



The only constant is change – climate change presents us actuaries with new challenges and opportunities

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What's next?!

Migration of Peoples

*Some of these events
are not independent*

Climate
Change

War, Inflation,
Energy and Food Shortage

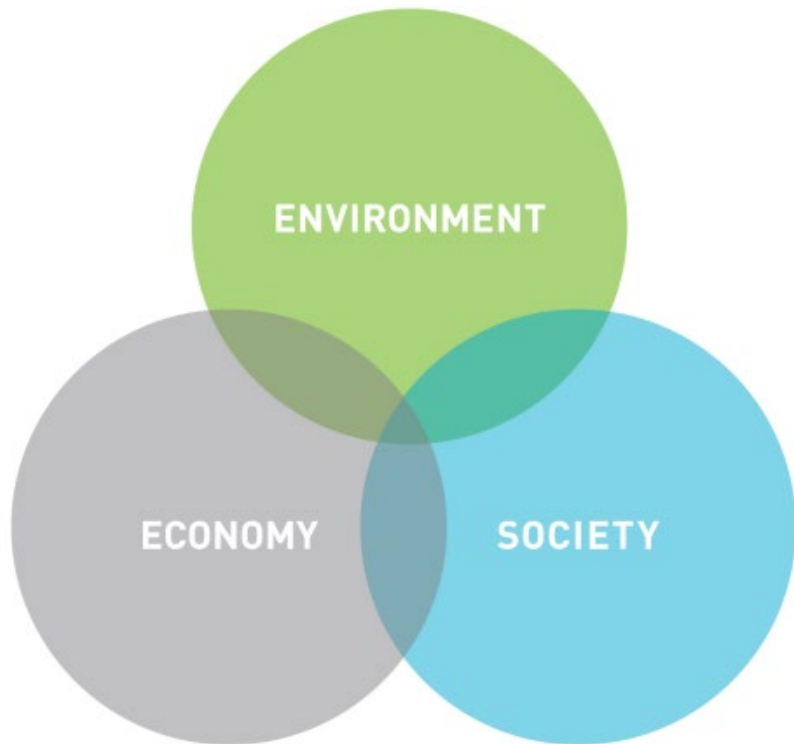
COVID-19

***“And I thought they
meant something
else when they
warned us about the
next wave...!”***

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Climate Change and Sustainability

The three pillars of sustainability



University of Alberta: What is sustainability?
<https://www.mcgill.ca/sustainability/files/sustainability/what-is-sustainability.pdf>

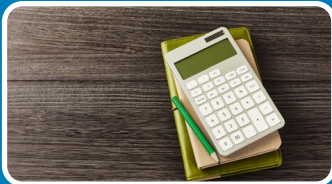
Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs.

*In addition to **natural** resources, we also need **social** and **economic** resources.*

Sustainability is not just environmentalism.

Main Action Points for European Actuaries

We must assure that the **pensions and insurance industries** maintain their **role for the economy** despite the climate change by answering the three questions:



Financial Sustainability

- How can we effectively **manage the risks posed to insurance and pension systems** from the short and long-term policy effects and plan for effective mitigation and adaptation?



Climate and Social Sustainability

- How can insurance and pensions **contribute to the transition through investments and transition project insurance**
- as well as **pay-out on climate related physical risks** which are insurable?



Climate Protection Gap

- For climate risk borne by society which are not currently insurable, or may become non-insurable under current / future market conditions, how do public policies work with the insurance and pension industries to **assure society is covered** in these areas?



Non-linear effects of Tipping Points dominate



Nature, Climate Tipping Points: <https://www.nature.com/articles/d41586-019-03595-0>

Domino-effects
connecting tipping points further increase non-linearity.

Need to base our scenario analyses on **long-term scientific assessments and modelling.**


No prediction but **what-if-analysis** to support management.




A forward-looking approach is needed!

