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Using insurance in adaptation to climate change

*Printed by the Publications Office in Luxembourg
Luxembourg: Publications Office of the European Union, 2018*

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Print ISBN 978-92-79-77289-4 doi:10.2834/745494 ML-06-17-493-EN-C

PDF ISBN 978-92-79-77288-7 doi:10.2834/036674 ML-06-17-493-EN-N

HOW CAN INSURANCE INCREASE RESILIENCE TO CLIMATE-RELATED DISASTER RISK?

Climate change is happening. We are reminded of it through an increase in frequency and destructive force of extreme weather events around the globe. Dealing with the consequences requires major financial efforts to compensate for losses. Insurance has attracted much attention as a tool in climate risk management in this context. In addition to financial compensation for losses after an extreme weather event, insurance can provide incentives to reduce risk. This brochure presents the main findings of a study into insurance mechanisms dealing with climate-related extreme weather events¹.

Policy background

The EU Adaptation Strategy² outlines objectives and actions that should contribute to a more climate-resilient Europe. The three objectives are:



The third objective encourages the use of insurance against natural and man-made disasters.

The European Commission's Green Paper on the insurance of natural and man-made disasters was published in 2013 as part of the Adaptation Strategy package³. It aims to encourage improvement in the ways insurers help to manage climate change risks, to increase the market access of natural disaster insurance and to release the full potential of insurance pricing and other financial products.

The basic principles of insurance against extreme weather events are presented in this brochure. Based on these principles and building on an inventory of insurance mechanisms and contributions from stakeholders, this leaflet presents good practices and a set of recommendations for action.

Insurance as a tool against extreme weather events

Insurance transfers risk from an insured person, object or organisation to an insurer. For extreme weather, this is a valuable tool because the financial damage does not turn into long term economic damage if a house or a business can be rebuilt or compensated for.

Before an extreme weather event can be insured, an insurer should be able to identify the risk and to quantify it. Of course, an insurer should be able to bear the costs if the extreme event actually occurs. One last important element of insurability is, that it cannot be known to anyone how, where and where exactly the extreme event will take place – it needs to be random.



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1. Ramboll and IVM (2017), *Insurance of weather and climate-related disaster risk: An inventory and analysis of mechanisms to support damage prevention in the EU*

2. COM (2013) 216

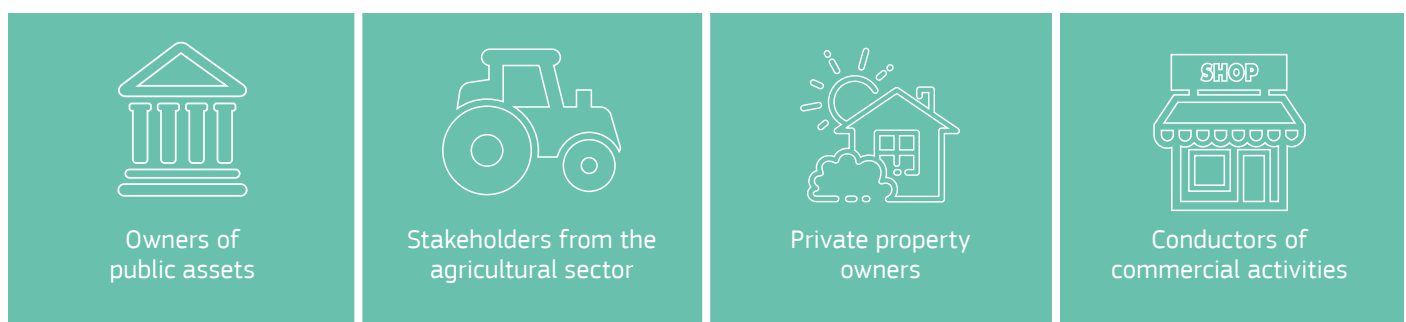
3. COM (2013) 213

Who is at risk?

