

UNDP BIOFIN – TNFD Training

The world we live in and the nature-business nexus

June 2025



Climate Risk
Services





Meet the team

- Climate Risk Services' CEO **Gerhard** has a wealth of experience in the climate and nature field, previously working for consultancies, banks, governments, and the IUCN. He also holds an MBA from the University of Oxford.
- As a senior analyst at Climate Risk Services, **Ben** specialises in nature-related risk for financial institutions and corporates. Ben holds a Masters degree from Imperial College London in Environmental Technology (environmental economics and policy).



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In this video...

1. The world we live in and the nature-business nexus
2. Nature risks: a governance and management issue
3. From Nature-related dependencies and impacts to risks and opportunities
4. A nature-related risks and opportunities for a hypothetical FI



Key Objectives

- Understand the state of nature and how the economy relies on it.
- Understand the relevance of nature dependencies and impacts.
- Understand how dependencies and impacts can be risks and opportunities.



「 The world we live in and the nature – business interface 」



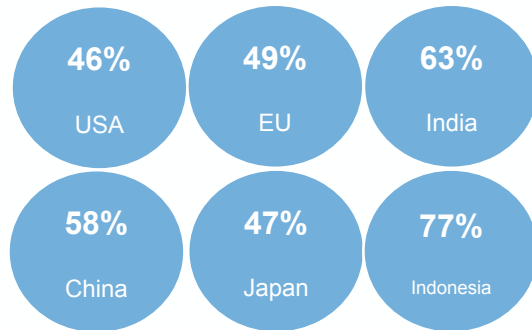
“Nature’s ability to provide the goods and services
on which we depend is being undermined,
presenting enormous risks to prosperity”

HENRY M. PAULSON
FORMER U.S. SECRETARY OF THE TREASURY

Nature and the Economy

Nature underpins our economies, societies, and business models

Countries around the world are now assessing the extent to which their economies are moderately to highly dependent on nature.



Source: WEF (2020) Nature risk rising: why the crisis engulfing nature matters for business and the economy

Reduced pollination, fisheries, timber production, and related ecosystem services could result in an annual decline in global GDP of USD 2.7 trillion by 2030, with Sub-Saharan Africa and South Asia being most at risk.

The World Bank (2021) Protecting Nature Could Avert Global Economic Losses of \$2.7 Trillion Per Year



Sovereign credit rating changes by 2030 due to partial nature collapse

“Biodiversity and nature-related risks can have significant impacts on sovereign creditworthiness, default probability, and the cost of capital.”

Source: Agarwala et al. (2022) Nature loss and sovereign credit ratings, University of Cambridge, Bennett Institute for Public Policy

Ecosystem services

How can we view the role of ecosystems in economic activity?

Ecosystem services refers to the values and benefits that nature and ecosystems provide to people, businesses and society. They are commonly broken down into 4 categories:

- **Provisioning services**
products people obtain from ecosystems e.g. timber
- **Regulating services**
benefits people obtain from the regulation of ecosystem processes such as air quality and climate regulation.
- **Cultural services**
non-material benefits that people obtain from ecosystems e.g. recreational value
- **Supporting services**
are those necessary for other ecosystem service provision e.g. soil formation

Article | Published: 15 May 1997

The value of the world's ecosystem services and natural capital

→ **USD \$33 trillion**

1.3.1 Ecosystems and Their Services

An ecosystem is a dynamic complex of plant, animal, and micro-organism communities and the nonliving environment interacting as a functional unit. Humans are an integral part of ecosystems. Ecosystems provide a variety of benefits to people, including provisioning, regulating, cultural, and supporting services. Provisioning services are the products people obtain from ecosystems, such as food, fuel, fiber, fresh water, and genetic resources. Regulating services are the benefits people obtain from the regulation of ecosystem processes, including air quality maintenance, climate regulation, erosion control, regulation of human diseases, and water purification. Cultural services are the nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences. Supporting services are those that are necessary for the production of all other ecosystem services, such as primary production, production of oxygen, and soil formation.

Biodiversity and ecosystems are closely related concepts. Biodiversity is the variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part. It includes diversity within and between species and diversity of ecosystems. Diversity is a structural feature of ecosystems, and the variability among ecosystems is an element of biodiversity. Products of biodiversity include many of the services produced by ecosystems (such as food and genetic resources), and changes in biodiversity can influence all the other services they provide. In addition to the important role of biodiversity in providing ecosystem services, the diversity of living species has intrinsic value independent of any human concern.

Opening concepts in the Millenium

Ecosystem Assessment

Ecosystem Services are in decline

14 out of 18 ecosystem services are in decline

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is the equivalent for nature as to what the Intergovernmental Panel on Climate Change (IPCC) is for climate science.

“Nature and its vital contributions to people, which together embody biodiversity and ecosystem functions and services, are deteriorating worldwide.”

IPBES (2019) Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services



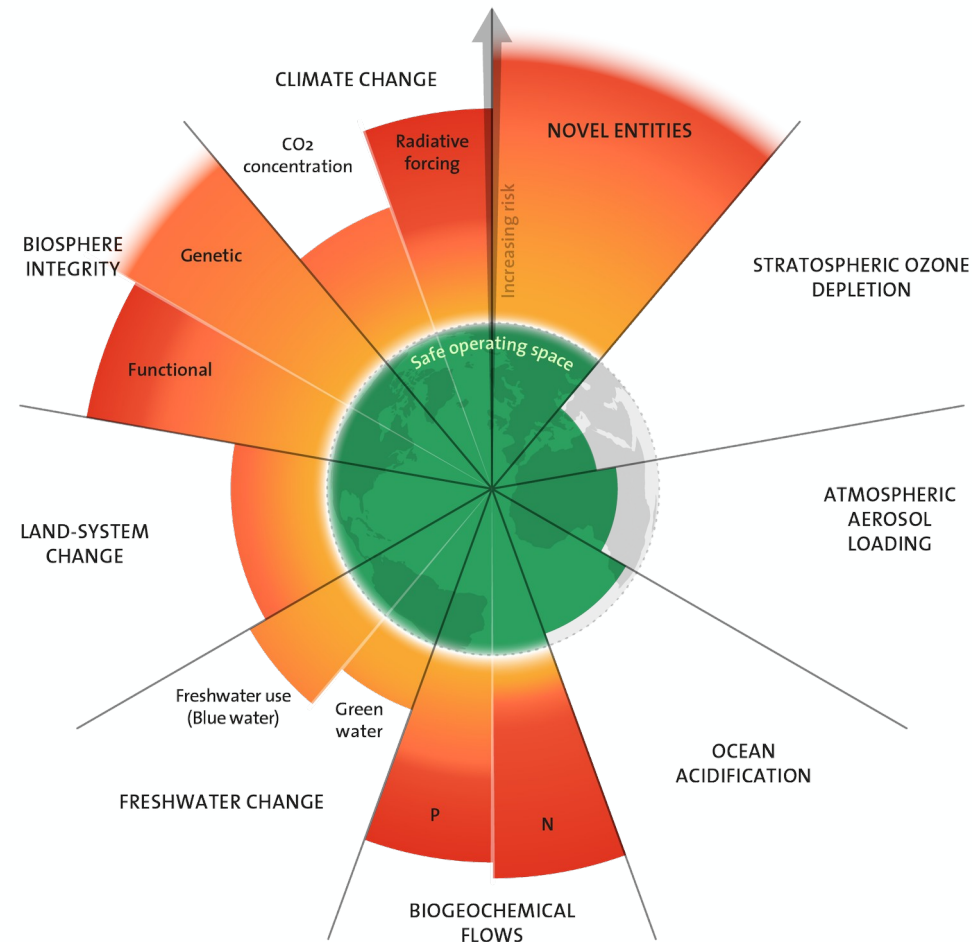
Planetary Boundaries

Six of the nine planetary boundaries are being transgressed

In 2024, six of nine planetary boundaries – only one of which is climate change – were transgressed. We are now close to breaching the safe operating limits on ocean acidification.

