

# Climate Risk – Are You Ready?

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# Background

Climate change is not a new concept! So why now for life/health insurers?

## Physical Risk

Risks emerging from climate factors, such as extreme high temperature or rising sea levels.

## Liability Risk

Risks that arise from parties who have suffered loss and damage from climate change, and seek to recover such losses from others.

## Transition Risk

Risks that emerge from a societal shift towards a low-carbon economy.

- There are wide-ranging implications of climate change for life insurance and life actuaries need to support the developments of insurers in this area

# Regulatory Trends

Climate change is an increasing area of focus for many regulatory bodies and formal regulation directly applicable to insurance companies is developing

## State Insurance Regulation

- State Insurance Commissioners
  - NY DFS
  - CID
  - Other State Activities
- National Association of Insurance Commissioners (NAIC)

## Federal Insurance Regulation

- Securities and Exchange Commission (SEC)
- Federal Insurance Office (FIO)
- Financial Stability Oversight Council (FSOC)

- Climate-related disclosure requirements are shifting from voluntary to mandatory.

# Task Force on Climate-related Financial Disclosures (TCFD)

Insurance regulatory bodies are increasingly adopting a TCFD aligned framework for US insurers to report on climate risk

- Comprehensive recommendations and guidance on climate-related financial disclosures
  - Intended to “promote more informed investment, credit [for lending], and insurance underwriting decisions” that “would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system’s exposures to climate-related risks”

**1**

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**Governance**

The Board and senior management should understand climate-related risks and maintain oversight

**2**

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**Strategy**

Consider current and forward-looking impact of climate-related risks on business decisions

**3**

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**Risk Management**

Incorporate climate-related risks into the organization’s risk management framework

**4**

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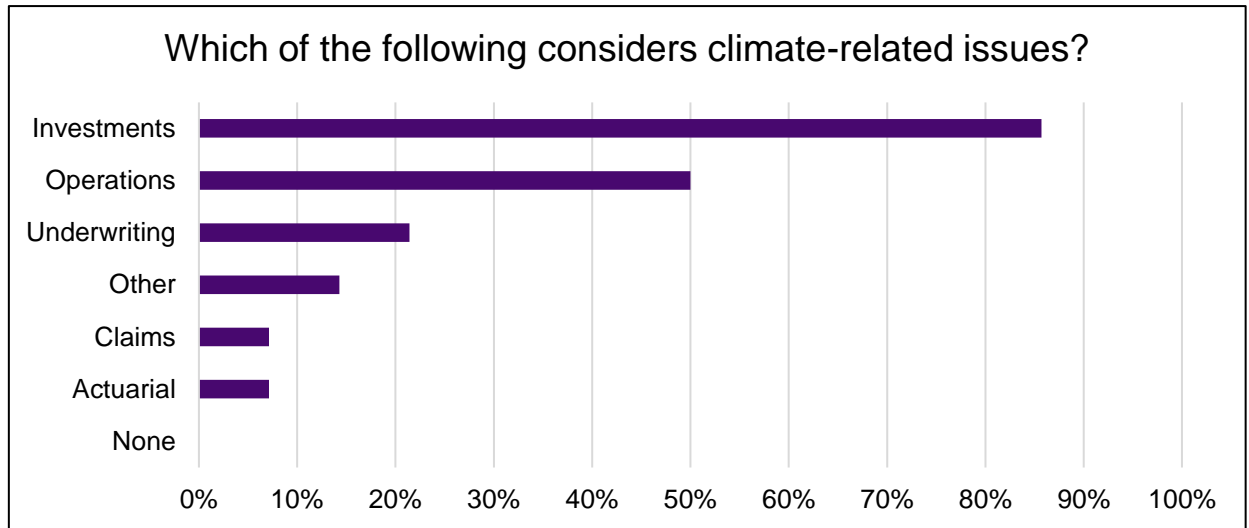
**Metrics and Targets**

Disclose the metrics & targets used to assess and manage relevant climate-related risks and opportunities

# Life Actuaries and Climate Change

Impact Area	Areas of Actuarial Work	Examples
Changes to investment trends and performance	Investment advice and strategy, Investment governance, Product design, Reserving	Product Pricing, ALM, Strategic and tactical asset allocations, Socially Responsible Investments (SRI)
Changes to mortality and morbidity trends	Product Design, Pricing, Reserving	Product Pricing, Capital Management, Reinsurance, Long-term assumptions setting
Overall uncertainty around timing, magnitude and response to climate change	Risk Management/ORSA, Pricing, Reserving	Risk governance, Strategic planning, Scenario analysis, Risk appetite framework, Capital management
Changes to economic growth and strategic planning	Product Design, Reserving, Financial/Strategic Planning	Product Pricing, ORSA, Long-term financial projections
Changes to insurance regulatory environment	Has potential to affect all areas of actuarial work	Risk governance, Risk reporting, Corporate level disclosures, Capital management

