



International Actuarial Association
Association Actuarielle Internationale



Importance of climate-related risks for actuaries

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IAA Climate-related Risk Initiative

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IAA Climate-related Risk Initiative

Launched in May 2020

Purpose

- Wider awareness of the potential impacts of climate-related risks on financial risk management, reporting and disclosure;
- Increased recognition for the potential contribution of actuaries as risk experts on the part of supranational organizations, government agencies, industry and the public; and
- Development of the actuarial profession's skill sets and capabilities to assist third parties in managing climate-related risks.

Activities to be completed by the end of 2020

- **Paper on the role of actuaries in climate-related risk management.**
- Introductory paper on global climate-related scenarios and considerations when applying to regional and/or local circumstances.
- Paper on the development of effective and globally-applicable links between climate-related risk scenarios and insurance and pension risks and costs, identifying gaps in data availability, assessment methodologies, and process capabilities at the industry sector level.



IAA Climate-related Risk Initiative

Recommended activities for 2021-2024 include:

- Paper on application of climate-related risk scenarios to asset portfolios.
- Advise on climate-related financial risk management, reporting and disclosure.
- Paper on transition and adaptation and on the consequences for the private and public insurance and pension sectors.
- Review of existing IAA publications regarding climate-related risks.
- Paper on the link between climate-related risk scenarios and social security.



The importance of climate-related risks for actuaries

This paper was authored by a subgroup appointed by the CRTF consisting of:

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Executive Summary

- Actuaries have long played vital roles in managing the uncertainties of financial risk.
- Growing global recognition of the importance of climate-related risks.
- Actuaries increasingly involved in considering how climate-related risks are applicable to their work and to the wider business interests of their employer or client.
- Paper examines categories of climate-related risks and their importance for actuaries.
- Paper concludes with implications and next steps for actuaries.