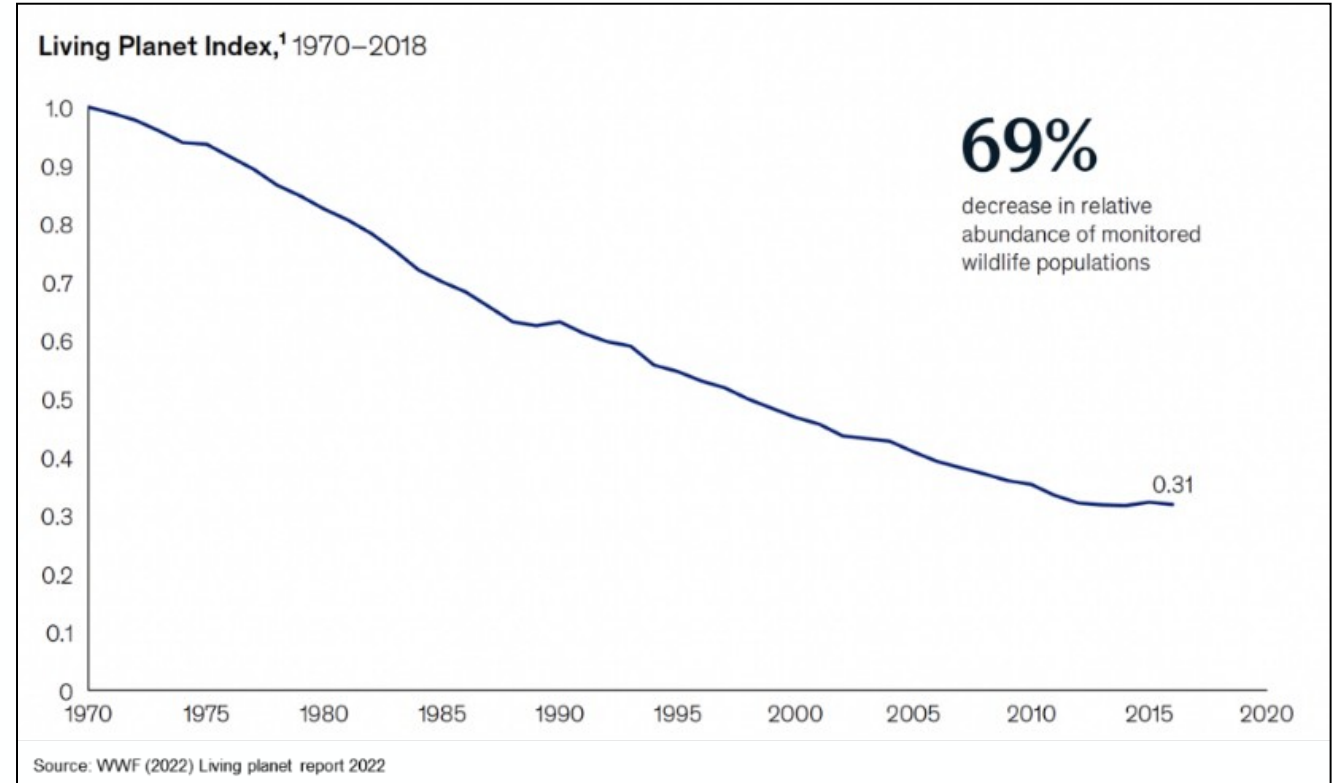
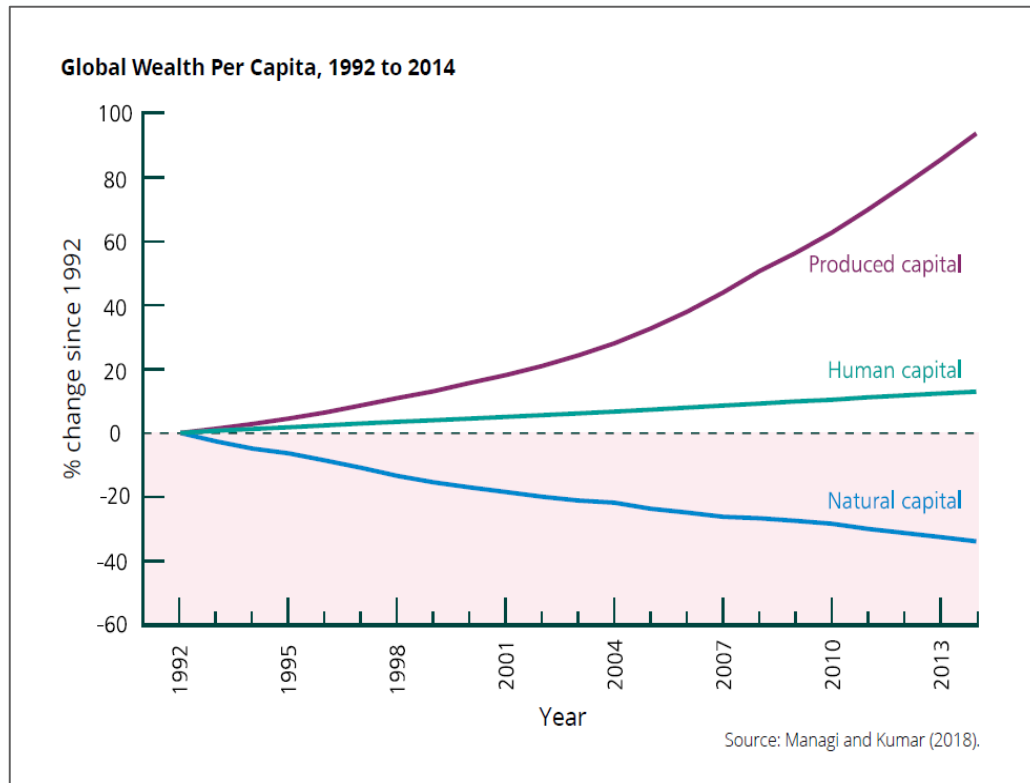
“Earth is now well outside of the safe operating space for humanity.”

Richardson et al (2023) Earth beyond six of nine planetary boundaries, Science Advances



We are facing multiple nature crises

Growth in capital has come at the cost of natural capital - biodiversity has been in decline for decades



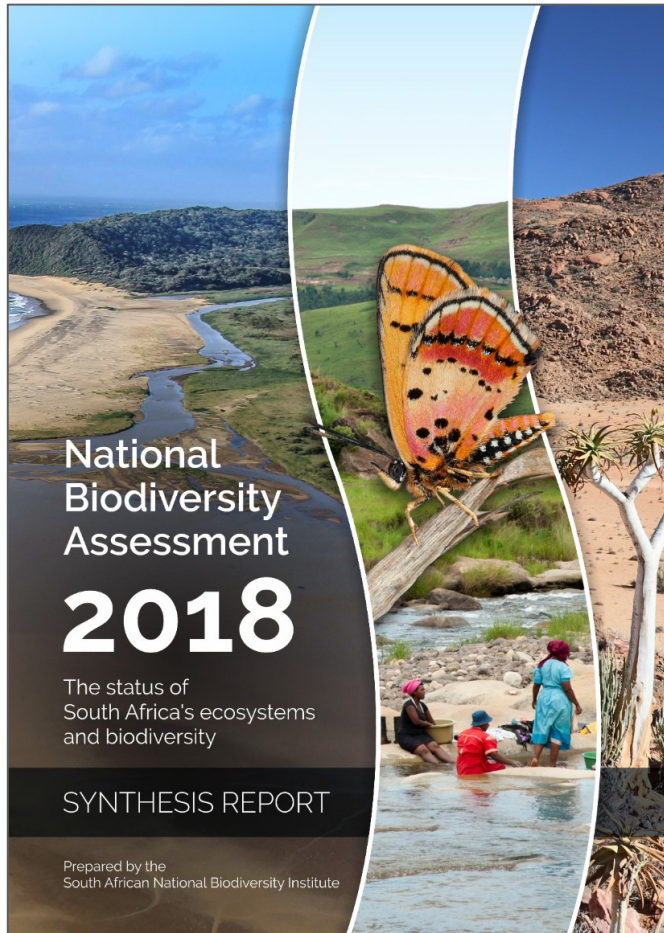
Nature loss is accelerating. Extinction rates are estimated to be 100 to 1,000 times higher than their background rate over the past tens of millions of years. Biodiversity is now declining faster than at any time in human history.

We urgently need to reverse this trend, and businesses and financial institutions will need to play a key role in this.



The state of nature in South Africa

How is nature and biodiversity faring in South Africa



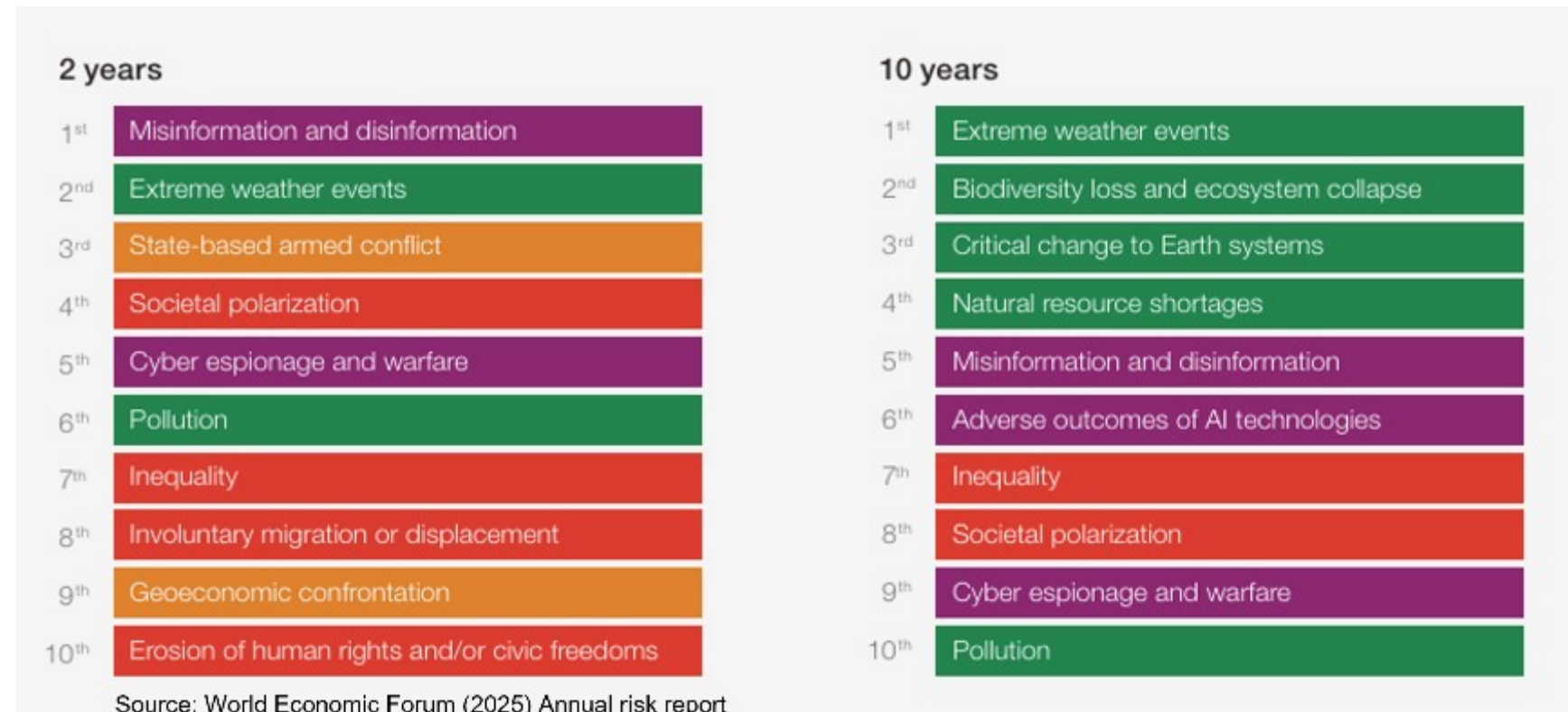
- South Africa is rich in biodiversity; home to 3 biodiverse areas, the Cape Floristic Region, the Succulent Karoo, and the Maputaland-Pondoland-Albany Region, and multiple KBAs (Key Biodiversity Areas).
- Almost half of the 1021 ecosystem types assessed in the NBA 2018 are categorised as threatened.
- 14% of assessed plant species were categorised as threatened and 12% of animals assessed were categorised as threatened.
- A key driver of biodiversity loss is habitat loss and land conversion, alongside invasive species, over-harvesting of marine resources, water pollution, and climate change.