As a consequence of climate change, extreme weather events such as floods, droughts, heat waves and storms are becoming more common, accompanied by an overall increase in risk. This places an increasing burden on the public budgets, insurers and people governments alike in order to absorb these impacts. To tackle such challenges, insurance or insurance-like mechanisms can make society more resilient to the impacts of extreme weather events in several ways:

- ↑ Insurance mechanisms can provide **financial compensation** for large disaster losses so that those affected can **recover faster**. The sooner and more comprehensive the recovery, the smaller the impacts of a disaster are likely to be in the long run, which helps to make society more resilient.
- ↑ Insurance companies can play a large role in **assessing, communicating and signalling risk** through premiums, deductibles and payments, so that those at risk can have a better understanding of the threat(s) posed.
- ↑ Stakeholders involved in the insurance sector can generate **incentives or requirements for risk management**, which in turn can **limit the potential impacts** of an extreme weather event. This could happen through price signalling (home-owners who fortify their roofs to be ready for hail storms, could be charged with a lower premium, or a lower deductible). Another option would be to include requirements that relate to resilience in the insurance policy: if an insurance-taker does not take any measures against the risk to which he/she is exposed, the pay-out will be lower.

The types of stakeholder discussed in this analysis can be divided into the following categories:



How can an insurance scheme be assessed?



What makes an insurance scheme perform well? Long term cost and benefits of insurance remain the main indicator. For climate change, these costs and benefits should be seen together with a broad range of risk management tools (prevention, protection, early warning).

The risk management objectives depend on the expectations that governments, insured parties or insurers may have.

An insurance scheme based on **solidarity** will achieve maximum coverage in order to evenly distribute risk.

A **climate risk management insurance** will increase risk awareness and provide incentives to increase resilience through adaptation measures.

The trade-off between premium affordability and risk-reduction incentives

Insurance companies distribute financial risk amongst policyholders, and risk-based premiums can incentivise individual policyholders to reduce risk. However, insurance becomes less attractive for high-risk households or farmers when premiums reflect the underlying risk. Although lower risk policyholders have a weaker incentive to reduce risk, they are more likely to buy insurance since premiums are more affordable.

This trade-off between premium affordability and risk-reduction incentives is important but difficult to balance, and is often influenced by the differing risk management objectives of individual countries and/or stakeholder groups. The differing risk management objectives show that there could be room for more open and transparent engagement of, and collaboration with, the various stakeholders involved in the risk management process.

Advancing solutions: What works?

When considering insurance as a tool in climate risk management, practice in the EU shows that some features of insurance consistently make it perform better.

The consistent characteristics of insurance in well-performing countries across the three archetypes of insurance schemes are displayed here below.

Understanding what makes insurance more performant is useful for guiding action. Sharing of knowledge and practice between member states and applying lessons from one to another would ideally be brought into practice.

Summary of features leading to high or low cost-effectiveness of insurance in the private property sector



High-performing



Low-performing

High-performing	Low-performing
Multiple extreme weather risks (floods, storms, hail, etc.) are combined in a single insurance product	Extreme weather risks are separately insured
Purchase of extreme weather insurance is connected to a far more common and enforced product (e.g. mortgage contracts, fire insurance)	Lax enforcements of requirements to buy insurance
Collaboration between public and private sectors with a commonly stated and understood objective . Governments and the insurance sector exchange data, set common objectives and divide responsibilities.	Low overall insurance coverage
Provision of a national pool or public reinsurance / support for catastrophic losses	Consumers are reliant on direct public compensation for extreme weather event losses
A tradition of collaboration between the public and private sector risk managers	

Successful collaboration between public and private stakeholders:

In **France**, the insurance industry’s contribution to extreme weather risk management is fairly well integrated, addressing risk transfer, disaster risk reduction financing, and data sharing for a better governance. The public and private sectors have a long-standing cooperation, put in place by the non-profit French Association for Disaster Risk Reduction (AFPCN) in 2001. The AFPCN is supported by government departments and brings together the DRR community to promote a coordinated approach. Its activities include stakeholder dialogue, exchange of good practice, and research.

In **Denmark**, flood insurance provision is provided through the Storm Council, a body that brings stakeholders together and shapes their interaction within the framework of a single common goal (i.e. the provision of storm surge and fluvial flood insurance). In recent years the Storm Council has benefitted from the greater involvement of private sector insurers.

