exposure to biodiversity loss and ecosystem degradation, exposes insurers to indirect nature-related transition or physical risks. These risks stem from the dependency or impact that the insured assets or activities have on nature (refer to the section "Understand your context: Nature-related DIROs in the non-life underwriting portfolio").

It is important for insurers to recognise that today's environmental impacts can evolve into significant nature-related risks in the future. **Therefore, in managing long-term risks, insurers should also address short- and medium-term impacts**.

To credibly contribute to a nature-positive future, insurance companies should prioritise avoiding harm and reducing pressures on nature, particularly in biodiversity-sensitive and material locations.[327] Following the extended impact mitigation hierarchy— avoid, reduce, regenerate, restore, and transform—insurers should understand and address their role in reducing nature-related impacts linked to insured activities.

Effectively managing nature-related impacts requires integrating these considerations into ESG/ sustainability risk management and underwriting practices. Many insurers have established ESG risk management frameworks, in line with the PSI ESG guide for non-life insurance business, which provides a solid foundation for incorporating nature-related issues into broader risk management strategies.[328,329]

Through ESG risk management frameworks insurers are enabled to reduce their exposure to activities harmful to nature or misaligned with a nature-positive future, potentially reducing their exposure to transition risks and resulting financial risks.

However, nature-related risks, alongside climate risks, are increasingly challenging the insurance industry by contributing to rising insured losses and claims. While annual contract reviews and premium adjustments have been used to manage these risks, they may overlook the long-term impacts on business models and profitability. This approach may also exacerbate the issue of uninsurable assets or risks, widening the insurance protection gap. In response, insurers' focus should extend beyond impact reduction to include risk reduction for insured assets and activities, aiming to minimise insured losses and claims. These measures may also indirectly reduce financial risks for the insurer.

This entails addressing both nature-related physical and transition risks. For nature-related physical risks (e.g., those arising from biodiversity loss and ecosystem degradation), insurers may set clear expectations for risk reduction and loss prevention measures with insureds. Such measures might include biodiversity risk assessments and underwriting policies, criteria and guidelines for high-risk activities or locations and for areas with significant ecosystem degradation (high vulnerability/low resilience), or the adoption of nature-based risk mitigation practices. These approaches could also be integrated into risk-based incentives and policy terms and conditions (e.g., farms adopting regenerative agriculture practices or reduced pesticide use, potentially lowering crop insurance risk) (refer to the section on "risk transfer solutions and product design" for further details).

For nature-related transition risks (e.g., increased losses due to heightened regulatory requirements or growing demand for higher environmental standards affecting insureds' business processes), risk reduction strategies often align closely with impact reduction measures. These strategies could involve underwriting guidelines and criteria for activities

327 For definition of biodiversity sensitive and material location refer to: TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global

328 UNEP FI (2020): PSI ESG Guide for Non-Life Insurance Version 1.0: unepfi.org/psi

329 The ESG guide for non-life insurance developed two heat maps providing optional guidance for organisations to get an indication of levels of potential ESG risks across economic sectors and insurance lines of business. This exercise identified that nature-related risks such as environmental degradation, protected sites and species, unsustainable practices, animal welfare/testing, among others, could have a potential high or direct risk on various economic sectors (e.g., agriculture, construction, mining) and on various lines of business (e.g., agribusiness, property, construction and engineering)

in biodiversity-sensitive areas or high-impact sectors and activities, adopting higher environmental standards or practices, and aligning business operations with nature-positive outcomes. Such strategies can also be reflected in risk-based incentives and policy terms and conditions (refer to "risk transfer solutions and product design for nature" section for more details).

Furthermore, insurers should advance the integration of nature-related risks and the valuation of ecosystem services—specifically, as risk attenuation factors—into their underwriting risk models.[330] This would enable insurers to quantify risk more accurately, send appropriate signals for emerging risks in certain sectors or locations and emphasise the value of nature in risk reduction. It would provide a business case for investment in nature-based solutions.

While the focus has largely been on assessing ESG risks in non-life insurance business and transactions particularly for industrial and commercial clients, this guide aims to be applicable across all non-life insurance business lines. Also, given the central role of brokers, it is vital for insurance companies to engage and align with brokers on their ESG and underwriting policies.

Actions to avoid and reduce the impact and risks can be nuanced and depend on the type of activity or asset insured, the location of the insured, and the type of insurance cover. Each insurer will need to assess impacts and risks individually and take actions in consideration of their business, geographical, and regulatory context and in line with their risk appetite.

General priority action (GBF targets #1, #3-4, #7–8, #9–10, #12–13, #16): Develop (or update, if already existing) and implement risk assessment and due diligence processes for sectors identified having impact or dependency on nature, and consider in the process nuances of assets, activities, location, and type of insurance product.

The risk assessment and due diligence processes should expand to activities of the insured that will, or is taking place, in biodiversity-sensitive or material locations (i.e., where activities have material nature-related impacts or dependencies in a locations).[331]

330 While this guide does not address responses or considerations related to prudential regulation, such as solvency II and insurers own risk and solvency assessment (ORSA), further advancements in prudential regulation and supervision might drive in the future enhancements in underwriting risk models and scenario analysis.

331 For definition of biodiversity sensitive and material location refer to: TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global

General priority action (GBF targets #1, #3-4, #7-8, #9-10, #16): Develop (or update, if already existing) and implement specific requirements in sector policies for all identified sectors with high impact or dependency on nature, and consider nuances of specific assets, activities and type of insurance products.

Develop (or update, if already existing) and implement an umbrella policy for activities in biodiversity-sensitive or material locations.[332] And where possible make such sector policies publicly available (i.e., through nature-related disclosures), which can signal expectations with (potential) clients.

Such policies can include **a)** criteria and guidelines where business (either at client, transaction, or location level) will not occur, **b)** where enhanced due diligence and environmental impact and risk assessments will need to be conducted, and /or **c)** where additional measures or practices are expected to avoid or reduce nature-related impact and risks, and support transition of activities to nature-positive (refer to the section on "engagement of intermediaries and clients"). Insurance companies should also consider including their expectations in insurance policy terms and conditions (refer to the section on "risk transfer solutions and product design").

General considerations (GBF targets #1, #3-4, #7-8, #9-10, #16): Enhancing due diligence and monitoring of impacts of companies and their operations or projects in areas of high biodiversity importance (e.g., key biodiversity areas (KBAs)) as well as expectations for additional impact reduction measures for companies with operations in areas of high biodiversity importance (e.g., adherence to sustainability standards and environmental impact assessments).

Setting underwriting policies, criteria and guidelines for activities in protected areas, including protected areas under IUCN categories (I–IV), World Heritage Sites, and Ramsar Wetlands, as well as activities with material negative impacts in areas of high biodiversity importance e.g., KBAs (refer to relevant NBSAPs and the TNFD[333]) such as intensive agriculture, and fishing, extractives (oil and gas/mining) and large hydropower. Additional guidance for consideration of nature-related issues in ESG risk management frameworks can be derived from the resources listed below.

Enhancing due diligence and monitoring of assets, activities and technologies with material nature-related impacts and risks as well as expectations for additional impact and risk reduction measures e.g., environmental impact and risk assessments and sustainable standards and practices to reduce the nature-related impacts and risks.

Setting underwriting policies, criteria and guidelines based on scientific consensus and adopted international frameworks, "excessive negative impact" or where expectations for environmental standards after engagement efforts are not fulfilled.

332 Ibid.
333 Ibid.

For insurance products which cover risks associated with potential negative impacts on nature (i.e. liability insurance products), consider that a) the product only covers risks arising from accidents, b) insurance policy terms and conditions include risk management requirements including environmental standards, ongoing monitoring and incentives to prevent and reduce risks and c) maintaining liability coverage for existing projects, with new projects being evaluated against relevant underwriting policies, criteria and guidelines.

Establishing underwriting guidelines, policies, and criteria for Directors and Officers (D&O) liability insurance where environmental harm results from negligence or lapses in due diligence and prudence.

Enhancing due diligence and monitoring if areas under the stewardship of Indigenous Peoples and Local Communities are affected, and include free, prior and informed consent (FPIC) requirements in the due diligence process.[334] Consider engagement with affected stakeholders, where transition to nature-positive can result in impacts to local communities.

General priority action (GBF targets #1, #3-4, #7–8, #9–10, #12–13, #14–15, #16): Insurance companies should integrate nature into underwriting strategies. Examples include integrating nature-related risks and nature's risk reduction value into risk assessment and models, ensuring long-term risk-adequate analysis, underwriting policies and processes, and impact/risk-based pricing. These strategies should be reflected in insurance policy terms and conditions (e.g., environmental standards for activities in areas of high biodiversity importance, coverage details, policy limits, deductibles, covenants, ongoing risk monitoring).

Insurance companies should ensure that any of these measures, if applied, does not inadvertently result in unfair and discriminatory practices. Efforts should be made to maintain inclusiveness, ensuring that all clients have equitable access to insurance services without compromising on risk management.

General priority action (GBF targets #1, #3-4, #7-8, #9-10, #14-15, #16): Enhance capabilities on risk and opportunity analysis and integrate nature into risk models, including developing relevant sources on loss data and biodiversity scenarios. Collaborate with key stakeholders to share insights and methods for more comprehensive and effective risk management and underwriting practices (refer to the section on "engagement with stakeholders").

334 TNFD (2024): Guidance on engagement with Indigenous Peoples, Local Communities and affected stakeholders: tnfd.global

Relevant guidance for integrating nature-related issues in ESG risk management frameworks:[335]

- PSI ESG Guide for Non-Life Insurance[336]
- "Underwriting our Planet"–WWF[337]
- "Protecting our World Heritage, insuring a sustainable future"–PSI[338]
- "Insuring a Nature-Positive World: An Insurer's Guide to Hydropower"–WWF[339]
- "Risk assessment and control of IUU fishing for the marine insurance industry"–PSI[340]
- "The Price of Plastic Pollution"–PSI[341]
- "Harnessing environmental pollution liability insurance for a sustainable economy"–PSI[342]
- UNEP FI Sustainable Blue Economy–relevant resources:
  - "Harmful marine extractives: Deep-Sea Mining"[343]
  - "Harmful marine extractives: Offshore Oil & Gas"[344]
  - "Harmful marine extractives: Dredging & marine aggregate extraction"[345]

5.7 Risk transfer solutions and product design

Insurance products can have a material interface with nature, such as through environmental pollution liability insurance or insuring natural ecosystems themselves (e.g., coral reefs, mangroves or forests). Underwriting certain assets or activities can contribute to negative nature-related impact, and insurance coverage can lead to moral hazards and perverse incentives that negatively impact nature (i.e., indirect negative impact). Conversely, insurance products can also be designed to support activities aligned with nature-positive goals, promoting positive environmental outcomes (i.e., indirect positive impact).