Environmental risks dominate the global risk landscape

Top 10 global risks over the next 2 and 10 years

Global risks ranked by severity over the short and long term

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period."

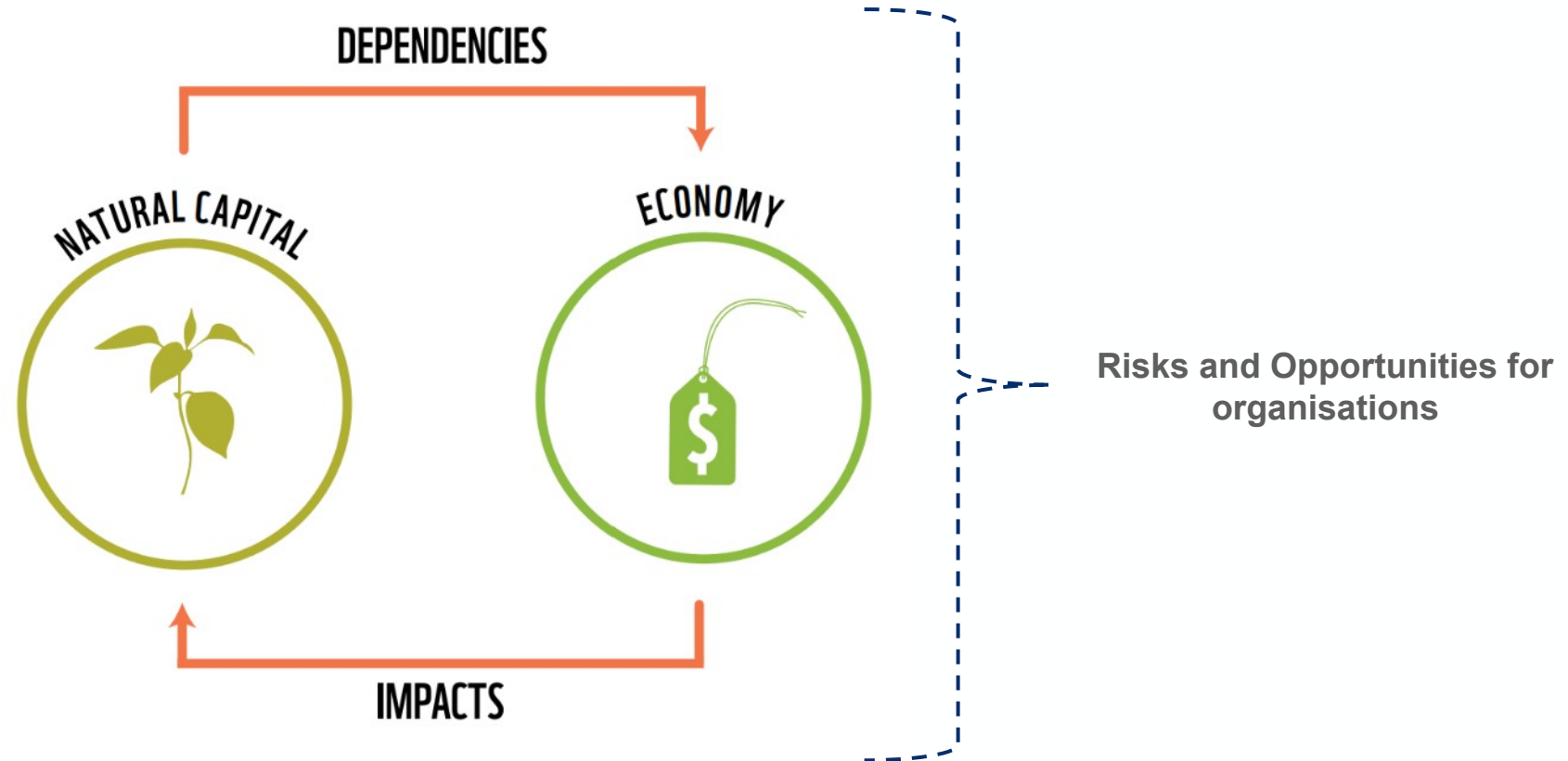


The essence of the business and nature relationship

Businesses and nature are systemically interconnected

Nature-related issues are evolving rapidly and have clear strategic implications for companies:

- today's impacts can accentuate tomorrow's dependencies
- understanding dependencies and impacts is essential for understanding risks and opportunities
- pursuing opportunities can enhance the resilience of businesses by investing in the resilience of nature





Nature risks: a governance and management issue

Directors' duties are evolving to include nature



Board directors could face liability risks for failures to consider nature, where this breaches their duties of loyalty and care

Board members have legal duties that include:

- strategic planning;
- oversight of foreseeable and material risks;
- attesting to the accuracy of disclosure and financial reporting.

Nature-related risks and opportunities may be material to an organisation or could become material as the market, as policy and social context evolves.

For example, board directors may have new disclosure obligations that include nature-related assessments as regulation moves to incorporate nature issues; or investors may question organisations that fail to disclose nature-related risks that could affect their financial health.

Duty of loyalty

Requires that directors act honestly and in good faith in the best interests of the company, typically, but not exclusively, defined in financial terms.

Duty of care and diligence

Requires that directors exercise reasonable care, skill, and diligence in the discharge of their stewardship functions, including by taking reasonable precautions against reasonably foreseeable harms.

Source: CCLI and CGI (2023) [Biodiversity as a material financial risk: what board directors need to know](#); CCLI and CGI (2024) [Directors' Duties Navigator: Climate Risk and Sustainability Disclosures](#)

Investors are actively seeking information on nature from investees

Investors are asking businesses for information on their nature strategies and risk management frameworks

Global investor groups are calling for action on nature.

Over 200 institutional investors, representing over \$28 trillion in AUM are driving coordinated engagement through groups such as Nature Action 100 and the PRI Spring Initiative.

Source: Chapter Zero and GFI (2024). Taking TNFD to the board.

“

We are encouraging these exchanges (Stock Exchange of Hong Kong (HKEX), Singapore Stock Exchange (SGX), Bursa Malaysia and Stock Exchange of Thailand (SET)) to align with the targets and goals of the Kunming-Montreal Global Biodiversity Framework and to set clear recommendations within disclosure expectations and listing rules during 2025.

 LGIM Q2 2024 Quarterly engagement report

“

...We encourage companies with a material impact and reliance on biodiversity and natural capital more globally to put in place effective mitigation strategies within relevant timelines. For these companies, insufficient improvements in terms of disclosure of biodiversity-related strategy and risk management may lead to a dissenting vote cast against the Management (including by supporting biodiversity-related shareholder resolutions) or the Board.

 AXA Investment Managers Corporate Governance & Voting Policy, February 2024

“

Accordingly, we expect all companies to begin reporting within a reasonable timeframe against the Taskforce on Nature-related Financial Disclosures (TNFD) framework, finalised in 2023. In preparation for reporting against the framework, companies should undertake the TNFD recommended business model assessment process, referred to as LEAP...

 Global Voting Policy 2024, Aviva Investors

“

Depending on the level of biodiversity incorporation we would expect and recommend the investee companies which we engage to demonstrate... Transparent disclosure - reporting regularly on biodiversity and, endorsing the Taskforce on Nature-related Financial Disclosures (TNFD).

 Allianz Global Investors Biodiversity Policy Statement 2023

“

Given the growing awareness of the materiality of these issues for certain businesses, enhanced reporting on a company's natural capital dependencies and impacts would aid investors' understanding. In our view, the final recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) may prove useful to some companies.

 BlackRock Investment Stewardship Global Principles for Benchmark Policies January 2025

“

Companies should disclose whether and how biodiversity and ecosystems form part of their strategies, policies and commitments. Where applicable, this should include goals, targets, performance against these, and action plans. Companies should align their disclosures with applicable reporting standards, and can consider the emerging recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) to guide their risk management and reporting efforts.

 Norges Bank Investment Management, Biodiversity and ecosystems: Expectations of companies

Climate and Nature litigation?

Climate duty-of-care litigation are a novel form of lawsuits, will nature duty-of-care lawsuits follow?



- In 2023, ClientEarth (a non-profit environmental law firm) filed a claim against the board of directors of Shell – with the claim alleging that the directors failed to adequately manage climate risks specifically focussing on their climate risk management strategy.



