

# From protection to prevention

The role of cooperative and mutual insurance in disaster risk reduction



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International Cooperative and Mutual Insurance Federation

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UN Office for Disaster Risk Reduction

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## Foreword



### Hilde Vernaillen

Chair, The International Cooperative and Mutual Insurance Federation (ICMIF) and Chair of the Management Committee, P&V (Belgium)

Preventing new risks and reducing existing risk is more urgent than ever, but this is not something that any one individual or even an organisation such as an insurer can hope to tackle in isolation. The world is in crisis and now is the time to develop meaningful partnerships and share knowledge generously for the ultimate survival of humanity. For almost a century, up to 200 values-led insurers have been doing exactly this through a global network that I am proud to represent as its Chair, the International Cooperative and Mutual Insurance Federation (ICMIF).

More than 900 million people worldwide are served by mutual, cooperative or similar forms of member-owned insurers\*. When added to the millions of people in emerging nations who rely on more informal, community-run insurance arrangements, the true scale and impact of member-owned insurance becomes very apparent.

Between 2007-2017, mutual and cooperative insurers outperformed the market globally<sup>1</sup>. Why? Because they are trusted to do the right thing, for the long-term. Since the nineteenth century, our movement has played pivotal roles in society, particularly in terms of re-establishing consumer trust after the world financial crisis of 2007/2008.

So as the world faces, what some might argue to be its most severe existential crisis for centuries, cooperative and mutual insurers are again poised and ready to lead from the front, this time with examples of the work that they have been doing in terms of disaster risk reduction and resilience.

The organisations that you will read about are no strangers to the concept of leading by example and responding quickly to a crisis. During recent years, when ICMIF members have assembled at the Federation's global conferences, member organisations have shared examples of how they are adapting their strategies to meet the needs of their members. Pledges including 'let's make insurance redundant' and 'we must leverage our collective knowledge and capital to safeguard the most vulnerable and uninsurable communities' typify the overall attitude of the ICMIF cohort.

At ICMIF's 2019 Biennial Conference in Auckland, I was proud to propose a motion to my Board that resulted in a new collaboration with three high profile agencies, of which one was the United Nations Office for Disaster Risk Reduction (UNDRR). ICMIF's partnership with UNDRR seeks to freely share the work that our members are doing to prevent risk in a bid to inspire other insurers to follow their example. By reflecting on these 20 case studies, ICMIF and UNDRR have collaborated to synthesise this intelligence and create a best practice framework that any insurer could adopt.

It is my sincere wish that our ambitions to encourage more widespread risk prevention are realised, for the sake of humanity and this incredible world that we inhabit. As we turn our attentions to the 26th UN Climate Change Conference of the Parties (COP26) taking place later this year in Glasgow (UK), I for one will be asking myself, how as a leader of an insurance company, can I do more to prevent hardship, pain and even death in the communities that I serve.

<sup>1</sup> ICMIF Global Mutual Market Share 10: The global insurance market share held by mutuals and cooperative insurers in 2017

## Foreword



### Mami Mizutori

Special Representative of the UN Secretary-General for Disaster Risk Reduction

We all know the saying, 'Saving for a rainy day'. This year has proven the truth of that ancient adage. The unprecedented, but dare I say, sadly not unexpected arrival and subsequent impact of COVID-19 has only accelerated the urgency and demand for us to change how we think about and address risk.

That is why I have been so encouraged to witness the commitment and action of ICMIF members to shift the focus of such a substantive and catalytic industry from protection to prevention. An intent which is manifested in a new partnership project with the UN Office for Disaster Risk Reduction (UNDRR).

And it is needed more than ever, not just because of COVID-19 but because of the alarming trend of disaster-related losses outstripping countries' and communities' ability to respond, absorb and survive.

Swiss Re Institute estimates USD 83 billion global insured catastrophe losses in 2020, the fifth costliest on record, combined with a looming global debt crisis which will – as usual - hit the most vulnerable countries, communities and people the hardest. The message could not be clearer: Our understanding of and approach to risk not only needs to be fundamentally re-examined, but the interconnectedness and cascading dimension of risk must inform policies, practices and investments.

The insurance industry, and particular the cooperative and mutual sector with its focus on resilience, innovation and community engagement, is uniquely placed to inform and lead such work. ICMIF has a long tradition of supporting countries to enhance national and local disaster risk reduction action; its engagement in the negotiations towards the Sendai Framework for Disaster Risk Reduction led to the inclusion of clear references to the need for private and financial sector and the regulators in driving and implementing disaster risk reduction.

The report, which outlines seven disaster risk reduction mechanisms building on concrete case examples from ICMIF members is the first product of the ICMIF-UNDRR partnership. It comes at an important moment. The first year of the UN Decade for action, 2021, features a number of critical meetings and global decisions including as the Climate and Biodiversity Conferences, the Financing for Development and Food Systems Summits and the UNDRR-led Regional Platforms; which bring excellent opportunities to advocate for a stronger and more profound role for the cooperative and mutual insurance sector.

I would like to thank ICMIF members and secretariat for their strong engagement in the development of this report

I look forward to putting this report to the test over the next two years through the implementation of a series of targeted pilot initiatives, which we hope to irreversibly impact the safety and security of the most vulnerable so that we leave no one behind in our quest for a resilient global community.

While this report was prepared in the context of the cooperative and mutual insurance sector, it is meant as a source of inspiration for the insurance industry at large, showing that regardless of size, jurisdiction, market, strategic/operational focus, there are possibilities to prevent and reduce disaster risk.

## About the partners



International Cooperative and Mutual Insurance Federation

The International Cooperative and Mutual Insurance Federation (ICMIF) is the only global representative body of the cooperative and mutual insurance sector. It provides unique services and activities and delivers enduring value to its 197 members which cannot be found elsewhere. ICMIF is owned, governed and actively guided by its member organisations. Its goal is to help member organisations achieve their strategic goals and sustainably grow in their markets by leveraging the knowledge, competencies and experience of ICMIF's global network and representing the sector's interests to key stakeholders.



UN Office for Disaster Risk Reduction

The United Nations Office for Disaster Risk Reduction (UNDRR) is the United Nations focal point for disaster risk reduction. UNDRR oversees the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030, supporting countries in its implementation, monitoring and sharing what works in reducing existing risk and preventing the creation of new risk. UNDRR is an organisational unit of the UN Secretariat and is led by the UN Special Representative of the Secretary-General for Disaster Risk Reduction (SRSG).

## Credits

Case studies: ICMIF and UNDRR would like to thank the following cooperative and mutual insurance companies for providing case study examples of how insurance supports disaster risk reduction and resilience: Achmea, CARD MBA, The Co-operators, Cornish Mutual, Desjardins Group, EMC Insurance, FMG – Farmers' Mutual Group, Folksam, Kokumin Kyosai Co-op, Länsförsäkringar Alliance, LB Forsikring, LocalTapiola, NFU Mutual, Royal Automobile Club of Western Australia (RAC), SANASA, Sancor Cooperativa de Seguros, Swiss Mobiliar, Unipol, Unique Insurance and Zenkyoren.

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# EXECUTIVE SUMMARY

## Context

In November 2019, the International Cooperative and Mutual Insurance Federation (ICMIF) and the United Nations Office for Disaster Risk Reduction (UNDRR) began a multi-year collaboration to help **address the urgent challenge of reducing disaster risks** in the midst of an expanding and intensifying global risk landscape.

Specifically, the collaboration aims to clarify the practical aspects of enabling a shift within the insurance industry from a focus on providing risk transfer products and services as a means to protect the insured from disaster risks, to an emphasis on prevention through disaster risk reduction (DRR) incentives, awareness, capacity and financing. With a member-driven operating model, the cooperative and mutual insurance sector is uniquely positioned to take a lead in charting a practical path **from risk protection to prevention**.

This report, prepared by the ICMIF-UNDRR collaboration, presents seven mechanisms gleaned from case studies compiled across the cooperative and mutual insurance sector and from a literature review on the role of insurance in supporting disaster risk reduction and resilience.

## The challenge

A focus on **preventing new risks and reducing existing risk is more urgent than ever** because disasters can erase development gains and hinder progress, often for years to come, such as in the case of floods, hurricanes, earthquakes, pandemics or major technological disasters. In the period 2000 to 2019, there were 7,348 major recorded disaster events claiming 1.23 million lives, affecting 4.2 billion people (many on more than one occasion) resulting in approximately USD 2.97 trillion in global economic losses ([UNDRR 2020](#)). The increasingly systemic and cascading nature of risks, such as seen in the cases of Covid-19 and climate change, represent an existential threat to the achievement of a sustainable and resilient future. The Covid-19 pandemic alone had caused 1.8 million deaths globally by the end of 2020 ([WHO 2020](#)) with an employment loss of 114 million jobs relative to 2019 ([ILO 2021](#)) and record levels of national debt not seen since World War II ([WEF 2020](#)). The human, economic and environmental costs of the climate crisis continue to aggregate due to insufficient action and the potential for climate change to increase the spillover of zoonotic diseases through habitat loss and other factors, is a frighteningly daunting prospect for the 21<sup>st</sup> century. Indeed, as the Executive Director of the United Nations Environment Programme warned, “nature appears to be sending us a message with the coronavirus pandemic and the ongoing climate crisis ([The Guardian 2020](#)).”

### The Sendai Framework for Disaster Risk Reduction

The Sendai Framework was signed by 196 Member States of the United Nations in 2015. Its goal is to:

*“Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience ([UN 2015a](#), para 17).”*

Translating the Sendai Framework for Disaster Risk Reduction into practical mechanisms, be they through risk-informed investment or insurance products that support disaster risk reduction, is of paramount importance if there is to be any chance of **achieving the 2030 Agenda and its 17 Sustainable Development Goals (SDGs) and the Paris Climate Agreement**.

The Sendai Framework provides a general roadmap for governments and stakeholders, including public, private, mutual and civil society, to reduce disaster risks and thereby support sustainable development. In recognising the fundamental role of the private and financial sector, and their regulators, in disaster risk reduction, the Sendai Framework highlights the importance of risk-informed investment and the role of insurance. In the specific context of insurance however, the primary focus of providers up to this point in time has been related to closing the protection gap to help the insured respond and recover from disaster – and less about how insurance itself could be used to provide incentives to individuals, households and businesses for reducing disaster risks.