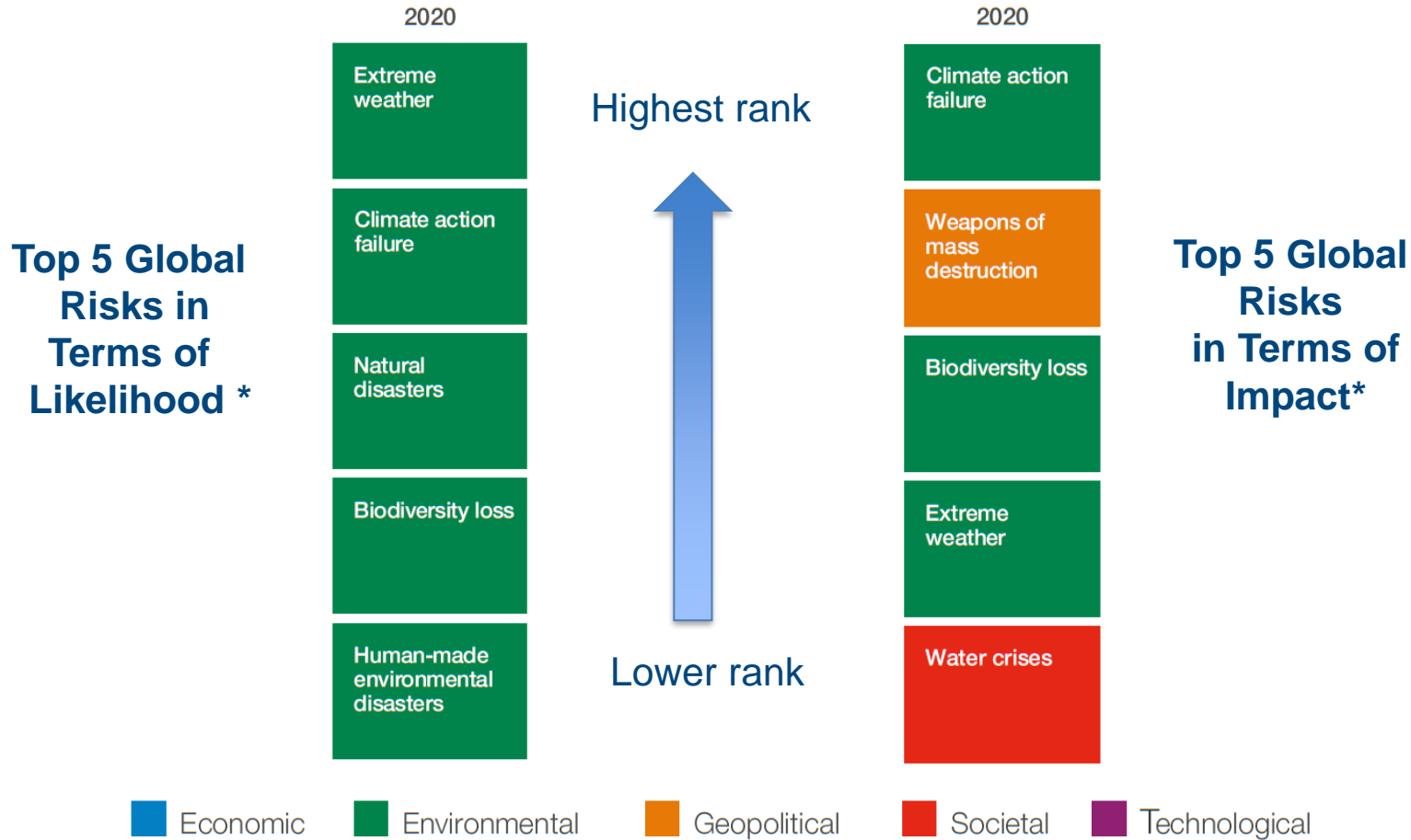
Contents of paper

- Why actuaries should care
- Climate – related risks
- Actuarial modelling
- Product management
- Risk and capital management
- Investment management
- Disclosure
- Implications for actuaries
- Next steps



Why actuaries should care?

- Climate-related risks are rising to a global level with impacts on many areas of our society.
- Business, governments and society are seeking the best means of managing and mitigating climate-related risks, both financial and non-financial, as well as exploring climate-related opportunities.



* Global Risks Report, World Economic Forum



Why should actuaries care?

- Actuaries have long played vital roles in managing the uncertainties of financial risk.
- An increased focus on and understanding of climate-related risks benefits all stakeholders by increasing the transparency with which these risks are addressed by all market participants.
- The importance of actuarial involvement in climate-related risks has been noted in a survey of insurance supervisors.



Why should actuaries care?

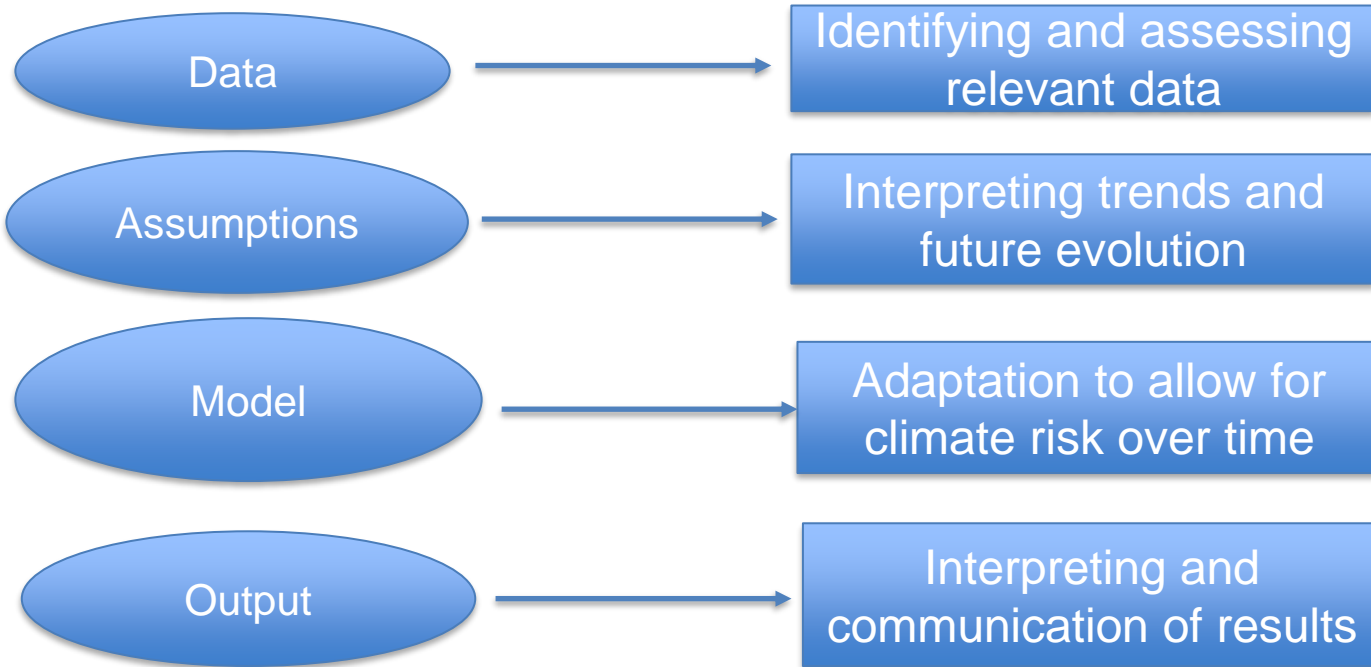
- Actuaries can play important roles:
 - Reviewing underlying models in their work;
 - Aligning insurance product design with the needs of consumers, corporates, vulnerable groups, regulators, governments, etc.;
 - Encouraging pension funds, insurers and other clients to be active investors who support the management of climate-related risks in their investments;
 - Developing investment strategies and products to help solve or address problems associated with climate-related risks;
 - Working towards improved governance and risk management of this risk;
 - Contributing to the public debate and review of relevant government programs;
 - Disclosing in their work the impact of climate-related risks