- In 2020, a trustee of an Australian pension fund REST (Retail Employees Superannuation Trust) was sued for breach of its duty of care due to its failure to integrate climate change considerations into its investment strategy.
- The case was settled in favour of the plaintiff with REST making various public statements and governance changes.

McVeigh v. Retail Employees Superannuation Trust

Filing Date: 2018

Reporter Info: NSD1333/2018

Status: Decided

Case Categories: Suits against corporations, individuals > Others

Suits against corporations, individuals > Corporations > Disclosures

Jurisdictions:

Principal Laws: Australia > Corporations Act of 2001

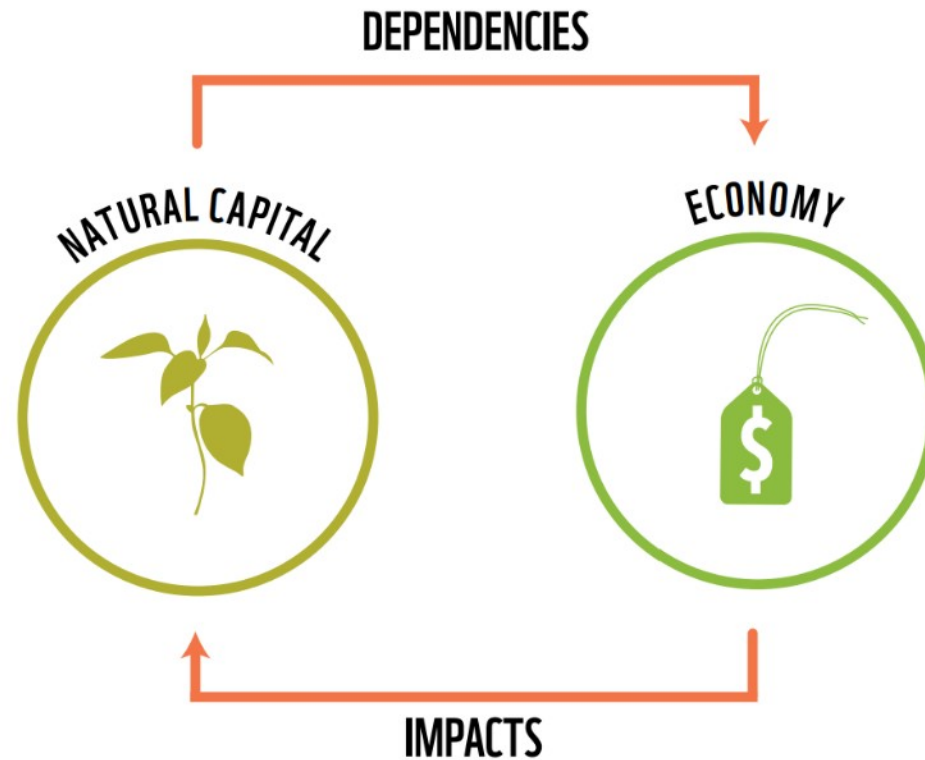
Australia > Superannuation Industry (Supervision) Act 1993



From nature-related dependencies and impacts to risks and opportunities

What's the relationship between businesses and nature?

From Impacts and Dependencies to Nature-related Risks



Different types of nature dependencies



It is critical that business executives understand the source of their dependencies on nature

Dependencies are aspects of environmental assets and ecosystem services that a person or an organisation relies on to function.

The future cashflows of business are dependent on the future flow of nature's inputs into business processes and activities (known as ecosystem services).

Some dependencies will be more obvious than others.

Source: TNFD (2023) Recommendations of the Taskforce of Nature-related financial disclosures





Different types of impact on nature

Impacts on nature are not just bad for the planet but are also a potential source of risk for organisations

Nature-related impacts refer to changes in the state of nature (quality or quantity), which may result in changes to the capacity of nature to provide social and economic functions.

Impacts can be:

- positive or negative
- the result of an organisation's or another party's actions
- direct, indirect or cumulative.

A single impact driver may be associated with multiple impacts.

Source: TNFD (2023) Recommendations of the Taskforce of Nature-related financial disclosures



e.g. pollution of rivers



e.g. resource use



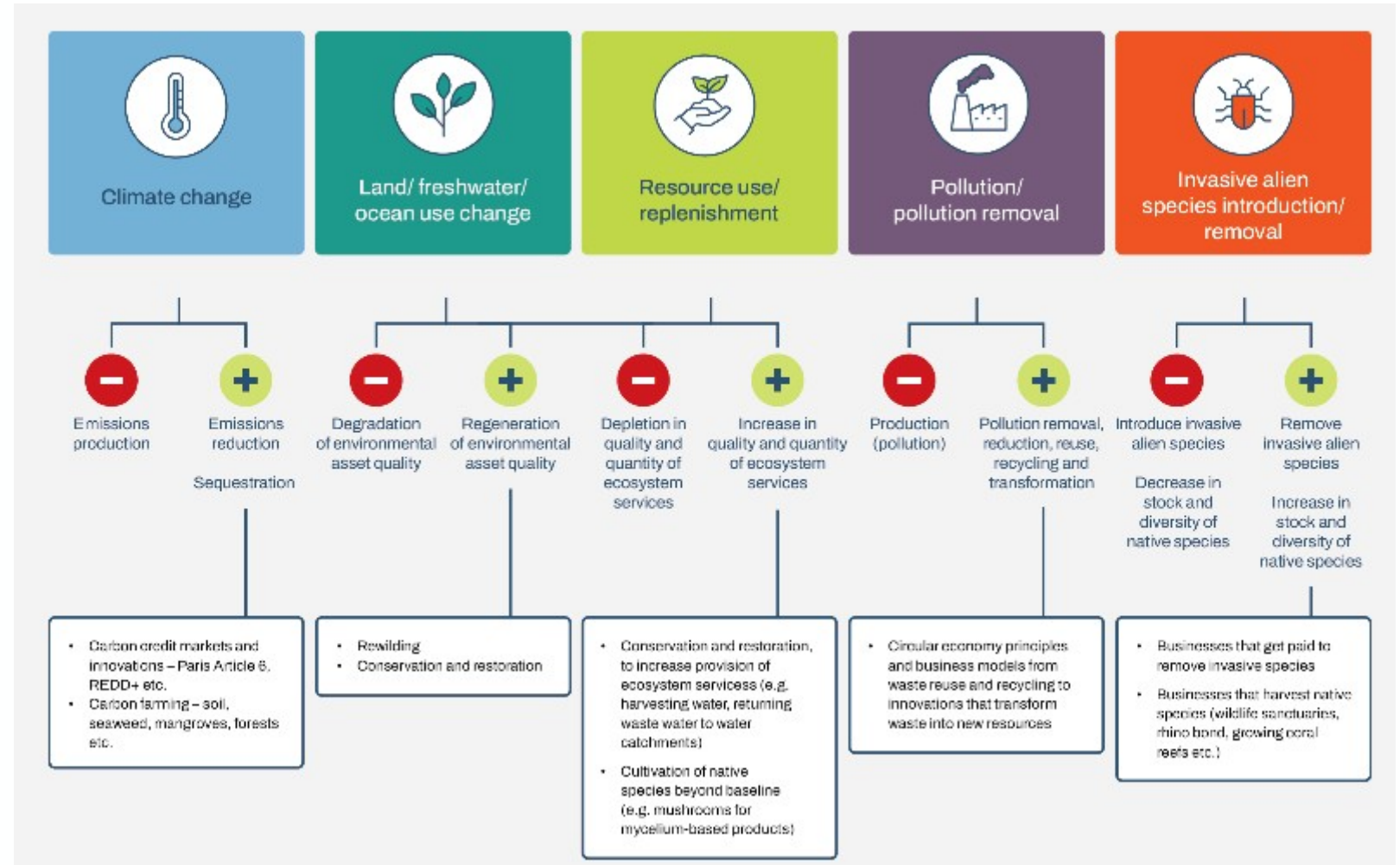
e.g. land clearance



e.g. bleaching of corals

Organisations can positively impact the state of nature

There are opportunities to build back the resilience of nature and create new commercial opportunities





Nature-related risks and opportunities

It is important to understand the different sources of nature-related risks and opportunities

Nature-related risks



"Potential threats posed to an organisation that arise from its and wider society's dependencies and impacts on nature."

Source: TNFD (2023) Recommendations of the Taskforce of Nature-related financial disclosures

Nature-related opportunities



"Activities that create positive outcomes for organisations and nature by creating positive impacts on nature or mitigating negative impacts on nature."

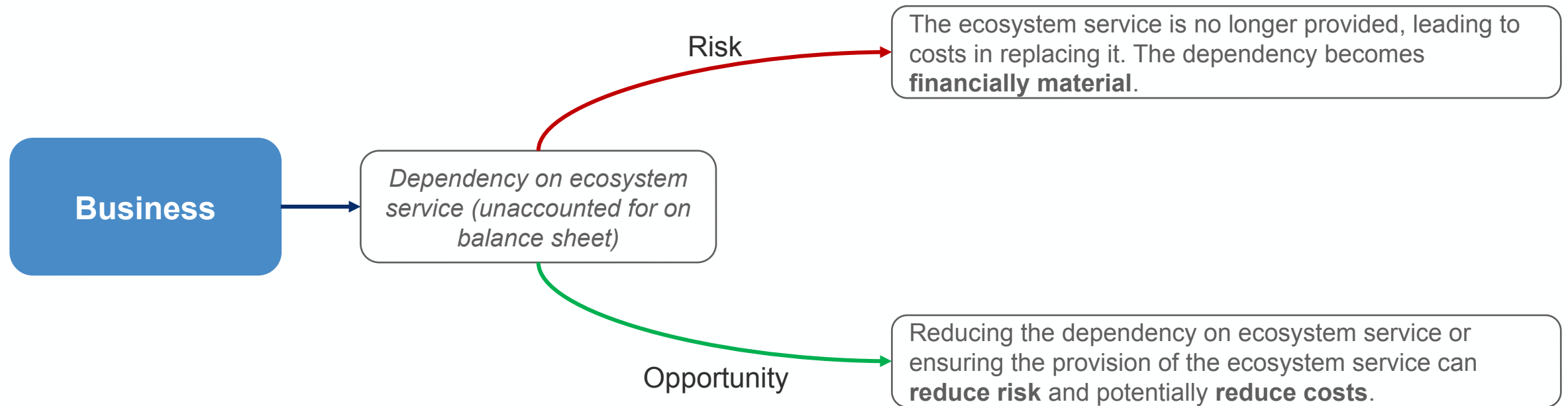
Source: TNFD (2023) Recommendations of the Taskforce of Nature-related financial disclosures



From dependency to risk & opportunity



A simplification of the relevance of dependencies on nature for financial institutions



Dependency Case Study – Bosman Family Vineyards 2018



Dependency upon water flow regulation as an ecosystem service led to financial consequences when the service was disrupted.