## **Seven mechanisms for supporting disaster risk reduction and resilience through cooperative and mutual insurance**

A combined view of insights gleaned from a review of literature and an analysis of mutual and cooperative insurance case studies converges on a set of practical mechanisms for how the cooperative and mutual insurance sector could help drive prevention and disaster risk reduction:

### **Seven mechanisms for supporting disaster risk reduction and resilience through cooperative and mutual insurance**

**Direct mechanisms** – for insurance products to reduce disaster risks:

1. Apply variable pricing of insurance to provide incentives for risk reduction
2. Include prerequisites and exemptions to provide incentives for risk reduction
3. Ensure investment reduces and prevents risk and builds resilience

**Indirect mechanisms** – for insurance providers to reduce disaster risks:

4. Raise awareness of the systemic nature of risks and provide transparent information and advice for reducing hazards, exposure, and vulnerability
5. Build and share capacity and technology for risk modelling, analysis and monitoring
6. Promote and enhance local social capital for responding to disasters and innovating to reduce risks
7. Collaborate with the public sector to signal unsustainable development and support decision making towards disaster risk reduction and risk-informed investment while closing protection gaps

The mechanisms provide a practical way for the (cooperative and mutual) insurance sector to implement the Sendai Framework for Disaster Risk Reduction. Through public-private partnerships and the sharing of a unique treasure-trove of risk data, these mechanisms also support implementation of the 2030 Agenda for Sustainable Development and the Paris Agreement. They do so by contributing to reducing exposure and vulnerability to an increasingly complex and intensifying risk landscape. The mechanisms also support reducing the severity and occurrence of the very hazards that stand in the way of achieving the SDGs by 2030, such as climate change, the spillover of zoonotic diseases, and technological disasters, to name but a few.

## I. BACKGROUND

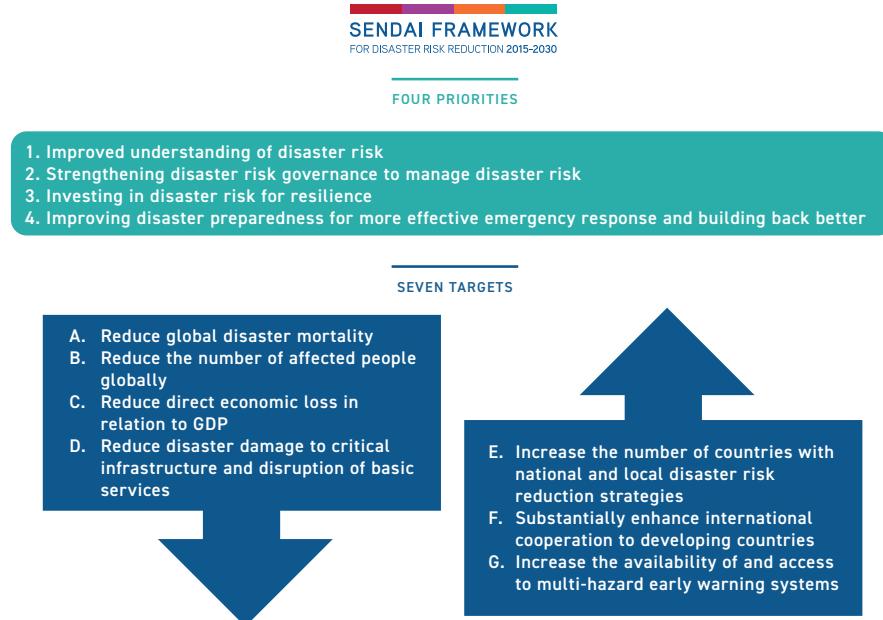
### The urgency of disaster risk reduction and resilience

In 2020, humanity found itself in the middle of a global pandemic, the likes of which had not been seen in a century. By the end of the year, 82.4 million people had been infected with Covid-19 and 1.8 million had died ([WHO 2021](#)). From an economic perspective, there was an unprecedented employment loss of 114 million jobs globally relative to 2019, with labour income losses totalling USD 3.7 trillion ([ILO 2021](#)) and record levels of national debt not seen since World War II ([WEF 2020](#)). And the Covid-19 pandemic is but one of the myriad global disasters that emerged and wreaked havoc during 2020, including civic unrest, wildfires, cyberthreats and climate change.

While global carbon emissions are anticipated to have decreased by about 7% during 2020, in step with decreased economic activity due to the Covid-19 pandemic, “the world is still heading for a catastrophic temperature rise in excess of 3 °C this century – far beyond the Paris Agreement goals of limiting global warming to well below 2 °C and pursuing 1.5 °C ([UNEP 2020](#)).” The impacts of the climate crisis continued to be felt during the pandemic, with the latest data showing 2020 as tied with 2016 as the warmest year on record ([NASA 2021](#)). Correspondingly, global insured losses from natural catastrophes during 2020 were estimated at USD 76 billion, up 40% from 2019 and mostly due to secondary peril events such as severe convective storms and wildfires in the United States ([Swiss RE 2021](#)). With the 2020 hurricane season also producing a record number of named storms, experts were forecasting that losses from secondary peril events would continue to increase, driven by climate change ([Swiss RE 2021](#)).

Urgency comes into stark relief in taking a systemic risk view of global pandemics and climate change. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) reported that “future pandemics will emerge more often, spread more rapidly, do more damage to the world economy, and kill more people than Covid-19 unless there is a transformative change in the global approach to dealing with infection diseases ([IPBES 2020](#)).” Furthermore, experts at IPBES highlighted that the same human activities that drive climate change and biodiversity loss also drive pandemic risk. More specifically, “changes in the way we use land, the expansion and intensification of agriculture; and unsustainable trade, production and consumption disrupt nature and increase contact between wildlife, livestock, pathogens and people.” It was concluded however, that the world can “escape the era of pandemics” with a “much greater focus on prevention”, and importantly from the perspective of building long-term resilience, doing so “while simultaneously benefiting conservation and reducing climate change ([IPBES 2020](#)).”

The Sendai Framework for Disaster Risk Reduction was signed by 196 Member States of the United Nations in 2015. Its goal is to “Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience ([UN 2015a](#), para 17).” The imperative for the Sendai Framework, including its attention to multiple hazard types (natural and man-made) and systemic risk, grew out of the stark reality of the rapidly changing risk landscape that faced all nations and citizens in the decade preceding its endorsement, a reality that is now more urgent than ever. In the period 2000 to 2019, there were 7,348 major recorded disaster events claiming 1.23 million lives, affecting 4.2 billion people (many on more than one occasion) resulting in approximately USD 2.97 trillion in global economic losses ([UNDRR 2020](#)).



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**Figure 1.** Overview of the Sendai Framework for Disaster Risk Reduction (*From: UNDRR*)

It is against this backdrop of an intensifying global risk landscape that the Sendai Framework emphasises the important role of the financial sector and its regulators in the promotion and implementation of financing for disaster risk reduction and risk informed investment (UN 2020, para 36c). The insurance sector is highlighted as a key actor in the Sendai Framework, through all three sides of the industry (liability, asset management and risk management).

At the insurance industry level, risk reduction aspects were included in the Principles for Sustainable Insurance (PSI), launched in 2012 by the Finance Initiative of the United Nations Environment Programme. The PSI is designed to bring together the global insurance industry in an effort to better understand, prevent and reduce environmental, social and governance risks and enable a healthy, safe, resilient and sustainable society ([UNEP FI 2020](#)). Critically, in relation to disaster risk reduction, signatories to the PSI commit to developing “products and services which reduce risk, have a positive impact on ESG issues and encourage better risk management”, supporting “prudential policy, regulatory and legal frameworks that enable risk reduction, innovation and better management of ESG issues”, and dialoguing “with governments and regulators to develop integrated risk management approaches and risk transfer solutions.”

## The challenge and the response of the insurance industry

The literature on the importance of insurance as a mechanism for providing incentive to reduce risks dates back to the mid 1990s. This highlights the urgency to mainstream the Sendai Framework in the context of insurance, and thereby also accelerate progress toward the 17 global Sustainable Development Goals (SDGs). The slow overall progress across the insurance industry in mainstreaming DRR over the past few decades is attributable to a host of barriers or bottlenecks (see below).

## **Barriers and bottlenecks to mainstreaming DRR in the insurance sector**

As stated by the Head of Responsible Investment at Aviva Investors, Steve Waygood, “***the incentives for individuals and businesses in the financial supply chain couldn't be more short-term and they couldn't be more out of kilter with sustainability*** ([Reuters 2018](#)).”

In the context of climate risks and resilience specifically, former Governor of the Bank of England, Mark Carney suggested the antidote could be that “***The providers of capital—banks, insurers, and asset managers and those who supervise them—must all achieve better understanding and management of climate-related financial risks*** ([IMF 2019](#)).”

The above implies that the short-term reporting requirements of capital markets and emphasis on shareholder value, a requirement of proprietorial insurers which comprise upwards of 70 percent of the global market, does not necessarily incentivise risk reduction from a system-wide perspective. Understanding the full array of barriers and bottlenecks to mainstreaming DRR within the insurance industry and related solutions requires further exploration.

Momentum is gaining however, across the insurance industry, to address the remaining challenge of mainstreaming and operationalising DRR. In response to the multi-hazard and intensifying risk landscape, rising disaster losses and related unaffordability of insurance products, and the calls for action from the international community, the insurance industry is mobilising to convene insurers and asset managers to take more concerted action to prevent and reduce disaster risks and build resilience. Examples include the ICMIF-UNDRR multi-year collaboration as outlined in this report and also the Insurance Development Forum (IDF), co-chaired by AXA, the United Nations Development Programme and the World Bank Group, and specifically through its subcommittee on Disaster Risk Reduction led by Zurich and its Flood Resilience Alliance, in collaboration with the UNDRR.