In the **United Kingdom**, the universal provision of flood insurance is characterized by a series of negotiations between the British Government and the insurance industry, and what the respective roles of the two should be.

Summary of features leading to high or low cost-effectiveness of insurance in the private property sector



High-performing



Low-performing

The use of insurance against multiple risks (with a focus on yield insurance)	Only specific weather-event insurance products are available
Requirements to insure all cultivated land	Only land with a specific crop must be insured
Premium subsidies to direct investment in multi-risk policies	The presence of ad-hoc government compensation not tied to insurance coverage in the case of truly extreme events
Pool-like structures or public reinsurance for specific time-bound risks, such as frost and droughts	
A tradition of collaboration between the public and private sector risk managers	

Examples of insurance against multiple risks in the agricultural sector

Spain and Austria possess similar features that contribute to the overall cost-effectiveness of their insurance schemes against climate-related risks. Both countries are characterised by a large presence of multi-risk insurance products compared to other markets, and relatively high premium subsidies of about 50% of the total premium. The majority of insurance coverage is provided for by a single overarching body that has the overall strategic aim of improving agricultural risk-management strategies. In Austria, this is done by a mutual insurance company (Österreichische Hagelversicherung) and in Spain by the members of a co-insurance pool (Agroseguro).

The benefits of having a single organising body could be the following:

- ↑ easier access to reinsurance or capital in the case of large agricultural disasters or general economies of scale, facilitating the development of risk reduction or management strategies.
- ↑ a single body provides a platform, which makes it clear where climate risk management takes place.

Austria provides an example of reducing the presence of adverse selection and increasing the amount of land covered by insurance, as Austrian law requires that all arable land – as opposed to specific fields – be insured in order to gain insurance coverage. The blanket approach was introduced in Austria in 1987 and formed the basis upon which the 1995 multi-peril crop insurance was provided. This trajectory could be applied to other countries to aid the transition to widespread multi-peril crop insurance.

Next Steps: Improving the use of insurance to increase resilience

One main recommendation is to place the responsibility for promoting and developing risk reduction strategies into the hands of an **external body that collaborates with insurers**. The exact nature of such an external body is difficult to determine a priori across countries; however, such an organisation can operate directly or indirectly at various levels (i.e. national, regional or city level). For instance, a national body can produce **investments in prevention strategies** or larger scale risk-reduction strategies. These actions could facilitate a national **minimum level of risk management** and insurance viability, upon which more localised bodies or agents can act. For example, **cities** can collaborate with insurers to better manage their risk beyond this minimum level imposed by the external body.

Furthermore, financial capacity for risk-reduction investments can be created by **adding a surcharge to insurance premiums into a fund** that uses the money raised to construct protection and other large-scale adaptation measures, or to **subsidise more individual-level measures**. Potential advantages of such a premium surcharge compared with financing from general taxation is that such funds are earmarked for risk reduction, and that the surcharge acts as a **signal of risk** if premiums are at least partially risk-based. This fund can be a not-for-profit management entity in which insurers, government agencies and other stakeholders are involved. Moreover, such a management entity could be mainstreamed into a country's overall climate change adaptation strategy.

Another suggestion is the improved use of **insurer's data and knowledge** in developing zoning and **building code regulations, standards and construction requirements**. Insurers often have good information on which areas are at high risk and which building-scale measures can lower risk, which is important information for government authorities to use in designing zoning and building code regulations. An advantage is that such measures are structural, which may limit information asymmetries that could arise with non-structural measures that policyholders may take only temporarily.



Finally, it could be beneficial to reconsider regulations that require policyholders to use insurance reimbursements after a disaster for reconstructing their property to the same state that it was in before the disaster occurred. Introducing such **'build back better'** requirements could allow the recovery and repair process to build risk-reduction measures directly into buildings when **awareness of the impacts of extreme weather events** is strongest.





