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Sectoral Climate Change Impacts and Adaptation Responses:

Insurance as a risk reduction tool supporting cross-sectoral adaptation

Europe is vulnerable to the increasing frequency and intensity of weather and climate-related natural disasters such as extreme temperature and precipitation, storms, floods and droughts. Extreme disaster events cause not only human losses, but can also have severe economic and financial implications for governments, businesses and households through the direct damages they cause to buildings, equipment and infrastructure as well as more indirect consequences, such as business interruption, loss of employment and output and decreased tax revenue. Insurance is one instrument among a whole suite of economic and financial risk management approaches that supports adaptation to climate change and helps in managing the economic losses and damages resulting from climate change-related extreme events. In the wake of rising losses and growing concerns about climate change impacts, the importance of insurance has been recognised as part of the recently adopted Paris Agreement. Despite these opportunities, at present, the insurance sector's expertise and capacity have been underutilised. Measures must be taken to increase the uptake of insurance as a tool for facilitating cross-sectoral adaptation among sectoral stakeholders and minimising future climate change-related losses.

This factsheet presents an overview of the possibility of utilising insurance as a risk reduction tool that supports cross-sectoral adaptation.

Climate change impacts in Europe and the role of insurance

More frequent, and more intensive, extreme events and natural disasters related to climate change will affect Europe differently across regions and sectors. Figure 1 shows the extent of the economic damages of natural hazards in Europe over the past 30 years (1980-2013).

Insurance plays a crucial role in helping to manage the financial impacts of disasters in all sectors as it can absorb some of the losses and provide relatively quick access to the funding necessary for recovery. Countries with higher insurance penetration have been shown to recover much faster and more efficiently when struck by a disaster. However, despite the positive impact of insurance on reducing the economic consequences of extreme events, a significant “insurance gap” remains; between 2005 and 2014, insurance covered only 51 per cent of all losses from meteorological and hydrological disasters in high-income countries. This can be attributed to the fact that unlike risks, such as ‘fire’ or ‘theft’, the risks of extreme weather events are less well-understood by clients. Hence, individuals and businesses insure themselves against the risks of natural disasters and extreme events less often, relying instead on ad hoc relief from governments, which places a significant burden on public budgets.

Evidence of this protection gap was reinforced in 2015, which saw the highest number of natural catastrophes on record, with over 1,000 causing overall losses of USD 90 billion, an increase and concentration of risk exacerbated by demographic and urbanisation trends. To date, insurance penetration has been outpaced by these trends, resulting in the widening of the protection gap. A further increase in the frequency and severity of disasters, as a result of climate change impacts, may exacerbate the insurance gap as insurance for certain risks may simply become unaffordable.

It is widely noted that, while a world that is 2°C warmer might still be insurable, it is absolutely clear that beyond that, the insurability becomes uncertain, leading to possible and serious economic disruptions. If the trend continues, the majority of future losses will be carried by individuals, firms and, the ‘insurer of last resort’, governments.