The cooperative and mutual business model acts as a valuable reference, even a source from which a set of principles can be developed, for insurers to support their purpose-driven business model and corporate values through their prevention initiatives. The cooperative and mutual model enables value to be delivered to members, including the most vulnerable, in a more direct manner than a model that must deliver value, in financial returns, solely to shareholders. Therefore, the mutual and cooperative insurance sector is inherently positioned to lead a way forward in the insurance industry towards a model that looks to reduce its claims and hence impact on customers through risk reduction.

## **Historical context of insurance and mutuals**

The concept of insurance is in practice a mutual concept whereby a community shares its risks in order to lessen the burden of a loss on one individual. This mutual risk sharing can be traced back to Ancient Greek and Roman times where benevolent societies introduced the origins of health and life insurance. The Guilds continued this risk sharing in the 11th and 12th centuries in many European countries where professions would share best practice, set standards and provide risk pools for each other. The oldest mutual still in existence, Bilsener Gilde Versicherung, is in Germany and was formed in 1642. Mutual insurers became common place in many communities in Europe in the 17th and 18th centuries, often set up as friendly societies or mutual aid societies to help communities and families with illness and death.

The introduction of commercial insurance came soon after the great fire of London in 1666 where shareholders provided the capital for insurance to be underwritten. Today the concept of insurance is still the mutualisation of risk whereby the premiums collected from all customers pay for the unfortunate few who have suffered a loss (less expenses of managing the business) thereby saving the full loss being borne by the individual.

The next evolution for insurance will be to manage those losses better through risk mitigation, disaster preparedness and risk education to create awareness of risks. In other words, through Disaster Risk Reduction (DRR) initiatives and programmes that create resilience through prevention.

## **About the ICMIF and UNDRR collaboration**

The goal of the ICMIF-UNDRR collaboration is ***to clarify the practical aspects of shifting from a focus on providing risk protection products and services to an emphasis on prevention through disaster risk reduction incentives, awareness, capacity and financing.***

The collaboration covers three general phases, namely:

1. Case studies and DRR mechanisms: Building the business case for DRR and prevention, including development of case studies and best practices in support of the development of key mechanisms for the cooperative and mutual insurance sector to support disaster risk reduction and resilience;
2. Pilot initiatives: Through a small number of national and local pilots, explore the practical design and implementation aspects (including regulatory and other policy barriers) of key mechanisms for advancing DRR in the cooperative and mutual insurance sector and building back better; and
3. Setting and tracking goals: For the cooperative and mutual insurance sector to operationalise the Sendai Framework on Disaster Risk Reduction by setting and tracking goals and sharing best practices to advance business strategies, products and services that support the implementation of the DRR mechanisms for cooperative and mutual insurance.

## II. UNDERSTANDING THE BUSINESS CASE OF INSURANCE AND DISASTER RISK REDUCTION

A 2009 report by the United Nations Office for Disaster Risk Reduction described how experience in developed countries in the context of climate change adaptation illustrates that collaboration between the insurance industry and the public sector can promote risk reduction in five ways, namely through ([UNDRR 2009](#)):

- *Awareness raising and risk education:* Insurers and government can partner to make available risk data and information systems;
- *Risk pricing:* By accurately pricing risk, insurers can incentivise risk reducing decision making;
- *Enabling conditions and regulation of insurance programmes:* Through legislation, financial oversight and monitoring, government can provide incentives for insurance to promote risk-reducing activities;
- *Direct financing of risk reduction measures:* Insurers can invest directly in risk reduction measures to avoid large compensation claims; and
- *Risk reduction as a prerequisite for insurance:* As a prerequisite for coverage, insurers can require that policyholders undertake specific disaster risk reduction measures.

Eleven years later, in reviewing insurance responses for protecting businesses from the impacts of the Covid-19 pandemic and analysing the pandemic protection gap in insurance, the Organisation for Economic Cooperation and Development ([OECD 2020](#)) also examined ways that insurance can provide incentives for risk reduction, either directly or indirectly. The report described how “insurance will make a greater contribution to managing catastrophic risks if the process of transferring these risks supports risk management.” Three main channels for such contribution were outlined, including:

- *The use of modelling for risk management:* Noting that the (re)insurance sector has significant expertise for modelling the financial consequences of natural and man-made catastrophe risks, the OECD suggests that this capacity could be deployed to inform land-use planning, building code updates and infrastructure investment decisions.
- *Pricing that reflects risk reduction:* It was suggested that “pricing for (re)insurance coverage which varies by level of risk should provide incentive for policyholders (or insurers) to invest in risk reduction (or ensure underwriting discipline) in order to lower the cost of that coverage.” It was noted however, that “while a number of catastrophe risk insurance programmes have implemented pricing that varies by risk zone or building type – none have implemented an approach to pricing their insurance, reinsurance or co-insurance coverage that provide significant incentives for reducing risk.” Furthermore, it was acknowledged that “implementing variable pricing (and particularly, premium reductions for risk mitigation measures) is a challenge for many types of perils (and potentially impossible for some) although advances in modelling will continue to support the ability of these programmes to price their coverage based on more granular assessments of risk.”
- *Risk reduction prerequisites:* It was observed that some programmes have included specific risk reduction requirements as part of design, including: (i) the National Flood Insurance Programme in the United States was noted whereby only communities agreeing to implement certain floodplain management techniques can get access to the programme; (ii) deductible increases in France for properties that experience repetitive losses if the municipality has not implemented a risk reduction plan; and (iii) reinsurance coverage in the United Kingdom that is only made available for properties built after 2009 as a means to ensure that new development only occurs in areas where insurers are willing to provide coverage without reinsurance backing.

The OECD insurance study on Covid-19 provided additional perspectives for providing incentives for risk reduction through insurance. Recognising that one of the challenges experienced by businesses during the pandemic was transitioning to a work from home approach, the OECD suggested that “insurers could be required to ensure that policyholders have business continuity plans or other risk mitigation measures in place (or could offer premium discounts) that supports the continuity of operations (where possible) and reduce the amount of business interruption losses incurred in the event of widespread business closures.” Application of such an approach at the national level was also described, for instance, to integrate requirements for covered businesses to limit the spread of the virus (such as strengthened capacity for remote working) and protect the health and safety of employees and customers. The proposal of a US insurance association was noted, where it was recommended that a potential Business Continuity Protection Programme include the requirement for adherence to federal health guidance as a condition for access to compensation.

From a climate change perspective, a 2019 paper by the Global Commission on Adaptation examined the current opportunities and limitations of insurance for climate adaptation ([Jarzabkowski et al. 2019](#)). Among the opportunities identified by the authors were the following:

- *Identifying climate risks:* “The risk identification expertise of the insurance industry can also be of great value for local communities and governments, particularly when the insurance industry engages with emerging markets, where such data or approaches to risk have previously not been considered.” The case of the Caribbean Catastrophe Risk Insurance Facility (CCRIF) was cited. Motivated by devastation from Hurricane Ivan in 2004, Caribbean nations created the CCRIF with technical support from the World Bank to transfer some of the risk of disaster into global reinsurance markets. This was made possible only with the aid of data and modelling capabilities, funded through a Japanese government grant.
- *Signalling unsustainable development:* “Insurance sends a strong price signal that specific risk-prone areas are only viable to insure if charged with a high premium.” The example of the Texas Windstorm Insurance Association was cited whereby it required that owners of houses and low-rise buildings to meet appropriate weatherproofing specifications, aided by inspectors to provide certifications and ensure compliance.
- *Preparedness:* “Insurers can suggest and incentivise better ways for their policyholders to prepare for disasters, for example, via preparedness guides and checklists, that can potentially help reduce the risks to them and their properties.” The case of the African Risk Capacity (ARC) finance initiative was cited, a programme that inducts its member states and provides financing with a requirement that they undertake a process of risk modelling as a basis for designing early warning systems for impending disaster from drought.
- *Building back better:* “Insurance is best integrated into a *Build Back Better* approach through pre-arranged, ex-ante recovery and reconstruction plans that account for climate-risk management.” The case of the US Institute for Business and Home Safety was cited, whose FORTIFIED reinsurance programme promotes reconstruction to a superior set of building standards after insured homes have been affected by natural disasters. This is done by providing insurers with approved civil engineers, construction companies to offer products and services that support resilience.

Box 1 below, provides an interesting example of how a private insurance company provided a signal of unsustainable development in a flood-prone region and also of the potential of using risk pricing to provide incentives for reducing the risks posed by flooding caused by cyclones.

### **Box 1. Signalling unsustainable development and implementing premium reduction for cyclone resilience – the case of Suncorp**

#### A signal of unsustainable development

In studying the opportunities and limitations of insurance for climate adaptation, ([Jarzabkowski et. al 2019](#)) reported on the case of the Suncorp Group, one of Australia's largest private insurers. In 2012, the company withdrew from offering policies in a few communities in a region of Queensland that braces itself each year for an onslaught of storms and cyclones. Suncorp had previously reported paying AUD 150 million in flood claims in these communities in return for AUD 4 million in premiums over a two-year period. The loss of insurance coverage prompted the government to construct levees to reduce the flood risk, after which, insurers, including Suncorp, returned to the market with products appropriately priced to reflect the reduced risk.

Jarzabkowski et. al (2019) described this as a case not only of the influence of a large insurance provider in signalling unsustainable development, but also a case where there was high local awareness of the hazard and a specific means to reduce the disaster risk.

#### Pricing insurance products to provide incentive for reducing disaster risks

In the broader region where the above case example took place, Suncorp had estimated that 100,000 older homes in north Queensland may not be up to cyclone standard and that nine out of 10 claims involve damage that could be prevented by planning and preparation ([Suncorp 2020](#)). Furthermore, Suncorp believed that AUD 13 in benefits could be achieved for every AUD 1 invested in resilience depending on the type of retrofit implemented.

Against this backdrop, Suncorp designed and implemented its “Protecting the North” programme to reduce the damage cyclones can cause to houses, as well as making insurance more accessible with new, innovative products and features ([Suncorp 2020](#)). They partnered with the Cyclone Testing Station (CTS) at James Cook University (JCU) and Urbis to analyse insurance claims data to better understand cyclone vulnerabilities in homes, and what it could do to make them stronger.