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Recommendations to the stakeholder community




Promote risk awareness and reduction

 Private property	<p>Low-income (following local definitions of low income or social hardship) households struggling to afford extreme weather insurance should have this pressure eased with insurance vouchers or tax credits if they buy insurance coverage.</p> <p>Minimum building standards, and build-back-better requirements, differentiated by risk levels, can be required as a standard element of insurance contracts in order to gain coverage (with a focus on measures integrated into the building).</p>
 Multi	<p>Research with the aim of defining and quantifying resilience to support risk awareness and reduction, and a focus on how insurance can enhance the economic resilience.</p>

Increase insurance coverage

 Private property	<p>Promote the bundling of a complete extreme weather event insurance package with private property fire insurance policies (or a similar and often purchased product).</p> <p>Urge banks to require full and comprehensive insurance coverage when providing mortgage loans.</p>
 Agriculture	<p>Redirect premium subsidies towards multi-peril (yield) crop insurance products to provide more extensive coverage. Each extreme weather event can contribute to the overall premium in line with its risk level.</p> <p>In order to reduce the presence of adverse selection in crop insurance and only insuring the high-risk land, a farmer should be compelled to insure all arable land as part of the terms and conditions of an insurance policy.</p> <p>Link access to wider agricultural sector subsidies (i.e. those relating to the Common Agricultural Policy (CAP) or those offered at national level) to the purchase of sufficient insurance protection in order to develop a tradition of being insured.</p> <p>Support the use of farm income insurance by starting pilot initiatives in various Member States.</p>

Support public-private partnerships and cross-organisational collaboration

 Private property	<p>Use a surcharge on insurance premiums (either newly introduced or redirected current taxes) to directly finance and construct risk-reduction infrastructure or to directly subsidise household level risk-reduction measures.</p> <p>Create a national focal point or authority for developing and maintaining a legal framework through which extreme weather risks can be managed via a combination of risk reduction and/or transfer.</p> <p>Lay down the roles and responsibilities of all the stakeholders in a national platform, focal point or authority, in a clear and transparent framework.</p>
 Agriculture	<p>Develop an agricultural risk management association with a focus on protecting farmers against income variations due to crop yields, within a mutual or non-profit maximising organisation.</p>
 Multi	<p>Create a working group in the European Commission enabling cross-Directorate-General collaboration, as well as coordination with national bodies.</p>

Increase the role of cities and regions



Cities and regions

Recommend that cities assess their vulnerability in regard to insurance coverage rates, including for municipal infrastructure and extreme weather events covered, as well as reporting on how they use insurance as a mechanism for managing risks.

Promote the use of insurance disaster loss data in the municipalities' risk-assessment data.

Promote the active and collaborative sharing of risk, hazard and impact data across stakeholders through the standardisation of meta-data and the format of granular data that can be more efficiently and transparently shared across stakeholders productively.

Promote the use of community rating systems for setting premiums

Promote the spreading of risk by allowing cities to pool their insurance

Increase capacity building with regard to insurance and climate resilience

Integration of resilience, including insurance data, in relevant policies



Member States

Introduce a requirement for flood risk management plans, national adaptation strategies and applications for loans or national or EU funds to include insurance mechanisms for managing risk that cannot be (cost-) effectively prevented in order to further mainstream insurance into national adaptation conversations.

Overall, the institutions of the European Union could actively promote the use of insurance as a tool to increase resilience against climate related extreme weather-related events. For instance, ex-ante conditionality and subsidies for insurance products could be used in the context of the European Regional and Urban Policy and the Common Agricultural Policy. Also, the European Commission could take the role of facilitating discussions and provide platforms for multi-stakeholder collaboration, promoting the use of insurance to increase resilience to weather-related events and most importantly, increase risk awareness and risk reduction.