335 Insurance companies insure activities and assets that can have negative impacts nature and require a deeper understanding of the environmental footprint of these activities. Actions to reduce the impacts can be nuanced, and depend on the type of activity or asset, the location of the activity or asset, and type of insurance cover. The PSI Working Group for Nature aims to continue providing guidance for insurers to interpret their relationship with nature in order for them to derive relevant responses and actions.
336 UNEP FI (2020): Managing environmental, social and governance risks in non-life insurance business unepfi.org
337 WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites
338 UNEP FI (2019): Protecting our World Heritage, insuring a sustainable future: unepfi.org
339 WWF (2022): Insuring a Nature-Positive World: An Insurer's Guide to Hydropower: worldwildlife.org
340 UNEP FI (2019): Risk assessment and control of IUU fishing for the marine insurance industry: unepfi.org
341 UNEP FI (2022): The Price of Plastic Pollution: unepfi.org
342 UNEP FI (2022): Harnessing environmental pollution liability insurance for a sustainable economy: unepfi.org
343 UNEP FI (2022): Harmful marine extractives: Deep-Sea Mining: unepfi.org
344 UNEP FI (2022): Harmful marine extractives: Offshore Oil & Gas: unepfi.org
345 UNEP FI (2022): Harmful marine extractives: Dredging & marine aggregate extraction: unepfi.org

Innovative insurance products can mainstream nature in insurance solutions and can provide coverage for nature-positive outcomes. This distinction aligns with the proposed definitions of nature finance outlined in the discussion paper "Finance for Nature Positive: A Working Model".[346]

Risk transfer solutions for nature-positive refer to products that are designed to create measurable positive outcomes for nature. Mainstreaming nature in risk transfer solutions can be interpreted as products that support the transition to nature-positive by either insuring economic activities that avoid or reduce environmental pressures compared to business as usual, or by offering insurance that helps businesses shift towards more sustainable behaviours. This can be achieved through insurance policy terms and conditions, and by incorporating incentives and nature-related KPIs that encourage the adoption of sustainable practices. A key aspect of mainstreaming nature in risk transfer solutions is not just what is being insured—the types of activities and sectors—but also how it is insured.[347] This involves ensuring that insurance products incorporate incentives for positive nature-related outcomes while embedding guardrails to prevent the promotion of moral hazards that can lead to harmful behaviours and unsustainable practices. Insurers can also incorporate nature-based risk reduction measures that benefit both nature and businesses and communities, such as using nature-based solutions (NbS). This guide expands on the "Finance for Nature Positive Working Model," which focuses on impact mitigation, by addressing the specific role of insurance. It recognises that providing coverage for emerging nature-related risks and integrating nature's risk reduction value into risk models can contribute to nature-positive outcomes while strengthening resilience.

To avoid harmful practices and ensure insurance products contribute to nature-positive outcomes, insurers should consider reviewing product design features such as target market, underwriting policies and criteria, coverage, policy limits and deductibles, risk assessments, and risk prevention and reduction measures, sustainable or environmentally friendly features (refer also to the section on ESG risk management and underwriting). Insurance products must be carefully designed to avoid policy terms or conditions that can create perverse incentives for insureds.

Safeguards should be incorporated to prevent environmentally damaging behaviours and reduce the potential for moral hazard, defined as situations where clients may increase their exposure to risk because they do not bear the full cost of that risk-taking. As highlighted in the WWF report, "Underwriting Our Planet", two main types of moral hazards can be identified. The first involves riskier behaviours that lead to direct ecosystem destruction, while the second concerns recurrent repairs or replacements that can generate additional environmental impacts.[348]

346 UNEP FI and Finance for Biodiversity Foundation (2024). Discussion Paper Working Model Finance for Nature Positive: unepfi.org

347 Please refer to the WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites which introduced the concept of 'What to insure' and 'How to insure'.

348 Ibid.

Therefore, insurers should regularly review both new and existing insurance products to ensure they do not inadvertently contribute to or enable harmful activities.

Product design should support the transition to nature-positive practices. Insurance products can be designed with tailored policy terms and conditions, and risk/impact-based pricing can incentivise greener choices and more sustainable practices. These products can also promote the adoption of nature-based risk reduction measures that protect and enhance the resilience of insured assets, which can reduce clients' exposure to both physical and transition risks.[349]

Product design that aligns responsible and sustainable practices with risk reduction could have a higher chance of adoption. This concept is demonstrated in environmental policies, where applying environmental risk assessments allow for the introduction of risk reduction and loss prevention measures, resulting in benefits such as reduced deductibles.[350] This approach can also extend to other business lines, such as agriculture, where sustainable and regenerative practices can yield similar impact and risk reduction. For instance, crop insurance can support farmers who adopt practices such as the use of bio-fertilisers, no-till farming, or crop covers, which reduce the need for chemical fertilisers, promote healthier soils, and lower productivity risks. In the retail sector, for example, products can be tailored for eco-homes, covering sustainable features like green roofs or rain gardens. These examples offer incentives for greener practices, which in some cases can also lead to reduced nature-related risks.[351]

A key area for future exploration could Involve promoting the transition of businesses by integrating nature-related KPIs into transactions or policies, adjusting premiums or deductibles to reflect the reduction of environmental impacts (e.g., water use or effluents as part of a manufacturing process being replaced with low water use practices or biodegradable materials or chemicals).

Insurers should regularly review existing products, and when developing new products, consider incentivising behaviour and practices that prevent and reduce negative impacts on nature and nature-related risk to the client.

While not all the listed design features in the following priority action sections will be feasible for all insurance companies due to differences in business models, regulatory and geographical contexts, insurance companies should consider these options during both the development and review processes. Product design and development is highly individualised to each insurer. These proposed actions and considerations should be reviewed and, if suitable, adopted in a way that best aligns with the insurer's specific strategy, objectives and clients.

349 Ibid.
350 Ibid.
351 Note practices that reduce nature-related risks not necessarily translated into reduced underwriting risk, such as eco-homes and bio-based materials not necessarily decrease risk covered by property/home insurance policies.

General priority action (GBF targets #14–15, #21): Understand if an insurance product has a potential material interface with nature based on the risk it insures, the sector/activity it is offered to, and the locations involved. If so, integrate nature into the product development process by reviewing:[352]

a. If the product is contributing to reducing negative impacts on nature and increasing positive impacts on nature throughout the product lifecycle.
b. If the product includes the necessary guardrails to avoid negative impacts on nature, including the reduction of moral hazard related to certain lines of business (e.g., environmental pollution liability insurance and D&O insurance).
c. If nature-based risk reduction measures* would be available and feasible for the product (and the assets / activities the product is designed for).
d. If the product considers affected stakeholders (e.g., Indigenous Peoples and Local Communities**) through, for example, free, prior, and informed consent (FPIC), before accessing their knowledge, innovations, and practices. This includes fair and equitable sharing of benefits arising from the use of biodiversity, especially in the design of products in relation to conservation and sustainable use of biodiversity (e.g., insurance for nature-based solutions).

(*Nature-based risk reduction measures are strategies and actions that use natural processes and ecosystems to reduce the risk and impact of environmental hazards)

(**Affected stakeholders, as defined by the TNFD include ”people or groups that have been, or may be, negatively affected by an organisation’s operations, products, services, and value chains.”)

General priority action (GBF targets #14–15, #21): Identify existing insurance products to be reviewed and ensure that their design features are not leading to material harm to nature and are not creating moral hazards, particularly for certain lines of business such as environmental pollution liability insurance and D&O insurance. Products in scope for the review are products that have an interface with nature and / or enable activities that can have material impacts on nature.

Perform a regular review (e.g., annually as part of a LEAP assessment as required for TNFD-aligned reporting). As a minimum, set clear objectives to perform the review of insurance products (deemed to have a material interface with nature based on the risk they insure, the sector/activity they are offered to, and the locations involved) within a practical timeframe.

352 As the definitions and criteria for risk transfer solutions for nature-positive (as well as broader sustainability-related definitions and criteria) are still emerging, and still lack internationally-accepted and robust definitions, insurers should be aware and consider clear and transparent approaches and avoid any risk of providing misleading information. Also refer to International Association of Insurance Supervisors (2023). Draft Application Paper on climate risk market conduct issues in the insurance sector: iaisweb.org

Consider in the review design features such as target market/customers, underwriting policies and criteria, risk assessment and risk management requirements, product terms and conditions (e.g., coverage, policy limits, deductibles, covenants, risk- (impact-) based pricing). Where product features risk impacting nature negatively, consider updates to align with incentives towards avoiding and reducing negative impacts on nature and contributing towards nature-positive outcomes.

Insurers should take an active role in developing and underwriting insurance products that (a) support nature-positive business models that lead to nature-positive outcomes (b) facilitate the mainstreaming of nature-positive practices, and (c) cover emerging nature-related risks to avoid widening the protection gap while ensuring the relevant guardrails to avoid harming nature are in place.

Insurance products should be developed for assets or activities that significantly reduce pressures on nature compared to business-as-usual approaches. This could include different types of transition insurance, aimed at supporting new business models that contribute to the transition to a nature-positive economy.[353] Transition insurance can also provide a financial safety net for companies shifting towards sustainable practices. As businesses transition from harmful activities to more sustainable ones, financial risks, such as project delays or impacts on productivity and output, may arise. Other products such as environmental pollution liability insurance or surety bonds for conservation could also help with an orderly transition (e.g., restoration of operational sites at the end of extractive activities). However, it is critical that these products have appropriate guardrails in place to prevent moral hazards and avoid expansion of harmful activities.[354]

Additionally, insurers should develop insurance products designed to support nature-positive business models, such as coverage for projects that contribute directly to the restoration and conservation of ecosystems. This could include coverage for natural assets such as forests, wetlands, and mangroves, which play a key role in reducing environmental risks, including addressing climate change mitigation and adaptation.

Insurers are in a unique position to develop tailored insurance products that address the increasing nature-related risks faced by businesses. As ecosystems degrade, individuals, businesses and communities may encounter greater physical risks, including supply chain disruptions, operational interruptions, and damage to infrastructure. This presents an opportunity for insurers to offer innovative solutions that build resilience against these emerging risks.

The following categories for risk transfer solutions for nature have been developed in line with the "Finance for Nature-Positive Working Model"[355] and expanded to provide an insurance perspective:

353 Note that while the concept of nature-positive, as defined by the Nature-Positive Initiative (NPI), is a global societal goal rooted in the GBF's mission to "halt and reverse biodiversity loss by 2030", the concept of "nature-positive economy" has not been defined, and is not part of the GBF, but has been inspired by its whole of society approach and inclusion of private sector in the targets 14 and 15.