The research revealed that simple, low-cost mitigation could pay for itself after just one cyclone. Suncorp’s “Cyclone Resilience Benefit” rewards customers in North Queensland with premium reductions of up to 20% for making their homes more cyclone resilient. To date, 43,244 customers have received a premium reduction from Cyclone Resilience Benefit ([Suncorp 2020](#)).

Additionally, Suncorp provides a no-fee, low-interest bank loan designed to help North Queensland customers finance mitigation improvements made to their homes to make them more resilient to cyclone damage ([Suncorp 2020](#)). The new low-cost personal loan features an interest rate of 4.99 per cent per annum and Suncorp waives all establishment and account keeping fees.

With regard to understand the levers that can have an impact on reducing disaster risk, the 2019 Global Assessment Report on Disaster Risk Reduction illustrated an evolution in thinking ([GAR 2019](#)). Whereas risk was traditionally understood as being a function of the severity of the hazard, the degree of exposure and level of vulnerability at multiple scales, the Global Risk Assessment Framework 2020+ further emphasises the importance of a systems view of exposure and vulnerability from a human, ecological, economic, political, cultural and financial perspective, together with a higher resolution consideration of scale (see Figure 2 below).

With this enhanced conceptual understanding, the 2019 GAR assessed vulnerability from “a more holistic and people-centered approach”, and did so by asking “why some people do better in overcoming adversity than others by assessing the main obstacles that individuals, households and societies may face in managing risk, including challenges in terms of information, resources and incentives to build back faster and better ([GAR 2019](#), p. 146).” This is consistent with the climate change adaptation literature, whereby technical guidelines for preparing national adaptation plans include reducing the vulnerability to the impacts of climate change by building adaptive capacity and resilience (in GAR 2019, p. 363; from [UNFCCC 2012](#)).



**Figure 2.** Global Risk Assessment Framework 2020+ for Disaster Risk Reduction  
(From: [GAR 2019](#)).

### **III. SEVEN MECHANISMS FOR SUPPORTING DISASTER RISK REDUCTION AND RESILIENCE THROUGH COOPERATIVE AND MUTUAL INSURANCE**

The literature on the importance of insurance as a mechanism for providing incentive to reduce risks dates back to the mid 1990s, highlighting the need to now accelerate progress towards mainstreaming. Cooperative and mutual insurance companies are owned by those they insure; therefore, the sector is uniquely positioned to build on and learn from its own history and experience to clarify practical mechanisms for mainstreaming disaster risk reduction through insurance products, investments and services as their purpose is to protect lives and livelihoods.

A combined view of insights gleaned from the literature (Section II) and the analysis of mutual and cooperative insurance case studies (refer to Section IV and Annex) converges on a set of seven practical mechanisms for how the cooperative and mutual insurance sector could help drive prevention and disaster risk reduction (see below).

#### **Seven mechanisms for supporting disaster risk reduction and resilience through cooperative and mutual insurance**

**Direct mechanisms** – for insurance products to reduce disaster risks:

1. Apply variable pricing of insurance to provide incentives for risk reduction
2. Include prerequisites and exemptions to provide incentives for risk reduction
3. Ensure investment reduces and prevents risk and builds resilience

**Indirect mechanisms** – for insurance providers to reduce disaster risks:

4. Raise awareness of the systemic nature of risks and provide transparent information and advice for reducing hazards, exposure, and vulnerability
5. Build and share capacity and technology for risk modelling, analysis and monitoring
6. Promote and enhance local social capital for responding to disasters and innovating to reduce risks
7. Collaborate with the public sector to signal unsustainable development and support decision making towards disaster risk reduction and risk-informed investment while closing protection gaps

Insights from the case studies and the literature suggest that the influence of the mechanisms outlined above on disaster risk reduction are mediated through three primary channels:

- **Hazards:** preventing or reducing the severity or occurrence of the hazard itself.
- **Exposure:** preventing or reducing the degree of exposure to the hazard.
- **Vulnerability:** reducing the level of vulnerability to the hazard (and conversely, by increasing adaptive capacity).

Furthermore, given the complexity of the multi-hazard risk landscape, disaster risk reduction efforts across these mechanisms and channels must also consider issues of scale (global, regional, national, sub-national, metropolitan, and local) and systems (human, ecological, political, cultural, built, and financial).

The sections below elaborate on each of the seven mechanism for supporting disaster risk reduction through insurance products and services in the cooperative and mutual insurance sector.

## **1. Apply variable pricing of insurance to provide incentives for risk reduction**

UNDRR (2009) suggest that “by accurately pricing risk, insurers can incentivise risk reducing decision making.” More specifically, it is noted that “the use of traditional insurance schemes to provide incentives for risk reduction investment will usually require differentiation in premium levels; that is, charging premiums that reflect the true level of risk (and therefore, offering appropriate discounts for risk reduction). Where premiums do not reflect the risk, this can provide a disincentive for risk reduction.”

Similarly, the OECD (2020) elaborated on insurance pricing that reflects risk reduction in the context of the Covid-19 pandemic. It was suggested that “pricing for (re)insurance coverage which varies by level of risk should provide incentive for policyholders (or insurers) to invest in risk reduction (or ensure underwriting discipline) in order to lower the cost of that coverage.” Furthermore, it was acknowledged that “implementing variable pricing (and particularly, premium reductions for risk mitigation measures) is a challenge for many types of perils (and potentially impossible for some) although advances in modelling will continue to support the ability of these programmes to price their coverage based on more granular assessments of risk.”

Examples and illustrations from the case studies include:

- **Unique Insurance** (Ghana): Incentives in the form of discounts and premium reductions are provided for clients who have risk reduction measures in place such as fire extinguishing appliances, sprinklers, security cameras and alarms.
- **Royal Automobile Club of Western Australia** (RAC, Australia): RAC's Less Emissions Mission is a rewards programme designed to incentivise customers to drive lower emission vehicles, including up to 25% off of automobile insurance, 0.5% lower interest rate for car loan, free upgrades on roadside assistance, and a 10% discount on labour at RAC Auto Services.
- **LB Forsikring** (Denmark): LB Forsikring has launched a telematics app solution where members can earn a lower deductible if they drive safely, avoiding traffic accidents and lowering damage losses. The solution has the potential to be further developed in several directions if it proves to be successful, for example, to mobility and transportation in a broader sense encouraging safer or climate-friendly transportation.

Other examples and illustrations from the literature include:

- Suncorp’s “Cyclone Resilience Benefit” rewards customers in North Queensland with premium reductions of up to 20% for making their homes more cyclone resilient. To date, 43,244 customers have received a premium reduction from Cyclone Resilience Benefit ([Suncorp 2020](#)).

## **2. Include prerequisites and exemptions to provide incentives for risk reduction**

UNDRR (2009) describe that “as a prerequisite for coverage, insurers can require that policyholders undertake specific disaster risk reduction measures (UNDRR 2009).”

It is further described that “commercial property policies often contain conditions that certain risk control measures should be in place for the policy to be operative, creating a risk management environment for industries and sectors. For example, many homeowners are required to install particular types of locks on their doors to qualify them for theft insurance.” Furthermore, it is noted that “such pre-conditions are applicable at the level of an individual insurance policy or may be applied at an aggregate level in partnership with government.”

Examples and illustrations from the case studies include:

- **The Center for Agriculture and Rural Development Mutual Benefit Association** (CARD MBA, Philippines): Risk-reduction exemptions are intended to highlight dangers and help protect lives. CARD MBA life insurance exemptions include death caused by an accident while drink-driving or driving without a licence.

### 3. Ensure investment reduces and prevents risk and builds resilience

[\*\*UNDRR \(2009\)\*\*](#) suggests that “insurers can invest directly in risk reduction measures to avoid large compensation claims.” It is also noted that “in most industrialised countries, risk reduction is financed either by the government (eg investments in sea defenses) or households. There are a handful of examples where an insurer itself may pay directly for risk reduction, either through investment or lending. Such solutions have multiple benefits as the risk holder receives higher protection and the insurer may be able to avoid a large claim.”

Furthermore, [\*\*Jarzabkowski et al. \(2019\)\*\*](#) highlight that “insurance is best integrated into a *Build Back Better* approach through pre-arranged, ex-ante recovery and reconstruction plans that account for climate-risk management.”

Examples and illustrations from the case studies include:

- **Länsförsäkringar Alliance** (Sweden): implements a programme that pays for more extensive chimney-sweeping to prevent fires.
- **Swiss Mobiliar** (Switzerland): Since 2006, the company has donated around CHF 38 million for prevention projects to protect against natural hazards throughout Switzerland. Start-up and partial financing were provided for over 146 projects in order to avoid damage to people, movables and real estate. To support the financing efforts, Swiss Mobiliar provides prospective project applicants with a checklist of success factors for flood protection based on a study conducted by the Mobiliar Lab for natural risks at the University of Bern. The checklist consists of nine different thematic blocks, including one related to long-term protection including emergency planning, new building construction, and land-use planning and zoning.

Other examples and illustrations from the literature include:

- Suncorp (Australia) provides a no-fee, low-interest bank loan designed to help North Queensland customers finance mitigation improvements made to their homes to make them more resilient to cyclone damage ([\*\*Suncorp 2020\*\*](#)). The new low-cost personal loan features an interest rate of 4.99 per cent per annum and Suncorp waives all establishment and account keeping fees.
- Tokio Marine Nichido (Japan) has invested in the protection of mangrove plantations in Indonesia, Myanmar, the Philippines, and Thailand, which reduce the risks posed by storm surges to areas further inland. Protecting mangroves reduces the risk of losses both to plantations as well as insured assets inland (in [\*\*UNDRR 2009\*\*](#)).
- Insurers like American International Group (AIG) offered its clients a premium wildfire protection service that deploys crews to covered property threatened by wildfire in parts of California and Colorado states in the United States thus reducing risk to those insured (in [\*\*UNDRR 2009\*\*](#)).