Actuaries have always applied a **forward-looking approach** in estimating future events in terms of their

- nature
- impacts
- probabilities
- timing



For **climate related events**, all of the above are hugely uncertain as they **depend on future deliberate human actions** such as regulations and the responses to such regulations and the intertwining future events and unintended side effects



Certain **forward-looking scenarios need to be developed**, agreed and applied in projecting (but not predicting) the future – **this is a very actuarial task**



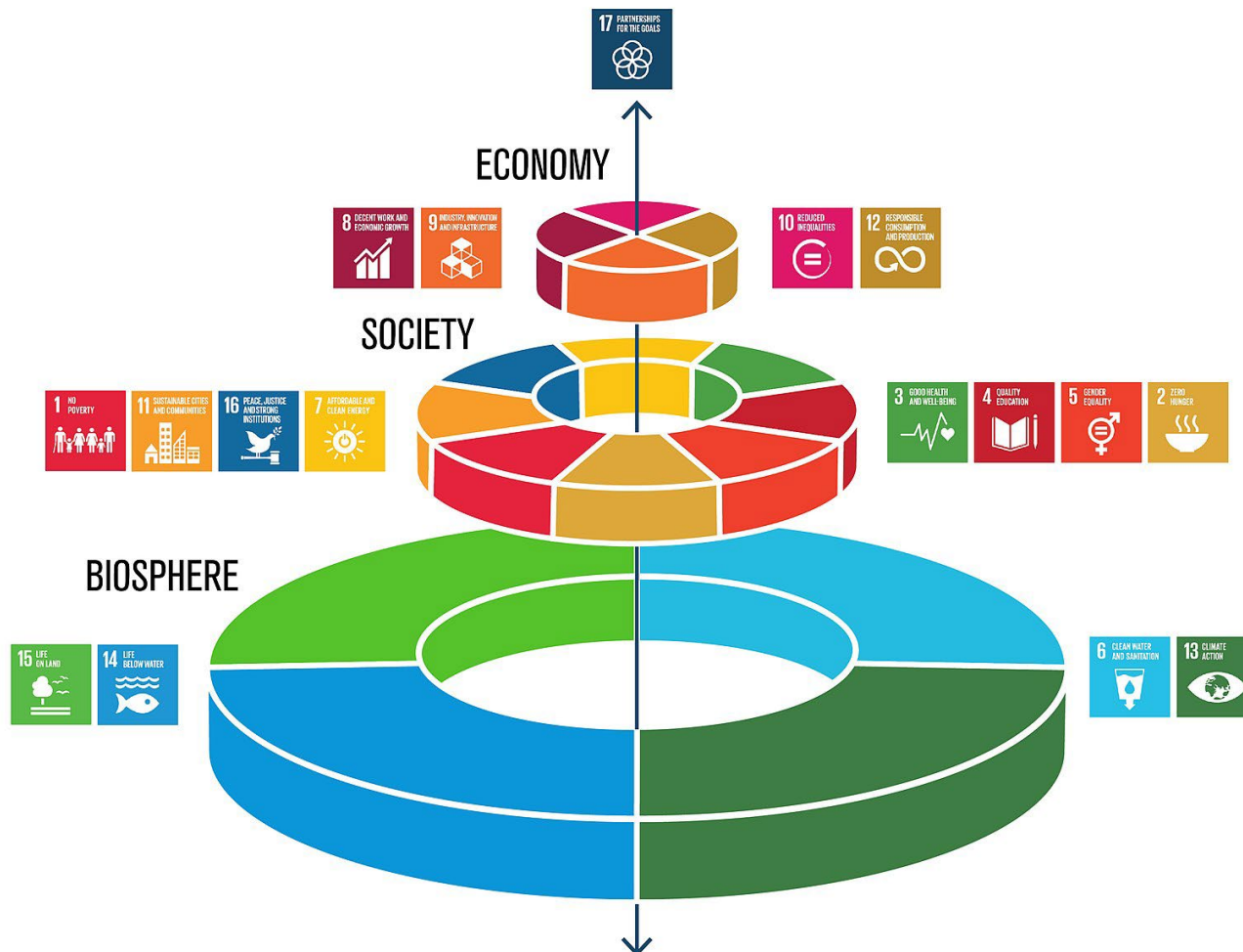
Climate and Social Sustainability

Non-life insurance can play a major role during the transition in **protecting individuals and companies against physical losses** and **providing supporting services**.