354 WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites

355 UNEP FI and Finance for Biodiversity Foundation (2024). Discussion Paper Working Model Finance for Nature Positive: unepfi.org/

1. **Risk transfer solutions for nature positive ("insuring nature"):**
   - Insurance of natural assets which help de-risk investments in nature restoration and conservation.
   - Insurance for the construction and service delivery of nature-based solutions.
   - Insuring business models or projects that contribute to nature-positive outcomes.[356]

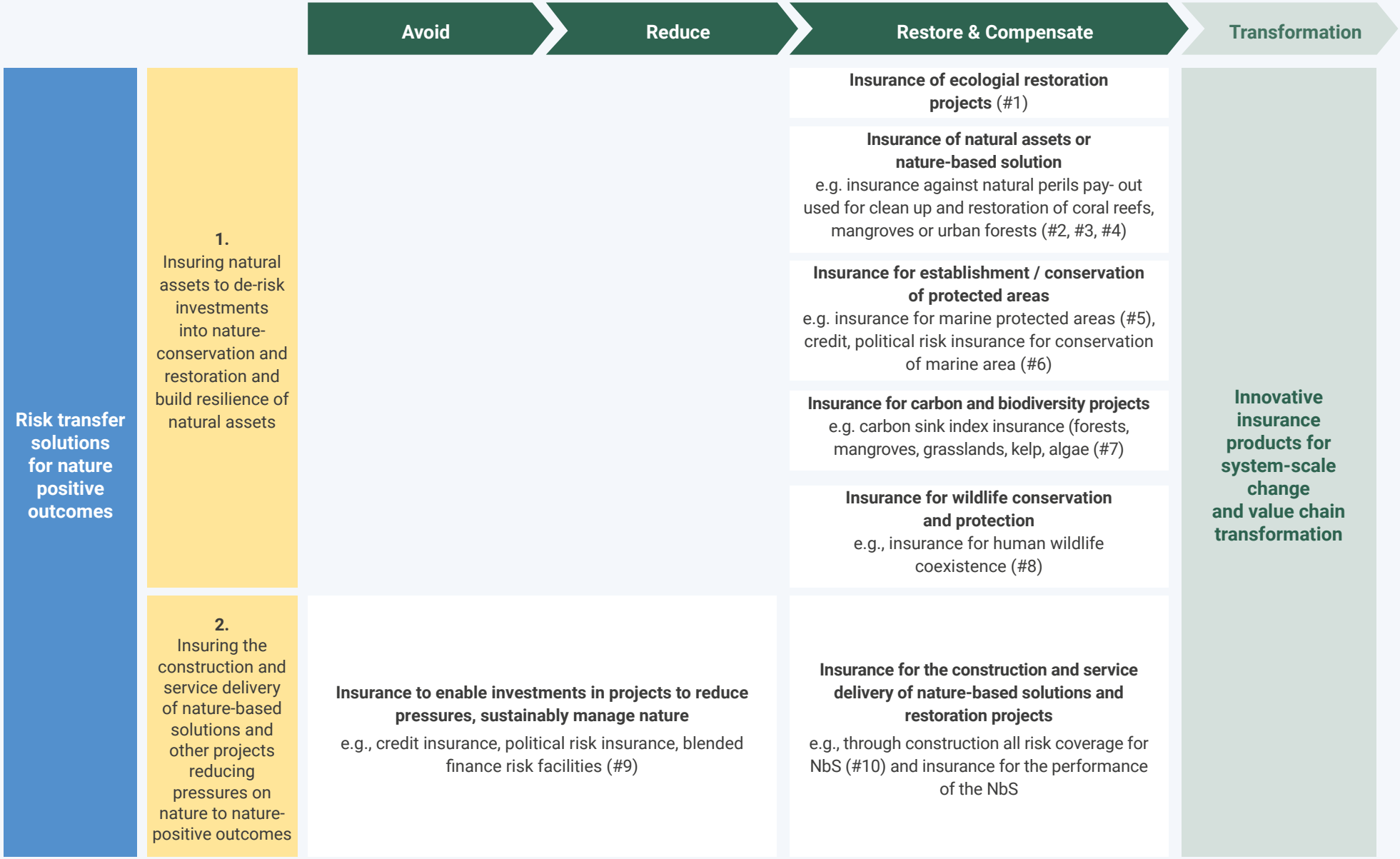
2. **Mainstreaming nature in risk transfer solutions (which can be viewed as "transition insurance"):**
   - Insuring business models that contribute to the transformation by avoiding and reducing pressures on nature compared to business as usual.
   - Insuring risks associated with the transition and adoption of alternative business models or processes.
   - Promoting green and resilient practices and choices e.g., adoption of alternatives that avoid or reduce environmental pressures or move toward sustainable use, and adoption of nature-based solutions to reduce risks and prevent losses. This can be achieved through insurance policy terms and conditions, incentives through risk-(impact-) based pricing, and sustainability-linked products integrating key performance indicators for nature (KPIs).

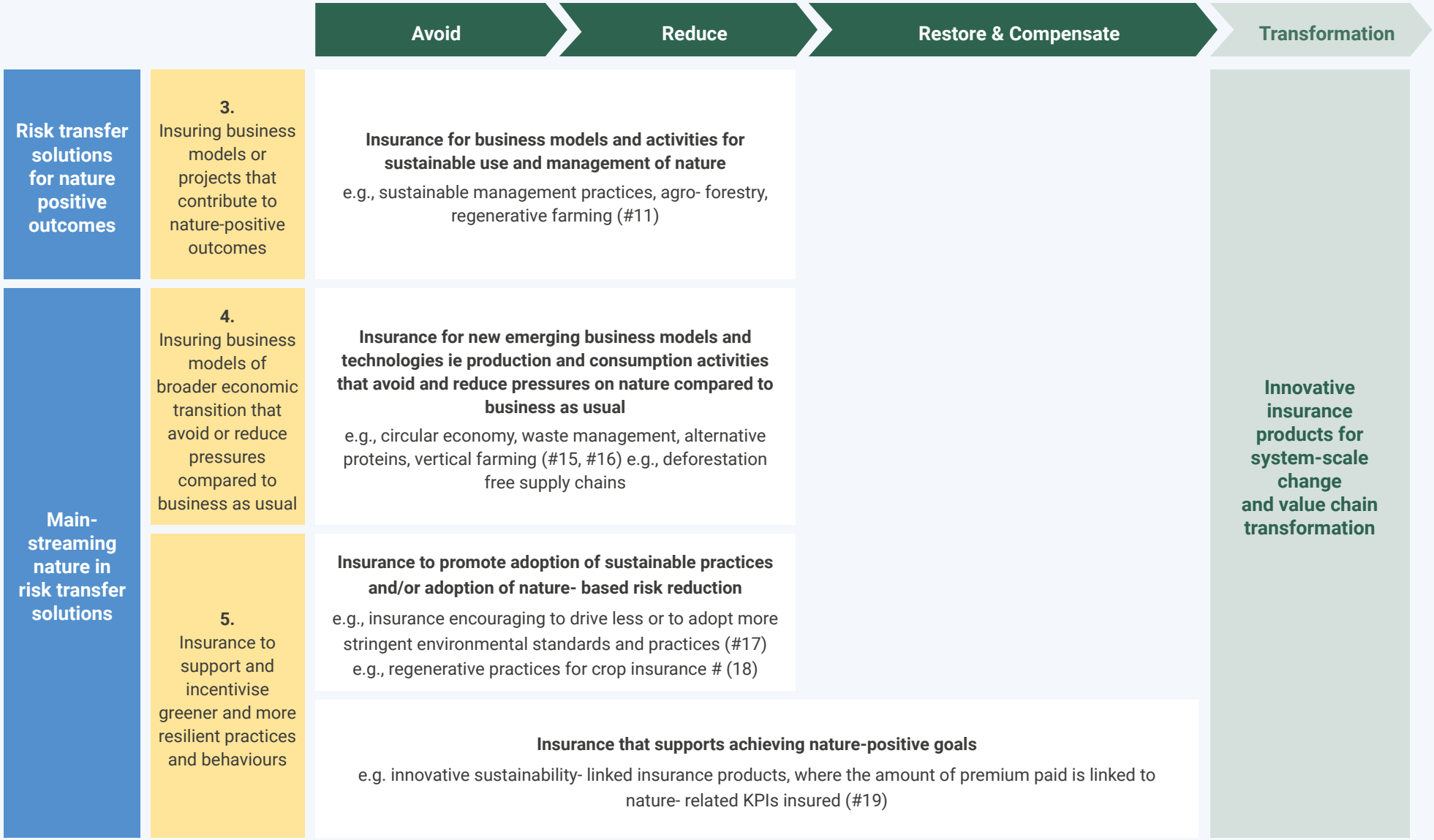
3. **Risk transfer solutions against nature-related physical risks ("insuring nature-related risks")**
   - Insurance against new emerging nature-related physical risks (e.g., soil health, water availability, pests, and diseases), while promoting loss prevention and risk reduction through nature-based solution.
   - Insurance against natural hazards (e.g., storms, floods) and nature-/ecosystem-based risk reduction i.e., incentivising resilience building through the adoption of nature-based risk reduction measures for insurance premium reduction.

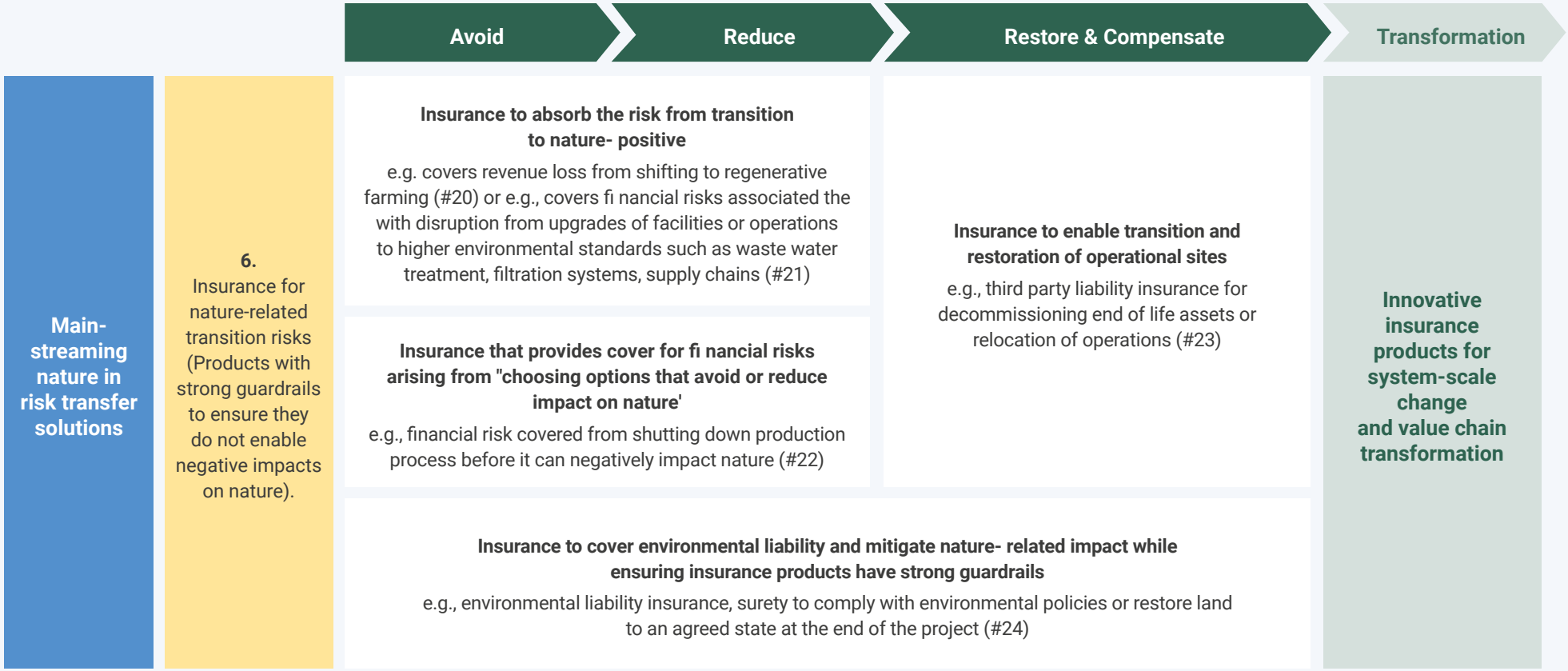
356 Additional guidance for business models and activities contributing or aligned with nature-positive outcomes, refer to emerging taxonomies that include specific objectives (and technical screening criteria) for nature such as protection, conservation and pollution prevention (EU taxonomy for sustainable activities), the International Finance Corporation (IFC) Biodiversity Finance Reference Guide, providing a indicative investment opportunities eligible for biodiversity finance, and the World Business Council for Sustainable Development (WBCSD) Roadmaps to Nature Positive, setting out which actions key sectors can take to avoid and mitigate impact on nature, and which practices and activities within these sectors are contributing to nature-positive outcomes.