#### **4. Raise awareness of the systemic nature of risks and provide information and advice for reducing hazards, exposure and vulnerability**

Insurers can raise awareness and provide advice to their customers on practical ways to reduce disaster risks, including by reducing the severity of hazards, their degree of exposure to hazards, and by reducing vulnerability and/or building their adaptive capacity. [Jarzabkowski et al. \(2019\)](#) describe that “insurers can suggest and incentivise better ways for their policyholders to prepare for disasters, for example, via preparedness guides and checklists, that can potentially help reduce the risks to them and their properties.”

Examples and illustrations from the case studies include:

Awareness and advocacy:

- **Royal Automobile Club of Western Australia** (RAC, Australia): Risky Roads survey asks road users to nominate roads or intersections they believe pose a safety threat, from local streets to major highways. Nominations are received from all corners of the state and members from regional areas, where roads are often particularly dangerous, are encouraged to contribute. Those with the most nominations are shared with government agencies and used by RAC to advocate for more action on road safety.

Advice, guides and tools:

- **FMG** (Farmers' Mutual Group, New Zealand): through its Point, Park and Anchor awareness programme, the company has produced a guide free for all farmers (regardless if they were existing clients) which identified the best ways to prevent the damage from windstorms. This advice includes: ‘point’ the irrigator into the wind, ‘park’ it, ‘anchor’ it down with pegs or large concrete blocks.
- **The Co-operators** (Canada): contributed funding and resources to promote and support Wildfire Community Preparedness Day events – raising awareness and encouraging wildfire resiliency at home through the clearing of dead or combustible vegetation, the installation of wildfire-resilient landscaping, and the use of fire-resistant roofing materials.
- **NFU Mutual** (UK): the Farm Safety Foundation, the charity founded and funded by NFU Mutual, developed and delivered a new Introduction to Mental Health in Farming session to 1,411 participants in agricultural businesses and organisations across the UK.
- **Zenkyoren** (Japan): An online agricultural risk diagnosis tool is provided on the company’s website. This is a rapid analysis that can be done in approximately 10 minutes.
- **LocalTapiola** (Finland): Farm safety programme provided including a safety mapping guide and risk tool for document storage, fire, electrical, mechanical, heating, oil tanks, and health and safety.
- **FMG** (Farmers' Mutual Group, New Zealand): Farmstrong is a non-commercial community give-back wellbeing programme to shares what farmers and growers can do to look after themselves and the people in their business, so they prevent injuries, and perform well.

Information:

- **Folksam** (Sweden): developed a model to be able to follow natural events on a regular basis (such as lightning storms, heavy rain, and floods). When there is a risk of natural events causing severe damage to the society, the company sends text messages to its customers and gives advice on how to prepare and prevent damages. This warning service through text message has also been used to inform customers about increased risk of floods in relation to spring floods.
- **Sanasa** (Sri Lanka): communicates weather data to help policyholders forecast the weather
- **Cornish Mutual** (UK): FloodSafe information portal outlines various steps policyholders can take to assess their risk of potential flood damage and to reduce the risk, including a range of building enhancements to reduce vulnerability to floods.

## 5. Build and share capacity and technology for risk modelling, analysis and monitoring

The [OECD \(2020\)](#) highlighted the importance of the use of modelling for risk management, noting that “the (re)insurance sector has significant expertise for modelling the financial consequences of natural and man-made catastrophe risks” and suggests that this capacity could be deployed to inform land-use planning, building code updates and infrastructure investment decisions.

Furthermore, [Jarzabkowski et al. \(2019\)](#) describe how “the risk identification expertise of the insurance industry can also be of great value for local communities and governments, particularly when the insurance industry engages with emerging markets, where such data or approaches to risk have previously not been considered.” Additionally, [UNDRR \(2009\)](#) noted that “insurers and government can partner to make available risk data and information systems.”

Examples and illustrations from the case studies include:

**Achmea** (the Netherlands): BlueLabel is a digital risk analysis tool that highlights areas vulnerable to climate-related risks with an accuracy that can pinpoint individual buildings, properties and streets. It translates the risk into an easily understandable ranking using a context labelling system. BlueLabel is to encourage a proactive approach to preventing disasters, rather than devising recovery measures in the aftermath. It provides clear insight into the areas where rain-induced flooding, heat stress or drought can occur. This translates into a risk label, or ranking, on individual buildings, streets and infrastructure.

**Unipol** (Italy): UnipolSai, in conjunction with DataMeteo® and Leithà (the Unipol Group company specialised in Big Data analysis), has developed a predictive model able to alert customers in advance of risks of hailstorms, strong wind, heavy rain or snow. The Alert Meteo system works by sending messages through the UnipolSai app or by SMS (for very intense events). In 2020, the alert system was extended to Linear customers (UnipolSai's company specialised in direct sales, online and through a call centre, of MV products). Approximately 3,300,000 customers have been involved in the campaign so far and almost 3 million SMS messages have been sent since the beginning of the project in July 2019.

**LocalTapiola** (Finland): Automated water pipe leak detection

**FMG** (Farmers' Mutual Group, New Zealand): established relationships with two thermal imaging professionals and offers thermal imaging as a complementary service to its clients. During the 2019/20 financial year, FMG implemented thermal imaging at 353 different businesses and of those, 10% reported severe issues that were able to be resolved, preventing a serious loss. FMG continues to put resources into improving the thermal imaging process to improve the data collected from it and its reach to clients. Its ability to prevent losses and disruption makes it a worthwhile and cost-effective investment.

## 6. Enhance local social capital for responding to disasters and innovating to reduce risks

Social capital, meaning the institutions and norms in social relationships that shape the quality and quantity of social interactions<sup>2</sup>, has proven an important characteristic in helping communities in all phases of disaster management.<sup>3</sup>

<sup>2</sup> See <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6506562/>

<sup>3</sup> See [https://link.springer.com/content/pdf/10.1007/978-0-387-71311-3\\_13.pdf](https://link.springer.com/content/pdf/10.1007/978-0-387-71311-3_13.pdf); <https://academic.oup.com/aje/advance-article-abstract/doi/10.1093/aje/kwaa085/5836847?redirectedFrom=fulltext>

**Roy et al. (2009)** explored social capital as a mechanism for creating adaptive policies and as guidance for policymaking in an uncertain world. Termed “enabling self-organisation and social networking”, the researchers elaborated it as follows:

*“ensuring that policies do not undermine existing social capital; creating forums that enable social networking; facilitating the sharing of good practices; and removing barriers to self-organisation, all strengthen the ability of stakeholders to respond to unanticipated events in a variety of innovative ways.”*

From a practical perspective, making use of social capital to achieve public policy objectives can be accomplished in a variety of ways, including (**PRI 2005**, in Roy et al. 2009) by: increasing programme sensitivity to existing social capital; establishing favourable conditions for desired network formation and maintenance; tapping into existing networks to deliver services; and building and supporting networks.

Examples and illustrations from the case studies include:

- **The Kokumin Kyosai Co-op** (Japan): launched a campaign called “Enjoy TASUKEAI” (Tasukeai means “Mutual help” in English) to encourage people to try helping others such as their neighbours, colleagues and sometimes strangers. Kokumin Kyosai Co-op believes that the situation surrounding modern citizens has been more and more harsh and because of the accompanying economic slowdown and uncertainty and instability on various aspects of life, mutual help and support among people must become more important.

## 7. Collaborate with the public sector to signal unsustainable development and guide investment to reduce risks while closing protection gaps

**Jarzabkowski et al. (2019)** describe the role of insurers in signalling unsustainable development, highlighting that “insurance sends a strong price signal that specific risk-prone areas are only viable to insure if charged with a high premium.” Furthermore, **UNDRR (2009)** elaborates on enabling conditions and regulation of insurance programmes, and that through legislation, financial oversight and monitoring, government can provide incentives for insurance to promote risk-reducing activities.

This mechanism highlights the essential role that public-private partnerships play in disaster risk reduction and resilience building, not only for signalling unsustainable development, but also by enabling the other six mechanisms.

Examples and illustrations from the literature include:

- The Texas Windstorm Insurance Association (USA): required that owners of houses and low-rise buildings meet appropriate weatherproofing specifications, aided by inspectors to provide certifications and ensure compliance. (in **Jarzabkowski et al. 2019**)
- Suncorp (Australia): In studying the opportunities and limitations of insurance for climate adaptation, **Jarzabkowski et. al (2019)** reported on the case of the Suncorp Group, one of Australia’s largest private insurers. In 2012, the company withdrew from offering policies in a few communities in a region of Queensland that braces itself each year for an onslaught of storms and cyclones. Suncorp had previously reported paying AUD 150 million in flood claims in these communities in return for AUD 4 million in premiums over a two-year period. The loss of insurance coverage prompted the government to construct levees to reduce the flood risk, after which, insurers, including Suncorp, returned to the market with products appropriately priced to reflect the reduced risk. Jarzabkowski et. al (2019) described this as a case not only of the influence of a large insurance provider in signalling unsustainable development, but also a case where there was high local awareness of the hazard and a specific means to reduce the disaster risk.

## **IV. CASE STUDIES OF COOPERATIVE AND MUTUAL INSURANCE SUPPORTING DISASTER RISK REDUCTION AND RESILIENCE**

Examples of disaster risk reduction efforts across twenty ICMIF member organisations were examined to gain an initial understanding of the types of mechanisms being implemented by the cooperative and mutual insurance sector to support disaster risk reduction and resilience.

### **Featured case study: “Make insurance redundant”**

An underlying premise of this report is that given their member-owned model, cooperatives and mutuals are uniquely positioned to help lead the insurance industry in mainstreaming disaster risk reduction and contributing to a value chain that delivers on resilience. An historical view of the origins of cooperatives and mutuals supports this premise, but so too does a prospective view.

For example, **LB Forsikring**, a mutual insurance company with 700 employees serving over 400,000 members in Denmark, delivered this forward-looking statement:

**“ At LB Forsikring, it has never been our purpose to sell insurance. It has always been to secure our members. We believe that with technology, cooperation and good ideas - together - we can prevent the damage from happening at all. That is why we work together to make insurance, as we know it today, completely redundant.”**

In elaborating on this approach to “make insurance redundant”, LB Forsikring notes that it will be “a long-term transformation”, and that while they do not know exactly what it will look like in 20 or 30 years, they acknowledge “it’s the right thing to do” and that “new technology offers new opportunities.” The example of innovative automobile technology is cited, whereby automatic emergency braking, lane departure warning and adaptive cruise control have already led to a dramatic drop in accidents and claims.