- We believe that **underwriting approaches** that **include ESG criteria** in the assessment of risk exposures are important for developing sustainable solutions that price climate change risks appropriately
- Companies should use such approaches to judge and implement effectively their **risk appetite** when pricing or agreeing to insure such risks, as well as the economic capital they need to face these risks



Benchmark product benefits against UN SDGs



“Wedding Cake” representation of UN Sustainable Development Goals (SDGs),
by Azote for Stockholm Resilience Centre, Stockholm University: <https://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html>

Graphics by Jerker Lokrantz/Azote



Consider Double Materiality for SDG effects

SUSTAINABLE DEVELOPMENT GOALS

Identify goals that are affected by product

Identify material effects of product on 17 goals

Assess if impact is negative (harmful) or positive (beneficial)

Describe the effects in detail

Describe the ways in which that goal is harmed or benefits

Assign a measurement to the extent of harm or benefit

Describe risks & opportunities for better or worse effects

Translate the risks and opportunities into actions

Aggregate product's measurements

Define OKRs of product's effects on SDGs

Setup monitoring and reporting process for internal measurement and public disclosure



Climate Protection Gap

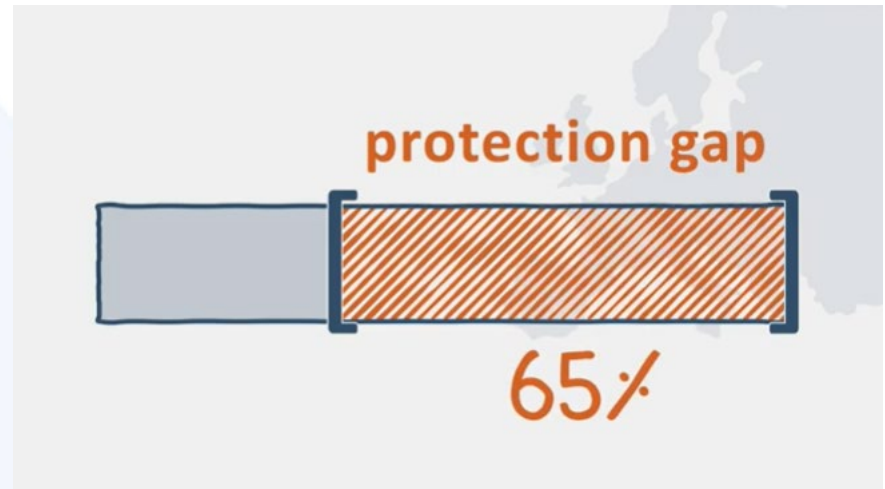
With **limited capacities and increasing physical risks** due to the climate change, insurers adopting well-informed underwriting processes may need to **decline coverages**.

- **Protection gaps** are areas in which societal risks are not covered by the insurance industry
- Risks that are uninsurable in profit-oriented markets can only be covered by **public policy encouragement**
- The **early identification** of protection gaps and the **development of shared resilience solutions** between the insurance industry and public protection facilities are key
- Public-private partnerships could mitigate the threats to protection gap



EIOPA works on early identification of gaps

1. **Understand drivers**
for existing protection
gaps
2. **Analyse measures for
mitigating** gaps:
 - reduce vulnerabilities
 - identify proactive prevention measures
 - improve cross-border cooperation
3. **Understand possibilities to establish
public-private partnerships**
vs.
public schemes and private protection



Only a world-wide approach will be successful



Climate change is not just a European issue. Solving the climate crisis will need a **global view**.

- There should be **no worldwide inconsistencies** or local regulatory loopholes that can be exploited
- Actuaries can support the development of **accounting, valuation and disclosure approaches** to make such loopholes more transparent



More details to be found at the various webinars the IAA has produced on its climate risk related papers and the AAE webinar on “Role of the Actuary” (June 2022)



Any questions or comments?