Categories—risk transfer solutions for nature (initial framework)

Impact Mitigation




Avoid
Reduce
Restore & Compensate
Transformation
Risk transfer solutions for nature positive outcomes
3. Insuring business models or projects that contribute to nature-positive outcomes
Insurance for business models and activities for sustainable use and management of nature
e.g., sustainable management practices, agro- forestry, regenerative farming (#11)
Main-streaming nature in risk transfer solutions
4. Insuring business models of broader economic transition that avoid or reduce pressures compared to business as usual
Insurance for new emerging business models and technologies ie production and consumption activities that avoid and reduce pressures on nature compared to business as usual
e.g., circular economy, waste management, alternative proteins, vertical farming (#15, #16) e.g., deforestation free supply chains
5. Insurance to support and incentivise greener and more resilient practices and behaviours
Insurance to promote adoption of sustainable practices and/or adoption of nature- based risk reduction
e.g., insurance encouraging to drive less or to adopt more stringent environmental standards and practices (#17) e.g., regenerative practices for crop insurance # (18)
Insurance that supports achieving nature-positive goals
e.g. innovative sustainability- linked insurance products, where the amount of premium paid is linked to nature- related KPIs insured (#19)
Innovative insurance products for system-scale change and value chain transformation


Avoid
Reduce
Restore & Compensate
Transformation
Main-streaming nature in risk transfer solutions
6. Insurance for nature-related transition risks (Products with strong guardrails to ensure they do not enable negative impacts on nature).
Insurance to absorb the risk from transition to nature- positive
e.g. covers revenue loss from shifting to regenerative farming (#20) or e.g., covers fi nancial risks associated the with disruption from upgrades of facilities or operations to higher environmental standards such as waste water treatment, filtration systems, supply chains (#21)
Insurance that provides cover for fi nancial risks arising from "choosing options that avoid or reduce impact on nature'
e.g., financial risk covered from shutting down production process before it can negatively impact nature (#22)
Insurance to enable transition and restoration of operational sites
e.g., third party liability insurance for decommissioning end of life assets or relocation of operations (#23)
Innovative insurance products for system-scale change and value chain transformation
Insurance to cover environmental liability and mitigate nature- related impact while ensuring insurance products have strong guardrails
e.g., environmental liability insurance, surety to comply with environmental policies or restore land to an agreed state at the end of the project (#24)

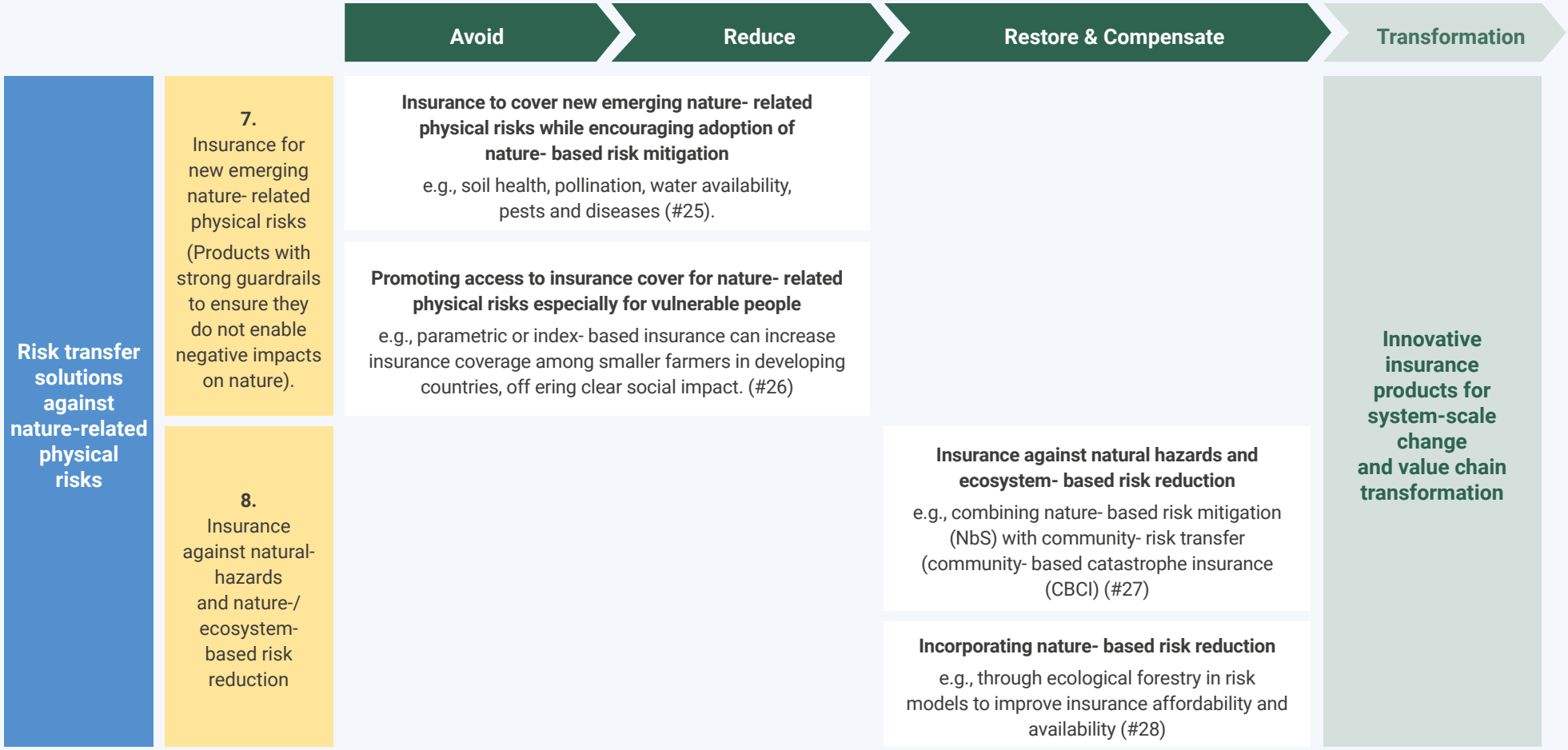


Figure 22: Initial framework risk transfer solutions for nature[357]

357 This is indicative only, a taxonomy for risk transfer solutions for nature will continue to evolve with emerging practices and with further developments and enhancements around the definition of 'nature finance'.

For examples and case studies for each of the listed categories of "risk transfer solutions for nature" refer to the upcoming complementary PSI resource "Insurance for nature positive—practical case studies and emerging practices".

Company-specific actions (GBF targets #2–3; #5–8; #9–10, #12–13; #19):[358] Provide insurance products that enable (measurable) nature-positive outcomes for nature (risk transfer solutions for nature positive outcomes) including insurance for nature restoration and conservation as well as insurance that enables scaling and investments in nature-positive business models and nature-based solutions (NbS).

Provide insurance products for business models and activities that contribute to the transformation towards nature-positive by avoiding and reducing pressures compared to business as usual as well as products enabling the transition to nature-positive business models (mainstreaming nature in risk transfer solutions).

Provide insurance products for new emerging nature-related physical risks with strong safeguards and insurance products against natural hazards leveraging nature-/ecosystem-based risk reduction.

This should also allow room for innovation that can support system-scale change and value chain transformation.

Also refer to the section on "engagement with stakeholders" to advocate for a conducive policy environment for these insurance solutions to scale.

Company-specific actions (GBF targets #2–3; #5–8; #9–10, #12–13; GBF #19):

1. Evaluate feasibility and relevance of risk transfer solutions for nature based on the organisation's business model, strategy and objectives, and regulatory and geographical context.
2. Consider prioritising solutions that can achieve significant scale within the company's business model and strategy.
3. Consider prioritising solutions that significantly contribute to NBSAPs and national policies.
4. Consider prioritising solutions aligned with the organisation's climate strategy and ESG initiatives.
5. Consider prioritising solutions that can significantly contribute to building resilience where the organisation operates in locations with a significant protection gap.

358 Please refer to 'Taxonomy of Risk Transfer Solutions'

General priority actions (GBF targets #7–10, #12–13, #16): Embed environmentally friendly and nature-based risk reduction design features in insurance products. Consider the following relevant design features along the entire product lifecycle[359]

- Promote green, smart, and sustainable choices, such as eco-friendly solutions and reducing harmful behaviours or consumption.
- Promote resilient choices, including nature-based risk reduction measures for homes, buildings, agriculture, and urban areas.
- In claims services and supplier engagement, embed circular economy principles, and focus on building back greener and more resilient infrastructure (refer to the section on "claims management and supplier engagement").

Promotion of these green and resilient features can be supported through insurance policy terms and conditions e.g., deductibles, (impact-) risk-based pricing to incentivise adoption.

5.8 Claims management and supplier engagement

As insurers work towards a resilient, nature-positive future, it is essential to consider nature-related dependencies, impacts, risks, and opportunities across the insurance value chain. A significant part of insurers' ability to take effective action lies within their claims management process and with their suppliers.