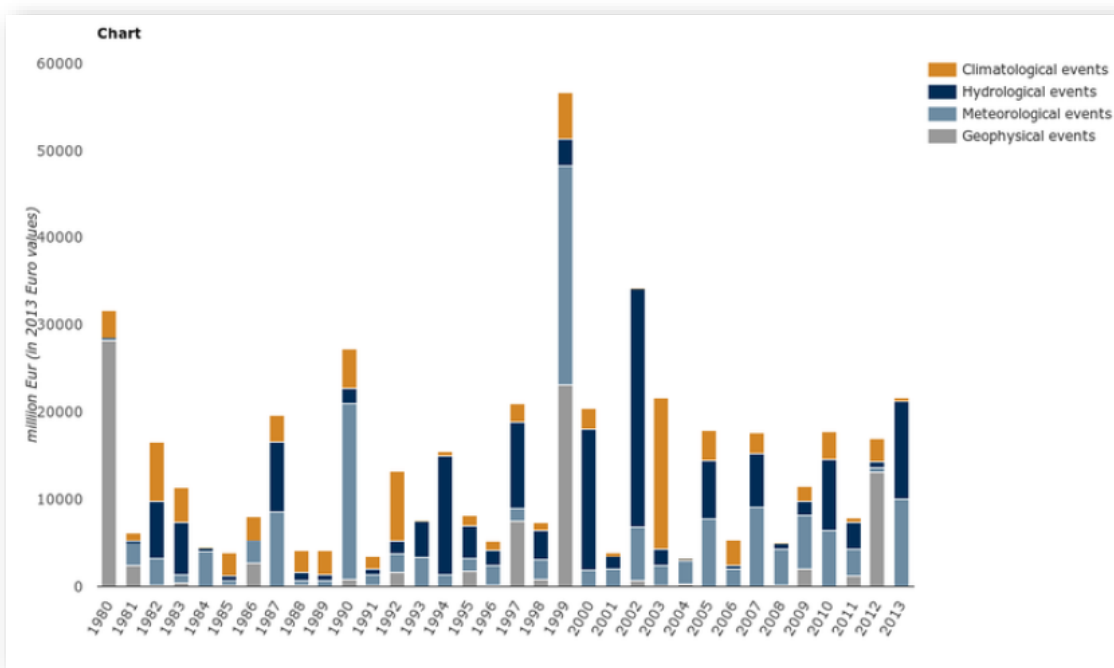


Figure 1 Economic damage caused by natural hazards by year and by hazard category (Source: EEA indicators 2016)

Insurance as a risk reduction tool

The need to reduce the burden on public resources, and to minimise the potential damages and spill-over effects caused by climate change, make insurance an important option that can support cross-sectoral adaptation. Insurance is not a replacement for adaptation (or mitigation), but it can be a key part of the overall suite of measures to manage the risk of catastrophic climate change. Insurance should not be viewed as a form of compensation for victims of climate change; indeed, it is a risk reduction tool, given that insurance can help to preserve the global financial and social system.

Insurance can be a valuable tool supporting adaptation in three ways:

- Reducing the financial impact of events like flooding or storm damage through insurance pay-outs;
- Providing incentives for risk prevention, e.g. the cost of insurance premiums for properties with high exposure to climate risks may encourage adaptation actions.

Box 1: Climate-ADAPT: The European Climate Adaptation Platform

Climate-ADAPT is the European Climate Adaptation Platform. It contains a vast database of sources and information about: climate change impacts, vulnerabilities and risks in different countries, regions and sectors; adaptation [options](#), [national strategies](#) and [case studies](#). It also allows users to share their own information and to find useful links to other adaptation networks and databases. Climate-ADAPT has a dedicated [Insurance](#) sectoral page which contains the most relevant information about climate change and adaptation in the sector including the relevant EU policies, research initiatives and funding.

- Well-designed insurance policies can work as a market-based instrument to discourage risky behaviour and to promote risk awareness and mainstream disaster proofing in economic and financial decisions;

Providing information on risk by signalling, through pricing, the true nature of risk. This is critical for raising the awareness of the population of increasing risk levels. In recent years, policies for disaster risk reduction and management have shifted to a comprehensive, integrated risk approach, taking the full disaster cycle: prevention, preparedness, response and recovery into account. Adaptation to climate change and disaster risk management provide a range of complementary approaches for managing the risks of climate extremes and disasters. Insurance can support this by raising awareness of the risks and sharing the costs of damages allowing clients and sectors to direct resources to adaptation action rather than recovery and repairs. Insurance can also promote adaptation action e.g. by offering lower premiums if clients undertake climate change adaptation measures.

The viability of insurance, as a climate change adaptation strategy, is enhanced by designing specific insurance products that best suit national and local conditions and different sectoral needs. There are multiple types of insurance schemes targeted at governments, intergovernmental 'risk pools', businesses and households.

The Table below provides a brief overview of the variety of insurance products tailored to insuring businesses (and households) against climate change-related extreme events and other natural disasters.

Table 1: Advantages and disadvantages of different insurance products for minimising climate change-related losses