Vineyards and businesses in the Cape Town and Stellenbosch region, such as Bosman Family Vineyards rely on water from the Berg River Scheme.



This is a dependency on nature, specifically a dependency on water flow regulation as an ecosystem service.



In 2017-2018, under drought conditions this ecosystem service was disrupted, and the Berg river ran dry before grapes could be harvested.



The dependency became financially material through loss of yields, and necessary investment into water-recycling systems and water efficiency measures. Estimated cost of losses due to the drought across the sector totalled **R500 million**. Distell, a major beverage and wine producer in the region has invested more than **R200 million** into water management.



Berg River Dam source: Daniel Saaiman



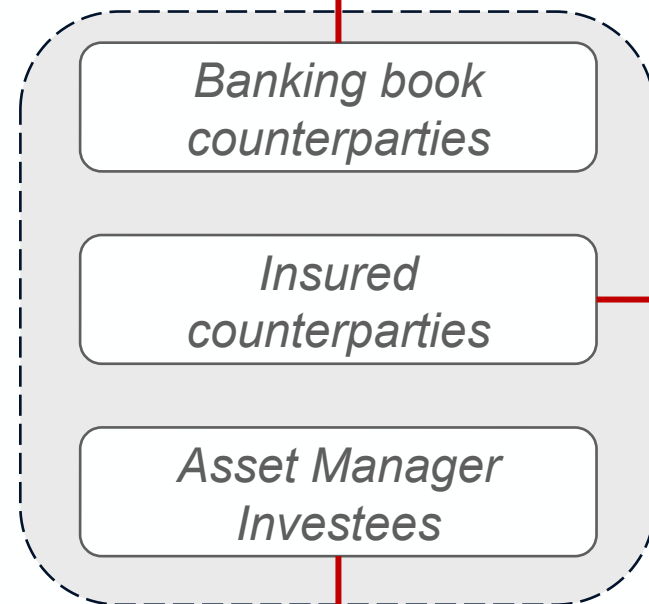
Stellenbosch vineyard source: South African Wines

How are dependencies relevant for financial institutions?



A simplification of the relevance of dependencies on nature for financial institutions

Businesses with dependencies



Dependencies becoming financially material for counterparties can drive defaults NPLs & increase credit risk.

Banks

Dependencies becoming financially material for insured counterparties leads to increased claims and payouts.

Insurers

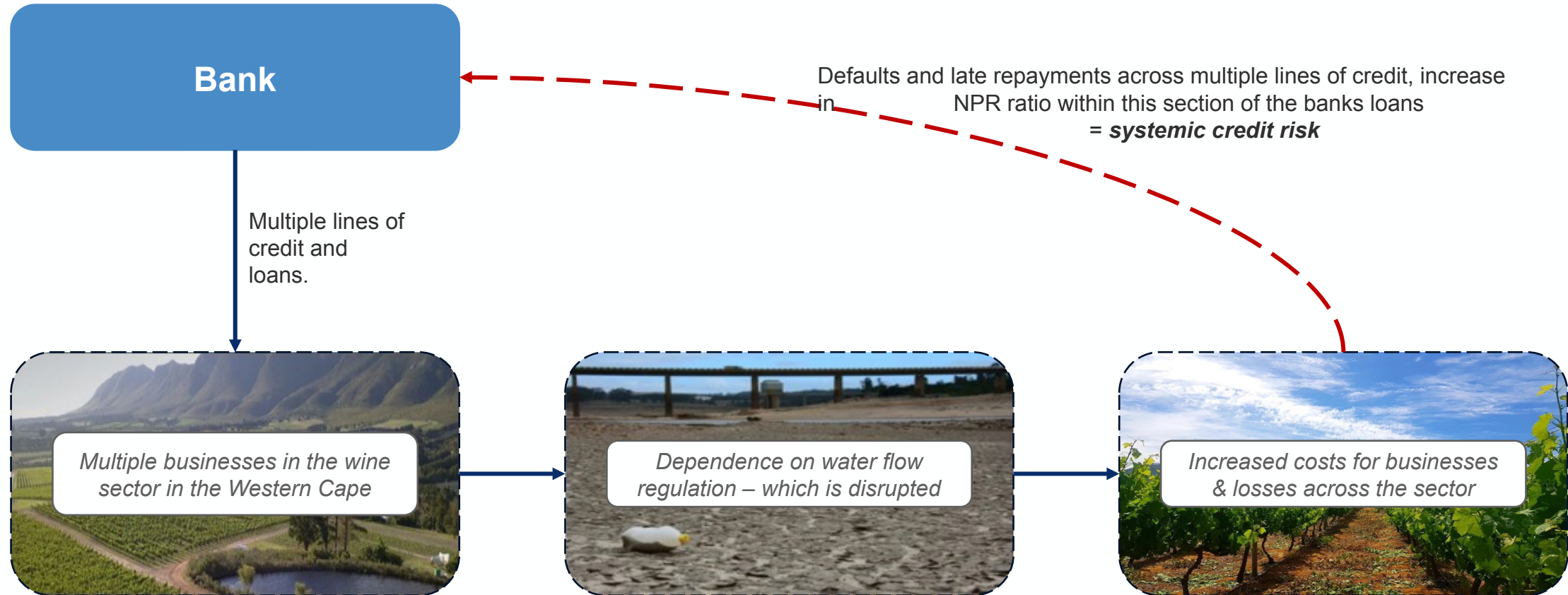
Dependencies becoming financially material for investees leads to changes in valuation, presenting asset managers with equity investment value decrease.

**Asset
Managers &
Pension funds**

How are dependencies relevant for financial institutions?



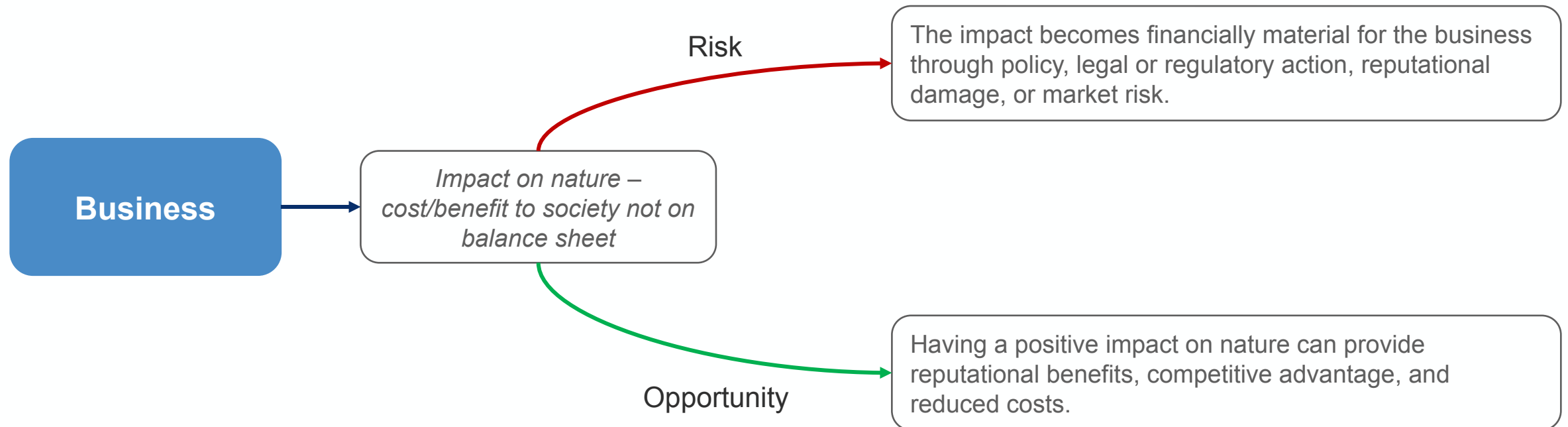
There is an element of systemic risk – financial institutions tend to have concentrations of exposure in specific sector and regions



From impact to risk & opportunity



A simplification of the relevance of impacts on nature for financial institutions



Impact Case Study – Harmony Gold Mining Company 2005



Pollution of the environment as an impact upon nature led to financial consequences for the company

Harmony Gold Mining Company's operations in the Klerksdorp-Orkney-Stilfontein-Hartebeesfontein (KOSH) area led to acid mine drainage.



This is an impact on nature, pollution of groundwater with acidic, heavy-metal laden water causing issues for water quality.



A 2005 statutory directive under the National Water Act required Harmony and other mining firms to pump and treat polluted water from their former mines.