For example, a study by the insurance company Co-operators in Canada found that over 26 million tonnes of waste are sent to landfills annually. In 2023 alone, insurance claims processed by Co-operators contributed 116,000 tonnes of waste, primarily from fire and flood-related claims. With 98% of this waste (e.g., carpets, drywall, furniture) ending up in landfills across North America, the survey also noted that only 23% of Canadians are aware of repair or restoration options for claims, despite 65% expressing a preference for repair if feasible. However, only 19% of claimants in the past five years were offered this choice.[360]

Suppliers—including adjusters, vendors, contractors, and repair networks—are central to the claims settlement process and can contribute to the insurance business's environmental footprint. Factors such as the location of suppliers' operations, their supply chains, and sourcing practices can significantly influence the risk profile and environmental impact of an insurance product. TNFD's guidance on value chains underscores the importance of assessing and disclosing nature-related risks, even when available data or direct control over the supply chain is limited.[361] This implies that insurers should evaluate the material nature-related issues of their suppliers, their interactions with biodiversity-sensitive areas and affected communities, including Indigenous Peoples and

359 WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites

360 Insurance Business (2024). Insurance industry must break 'cycle of unsustainable claims': insurancebusinessmag.com accessed on 10 November 2024.

361 TNFD (2024). Guidance on value chains: tnfd.global

Local Communities. The TNFD LEAP approach can assist insurers in identifying which suppliers are most material, by sector or location, and should therefore be prioritised for engagement. Incorporating these nature-related considerations into the procurement framework, such as sourcing guidelines and third-party due diligence processes, is therefore highly relevant.

Insurers can promote environmentally friendly claims settlement practices, either directly or indirectly through claims service providers (e.g., adjusters, repair networks), to avoid or reduce pressures on nature arising from claims. At times, intermediaries (e.g., brokers and advisors) serve as primary point of contact in the claims settlement process, which gives them an important role in promoting sustainability in the insurance value chain. Insurers should inform intermediaries of the available environmentally friendly claims options.

Building on this, insurers should offer products aligned with circular economy principles—such as promoting "repair over replacement" and "build back greener" initiatives that include upgrades to more environmentally friendly and resilient solutions. Insurers should actively engage with their supplier network to support these models. Through this engagement, insurers can ensure that suppliers' offerings and services support environmentally friendly claims options and that these sustainable choices are utilised across the claims settlement process.

Therefore, for effective implementation, insurers should collaborate with suppliers to ensure they are equipped to offer sustainable alternatives, have the operational capacity to manage these activities effectively, and to inform clients of environmentally friendly options during the claims settlement process.

This approach should also consider possible actions outlined in the UN Principles for Sustainable Insurance (Principle 1):[362]

- Respond to clients quickly, fairly, sensitively and transparently at all times and make sure claims processes are clearly explained and understood.
- Integrate ESG issues into repairs, replacements and other claims services.

While not all the listed design features in the following priority action sections will be feasible for all insurance companies due to differences in business models, regulatory and geographical contexts, insurance companies should consider these options during both the development and review processes. The claims management process is another highly individualised practice. These proposed actions and considerations should be reviewed and, if suitable, adopted in a way that best aligns with the insurer's specific strategy, objectives and clients.

362 UNEP FI (2012): The Four Principles for Sustainable Insurance: unepfi.org

General priority action (GBF targets #14–15, #21): Consider reviewing whether existing or new claims services have a significant interface with nature and could be materially contributing to increasing environmental pressures. Assess opportunities to reduce resource use, pollution and waste generation in the claims settlement process. For example, insurers can start by identifying areas where repair solutions for defective components are already available.

General priority action (GBF Targets #7–10, #12–13, #16): Embed environmentally friendly design features in claims services. Consider the following relevant design features throughout the product and claims lifecycle:

- Embed circular economy principles in claims services such as prioritising repair over replacement[363] or offering sustainable replacement options (e.g., second hand products).
- Promote build back greener and more resilient approaches by incorporating a) environmentally friendly materials, or systems that reduce an asset's environmental footprint (e.g., renewable heating and energy production)[364] and b) resilient construction options such as nature-based risk reduction measures (e.g., rain gardens).

General priority action (GBF targets #5, #9, #16): Non-life insurers should enhance their third-party due diligence processes to address nature-related issues associated with key suppliers. This includes evaluating the sustainability of suppliers' sourcing, operations, and waste management practices, particularly where activities or operations are taking place in biodiversity-sensitive or material locations.[365] Additionally, ongoing monitoring of suppliers' environmental management practices is important to ensure compliance with relevant standards.

Insurers should enhance third-party due diligence to ensure that suppliers have processes and controls in place to respect Indigenous People's rights to self-determination,[366] adhering to free, prior, and informed consent (FPIC)[367] for Indigenous Peoples and Local Communities in areas where materials are sourced.

363 WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites
364 Ibid.
365 For definition of biodiversity sensitive and material location refer to: TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global
366 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)
367 TNFD (2024): Guidance on engagement with Indigenous Peoples, Local Communities and affected stakeholders: tnfd.global

General consideration (GBF targets #5, #9, #16): Consider engaging suppliers to ensure they can provide services focused on 'repair over replacement' options (e.g., using recycled parts in repairs, drying in place, or soft content cleaning)[368] and 'sustainable replacements' (e.g., sourcing second-hand furniture or white goods). Suppliers should also have processes in place to communicate these options to affected clients.[369]

Encourage suppliers to adopt sustainable waste management practices, such as recovering parts where possible, donating reusable items, or adhering to established waste management standards.

Encourage suppliers to source materials sustainably, incorporate alternatives with a lower environmental footprint (e.g., alternative sustainable building materials such as bio-based chemicals, bird-bat friendly building materials and other habitat enhancing materials[370]) or using sustainable systems and technologies (e.g., water recycling, closed-loop water systems). Suppliers should also have processes in place to inform affected clients of these environmentally friendly options.[371]

Consider engaging with suppliers so they become knowledgeable about offering insights into resilient building solutions, such as incorporating green-blue infrastructure (e.g., raingardens, bioswales), and have the capacity to implement these solutions as part of the repair or rebuild process.

Encourage suppliers to minimise their own operations' environmental impacts, such as reducing noise pollution during repairs or considering GHG emissions from transportation. Creating buffer zones or utilising environmentally conscious tools and materials on-site can further reduce their operational footprint.

368 WWF, Deloitte (2023), Underwriting Our Planet: wwf.ch/sites, Insurance Business (2024). Insurance industry must break 'cycle of unsustainable claims': insurancebusinessmag.com/ accessed on 10 November 2024.

369 Acc. to study by the insurance company Co-operators in Canada only 23% of policy holders were aware there are alternative options available, and only 19% of policy holders were given the option after they have raised a claim.

370 This should be consider together with the impact to the risk profile of the insured asset, as certain materials could increase potential risks e.g., bio-based materials and fire risk.

371 World Business Council for Sustainable Development (2023). Roadmap to Nature Positive. Foundations for the built environment system: wbcsd.org

6. Priority action on nature–life & health insurance business

6.1 Capacity building and culture

Life & health insurers should prioritise building their internal knowledge and capacity to systematically integrate nature-related risks into their organisations. This entails a comprehensive understanding of how their underwriting portfolios, customers, and providers interact with nature. Insurers' foundational knowledge of climate change's health impacts can serve as a starting point to tackle the broader issue of biodiversity loss and ecosystem degradation. However, this shift requires further education on concepts like biomes, ecosystems, and species loss.[372]

Currently, nature and biodiversity loss may not be seen as immediately relevant across all teams within insurance companies. To address this, companies should assess the current understanding of nature-related issues within various departments. Various teams (e.g., sustainability, risk management, underwriting, product development, procurement) will likely need significant upskilling to understand how nature-related risks impact life & health insurance business more comprehensively. Identifying key individuals in different teams who already engage with nature-related issues can help build internal champions to support the company's nature-positive initiatives.

To successfully integrate nature-related considerations into core business strategies and operations, technical teams—such as underwriting, risk management, product development, and procurement—should be involved, as they will implement the company's actions and plans. Raising awareness and securing buy-in from senior leadership, including the Board of Directors, executive management, and middle management, is essential to ensure that nature-related priorities are taken seriously across the organisation.

Building awareness and capacity across all employees will cultivate a nature-positive culture, where the rationale for taking action and the means of doing so are understood by everyone. This cultural shift is critical for ensuring broad support and effective implementation of the organisation's nature-related initiatives.

372 Geneva Association (2024): Climate Change: What does the future hold for health and life insurance?: genevaassociation.org

General priority action (GBF targets #14–15, #21): Evaluate the current understanding of nature-related issues across teams, focusing on identifying knowledge gaps. Deliver targeted training for key teams (e.g., sustainability, risk management, underwriting, product development, procurement) on nature-related dependencies, impacts, risks and opportunities and the relevance of life & health insurance through the insurance value chain, including upstream actors and customers, and strategies to reduce risks and building the resilience for clients. Enhance the key team's understanding of relevant policy and regulatory frameworks (e.g., GBF, Paris Agreement, CSRD, CSDDD) and disclosure frameworks, standards and other initiatives (e.g., TNFD, ESRS, ISSB, GRI)[373] and the latest nature-related research on life & health risks and opportunities to support decision-making.

Provide general awareness training for other staff on the global biodiversity crisis and its relevance to health outcomes. Consider providing general awareness training for intermediaries such as brokers and agents and other service providers.

General priority action (GBF targets #14–15, #21): Engage the Board of Directors, executive management, and middle management through focused awareness initiatives.[374] Highlight the health risks tied to nature loss, the life & health insurance industry's exposure to these risks, and the long-term implications for insurability. Emphasise the role of life & health insurers in contributing to nature-positive outcomes and building resilience, and corresponding commercial opportunities. Secure support and buy-in from senior leadership to set actions and to embed nature in the company's sustainability strategy and core business operations.

Consider integrating nature related KPI's (e.g., level of insurance for nature-related risks, solutions, and services to avoid and prevent risks) into senior management's remuneration policies to further drive leadership and commitment.

373 UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi.org

374 UNEP FI (2024). Nature in the Boardroom: unepfi.org

6.2 Strategy and governance

Incorporating environmental, social, and governance (ESG) considerations into the governance frameworks of life & health insurance companies is becoming increasingly important. On balance, while there has been progress, the integration of nature-related risks remains at an early stage. The PSI ESG guide for life & health insurance business highlights actions such as defining roles and responsibilities and creating escalation processes to manage ESG-related issues.[375] There is a clear opportunity to extend these processes to explicitly include nature-related issues.

To fully integrate nature into governance and strategy, nature-related considerations must be embedded in the company's sustainability strategy and other relevant business frameworks such as risk management and underwriting guidelines. This should lead to transparent public disclosures aligned with the relevant disclosure frameworks or standards (e.g., TNFD, ESRS, ISSB, GRI)[376] demonstrating a commitment to managing nature-related risks. Strategic components can include priority actions focused on resilience, avoiding and reducing nature loss, and seizing nature-positive opportunities. Each life & health insurer should define its actions based on its business model, geographic and regulatory context.