Climate-related risks

Risk	Description	Impact
Physical Risk	Can be event-driven (acute) or longer-term (chronic) shifts in climate patterns	Extreme weather events eg windstorm, sea-level rises Social conditions eg droughts, wildfires
Transition Risk	Transitioning to a lower-carbon economy may entail extensive policy, technology and market changes	Policy risk Technology risk Market risk
Legal / Reputation Risk	An increase in climate-related claims being brought before the courts by eg property owners	Failure to mitigate Failure to adapt Insufficiency of disclosure

Actuarial modelling



Actuarial modelling

Investment Assumptions	Mortality and Morbidity Assumptions	GI Claims Assumptions
<p>Impact of physical and transition risks</p> <p>Stranded assets</p> <p>Reduction in investment returns, impact differs by eg segment and geography</p>	<p>Food and water security</p> <p>Temp change and volatility</p> <p>Pandemics and vector-borne diseases</p> <p>Social impacts</p>	<p>Uncertain trends and potential for step-changes in eg:</p> <ul style="list-style-type: none"> • Weather - related • Decarbonisation effects • Liability risks • Nat cats



Product Management

- Balance needs of consumers with need to run a viable insurance business:
 - Premium levels
 - Policy coverage
 - Adoption of a sustainable approach to investment
- Opportunities for product innovation eg introducing incentives that manage risk exposures or incentivize initiatives that seek to directly address climate-related risks

Risk and Capital Management

	Physical	Transition	Legal / Reputation
Market	Medium	High	High
General Insurance	High	Medium	High
Longevity	Medium	Low	Low
Mortality/Morbidity	Medium	Low	Low
Lapse	Low	Medium	Low
Counterparty	Medium	High	Medium
Operational	Low	Medium	Low
Strategic	Medium	High	High
Reputational	Low	Medium	High



Risk and Capital Management

ERM Key Feature	Potential Climate-related Risk Considerations
Governance and ERM Framework	Ensure that climate-related risk is properly considered and assessed in its enterprise risk management framework.
Risk Management Policy	Sufficiently flexible to incorporate climate-related risk both as it is considered now but also as it develops in the future.
Risk Tolerance Statement	Should explicitly consider climate-related risks, eg with regard to the fund's or firm's investment strategy
Risk Responsiveness and Feedback Loop	Analysis of previous experience, as well as forward-looking emerging risk assessments
Scenario Analysis	Forward-looking views of companies' risk exposures and how this links to their future business strategy



Risk and Capital Management

- Expectation of inclusion in ORSA for insurance
- Use of an appropriate range of scenarios -design and usage in subsequent papers
- May need to review reinsurance coverage
- Approach of rating agencies
- Relationship with pension fund sponsor



Investment Management

- Implications for pensions schemes, insurance companies and fund managers
- ESG / socially-responsible investment
- Quantitative assessment of climate-related risks
- Understanding of impact on correlations between different investments
- Third party assessments
- Investment mandates



Disclosure

- Increasing demand by stakeholders for more extensive disclosure of companies' own assessment of the risks they face, together with the actions they are taking to identify, manage and mitigate those risks
- Relevance to actuaries:
 - Actuaries are likely to be asked to support the development and production of the disclosure for the insurers, pension funds or other institutions they work for or advise; and
 - The disclosures of firms in which those institutions invest will be of interest to actuaries as they will help them understand the sustainability of those investments.

Disclosure

TCFD recommendations (2017) provide framework for companies and other organizations to develop climate-related financial disclosures through their existing financial reporting processes.

Table 3: *The TCFD’s recommended four-pillar approach to company disclosure on climate-related risks*

Governance	Strategy	Risk Management	Metrics and Targets
Disclose the organization’s governance around climate-related risks and opportunities	Disclose the actual and potential impacts of climate-related risks and opportunities on the strategy and financial planning of the business	Disclose how the organization identifies, assesses and manages climate-related risks	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities

Implications for actuaries

Table 4: How actuarial work is exposed to climate-related change

Climatic impacts		Socio-economic impacts		Impacts on actuarial work
Direct	Indirect	Social	Economic	
<ul style="list-style-type: none"> • Heatwaves • Storms • Floods • Sea level rise • Bushfires • Droughts 	<ul style="list-style-type: none"> • Air pollution • Water and food supply • Diseases 	<ul style="list-style-type: none"> • Migration • Health infrastructure • Emergency & social services • Consumer behavior 	<ul style="list-style-type: none"> • GDP growth • Investor preferences • Infrastructure investment • Employment • Housing • Energy • Taxation 	<ul style="list-style-type: none"> • Changes to modelling & assumptions • Development of products including re-design, pricing, exclusions etc. • Changes to risk management practices • Changes to capital management practices • Prevised/new investment management practices • Changes to financial stability management • Disclosure that allows for climate risk • Broader application of actuarial work



Next steps

- For actuarial associations:
 - Research and development efforts
 - Training and continuing professional development
 - Regulatory environment – Proactive actuarial involvement



Next steps

- For individual actuaries:
 - Be informed
 - Learn about climate-related risks and the value of adaptation
 - Build deeper expertise
 - Collect and share data and techniques
 - Start a dialogue
 - Validate the sources of information used
 - Make part of integrated part of day-to-day work
 - Continuously learn



Any questions?



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Thank you



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