This caused the impact to become financially material for Harmony, the firm had to cover expenses of pumping and treating. The firm also had legal costs as they contested the directive after selling the assets, but their liability was upheld. Up to 2011 Harmony was spending **R26 million** in pump and treat at the site – not including legal fees and other compliance cost (from their own financial reporting).



Kusasaletu source: *miningmx*



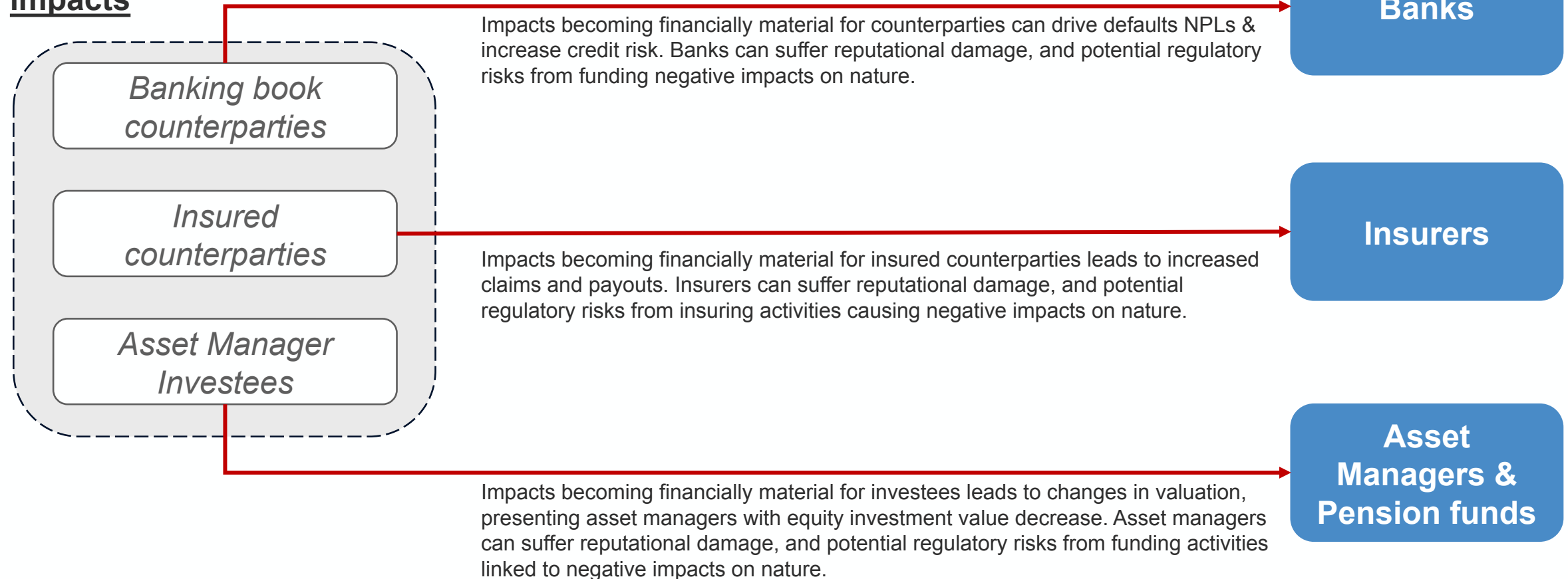
Gold mine source: *WWF*

How are impacts relevant for financial institutions?



Why do business impacts on nature matter for financial institutions?

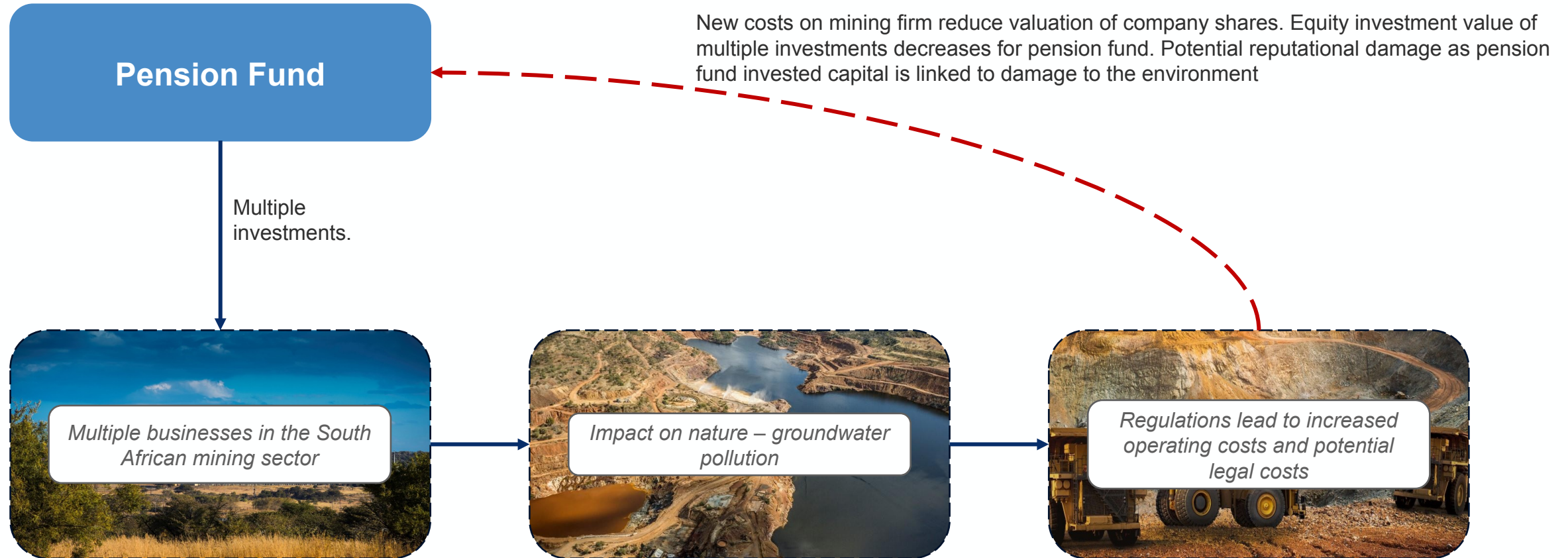
Businesses with impacts



How are impacts relevant for financial institutions?

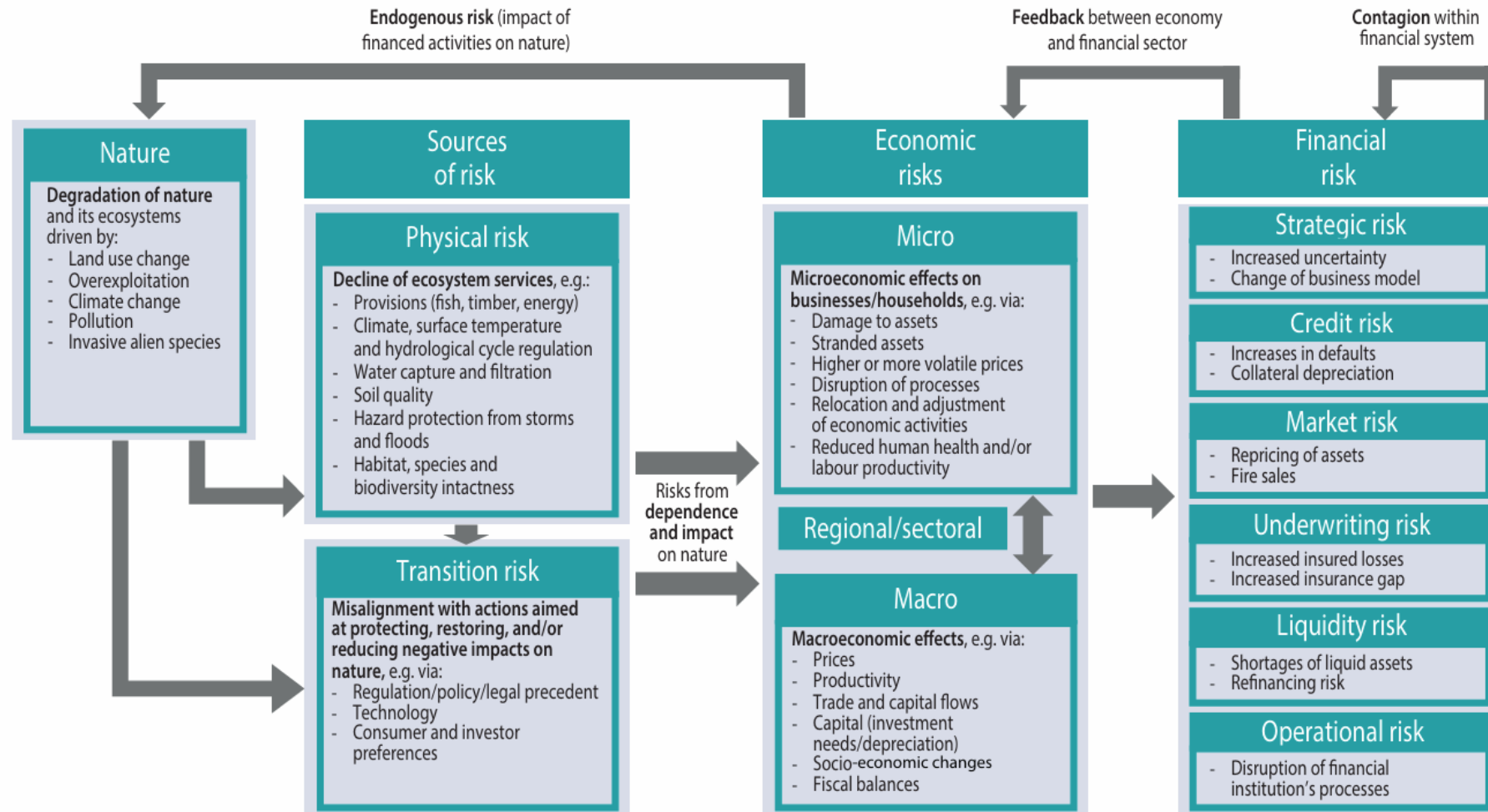


There is an element of systemic risk – financial institutions tend to have concentrations of exposure in specific sector and regions