Governance structures should ensure Board-level oversight of nature-related risks, with regular discussions on emerging risks, their implications for customers, financial stability, and long-term insurability. Similarly, management should be empowered to address these risks within existing committees and decision-making processes. Clear escalation pathways should be in place to address nature-related risks at the appropriate levels.[377]

General priority action (GBF targets #14, #21): Life & health insurers should establish Board oversight for nature-related risks by integrating nature considerations into existing ESG governance. This includes:

- Regular Board-level discussions on the emerging risks of nature loss and implications to customers and the organisation.
- Assigning clear responsibilities to senior management for assessing and managing nature-related risks.
- Assigning clear responsibility to senior management for implementing priority actions for nature.
- Ensuring sustainability committees and other relevant committees regularly include nature in their risk reviews and track progress on actions.

375 UNEP FI (2022): Managing environmental, social and governance risks in life & health insurance business: unepfi.org

376 UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi/org

377 Ibid.

Consider appointing a dedicated individual to take overall responsibility for managing and overseeing nature-related issues within the organisation.[378]

General priority action (GBF Target #14, #21): Life & health insurers should integrate nature-related actions into their sustainability strategy and update stakeholders through relevant disclosure frameworks or standards (e.g., TNFD, ESRS, ISSB, GRI).[379] Life & health insurers can also consider embedding nature-related considerations in relevant business frameworks (e.g., risk management and underwriting guidelines).

6.3 Engagement with stakeholders

Implementing the nature actions will require an ecosystem-wide approach. Life & health insurers should engage with key stakeholders to promote sustainable lifestyle choices that improve health outcomes while reducing supplier and consumer pressures on nature.

Engagement with government agencies, public health departments, and regulatory bodies is essential to raise awareness of the health and economic threats posed by nature-related risks. For instance, the Green Finance Institute (GFI) projects that a combined pandemic and AMR scenario[380] could erode 12% of the GDP of the United Kingdom of Great Britain & Northern Ireland. Globally, AMR could cost between USD 300 billion and USD 1 trillion annually by 2050, while already costing the National Health Services (NHS) of the United Kingdom of Great Britain & Northern Ireland GBP 180 million per year.[381]

Policy engagement is crucial to better understand emerging nature-related health risks and promote actions that improve public health through sustainable lifestyle choices. For example, Denmark's "Danish Action Plan for Plant-based Foods" aims to green its agricultural sector by promoting healthy, climate-friendly diets. This shift, including reduced meat consumption, could save DKK 12 billion in health costs and cut Denmark's climate footprint by 31–45%, according to the Climate Council and the University of Copenhagen.[382]

378 UNEP FI (2024). Nature in the Boardroom: unepfi.org

379 UNEP FI (2024). Accountability for Nature: Comparison of Nature-related Assessment and Disclosure Frameworks and Standards: unepfi/org

380 Antimicrobial resistance (AMR) and zoonotic diseases are closely linked with deforestation and habitat destruction which can bring humans and wild animals into closer contact and have been shown to lead to greater abundance of antibiotic resistance genes in soil. The development of antimicrobial resistance (AMR) is significantly influenced by the overuse and misuse of antimicrobial medicines in healthcare, agriculture, and animal husbandry.

381 Green Finance Institute (2024): Assessing the Materiality of Nature-Related Financial Risks for the UK: greenfinanceinstitute.com

382 Ministry of Food, Agriculture and Fisheries of Denmark (2023): Danish Action Plan for Plant-based Foods: en.fvm.dk

"One Health Approach"—Connecting health of humans, animals, plants and the environment

In March 2022, the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (WOAH), the UN Environment Programme (UNEP) and the World Health Organization (WHO), formed a quadripartite collaboration to promote "One Health", a holistic approach to sustainably balance and optimize the health of humans, animals, plants, and the environment.

"One Health" recognises the health of humans, domestic and wild animals, plants and the wider environment are closely linked and interdependent.[383]

The GBF calls for the "One Health" approach to be integrated into National Biodiversity Strategies and Action Plans. During the 16th Conference of the Parties (COP) to the CBD, a "Global action plan for biodiversity and health" has been submitted.[384]

Life & health insurers can benefit from multistakeholder platforms, such as through the PSI Working Group for Nature or the Forum for Insurance Transition Net Zero (FIT). To better understand the links between nature-related risks and mortality and morbidity risks, collaboration with academic institutions, healthcare providers, and the actuarial community is essential to develop appropriate methodologies, data, and tools.

Life & health insurers will need to identify and engage key stakeholders to enable their nature actions across the insurance value chain.

General priority action (GBF targets#1-3, #5, #7-13, #14): Engage with actors and key stakeholders of the life & health insurance ecosystem to advocate and promote sustainable lifestyle choices that positively contribute to health outcomes and reduce consumer-driven pressures on nature, including:

- Raise awareness of policymakers, government agencies, healthcare providers on emerging nature-related risks, support training programmes, and consider providing access to relevant data and research (e.g., public health costs of inaction on nature loss).

383 UNEP, FAO, WHO, World Organisation for Animal Health (2022). Quadripartite Memorandum of Understanding (MoU) signed for a new era of One Health collaboration as signed on April 2022: unep.org

384 Conference of the Parties to the CBD (2024). Biodiversity and health. Draft decision submitted on 30 October 2024: cbd.int

- Collaborate with policymakers, national and local government agencies to integrate nature-based solutions (NbS) into urban planning and public health strategies such as:
  - Incorporating green and blue spaces in urban areas to enhance biodiversity and support human physical and mental wellbeing.
  - Promoting nature restoration and conservation (e.g., community gardens) and their benefits such as nutritious food, clean air, and water.
  - Promoting time in nature to improve physical and mental health.

- **Engage with Indigenous Peoples, Local Communities and Affected Stakeholders** in the UN Guiding Principles on Business and Human Rights, and directly engage civil society, local resource users and communities, and other relevant stakeholder groups in applying this guide (or similar).[385]
- Collaborate with key stakeholders such as healthcare providers and the scientific community to produce and access nature-related information (e.g., database on nature-related impacts on mortality and morbidity to support enhancements in actuarial capabilities for nature-related risks and to identify nature-based solutions).
- Advocate for the protection and sustainable use of genetic resources and biodiversity in pharmaceuticals or biotechnology and promote access and benefit-sharing for nature conservation and with Indigenous Peoples and Local Communities for traditional medicine and practices.[386]

385 United Nations Human Rights, Office of the High Commissioner (2011). Guiding principles on business and human rights: ohchr.org

386 16th Meeting of the Conference of the Parties to the CBD (2024). Digital sequence information on genetic resources: cbd.int which resulted in the establishment of the "Cali fund", a plan that organisations in sectors that rely on DNA sequences—such as pharmaceuticals, biotechnology, and food supplements, put either 1 % of profit or 0.1% of revenue is in the fund. Which is aimed to be used for nature conservation and benefit sharing with Indigenous Peoples and Local Communities.

6.4 Engagement with clients

Client engagement is increasingly recognised as crucial in helping clients transition to sustainable practices. This includes setting sustainability expectations, supporting transition plans, and offering technical and financial capital.[387] In the insurance industry, this entails engaging with both corporate and retail/individual clients.

For life & health insurers, client engagement can help better understand and prevent growing nature-related risks to health and wellbeing. Aside from engagement opportunities at the time of policy renewal, insurers can rely on existing awareness programmes distributed either directly by insurers or by healthcare providers and agents. These programmes can inform customers on nature-related risks, such as the emergence of new diseases or pandemics, and risk reduction measures such as vaccines and health risk advisories and guidelines.

Client engagement programmes could incorporate early warning systems such as air quality updates through health apps. Raising awareness of lifestyle choices that directly affect both personal health and the environment (e.g., dietary habits, transportation choices) could be part of insurers' preventative initiatives and with healthcare providers..

For corporate clients, engagement could focus on identifying transition and physical risks from nature loss. Insurers can help businesses understand how biodiversity loss can affect employees, particularly in sectors such as agriculture or construction, where environmental changes (e.g., extreme heat) threaten worker health. By supporting risk management, insurers can protect employees while helping businesses reduce their environmental impact.

General priority action (GBF targets #7, #8, #16): Develop (or update) client awareness programmes in relation to environmental impacts of lifestyle choices. Integrate nature in existing educational or awareness programmes (e.g., nutritional, fitness and mental health programmes with access to resources and services) and update programmes to promote understanding of how lifestyle activities can reduce pressures on nature and also reduce health risk from climate and nature-related risks (e.g., providing individual plans, resources, apps and educational programmes on how individual choices on diets, form of transportation and physical activity have an indirect impact on nature).

387 CISL (2023): Let's Discuss Nature with Climate: Engagement Guide: cisl.cam.ac.uk

6.5 ESG risk management and underwriting

Over the years, managing ESG risks in life & health insurance has generally been less discussed and addressed compared to non-life insurance. However, in 2022, the PSI Life & Health Working Group produced the first global guide to manage ESG risks in life & health insurance, outlining how ESG risks can be integrated into core business strategies and operations.[388]

This guide builds on the foundation laid by the 2022 PSI ESG guide, expanding the scope to include the concept of double materiality. This approach incorporates both the indirect impacts on nature of insurers' activities, as well as risks to insurers such as reputational risks from unsustainable practices, and the physical risks related to nature that could affect mortality and morbidity rates, and potentially creating underwriting risks. Life & health insurers should broaden their ESG risk management and underwriting frameworks to incorporate nature-related risks and opportunities.[389]

Nature-related risks should be a core part of the due diligence and risk assessment process for life & health insurers. This is particularly relevant for:

- Due diligence and group insurance policies: Insurers conducting due diligence for companies with group insurance policies should expand their assessments to consider the companies' potential material negative impacts on nature. Focus should be given to businesses in biodiversity-sensitive or material locations or those facing emerging regulatory requirements due to climate- or nature-related transitions. Failure to manage these risks may result in increased reputational and financial risks for insurers.
- Due diligence for investment-linked policies: ESG risk management guidance for investments already exists but should be expanded to address specific nature-related risks and to prevent and reduce material negative impacts on nature or in biodiversity sensitives areas or material locations.[390]

Although life & health insurance may not directly enable businesses to harm nature, they provide critical social safety nets for employees and communities. Therefore, insurers should incorporate environmental as well as social considerations into their underwriting practices. Additionally, investment-linked insurance solutions should prioritise investments towards projects that have a positive or neutral impact on nature.