Source: <https://www.lb forsikring.dk/>

## **Profiles**

The twenty case studies spanned cooperative and mutual insurance companies located in North America (3), South America (1), Europe (9), Africa (1), Central Asia (1), and Asia and the Pacific (5). The companies ranged in size from several hundred to 48,000 employees with customer bases of between several thousand to 16 million. The gross written premium of companies featured ranged from tens of millions to USD 23 billion. A full description of case studies is provided at the end of this section, with a synthesis and key insights presented below.

## Synthesis and insights

**Hazards:** The case studies examined addressed a range of hazards from the comprehensive list of hazards covered under the Sendai Framework ([UNDRR and ISC 2020](#)), including:

- *Multi-hazard (x30, not related to a single hazard, ie, climate change and severe weather-related hazards, on-farm related hazards, home-related hazards)*
- *Road traffic accidents (x12)*
- *Fire (x6)*
- *Flood (x6)*
- *Water supply failure (x3)*
- *Wildfire (x1, x3, indirect)*
- *E-waste (x2)*
- *Explosive agents (x1)*
- *Spills (x1)*
- *Thunderstorms (x1)*
- *Wind (x1)*
- *Earthquake (x1)*

The listing of hazards for each case study is detailed in Annex-Table 3. Hazards such as floods, road traffic accidents and fires (not wildfires) were addressed frequently across the case studies examined. The review of literature, and most notably the current list of hazards based on a scientific study on the classification of Sendai Framework hazards, points to a much broader risk landscape, including eight clusters of hazards ([UNDRR-ISC 2020](#)): meteorological and hydrological (ie, cyclones, floods); extraterrestrial (ie, solar storms, meteorites); geohazards (ie, earthquakes, landslides); environmental (ie, soil erosion, biodiversity loss); biological (ie, zoonotic diseases, vector borne diseases); technological (ie, power outages, cyber hazards); and societal hazards (ie, civil unrest, financial shock<sup>4</sup>). The reality of such a multi-hazard landscape is well documented, including in the World Economic Forum's Global Risks Report ([WEF 2020](#)) and the UNDRR's Global Assessment Report ([GAR 2019](#)).

**Measures:** The case studies revealed a range of different types of measures being used to support disaster risk reduction. These are listed below, with illustrative examples provided in Annex-Table 1.

- *Awareness and advice (x37)*
- *Modelling and technology (x14)*
- *Resource efficiency (x7)*
- *Building and infrastructure enhancements (x5)*
- *Insurance pricing (x5)*
- *Risk analysis and continuity planning (x5)*
- *Data and analysis (x3)*
- *Enabling social capital (x1)*
- *Insurance prerequisites and exemptions (x1)*

The majority of measures being implemented as seen across the case studies related to awareness raising and advice for risk reduction, and also the use of modelling and technology to better understand risks. There was limited application of measures directly related to the provision of insurance products, such as through variable pricing and policy prerequisites or exemptions to provide incentives for risk reduction. This is consistent with the broader literature on experience by the private and mutual insurance sectors in supporting disaster risk reduction, suggesting an area for further product development and pilot testing.

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<sup>4</sup> Note: As to UN General Assembly Resolution 69/284, the term 'anthropogenic' or 'human-induced' hazards in the Sendai Framework, does not include the occurrence or risk of armed conflicts and other situations of social instability or tension which are subject to international humanitarian law and national legislation. In view of the calls for stronger coherence across the disaster risk reduction, development, climate change and humanitarian agendas, all of which have risk and resilience as underlying concepts, and aligned with the hazard scope covered by insurance, societal hazards are included as part of all-hazard considerations and ensure commonly agreed definitions for any hazard and risk.

**Disaster risk reduction pathways:** The various types of measures featured within the different case studies achieved disaster risk reduction in one of three ways: (i) reducing the occurrence or severity of the hazard; (ii) reducing the degree of exposure of assets and populations; and/or (iii) reducing the vulnerability of assets and populations. The specific occurrence of the measures examined were as follows: vulnerability reduction (x37); exposure reduction (x34); and hazard reduction (x15). Illustrative examples are provided in Annex-Table 2.

The majority of measures observed were directed at reducing exposure and vulnerability to hazards. A smaller number of measures were directed at reducing the occurrence or severity of hazards and were mostly focused on preventing road traffic accidents and greenhouse gas emissions. This suggests that there is merit in exploring how the severity of other hazards could be reduced or prevented through targeted measures.

**Disaster risk reduction timing:** The measures examined were intended to influence disaster risk reduction either through action taken before a disaster occurs (ie, ex ante efforts including targeted risk reduction or mitigation or preparedness efforts) or through action after a disaster had occurred (ie, ex post efforts including during disaster recovery). More specifically, the measures occurred as follows:

- Affected before disaster occurs (ex ante): Mitigation (x47), Preparedness (x38)
- Affected during or after disaster occurs (ex post): Recovery (x4)

A detailed listing of this disaster risk reduction timing for each case study is provided in Annex-Table 3. The measures observed focused appropriately on actions that prevent and reduce risks before disasters occur (ie, building enhancements) and support preparedness (ie, early warning systems, risk assessment). While prevention measures implemented before disasters occur are the key leverage point for progress on disaster risk reduction, long-term prevention measures can also be triggered during and after a disaster occurs. For example, during recovery to help ensure that infrastructure is built back better to reduce exposure and vulnerability to hazards (ie, disincentives for building in flood zones, or incentives for flood-proof building reconstruction and retrofits), and even help reduce the occurrence and severity of hazards themselves (ie, construction of energy efficient buildings to help mitigate climate change).

## Case studies

The twenty case studies of cooperative and mutual insurance companies supporting disaster risk reduction are listed below and elaborated in the sections that follow.

1. Achmea
2. CARD MBA
3. The Co-operators
4. Cornish Mutual
5. Desjardins Group
6. EMC Insurance
7. FMG – Farmers’ Mutual Group
8. Folksam
9. Kokumin Kyosai Co-op
10. Länsförsäkringar Alliance
11. LB Forsikring
12. LocalTapiola
13. NFU Mutual Insurance
14. Royal Automobile Club of Western Australia (RAC)
15. SANASA
16. Sancor Cooperativa de Seguros
17. Swiss Mobiliar
18. Unipol
19. Unique Insurance
20. Zenkyoren



LB Forsikring



la Mobilière

Folksam





## Achmea (Netherlands)

Achmea is an insurance cooperative holding company based in The Netherlands. Founded in 1811, today Achmea is the largest insurance provider in The Netherlands and Europe's third largest mutual insurer. The company serves 10 million customers in Europe, Canada and Australia with a staff of 16,000 employees. In 2018, Achmea's gross written premium was approximately EUR 20 billion. Achmea is a signatory to the United Nations Principles for Sustainable Insurance (PSI) and Principles for Responsible Investment (PRI). For more information visit [their website](#).

### BlueLabel<sup>5</sup>



In 2019, Achmea conducted its Climate Adaptation Monitor survey to better understand the climate resilience of homes in the Netherlands. The survey revealed that most residents of the Netherlands want to adapt their homes to the impact of climate change, such as flooding. The problem was that homeowners didn't know enough about how to do so and how much it would cost. For this reason, Achmea entered into a partnership with Royal Haskoning DHV and consultancy Nelen & Schuurmans under the name BlueLabel to give customers insights into their climate-related risks such as rain-induced flooding, flooding, heat stress and drought.

BlueLabel is a digital risk analysis tool that highlights areas vulnerable to climate-related risks with an accuracy that can pinpoint individual buildings, properties and streets. BlueLabel translates the risk into an easily understandable ranking using a context labelling system. This is depicted visually for each property, street and infrastructure object – allowing people to understand risk at a glance.

<sup>5</sup> See <https://bluelabel.net/En/>

The ultimate aim of BlueLabel is to encourage a proactive approach to preventing disasters, rather than devising recovery measures in the aftermath. It provides clear insight into the areas where rainwater flooding can occur (based on an extreme rainfall event which is expected to become reality more often according to climate change scenarios) and gives detailed information down to the square metre. This translates into a risk label, or ranking, on individual buildings, streets and infrastructure. As a digital information service, Blue Label aims to empower governments, cities, industries, organisations and individuals to take targeted measures that focus on mitigating risk with insight can be used to effectively plan interventions towards greater flood resilience. The Netherland's Delta Programme for 2018 states that every municipality must have carried out a climate stress test by 2019. BlueLabel allows cities such as Rotterdam, an early adopter of the system, to map and measure the impact of climate risks through a specially developed dashboard.

### **Green roofs<sup>6</sup>**

Under the programme brand Interpolis, Achmea is promoting the construction of 'green roofs' with a view to preventing damage or loss caused by severe rainfall and heat stress. Special water-absorbing plants absorb surplus water, prevent heat stress in homes or buildings and absorb carbon dioxide.

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<sup>6</sup> See <https://www.achmea.nl/en/sustainability/climate-action/products-and-services>





## CARD MBA (Philippines)

The Center for Agriculture and Rural Development Mutual Benefit Association (CARD MBA) is the largest mutual microinsurance provider in the Philippines with 83 percent of the market share. Founded in 1999, CARD MBA now has over 6 million members providing life insurance to 22 million individuals (members and dependents).

CARD MBA is part of a group of companies promoting financial inclusion under the name CARD Mutually Reinforcing Institutions (CARD MRI), including 20 companies with 17,000 staff providing microfinance credit, life and non-life insurance (ie, disaster and crop insurance), banking, financial education, investment, healthcare, publishing and aid. CARD Inc. is one of these companies and is the Philippines largest microfinance institution. Becoming a member and insured through CARD MBA is a compulsory requirement when a microfinance product in one of its CARD MRI institutions. For more information visit [their website](#).