Nature-related risks for FIs is a complex relationship

Nature loss can drive micro and macro economic risks

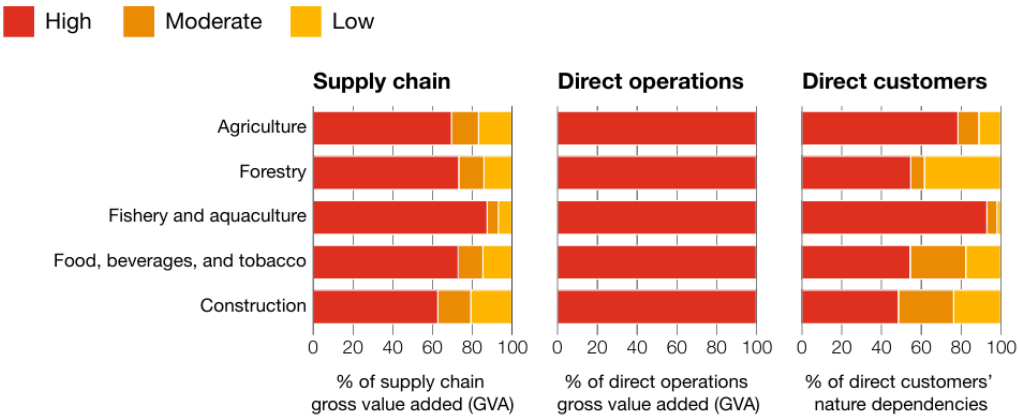


Nature risks and value-chains

Nature risks are often higher in supply-chains than in direct business operations

Agriculture and primary production contributes less than 3% to South Africa’s GDP – does this mean that nature-related risks are only relevant for 3% of South Africa’s economy?

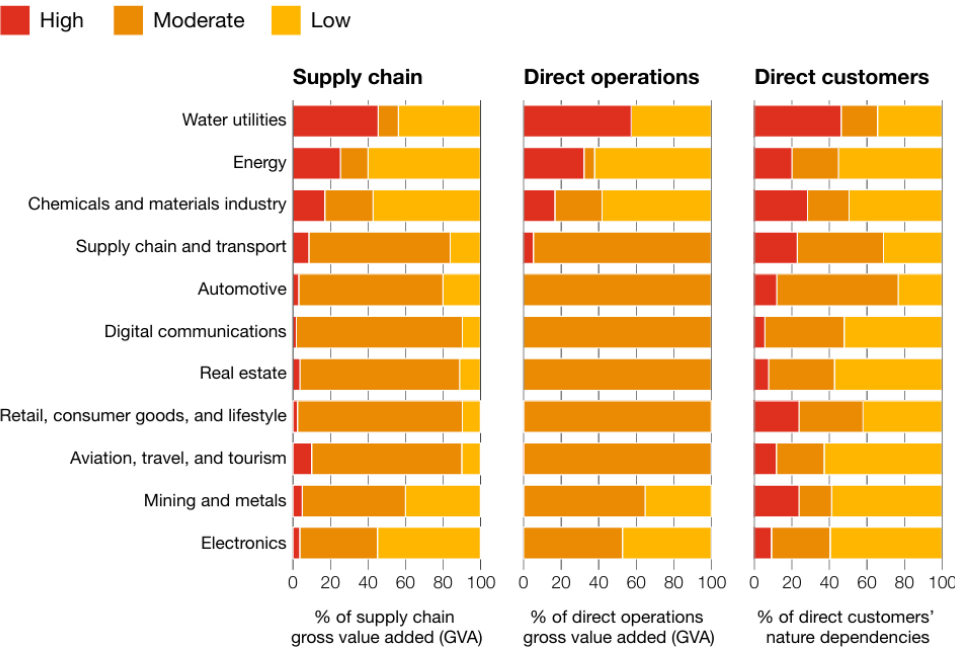
In five industries, all of the economic value from direct operations exhibits high nature dependence



Note: Here, nature dependence measures the degree to which the economic value generated by business activity is exposed to the risk of ecosystem disruption. High dependence means that economic value comes from business activities that could fail financially as a result of particular ecosystem disruptions. Moderate dependence means that economic value comes from business activities that are likely to experience a material reduction in financial returns because of particular ecosystem disruptions. Low dependence means that economic value comes from business activities that are likely to experience limited material financial effects of ecosystem disruptions.

Source: EXIOBASE, ENCORE database, PwC analysis

Eleven industries have moderate or high nature dependence for at least 35% of the economic value from their direct operations and supply chains



Note: Here, nature dependence measures the degree to which the economic value generated by business activity is exposed to the risk of ecosystem disruption. High dependence means that economic value comes from business activities that could fail financially as a result of particular ecosystem disruptions. Moderate dependence means that economic value comes from business activities that are likely to experience a material reduction in financial returns because of particular ecosystem disruptions. Low dependence means that economic value comes from business activities that are likely to experience limited material financial effects of ecosystem disruptions.

Source: EXIOBASE, ENCORE database, PwC analysis



Example: PG&E and Californian financial institutions



Wildfires in California - the PG&E case study

How nature-related risks led to the bankruptcy of one of America's largest utility firms

BloombergNEF

PG&E Corp | Electric transmission and distribution

Acute

Chronic

Legal and policy

Market

Technology

Reputational

Physical risk

Transition risk

PG&E Liabilities for California Wildfires Led to Bankruptcy

Power companies interact with the natural world in ways that bring existential threats. This is exemplified by the bankruptcy of PG&E Corp, the parent of regulated power and gas utility Pacific Gas and Electricity Company. The Northern California utility was forced to file for Chapter 11 bankruptcy after a federal court found PG&E liable for a series of forest fires from 2015 to 2018 that were started by sparking lines and poorly maintained infrastructure. It later paid out billions of dollars in settlements and was required to invest heavily in upgraded transmission and distribution equipment, as well as monitoring systems.

100% Share of gross value added by power utilities that is moderately or highly dependent on nature

91% Decline in PG&E's share price in the 15 months following the 2017 Napa Valley fire

\$5.36 billion Amount paid by PG&E in settlements to compensate for the impacts of the wildfires

Climate change and nature loss

The natural systems, land use and climate change are interlinked. Increasing temperatures and deforestation hasten the decline in nature, which impairs the ability of natural systems to regulate the global climate.

Source: BloombergNEF

Manifestation of nature risk

PG&E's (NYSE: PCG) service territory extends through urban, rural and wild settings. It covers approximately 70,000 square miles – almost twice the size of South Korea or Portugal – including some of the most forested areas of the state, in Northern California and the Sierra Nevada mountains.

Severe and prolonged drought – exacerbated by climate change – has made these natural settings more vulnerable to wildfire.

PG&E's service territory is smothered with high fire-threat areas

Source: PG&E, California Public Utilities Commission, BloombergNEF.

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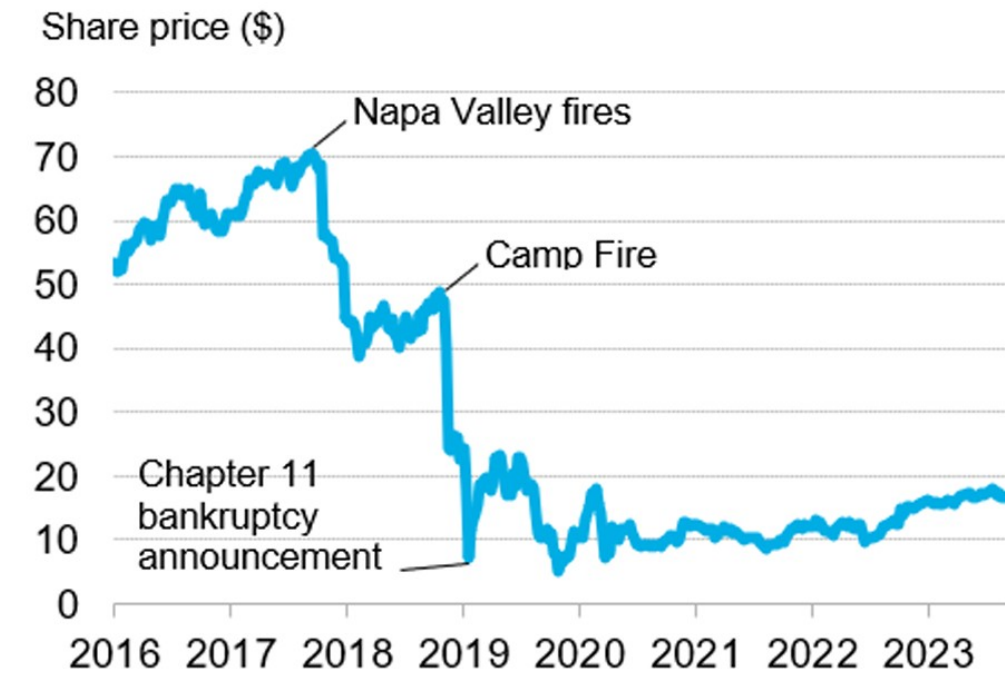
- Multiple factors make California highly susceptible to wildfires.
- Since the early 2000s there have been multiple notable wildfires in the state, including the Napa Valley (2017), Camp Fires (2018), and Los Angeles wildfires (2025).
- A federal judge ruled that Pacific Gas and Electricity Company was liable for damages relating to the fires due to failures to properly trim trees, resulting in fires when branches hit lines.
- The total liabilities for fire damages between 2015 and 2018 totalled \$30 billion, far in excess of the firm's insurance limits.