Nature-related risks such as COVID-19 can already be reflected in risk management frameworks through the excess mortality in mortality risk models of life & health insurers, as well as through pandemic scenarios as part of their Own Risk Solvency Assessment (ORSA) frameworks. Pandemic risks are usually not excluded from insurance coverage. However, other nature-related risks from ecosystem degradation remain largely unaddressed in underwriting processes and risk models due to limited historical data.[391]

388 UNEP FI (2022): Managing environmental, social and governance risks in life & health insurance business: unepfi.org

389 Ibid.

390 For definition of biodiversity sensitive and material location refer to: TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global

391 As per feedback provided by working group members.

For health coverage, policy terms and conditions are generally renewed and updated using historical data. However, nature-related risks such as chronic environmental degradation (e.g., long-term exposure to pollutants) could affect long-term contracts such as annuities, where gradual health impacts accumulate over time, potentially impacting mortality risks.[392] Through these insurance practices, policyholders may be affected, particularly in scenarios where healthcare costs rise due to nature-related risks (e.g., availability of pharmaceuticals), or if access to insurance becomes limited under such conditions.

Studies have also indicated potential social risks if insurers start to adjust premiums based on exposure to environmental factors. For example, higher premiums in areas with poor air or water quality could disproportionately impact vulnerable communities. This would widen the protection gap and raise social equity concerns.[393] Insurers should focus on preventative measures to address nature-related risks. This includes early warning systems for pollution levels and promoting preventative care to maintain insurability for vulnerable populations.[394]

General priority action (GBF targets #1-4, #7-8, #9-10, #16): Consider integrating nature-related issues into ESG due diligence processes, especially in the contexts of group insurance policies. Review businesses for their potential material negative impacts on nature or their operations in biodiversity-sensitive areas. While life & health insurance may not directly facilitate insured entities' operations, it could play a critical role in supporting employees during the transition of businesses to nature-positive operations and practices.

Company-specific action (GBF targets #1-4, #7-8, #9-10, #16): For investment-linked insurance products, integrate nature into ESG risk management:

- Consider establishing investment policies, guidelines and criteria for sectors and activities which can have a material negative impact on nature (e.g., water consumption, land-use change, waste and pollution) and for activities in biodiversity-sensitive or material locations (i.e., where activities have material nature-related impacts or dependencies in a locations).[395]
- Consider investing in companies or projects that are contributing to avoiding or reducing negative impact on nature compared to business as usual or have a positive impact on nature.

General priority action (GBF targets #14–15, #21): Integrate nature-related issues into ESG risk management and underwriting frameworks (refer to PSI ESG guide for life & health insurance).[396]

392 EIOPA (2023): EIOPA Staff paper on nature-related risks and impacts for insurance: eiopa.europa.eus
393 Moberly, T. Declaring a health and care emergency. BMJ 384, q256 (2024).bmj.com
394 Based on the recommendations of the PSI guide "Health is Our Wealth" (2023): unepfi.org
395 For definition of biodiversity sensitive and material location refer to: TNFD (2023): Guidance on the identification and assessment of nature-related issues: The LEAP approach: tnfd.global
396 UNEP FI (2022): Managing environmental, social and governance risks in life & health insurance business: unepfi.org

6.6 Risk transfer solutions and product design

Life & health insurers have a key role to play in addressing the protection gap and in promoting sustainable, healthier lifestyles through innovative insurance solutions.

A major challenge for insurers in addressing nature-related risks is the lack of long-term data linking events such as biodiversity loss to mortality and morbidity risks. This issue mirrors the difficulties in assessing climate-related health risks, where limited data constrains risk analysis and quantification and product design, as highlighted by The Geneva Association.[397] As with climate risks, life & health insurers need to bridge actuarial gaps by enhancing their understanding of how nature-related risks affect health outcomes.

Life & health insurers can take a proactive approach by focusing on risk prevention and reduction. Aside from client engagement efforts, insurers can look into product design to deliver innovative solutions. This can involve tailoring underwriting guidelines to incentivise and reward sustainable behaviours, encouraging policyholders to adopt greener, more health-conscious choices. This approach, sometimes referred to as "impact underwriting", allows insurers to account for and promote positive lifestyle changes that benefit both personal health and the environment.[398]

While the concept of risk transfer solutions for nature-related risks is still emerging in the life & health insurance industry, three potential categories for these solutions could be considered:

- Developing insurance products that specifically cover nature-related risks and health impacts.
- Incorporating nature-related risks and environmental impacts into product design.
- Contributing to nature-positive outcomes through insurance solutions that incentivise greener lifestyles.

Life & health insurers can draw insights from existing models developed to address climate-related risks. For example, opportunities to insure extreme heat risks, fuelled by climate change, through insurance innovation have been explored in California, United States of America[399] and the first life & health insurers have already developed insurance solutions covering health impacts linked to heat stress through heatwave parametric insurance.[400] Parametric insurance is an opportunity for innovation in this case, as pay-outs can be triggered by predefined environmental events or thresholds (e.g., temperatures, rainfall).

397 The Geneva Association (2024): Climate Change: What does the future hold for health and life insurance?: genevaassociation.org

398 The Geneva Association, Climate Change and Health—concept of 'impact underwriting', which provides insurance coverage based on analyses of policyholders' behaviours and rewards actions that reduce or prevent risks. This concept is already a central consideration in many non-life lines of businesses. A form of impact underwriting is being employed by some H&L insurers, too, whereby they incentivise consumers to adopt healthy behaviours that align with climate-friendly practices.

399 For more information refer to a study published by Berkeley Law, Centre for Law, Energy, & the Environment and commissioned by the California Department of Insurance, United States of America: Lamm, T., Blumberg, L., Elkind, E.N. (2020). Insuring Extreme Heat Risks. Scoping the potential for insurance innovation to support heat mitigation and response: law.berkeley.edu

400 AXA Hong Kong (2024): AXA Launches Pioneering Heatwave Parametric Insurance: hk.axa

Insurers could explore expanding insurance solutions to address environmental issues impacting human health, such as poor air or water quality exceeding safe thresholds. For example, insurers could link health check-ups or treatment coverage to environmental thresholds (e.g., air pollution index), providing policyholders with additional health protections when these risk factors become significant.

Similarly, insurers could explore specific coverages for nature-related health risks arising from the loss of ecosystem services, including impacts to food systems and access to nutritious foods, vector-borne diseases, or mental health issues exacerbated through "eco-anxiety".[401] However, current knowledge is inadequate, limiting the ability to underwrite health risks specifically tied to nature loss. This highlights the need for improved research and access to more and better data.

Life & health insurers can promote nature-positive outcomes by designing products that incentivise risk prevention and reduction and sustainable lifestyles. This could include:

- Preventative healthcare services (e.g., free screenings, vaccinations) to reduce the burden of chronic diseases.
- Wellness programmes rewarding healthy lifestyles, reducing claims from preventable conditions (e.g., cardiovascular disease, diabetes).
- Expanding wellness programmes to encourage time in nature for treating physical and mental health issues (e.g., reimbursing transport to nature parks).
- Incentives for policyholders to reduce their environmental impact through lifestyle choices (e.g., promoting plant-based diets, sustainable transport options).

This approach can apply to individual and group insurance policies, with special attention to industries facing higher environmental risks. For example, agricultural workers are increasingly exposed to harmful chemicals due to biodiversity loss. Insurers could promote biological pesticides and integrated pest management to reduce such risks.

In investment-linked life insurance, insurers could explore biodiversity or nature-themed investment options to align with broader sustainability goals.

From a social equity perspective, wealthier regions often have better infrastructure and healthcare access, leaving marginalised communities highly vulnerable to environmental health risks. Insurers could address this by developing microinsurance products tailored to low-income, underserved populations.[402] Life & health insurers should take into account sustainability and inclusivity goals in their underwriting strategies and practices. Solutions that favour wealthier populations risk widening the protection gap. Insurers should support a just transition by addressing nature-related risks equitably across all communities.[403]

401 Rao, M., Powell, R. A. (2021): The climate crisis and the rise of eco-anxiety: researchgate.net
402 UNDP Sustainable Insurance Forum (2021): Nature-related risks in the global insurance sector: sustainableinsuranceforum.org
403 Ibid.

While not all the listed design features in the following priority action sections will be feasible for all insurance companies due to differences in business models, regulatory and geographical context, insurance companies should consider these options during both the development and review processes. These recommended actions should be considered and, if suitable, adopted in a way that best aligns with the insurer's specific strategy, objectives and customers.

General priority action (GBF targets #8, #11, #14–15, #21): Life & health insurers should focus on closing actuarial gaps by improving their understanding of how nature-related risks impact health outcomes. This is important for life & health insurers to assess impact on product design and develop innovative risk transfer solutions for nature-related risks (refer to the section "engagement of stakeholders"). Consider developing innovative risk transfer solutions that can provide cover for life & health related risks arising from nature loss, ensuring that these products do not exclude vulnerable groups, thereby supporting insurers' inclusivity goals.

General priority action (GBF targets #1–4, #7–10, #12–13, #16): Consider offering insurance solutions and services that support and provide incentives to policyholders in preventing or reducing health risks from nature-related issues (e.g., services that monitor environmental issues, early warning systems related to air or water quality, preventative measures such as access to green and blue spaces to reduce mental and physical health issues).

Consider offering insurance solutions and services that provide incentives for policyholders to reduce pressures on nature through their lifestyles (e.g., shifting towards more plant-based diets, reduced consumption patterns, using greener transport options).

Company-specific action (GBF targets #1–4, #7–10, #12–13): Consider providing investment-linked products that offer investments in companies or assets with positive impacts on nature (refer to section on "ESG risk management and underwriting").

Promote the consideration of nature-related risks and their effects on lives, health and wellbeing in other lines of insurance business (e.g., non-life insurance lines such as environmental pollution liability insurance, covering the impacts to lives, health and wellbeing of employees and communities).

6.7 Supplier engagement

Private life & health insurers are a critical component in the healthcare systems by selecting providers, negotiating pharmaceutical prices, and incentivising health outcomes.

Life & health insurers should consider the environmental impacts of their upstream value chain, particularly suppliers such as pharmaceutical manufacturers and healthcare service providers. Pharmaceutical companies rely heavily on biodiversity for drug development, and disruptions in natural resources can increase production costs and create supply chain instability.[404]

Furthermore, the pharmaceutical sector's supply chain, particularly in the sourcing and production of medicines, as well as its downstream impacts (e.g., pollution and waste generation, especially through the improper disposal of antibiotics and other pharmaceutical products), present significant environmental pressures. Healthcare providers contribute to environmental impacts through their procurement processes and the substantial waste produced in their operations (e.g., medical waste and single-use plastics).[405] Some life & health insurers have shared growing concerns over systematic over-prescription of medications, which often leads to improper disposal and is contributing to the growing problem of antimicrobial resistance (AMR). This issue is increasingly being observed across multiple countries.[406]

To address these impacts and risks, insurers can use relevant tools (e.g., TNFD LEAP approach) to conduct a comprehensive assessment of upstream suppliers. Particular attention should be given to operations in biodiversity sensitive areas and interactions with Indigenous Peoples and Local Communities. This includes acknowledging the traditional knowledge and stewardship of biodiversity-rich areas and the sustainable use of natural resources.[407]

Life & health insurers have varying levels of influence and control over their supply chain, depending on regulatory frameworks and market structures. In some countries, stricter regulations may grant insurers greater oversight, while in others, more flexible or fragmented systems may limit traceability. While direct control over the supply chain, on balance, can be limited, life & health insurers should take action when material nature-related issues are identified in their value chain, regardless of data availability or sphere of influence and control.[408]

404 TNFD (2024): Sector Guidance on Biotechnology and pharmaceuticals: tnfd.global
405 Health Care Without Harm (2020). Sustainable Procurement in Health Care Guide: greenhealthcarewaste.org
406 The misuse and overuse of antimicrobials and antibiotics. This can be seen in the over-prescription of antibiotics or, in some developing countries in unregulated access and availability without prescription.
407 TNFD (2024): Sector Guidance on Biotechnology and pharmaceuticals: tnfd.global
408 TNFD (2024): Guidance on Value Chains: tnfd.global

General priority action (GBF targets #5, #9, #16): Life & health insurers should enhance their due diligence processes by assessing the environmental impacts of key suppliers, particularly in the pharmaceutical sector. This includes evaluating the sustainability of sourcing, production, and waste management practices, especially in biodiversity sensitive locations. Careful consideration should be given to the acceptance of credible sustainability certifications. Additionally, ongoing monitoring of suppliers' management practices regarding antibiotic pollution and chemical waste is crucial to ensure compliance with environmental standards.