### Risk reduction exemptions<sup>7</sup>

Risk-reduction exemptions are intended to highlight dangers and help protect lives. CARD MBA life insurance exemptions include death caused by an accident while drink-driving or driving without a licence.

### Credit with Education Programme

CARD MRI's Credit with Education Programme supports members with a budget of USD 2.1 million under a range of themes, including a risk reduction and resilience theme which helps build skills related to disaster preparedness, stress debriefing and conducting fire and earthquake drills.



<sup>7</sup> See page 43 <https://www.cisl.cam.ac.uk/resources/sustainable-finance-publications/mutual-microinsurance-inclusive-development>



## The Co-operators (Canada)

The Co-operators Group Limited is a Canadian multi-line insurance and financial services cooperative with CAD 47.3 billion in assets under management. Its subsidiary companies provide solutions in four core areas: property and casualty insurance, life insurance, institutional asset management and brokerage operations. The mutual company is supported by 6,249 employees and a financial advisor network with 2,530 licensed insurance representatives. Its member organisations include cooperative organisations, credit union centrals and representative farm organisations. The Co-operators is a signatory to the United Nations Principles for Sustainable Insurance and Principles for Responsible Investment. For more information visit [their website](#).

### Wildfire resilience events

In 2019, 125 Canadian communities joined in a national effort to reduce wildfire risk. In partnership with FireSmart® Canada, the Institute for Catastrophic Loss Reduction, and the National Fire Protection Association, The Co-operators contributed funding and resources to promote and support Wildfire Community Preparedness Day events – raising awareness and encouraging wildfire resiliency at home through the clearing of dead or combustible vegetation, the installation of wildfire-resilient landscaping, and the use of fire-resistant roofing materials.

### Water First Education and Training

Water First Education and Training Inc., a registered charitable organisation based in Creemore, Ontario. Water First is dedicated to working with First Nations communities – through education, training and meaningful collaboration – to resolve local water challenges. Paid internship opportunities take place in local communities and support Indigenous youth, by providing the customised skills, training and tutoring needed to obtain certifications in drinking-water treatment and environmental water-quality monitoring.

## Flood mapping technology

Using industry-leading flood-mapping technology, The Co-operators is able to pinpoint flood risk down to an individual household. In 2018, The company was able to make Comprehensive Water insurance available to all homeowners in Canada. In 2019, it expanded its offering by making this coverage available to all risk types and all property types – including cottages and seasonal dwellings, apartments and condos.

## Partners for Action Network<sup>8</sup>

The Co-operators is a founding partner in the Partners for Action Network (P4A), an applied research network based on the University of Waterloo dedicated to reducing the risk of flood damage and advancing flood resilience in Canadian communities. The P4A advances flood resiliency through the promotion of flood awareness and preparedness, as well as strategies to adapt to and prevent flooding events.

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<sup>8</sup> See <https://uwaterloo.ca/partners-for-action/>





## Cornish Mutual (UK)

Cornish Mutual was founded in the UK in 1903 by a group of local farmers searching for a better way of insuring their farms through a cooperative approach. By 1999, the company extended its insurance services from farms to homes and businesses across the rural communities of Cornwall, Devon, Somerset and Dorset. As of 2019, Cornish Mutual's gross written premiums were GBP 23.65 million. For more information visit [the website](#).

As part of a strategy refresh during 2020, Cornish Mutual identified the move from protection to prevention as one of its transformative opportunities. In the past, the company ran a number of marketing campaigns to highlight the importance of creating safe home and workplaces, examples of which can be found below. Now, an even more proactive approach is being taken across the business with a view to developing new valuable services and real risk-reducing changes in behaviour amongst the membership.

The company is starting with a health and safety offering which it is launching in 2021 with expert partners. This will sit alongside a number of internally provided services.

Additionally, the farming membership faces business model uncertainty as a result of Brexit and climate change among other challenges. As part of a wider risk prevention remit, Cornish Mutual is running their Future Farming Programme. This campaign aims to showcase solutions which anticipate and build resilience against emerging business model risks to members through relevant content, events, case studies and opportunities to cooperate with each other.

## **FarmSafe**

The company noted that the fewer incidents it had to pay out to cover, the more it could invest in better premiums and service for its membership. So, to help people stay safe, the company advised its members to reduce their risk through awareness raising and advisory initiatives.

FarmSafe was one such initiative which aimed to raise awareness of health and safety on farms. The FarmSafe website provided guidance to help members make sure their farming activities complied with health and safety regulations, as well as taking proactive steps to reduce the risks. It included a wide range of subjects surrounding health and safety on farms, including how to write a risk assessment.

## **FarmSafe for Schools**

Cornish Mutual's FarmSafe for Schools resource provided free farm and countryside safety teaching materials for Key Stage 1 and 2 teachers (those teaching children between ages 5-7 and 7-11). Their Teaching Resources page gave access to new lesson plans to help teachers deliver farm and countryside safety lessons. These materials covered farm safety, the countryside code, hygiene, road and rail safety, safety around animals and safety around electricity. Each lesson plan consisted of detailed teacher notes, pupil worksheets and PowerPoint presentations to help pupils understand some of the dangers they might encounter in the countryside and know how to deal with them safely.

## **FloodSafe**

The company recognised that climate change and other factors are having an adverse impact on the frequency of flooding. Its FloodSafe information portal outlined various steps policyholders can take to assess their risk of potential flood damage and to reduce the risk, including a range of building enhancements to reduce vulnerability to floods.

## **HomeSafe**

Cornish Mutual's HomeSafe campaign aimed to reduce the risk of accidents in the home, be it whilst undertaking DIY projects, protecting children or reducing the risk of fire.





## Desjardins Group (Canada)

The Desjardins Group is a cooperative and private group, based in Quebec (Canada), providing financial and insurance services in the areas of life, health, property and casualty. The company services 7 million members and clients through its nearly 48,000 employees and over 900 points of service. Desjardins is also active in 65 countries providing microfinance products through its subsidiary Développement International Desjardins. For more information visit [their website](#).

### Radar and Alert warning systems for natural hazards<sup>9 10</sup>

With *Radar*, available for free on a customer's mobile device, Desjardins Insurance provides personalized weather alerts, not just based on a regional forecast, but to inform customers about a major weather event expected at a specific address.

*Alert* is a prevention programme for the company's home insurance policyholders. It comes with a free water and freeze detector, providing smartphone alert to help customers act fast and limit the damage caused by water leaks and freezing pipes.

### Ajusto telematics app for safe driving<sup>11</sup>

The company's *Ajusto* telematics app enables personalised driver scores to incentivise safe driving, including relating to cell phone distractions, speed, fast acceleration and hard braking. Based on their driving habits, customers could get savings of up to 25% on car insurance premiums. The app delivers a co-benefit in that reduced acceleration and braking saves gas and therefore, carbon emission reductions in the case of combustion engine vehicles.

<sup>9</sup> See <https://www.desjardins.com/ca/personal/insurance/home-insurance/radar/index.jsp>

<sup>10</sup> See <https://www.desjardins.com/ca/personal/insurance/home-insurance/alert/index.jsp>

<sup>11</sup> See <https://www.desjardins.com/ca/personal/insurance/car-insurance/ajusto/index.jsp>

## **Low carbon and fossil fuel-free ETFs<sup>12</sup>**

With the Desjardins low-CO2 ETFs, investors can choose portfolios that are intended to notably lower their carbon footprints compared to traditional stock indices—these ETFs exclude the companies with the highest carbon intensities.

Additionally, Desjardins RI Global Multifactor Fossil Fuel Reserves Free ETF gives investors the opportunity to invest with zero exposure to the traditional energy sector (coal, gas, oil). The fund excludes all companies in the fossil energy sector, or that hold fossil fuel reserves. It also excludes companies with a sizable portion of their revenue deriving from the fossil fuels industry, or from electricity generated by thermal coal.

## **SocieTerra mutual funds**

When developing Desjardins SocieTerra Funds, the selected companies are subject to a rigorous review of their ESG (environmental, social and governance) practices and an in-depth financial analysis. In addition, producers and specialised transporters of fossil fuels, and companies in the civilian firearms, nuclear energy and tobacco industries are excluded from the outset. Once a company is selected, Desjardins maintains a relationship and takes various steps to ensure ongoing engagement. A range of 16 SocieTerra Funds and Portfolios are available to members and clients to fit different investor profiles.

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<sup>12</sup> See <https://www.fondsdesjardins.com/etf/market-insight/responsible-investment/index.jsp>





## EMC Insurance (USA)

EMC Insurance Companies, the trade for the Employers Mutual Casualty Company, was founded in 1911 and is among the largest property and casualty providers in the US state of Iowa and one of the top 60 providers in the country based on net written premium. It employs more than 2,400 employees across 19 locations and actively writes in more than 40 states. For more information visit [their website](#).

### **Loss Control management and online services<sup>13</sup>**

EMC Insurance maintains a loss control website and a network of professionals to share information with policyholders and provide services to help prevent losses from occurring. The company offers engineering, environmental health, injury management and online services to EMC policyholders to help them improve safety in the workplace. Services include on-site industrial hygiene and indoor air quality surveys, chemical storage assessments, noise monitoring, hazard control assessments and ergonomic evaluations.

For example, through its online Loss Control Newsletter, EMC provides awareness and advice for preventing ice damage in town water storage tanks<sup>14</sup>. For the Covid-19 pandemic, EMC's Loss Control website provide a suite of guides and tools for safe reopening of businesses, schools and public sector agencies<sup>15</sup>.

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<sup>13</sup> See [https://www.emcins.com/assets/pdf/aboutemc/2019\\_corporate\\_review\\_single.pdf](https://www.emcins.com/assets/pdf/aboutemc/2019_corporate_review_single.pdf)

<sup>14</sup> See <https://www.emcins.com/losscontrol/insights-d/newsletters/local/2020/10-1/>

<sup>15</sup> See <https://www.emcins.com/lossControl/Covid-19.aspx>

## **Aerial intelligence**

EMC is using drones to capture high-resolution imagery of roofs to identify ponding, displaced ballast, debris or other problems. As a result, the company can provide its policyholders with actionable loss control solutions to help them plan repairs and preventive maintenance to improve roof resiliency and longevity. Last year, EMC completed flights over more than 300 policyholder locations. The company partners and invests in a company that provides property risk insights through applying deep learning technology to aircraft imagery sets. These analytics will be used for improved risk selection and prioritisation of property activities, such as property surveys and drone flights.