References

- ✦ The EU Strategy on adaptation to climate change sets out the framework for strengthening Europe's resilience to the impacts of climate change. Adaptation means anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause, or taking advantage of opportunities that may arise. It has been shown that well planned, early adaptation action saves money and lives later. The EU Adaptation Strategy was adopted in 2013 and is now being evaluated.
- ✦ The LIFE Programme for the Environment and Climate Change 2014-2020 is divided into two sub-programmes: environment and climate action. LIFE Climate Action supports public authorities, non-governmental organisations and private actors, especially small and medium-sized enterprises, in implementing low-carbon and adaptation technologies and new methods and approaches.
- ✦ The European Climate Adaptation Platform (Climate-ADAPT) aims to support Europe in adapting to climate change. It is an initiative of the European Commission and helps users to access and share data and information. It provides a wide range of adaptation-relevant information, for example Adaptation Support Tools with guidance for Member States on the preparation of adaptation strategies.
- ✦ The EU Covenant of Mayors for Climate and Energy brings together thousands of local and regional authorities voluntarily committed to implementing EU climate and energy objectives on their territory. New signatories now pledge to reduce CO2 emissions by at least 40% by 2030 and to adopt an integrated approach to tackling mitigation and adaptation to climate change.
- ✦ The Global Covenant of Mayors for Climate and Energy is an international alliance of cities and local governments with a shared long-term vision of promoting and supporting voluntary action to combat climate change and move to a low emission, resilient society.
- ✦ The European Environment Agency (EEA) works on adaptation and, for example, hosts Climate-ADAPT and publishes reports on adaptation, which facilitates the dissemination and sharing of knowledge.
- ✦ The Paris Climate Agreement includes among other provisions on the global adaptation goal and reporting (see e.g. article 7). The agreement brings, for the first time, all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects. In relation to adaptation, the agreement (1) establishes the "global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change...", (2) recognises that "adaptation is a global challenge faced by all with local, subnational, national, regional and international dimensions...", and (3) includes provisions on "adaptation planning processes and the implementation of actions" and the "assessment of climate change impacts and vulnerability", etc.

Links:

CLIMA's website on adaptation:

- ✦ Website: https://ec.europa.eu/clima/policies/adaptation_en
- ✦ Selected publications:
 - https://ec.europa.eu/clima/publications_en
 - https://ec.europa.eu/clima/publications_en#Adapt
 - https://ec.europa.eu/clima/sites/clima/files/docs/major_projects_en.pdf
 - https://ec.europa.eu/clima/sites/clima/files/docs/integrating_climate_change_en.pdf
 - https://ec.europa.eu/clima/sites/clima/files/docs/eu_strategy_en.pdf
- ✦ Selected reports:
 - https://ec.europa.eu/clima/policies/budget/mainstreaming_en#tab-0-1

EU Adaptation Strategy:

- ✦ Communication: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52013DC0216>
- ✦ Citizen's summary: https://ec.europa.eu/clima/sites/clima/files/summary/docs/adapting_en.pdf
- ✦ Adaptation Package: https://ec.europa.eu/clima/policies/adaptation/what_en#tab-0-1

LIFE:

- ✦ CLIMA's website: https://ec.europa.eu/clima/policies/budget/life_en
- ✦ LIFE Projects: <http://ec.europa.eu/environment/life/project/Projects/index.cfm>

Climate-ADAPT:

- ✦ Website: <http://climate-adapt.eea.europa.eu/>
- ✦ Adaptation support tool: <http://climate-adapt.eea.europa.eu/knowledge/tools/adaptation-support-tool>

EU Covenant of Mayors:

- ✦ Website: <http://www.covenantofmayors.eu>
- ✦ Adaptation: <http://www.covenantofmayors.eu/Adaptation.html>

Global Covenant of Mayors:

- ✦ Website: <https://www.globalcovenantofmayors.org/>
- ✦ European Commission Press Release: http://europa.eu/rapid/press-release_IP-16-2247_da.htm

European Environment Agency (EEA):

- ✦ Website: <https://www.eea.europa.eu/themes/climate-change-adaptation>
- ✦ Selected reports:
 - <https://www.eea.europa.eu/publications/climate-change-adaptation-and-disaster>
 - <https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016>
 - <https://www.eea.europa.eu/publications/financing-urban-adaptation-to-climate-change>

Paris Climate Agreement:

- ✦ http://unfccc.int/paris_agreement/items/9485.php

Useful resources:

European Commission Climate Action website and social media:



ec.europa.eu/clima



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ISBN 978-92-79-77288-7