General priority action (GBF target #13): Life & health insurers should expect their suppliers to have processes and controls in place that ensure free, prior, and informed consent (FPIC) is obtained from Indigenous Peoples and Local Communities when local species are harvested in areas under their stewardship. For example, TNFD guidance highlights the importance of ensuring that Indigenous Peoples and Local Communities are fully engaged in decisions impacting biodiversity and traditional knowledge, particularly in sectors like pharmaceuticals where raw materials are often sourced from biodiversity-rich areas.[409]

Additionally, insurers should require suppliers to meet obligations under GBF target 13, which focuses on the fair and equitable sharing of benefits arising from the use of native species and biodiversity. This includes ensuring that Indigenous Peoples and Local Communities receive appropriate compensation and recognition for the use of traditional knowledge, or genetic resources tied to the development of medicines or other health products.[410]

409 TNFD (2024): Guidance on engagement with Indigenous Peoples, Local Communities and affected stakeholders: tnfd.global

410 CBD (2022): The Kunming-Montreal Global Biodiversity Framework adopted in 2022: cbd.int ; CBD, 16th Conference of the Parties to the CBD (2024). Digital sequence information on genetic resources. Draft decision submitted: cbd.int

7. Annex

7.1 Insurance-relevant GBF targets

Mitigation

Avoid the loss of biodiversity areas

Targets #	Overview of targets mostly relevant for insurance companies
#1	Actions to reduce the loss of areas of high biodiversity importance close to zero by 2030, respecting the rights of Indigenous Peoples and Local Communities.
#3	Conserving and protecting 30% of terrestrial, inland waters and marine ecosystems particularly important for biodiversity by 2030, respecting the rights of Indigenous Peoples and Local Communities.
#4	Minimising human-wildlife conflicts for co-existence.

Relevance non-life insurance (examples)	Relevance life & health insurance (examples)
▪ Insurance companies should have underwriting policies and strategies to avoid and reduce loss of areas of high biodiversity importance. ▪ Insurance companies have a long value chain to consider, especially in the case of commercial insurance lines. ▪ Companies with footprint in 30x30 (increasing areas of) restoration or protection will face transition risks. Opportunity to respond to the increasing transition risks through insurance cover, ensuring appropriate design to mitigate negative impact through the activities.	▪ Degradation of nature and ecosystems (e.g., lack of green spaces) can lead to chronic risks (e.g., air pollution and impacting human health).

Reduce pressures on biodiversity

Targets #	Overview of targets mostly relevant for insurance companies
#5	Sustainable use, harvesting and trade of wildlife species, reducing the risk of pathogen spillover.
#6	Reduce introduction of invasive species.
#7, #8	Actions to reduce pressures on biodiversity (from all sources of pollution and minimize impacts of climate change).
#16	Sustainable consumption choices to reduce food waste, overconsumption and waste generation.

Relevance non-life insurance (examples)	Relevance life & health insurance (examples)
▪ Reducing pressure through for example environmental standards, supporting of green alternatives, client engagement ▪ Sector and industry activity—consider first enhanced assessments, awareness and understand the transition pathways. ▪ Supporting activities in reducing the pressures, consider levers of insurance companies such as differentiating premiums. ▪ Integrate circular economy into claims management. ▪ Adopt the 'Build back greener' principles.	▪ Lever to reduce pressures for consumers through their lifestyle choices such as through diets and consumption choices, that in turn through a reduced personal 'footprint' can also have a positive impact on health and longevity. ▪ Health care system generates waste and increasing antibiotics use can impact environment, insurers can work with suppliers to reduce environmental footprint.

Sustainable use and management of biodiversity

Targets #	Overview of targets mostly relevant for insurance companies
#9, #10	Sustainable use and management of biodiversity in agriculture, aquaculture, fisheries, and forestry.
#12	Enhancing green and blue spaces in urban planning.
#13	Fair and equitable sharing of benefits from the utilisation of genetic resources and from digital sequence information on genetic resources.

Relevance non-life insurance (examples)	Relevance life & health insurance (examples)
▪ Insurance products for sustainable business models. ▪ Absorbing agricultural transition risks with new (subsidized) products. ▪ Revising (subsidized) crop insurance to create incentives for more sustainable agriculture. ▪ Incentivising sustainable management of biodiversity in nature key sectors e.g., sustainable soil management practices; insurance products to help farmers i.e., agri-forestry systems, regenerative agriculture.	▪ Promote green and blue spaces, that benefit people and biodiversity, especially in urban areas. ▪ Access to benefits of genetic resources is important for drug discovery and access to medicine. Many medicines are derived from natural compounds found in plants, animals, and microorganisms. Examples include anti-biotics, anticancer drugs, and pain relievers.

Restoring biodiversity areas

Targets #	Overview of targets mostly relevant for insurance companies
#2	Restoring 30% of degraded terrestrial, inland waters, and marine ecosystems by 2030.

Relevance non-life insurance (examples)	Relevance life & health insurance (examples)
▪ Insurance activities can contribute to nature restoration (e.g., insurance for natural assets, insurance of restoration projects etc.) ▪ Engagement with companies to promote or incentivize restoration of biodiversity e.g., biodiversity strips under energy grids, biodiversity restoration or conservation and soil health on farms.	▪ Restoration of nature and ecosystems on the other hand can have positive impact on human health (inc. mental health, access to more nutritious food, climate regulation / flood and storm protection, clean air and water, disease and pest control, availability of therapeutic drugs).
▪ Promote investments in restoration of ecosystems including nature-based solutions—such as restoration of wetlands to reduce disaster risk, mainstreaming natural infrastructure in urban landscape design e.g., increasing green spaces, natural flood management.	

Adaptation and resilience

Targets #	Overview of targets mostly relevant for insurance companies
#8 & #11	Actions to improve ecosystem functions, risk reduction and building resilience through nature-based solutions and ecosystem-based approaches.

Relevance non-life insurance (examples)	Relevance life & health insurance (examples)
▪ Incentives for risk resilience practices resulting in restoring biodiversity e.g., sustainable soil management practices, insurance products to help farmers i.e., agro-forestry systems for more resilient production systems (also see Targets 9–13) ▪ Promote nature-based solutions and ecosystem-based practices for adaptation and disaster risk reduction, as well as provide insurance cover for natural assets to enhance their resilience against climate change impacts. ▪ Participate in initiatives and public-private partnerships to foster building resilience through nature-based solutions. ▪ Engage with Indigenous Peoples and Local Communities in relation to restoration and management of nature-based solutions.	▪ Promote nature-based solutions for climate regulation and adaptation to reduce impact to human health.
▪ Insurers can also play a role as investors by leveraging private finance and promoting blended finance mechanisms to mobilise financial resources for nature-based solutions.	

Mainstreaming nature in the organization

Targets #	Overview of targets mostly relevant for insurance companies
#14, #15, #21	Actions to mainstream nature in all aspects of the organisations to align financial flows with the GBF.

Relevance non-life insurance (examples)	Relevance life & health insurance (examples)
▪ The insurance industry is impacted by these integration efforts as it operates within policy, regulatory and legal frameworks and interacts with various stakeholders. Insurers can support these targets by collaborating with policymakers and regulators at various levels to advocate for the integration of biodiversity into policies, regulations, and planning processes. ▪ The insurance industry should proactively assess, monitor, and disclose its nature-related impacts, dependencies, risks, and opportunities of underwriting portfolio. ▪ Build support from board and senior management to further the necessary activities to implement nature-related considerations in the organizations decision making. ▪ This also includes capacity building and knowledge sharing across industry.	

Mobilising financial flows

Targets #	Overview of targets mostly relevant for insurance companies
#19	Actions to mobilise financial flows from all sources to implement national biodiversity strategies.

Relevance non-life insurance (examples)	Relevance life & health insurance (examples)
▪ Be aware of and potentially support the development of NBSAPs in each country, including their financing plans and the relevant targets and initiatives domestically. ▪ Absence of insurance is a hurdle for innovation of new technologies, and for economic development; Traditional insurance such as P&C, credit, and political risk, sets the foundation for de-risking projects, and should be coupled with other relevant strategies e.g., build back better to attract capital for nature-positive business models. ▪ Enable financial flows for biodiversity finance, by offering insurance solutions to contribute to the effective development, implementation and scaling up of biodiversity finance strategies e.g., de-risking of nature-based solution projects.	▪ n/a

- Insurers can advocate for investments in restoration and conservation and nature-based solutions.
- Although not in scope of the guide, insurers can also play a role as investors by leveraging private finance and promoting blended finance mechanisms to mobilise financial resources for biodiversity conservation.

UN environment programme

finance initiative

UNEP Finance Initiative (UNEP FI) brings together a large network of banks, insurers and investors that catalyses action across the financial system to deliver more sustainable global economies.

For more than 30 years the Initiative has been connecting the UN with financial institutions from around the world to shape the sustainable finance agenda establishing the world's foremost sustainability frameworks that help the finance industry address global environmental, social and governance challenges.

Convened by a Geneva, Switzerland-based secretariat, more than 500 banks and insurers with assets exceeding USD 100 trillion are individually implementing UNEP FI's Principles for Responsible Banking and Principles for Sustainable Insurance. Financial institutions work with UNEP FI on a voluntary basis to apply the sustainability frameworks within their industries using practical guidance and tools to position their businesses for the transition to a sustainable and inclusive economy.

Founded in 1992, UNEP FI was the first organisation to engage the finance sector on sustainability. Today, the Initiative cultivates leadership and advances sustainable market practice while supporting the implementation of global programmes at a regional level across Africa & the Middle East, Asia Pacific, Europe, Latin America & the Caribbean and North America.

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