What were the impacts for the company and investors?

How nature-related risks led to the bankruptcy of one of America's largest utility firms

- **For PG&E:**
 - Forced to file for bankruptcy in 2019
 - CEO and other senior staff resignations
 - Massive reputational damage as the company pleaded guilty to 84 counts of manslaughter
 - Implementation of a \$59 billion reorganization plan
- **For insurers:** multiple payouts and legal fees associated with recouperation.
- **For investors:** PG&E share prices fell 91% over two years.

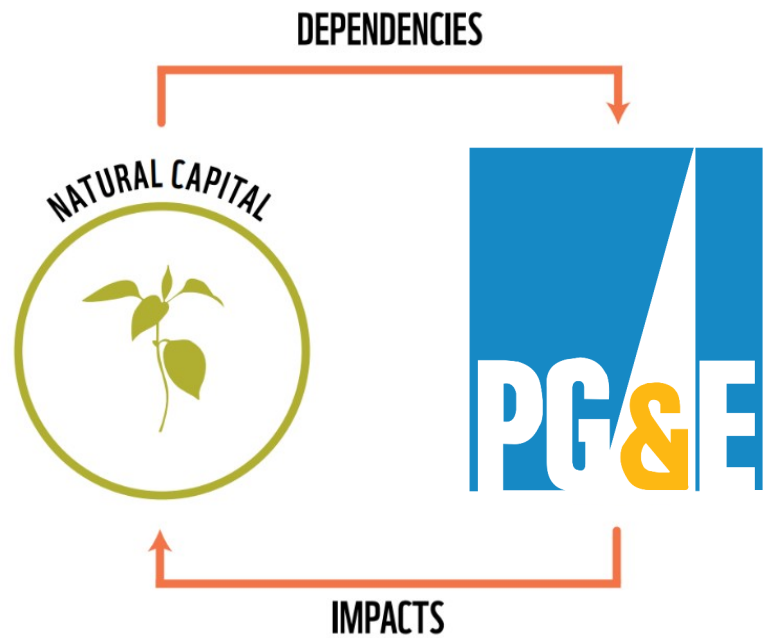
PG&E Corp share price fell 91% from September 2017 to January 2019



Source: BloombergNEF, Bloomberg Terminal.

Double-materiality - what was the role of nature-related risks?

How nature-related risks led to the bankruptcy of one of America's largest utility firms



Relevant **dependencies** of PG&E on nature

- Local climate regulation
- Water supply / rainfall
- Forest ecosystem health and integrity



Impacts of PG&E on nature through wildfires

- Habitat destruction
- Carbon emissions
- Soil degradation and increased erosion



Nature & Climate



How did the climate and nature nexus contribute to the wildfires?

- One factor in the wildfires was the large supply of “fuel”
 - Through the 2010’s multiple warm drought periods contributed to record numbers of tree mortalities providing large stocks of dead trees by the later 2010’s (129 million dead trees by 2017).
- These droughts are driven by nature risk and climate risk
 - Climate change increases the likelihood of wildfire risk, driving longer and hotter Summers in California.
 - Deforestation in California reduces the ability of local ecosystems to contribute towards local climate regulation and rainfall.
- Another contributing factor was habitat destruction and construction in the wildland-urban interface (WUI)
 - Since the 1990’s, nearly half of all new buildings have been constructed in the formerly unoccupied transition zone between urban and wild areas.
 - In previous fires when these areas burn damage is limited – now residences are threatened.
- Successful historic fire suppression to protect forests and those living in the WUI also contributed to the fuel supply
 - Limiting natural fires disrupts the ecosystem cycle of disturbance and



Nature & Climate

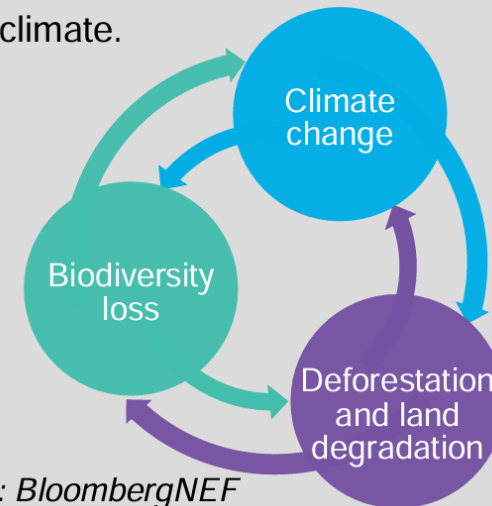
How will the relationship between climate and nature contribute to future wildfires?

If current trends continue, then climate and nature may increase wildfire risk even further:

- **Invasive species:** continued growth and spread of invasive grasses such as cheatgrass provide more continuous, flammable, material for fires than native species.
- **Habitat loss / land conversion:** continued development of the WUI areas for residential property increase the number of residences vulnerable to wildfires.
- **Deforestation:** if deforestation trends continue, the ability of the California ecosystem to regulate its local climate will continue to decline.
- **Soil degradation:** degraded soils perform poorer in water retention, support less diverse plant cover, and promote drier vegetation. Drought, erosion, and overgrazing may continue to drive soil degradation
- **Global warming & climate change:** As climate change continues, the climatic conditions favourable for wildfires will increase in duration – leading to a longer wildfire season.

Climate change and nature loss

The natural systems, land use and climate change are interlinked. Increasing temperatures and deforestation hasten the decline in nature, which impairs the ability of natural systems to regulate the global climate.



Source: BloombergNEF

LA wildfires 2025



Similar nature and climatic factors drove the wildfires in Los Angeles (January 2025)

Climate

- 2 Winters preceding 2024 with higher precipitation led to growth of wildfire fuel supply.
- Spring and Summer of 2024 was the hottest on record producing conditions susceptible for wildfires into the autumn and winter.
- Extension of fire risk conditions into January coincides with peak Santa Ana winds – dramatically spreading even small fires.

Nature

- Chaparral and coastal sage scrub ecosystems were out of balance, with invasive species and preceding unusual climatic conditions leading to easily ignited continuous fuel beds.
- Construction in urban-wildland interface areas put residences at high risk of wildfires



Hughes Fire, Los Angeles January 2025 source: Frederic J.Brown

What do these cases tell us about nature-related risks for financial institutions?



Immediate risks

- For insurers, nature-related risks can drive rapid high quantity and sizeable payouts.
- For investors (banks and pension funds), nature-related risks can reduce share values, cause expensive damages for clients, drive credit risk profile of counterparties, and cause reputational damage for clients (and potentially their financiers)

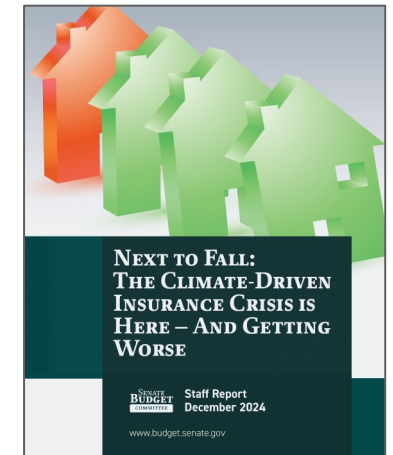
Systemic risks

- Droughts and wildfires in California, driven by nature and climate risks pose a systemic risk to the entire financial system of the state.
- Large areas are now seen as *uninsurable* due to the vast scale of insurance payouts previously and the high-risk profile of the area.
- Without insurance, homeowners and businesses face dire consequences in the case of wildfires, property values may fall, and asset devaluation may occur for utilities, real estate, and other sectors. Mortgage eligibility is also at risk for many homeowners in affected areas.

This systemic risk has the potential to become a repeating cycle of reduced financial stability:

With rising loan defaults, devaluation of bonds, surges in infrastructure repair costs, massive insurance costs or coverage denial, and devaluation of properties at a regional scale all eroding the stability of the California financial system.

- The US senate budget committee has identified the climate-driven insurance crisis as a potential source of a major financial crash



What do these cases tell us about the risks in South Africa?

With a similar climate and exposure to drought and wildfires – what are the implications for South African Financial Institutions

- The wildfire and drought situation in South Africa has some notable similarities with that of California:

Factor	California	South Africa
Hotter, drier summers	Increasing drought/fire frequency	2015–2018 Cape Town drought
Shrubland ecosystems	Chaparral, coastal sage scrub	Fynbos
Wildland–urban interface	Expanding urban sprawl into fire zones	Informal settlements near wild areas
Insurance stress	Increasing uninsurability post-2025	Short-term insurers exposed to fire/flood risk
Water scarcity	Sierra snowpack declining	Dam levels volatile, declining recharge

- South African FI’s are already seeing some similar issues to those in California □ multi-peril crop insurance has largely become unviable, with the area under such coverage falling by over 75% from 2009 – 2018
- The case of California shows that nature-related risks are **systemic** and **financial** □ early TNFD adoption and uptake may help South African financial institutions avoid the issue of pricing lags experienced by Californian financial institutions.



Key take-home messages



1

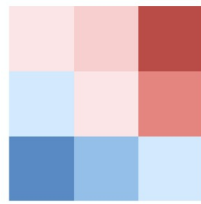
The future cashflows of business are dependent on the future flow of nature's services.

2

Most corporates and financial institutions today are inadequately accounting for nature-related dependencies, impacts, risks and opportunities.

3

The TNFD can help organisations identify, assess, disclose and manage nature-related issues, providing these tools in an integrated way for the first time.



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