# Opportunities for actuaries



Source: WTW Climate Risk Survey, 2022

# A closer look at mortality impacts

Reduction in mortality rates

Increase in mortality rates

**Warmer winters** Leading to fewer “excess” winter deaths

**More heat waves**

Causing excess summer deaths

**Larger swings in temperature**

Bad for health, particularly for older people

**More weather-related disruption**

Storms, floods

**Economic gains from positive action** Continued investment in health and public services

**Less healthy diets**

Price increases for fresh produce

**Healthier diets** More sustainable and healthy plant-based diet

**Less healthy environment**

Pollution continues unabated, increase in airborne diseases

**Healthier lifestyles** Warmer weather encourages more outdoor activity, reduced car use

**Deterioration in health services**

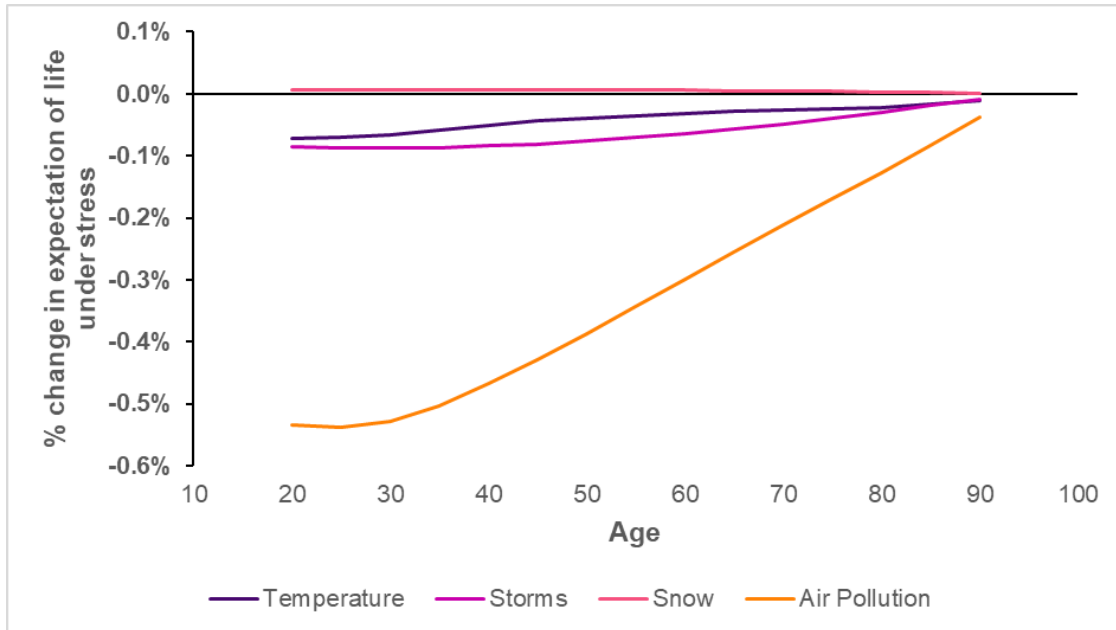
Poorer health, pressure on emergency services from weather-related disruption

**Healthier environment** Cleaner air through economic/political changes

**Disruptions to water supplies**

Drought or weather-related disruption

# Direct effects of climate risk are likely to be minor



Source: WTW analysis <https://www.wtwco.com/en-GB/Insights/2021/04/the-mortality-impacts-of-climate-change-chapter-4>



# Indirect effects of climate risk are likely to be more significant



**Vector borne diseases and novel diseases.**



**Food security and dietary change**



**Impacts of climate change on migration,  
conflicts and geopolitics**



**Flooding and damage to arable land.**



**Other behavioural changes targeted at  
limiting climate change, but affecting health**

# Considering direct *and* indirect effects of climate change together



Consistency in scenarios means we can avoid having to make spurious assumptions about the correlations between the asset-side and liability-side impacts of climate change as measured in unrelated scenarios

# Potential scenarios for investigation

Mass behavioural change	Climate-induced mass-migration	Economic effects of disorderly transition
<p>Consumers may choose to:</p> <ul style="list-style-type: none"><li>■ Cut meat consumption</li><li>■ Change modes of transport (and perhaps levels of exercise)</li><li>■ Change purchasing habits, preferring locally sourced products</li></ul> <p>Additionally, governments and local authorities may implement policies to reduce the impact of climate change, some of which affect health. For example: investment in green spaces</p>	<p>Crop yields fall due to salinification of soils and low rainfall in sub-tropical areas (e.g. Sahel / areas of central and North America).</p> <p>This, along with extreme weather and consequent flooding, as well as sea-level rise, displaces populations, resulting in:</p> <ul style="list-style-type: none"><li>■ stress on recipient countries' health services, and</li><li>■ potential increases in the prevalence of diseases uncommon in the recipient countries (e.g. tuberculosis, hepatitis C)</li></ul>	<p>Nations' GDP growth and ability to fund healthcare may be impaired, as may individuals' ability to afford healthcare.</p> <p>Consideration can be given to the difference between impacts on different industry sectors and socioeconomic groups, based on how the transition would affect their own income and health.</p> <p>Mental health impacts could be a factor for some product categories too</p>

# Climate Risk Scenarios

Climate risk scenarios inherently involve a great deal of judgment but generally consider 2 broad categories:

1. Amount of warming within a specified period of time
2. Ability of policy and economy to respond

Some states are exploring 4 scenarios that could be included

Scenario	Transition	Financial Market Impact	Natural Disaster Impact
1	Orderly	Minimum	Limited
2	Disorderly	Large	Limited
3	Disorderly	Large	Drastic Increase
4	None		Drastic Increase

# Merging with the existing risk taxonomy

## Market risk

- Transition risks could accelerate quickly. One possible outcome is increased market volatility
- Physical risks could create new losses (e.g., real estate assets), but quantification and management of these is likely more familiar to insurers

## Insurance risk

- Adverse impacts to mortality and morbidity, with the potential for longevity offsets

## Operational risk

- Most insurers already use a combination of qualitative and quantitative methods, and both methods are expected to remain relevant
- Shifting climate attitudes and heavy media coverage can create a very sensitive environment for reputational risk

# Adapting existing Enterprise Risk Management tools for climate risk

Regulatory Expectations	ERM Tools
Integrate climate risk into governance structure	Board risk committee, CRO
Consider climate impact in business decisions	Risk appetite
Include climate risk in ORSA	ORSA
Identify and assess climate risk	Risk register, scenario analysis, economic capital
Disclose climate risks	Risk dashboard