Type of Insurance	Advantages	Disadvantages
<p>Parametric schemes: Pay-outs for parametric insurance products are not based on actual losses, but are agreed ex-ante. They are paid once an event, defined by verifiable independent sources, occurs.</p>	<p>Parametric schemes are simple and easy to understand. They also have the advantage that claims are handled and paid much quicker and data requirements are less onerous.</p>	<p>Parametric schemes may create a gap between loss amount and recovery for the client.</p>
<p>Parametric index-based weather schemes: A set amount is paid out if a certain index is reached, such as wind speed, rainfall in millimetres, location of a hurricane, magnitude and location of an earthquake, etc. The index can be measured via weather stations or, increasingly, satellite images.</p>	<p>Using verifiable sources for the index measurement makes this type of schemes one of the most innovative, affordable and fitting solutions for weather-sensitive companies and populations.</p>	<p>Like other parametric schemes they may create a gap between loss amount and recovery for the client.</p>
<p>Modelled loss basis schemes: Payments are made based on losses estimated by a catastrophe model.</p>	<p>Catastrophe models are suitable for estimating exposure to homogenous risks (e.g. domestic property).</p>	<p>Building a model takes time and expense, thereby making these schemes more expensive. Catastrophe models are also less suitable for estimating exposure to complex risks and may be less suitable for insuring businesses facing a variety of linked risks.</p>
<p>Indemnity schemes: Indemnity schemes compensate for the actual economic losses of a climate-related disaster (up to the limiting amount of the insurance policy).</p>	<p>Indemnity insurance offers the certainty that compensation matches exposure.</p>	<p>The indemnity insurance pay-outs are potentially slower than other types of insurance.</p>
<p>Insurance-linked securities: Insurance-linked securities (ILS) can be catastrophe bonds or other alternative risk transfer instruments that provide insurers, re-insurers and businesses with multi-year protection against natural disasters with minimal counterparty credit risk. They can also offer investors the possibility to diversify their portfolio risks.</p>	<p>ILS can increase insurance capacity for highly improbable, low-frequency, high-severity natural catastrophes.</p>	<p>ILS involve some risks for investors e.g. loss of investment in case a natural catastrophe or other event triggers a payment by the issuer of the ILS under the underlying risk-transfer agreement to which the ILS relates to. Hence, ILS might be less suitable for risk-averse investors or businesses seeking to simply cover potential costs of disaster damages.</p>

The information in this factsheet is based on the following sources:

Bauer, E. (2016) Natural catastrophe insurance in Europe: coverage gap, causes, consequences and solutions, Swiss Re presentation at the DG CLIMA/ DG ECHO Insurance workshop, Brussels, 5-6 October 2016

EEA (2016) Indicators, available at: <http://www.eea.europa.eu/data-and-maps/indicators/direct-losses-from-weather-disasters-2/assessment>

European Commission (2013) Green paper on the insurance of natural and man-made disasters, COM(2013) 213 final, available at http://ec.europa.eu/finance/insurance/consumer/natural-catastrophes/index_en.htm#maincontentSec1

Hauer, O. (2016) The Coverage Gap - Causes and consequences, Bridging the gap in Germany, GDV presentation at the DG CLIMA/ DG ECHO Insurance workshop, Brussels, 5-6 October 2016

OECD (2015) Special session on climate change and the insurance sector, Conference Review Paris 3, December 2015

Simmons, D. (2016) The role of insurance and re-insurance in disaster risk management and risk mitigation, Willis Towers Watson presentation at the DG CLIMA/ DG ECHO Insurance workshop, Brussels, 5-6 October 2016

Suarez, P. and Linnerooth-Bayer, J. (2011). Insurance-related instruments for disaster risk reduction, Global Assessment Report on Disaster Risk Reduction. The United Nations Office for Disaster Risk Reduction, Geneva. Available at: <http://www.preventionweb.net/english/hyogo/gar/2011/en/bgdocs/Suarez & Linnerooth-Bayer 2011.pdf>

Swiss Re (2016) Swiss Re Capital Markets Insurance-Linked Securities – Risk Factors, available at: http://media.swissre.com/documents/Risk_Factors_310511.pdf

University of Cambridge Institute for Sustainability Leadership (CISL). (2016). *Closing the protection gap: ClimateWise Principles Independent Review 2016*. Cambridge, UK: Cambridge Institute for Sustainability Leadership, available at <http://www.cisl.cam.ac.uk/publications/sustainable-finance-publications/closing-the-protection-gap-climatewise-principles-independent-review-2016>

Useful sources for further information

- ClimateWise – Insuring a sustainable future: <http://www.cisl.cam.ac.uk/business-action/sustainable-finance/climatewise>
- Munich Climate Insurance Initiative: <http://www.climate-insurance.org/home/>
- The Geneva Association: <https://www.genevaassociation.org/research/topics/climate-risk/>
- Insurance Europe: <http://www.insuranceeurope.eu/climate-change>
- Enhance – Partnership for Risk Reduction: <http://www.enhanceproject.eu/>

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More information on Climate-ADAPT:

Website: <http://climate-adapt.eea.europa.eu/>

Newsletter: <http://climate-adapt.eea.europa.eu/newsletter>

Useful resources:

European Commission Climate Action website and social media:



ec.europa.eu/clima



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