## **Building sensors**

EMC monitors the activity of more than 50 sensor packages installed in 17 school districts in four states. These systems provide alerts to schools for problems with their refrigeration equipment and instances of building water intrusion or leakage. By identifying pre-loss conditions and alerting schools of needed actions, multiple spoilage and water damage claims were prevented.





## FMG – Farmers' Mutual Group (New Zealand)

Farmers' Mutual Group (FMG) is a mutual insurance company based in New Zealand. Founded in 1905 through Farmers Mutual Associations, the idea grew over the ensuing decades and in 1978 the Farmers' Mutual Group (FMG) was established and today is still 100% owned by its rural New Zealand members. The company employs over 800 people across New Zealand serving 100,000 clients. In 2019/20 FMG reported a 51% rural market share and a gross written premium of NZD 366.3 million. For more information visit [their website](#).

### **Preventing windstorm damage to irrigation equipment: point, park and anchor awareness**

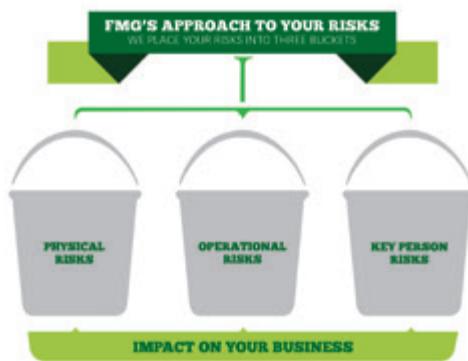
In 2013, the region of Canterbury in New Zealand's South Island was hit with a major windstorm. The winds reached 250km/hr and caused significant damage throughout the area. Canterbury is also New Zealand's largest irrigation region and the windstorm hit in September - just as irrigators were starting to be used. The winds caused many irrigators to fall over, resulting in a loss of function at a critical time in the farming calendar. In total, FMG paid out NZD 9.4 million in irrigator claims but there was also the disruption caused from the loss of productivity while waiting for repairs as the demand for parts and specialist labour spiked.

After the event, FMG worked with Lincoln University of Canterbury to conduct a study on the impact of the storms and what could be learnt from it. An irrigator advice guide was produced free of charge for all farmers (regardless if they were existing clients) which had the key findings of 'Point, Park, & Anchor'. The study identified this as the key preventive advice when there are strong winds or a storm coming. The best way to prevent the damage from these events is to 'point' the irrigator into the wind, 'park' it, and 'anchor' it down with pegs or large concrete blocks. FMG also began an industry partnership with Irrigation New Zealand to educate farmers on how to point, park and anchor their irrigators.

This has been very successful with no significant irrigator single losses since the 2013 event until September 2020 where, despite different wind conditions and the storm concentrating in northern Canterbury, irrigators that were pointed into the direction of the wind performed significantly better. The claims impact of this most recent event was still significantly less than the 2013 storm. Overall, the profitability of the irrigator policy has drastically improved meaning that it can stay affordable for farmers and growers. FMG and Irrigation New Zealand are continuing their partnership to help build the resilience of farmers, including through planned workshops and the production of a new guide relating to wind forecasting.

## Risk education

FMG assists clients in understanding the risks they face and how to go through the risk management process. FMG's '3 Bucket' framework was developed to help clients evaluate and identify different types of risks their business faces. This includes physical (tangible risks), operational (legislative and compliance risks) and key person risks (injury, illness and life). Further work is being done to help clients understand what the major risks they face are and what their appetite is - based on industry type, scale of operation, geography, and the individual farmers. FMG has tailored this advice across multiple channels such as written reports, conversations and practical workshops to allow for different learning styles. FMG is currently working to provide resources and workshops to help clients understand their risk appetite and prepare risk registers for all risks, not just those that are insurable. As most of the businesses FMG insures are small-to-medium enterprises, they normally wouldn't have access to this level of risk management advice.



## Thermal imaging

Thermal imaging uses thermographic cameras to find electrical wiring with elevated temperatures in order to proactively identify issues that can't be seen with the naked eye. FMG has established relationships with two thermal imaging professionals and offers it as a complementary service to its clients. During the 2019/20 financial year, FMG implemented thermal imaging at 353 different businesses and of those, 10% reported severe issues that were able to be resolved, preventing a serious loss. FMG continues to put resources into improving the thermal imaging process to improve the data collected from it and its reach to clients. Its ability to prevent losses and disruption makes it a worthwhile and cost-effective investment.



## Farmstrong

Farmstrong is a non-commercial community give-back wellbeing programme that was founded by FMG and the Mental Health Foundation in 2015. The programme's goal is to help farmers and growers across New Zealand live well to farm well. Farmstrong shares what farmers and growers can do to look after themselves and the people in their business, so they prevent injuries, and perform well. Each year a random sample survey of ten behaviours is used as a benchmark to measure the effectiveness of the programme and the overall wellbeing of rural communities. This was recognised by the Government-owned Accident Compensation Corporation (ACC) who joined as a strategic partner in 2016. With on-going commitment from the key partners over the next five years, Farmstrong aims to extend its reach to influence the wellbeing of 107,000 people working in agriculture. This will be done with a range of different methods including wellbeing and injury prevention initiatives; further sharing of Farmstrong tools and information; and increased community support for farmers and growers to sustain new wellbeing habits.



## Folksam (Sweden)

Folksam is a Swedish mutual company founded in 1908, providing a range of personal and commercial insurance and savings products. Today, every second person in Sweden is insured through Folksam with 4 million customers served by over 3,600 employees across 30 offices. The company's gross written premium in 2019 was SEK 56 billion.

Folksam is member of the UN-convened Net-Zero Asset Owner Alliance (featured below) and endorses the following agreements and frameworks: the UN Agenda 2030 and the global sustainable development goals; The UN Global Compact; The UN Principles for Responsible Investment (PRI); the Global Reporting Initiative (GRI); Green Bond Principles (GBP); The Swedish Society for Nature Conservation's Good Environmental Choice certification for home, holiday home and car insurance; the Task Force on Climate-related Financial Disclosures (TCFD); and The Montreal Carbon Pledge. For more information visit [their website](#).

### Net-Zero Asset Owner Alliance<sup>16</sup>

The Folksam Group is one of six initiators of the UN-convened Net-Zero Asset Owner Alliance, an international group of more than 30 institutional investors with the goal of having net zero greenhouse gas emissions in investment portfolios by 2050. Through its work in the Alliance, Folksam steadily promotes the achievement of net zero greenhouse gas emissions among the companies in its investment portfolios. Such efforts contribute to the reduction of future risks related to climate change.

The Net-Zero Asset Owner Alliance is convened by the United Nations Environment Programme's Finance Initiative and the Principles for Responsible Investment, representing approximately USD 5 trillion in assets under management to help align investment portfolios with a 1.5 degree Celsius climate change scenario, addressing Article 2.1c of the Paris Agreement.<sup>17</sup>

<sup>16</sup> See [https://nyhetsrum.folksam.se/en/files/2020/04/S4342\\_ars\\_hallbarhetsrapport\\_2019.pdf](https://nyhetsrum.folksam.se/en/files/2020/04/S4342_ars_hallbarhetsrapport_2019.pdf)

<sup>17</sup> See <https://www.unepfi.org/net-zero-alliance/>

## **Helping customers prevent damage from natural events**

Folksam helps its customers to prevent damages related to natural events through analysis and communication. For example, Folksam has developed a model to be able to follow natural events on a regular basis (such as lightning storms, heavy rain and floods). And when there is a risk of natural events causing severe damage to the society (warning classification 3 by SMHI), Folksam sends text messages to its customers and gives advice on how to prepare and prevent damages. This warning service through text message has also been used to inform customers about increased risk of floods in relation to spring floods.

Communication through text messages is complimented with press releases and information in social media in order to reach as many of our customers as possible. Before the summer, the company publishes information about impacts of the damages caused by natural events during the previous year. Also, Folksam sends out emails to its customers 5-6 times per year with relevant information and recommendations of how to prevent damages from natural events typical for the specific season. Folksam advises customers on how to create climate resilient housing through information on its website.

## **Road traffic safety and carbon emission reduction**

Folksam contributes to road traffic and vehicle safety through a number of measures as outlined below, many of which also have the co-benefit of reducing carbon emissions through speed reduction incentives and identifying fuel efficient vehicles.

- By analysing real-world accidents from a systems approach, effective countermeasures have been identified for various road users. Premium reductions have frequently been used to promote efficient safety systems;
- Undertaking car model safety ratings based on real-world crashes aimed to guide consumers to pick the safest cars;
- Pay-as-you-drive car insurance that encourages policyholders to keep within the speed limit;
- Measuring the speed compliance in company cars with the aim to lower the speed on the roads and to influence companies to introduce for example ISO 39001 (standard for road traffic safety); and
- Consumer information is used to spread knowledge and to minimise injuries. This includes conducting consumer tests of child restraints and bicycle helmets, thereby influencing manufacturers to produce safer products and helping customers pick the safest products.





## Kokumin Kyosai Co-op (Japan)

The National Federation of Workers and Consumers Kyosai Cooperatives (Kokumin Kyosai Co-op) is a Japanese insurance cooperative organisation (Kyosai means “Mutual aid using insurance based on the cooperative movement”). Established in 1957, the Kokumin Kyosai Co-op offers life, fire, natural disaster and automobile insurance products as well as group life insurance and pension plans. It operates under the supervision of the Ministry of Health, Labour and Welfare and the Consumers’ Livelihood Co-operative Society Law. In 2018, the organisation had a gross written premium of JPY 572.1 billion. For more information visit [their website](#).

### Bosai Café - loss prevention events

Kokumin Kyosai Co-op has been holding loss prevention, awareness raising events named “Bosai Café” (Bosai means “Loss and risk prevention”), for its policyholders and the local community for more than a decade. The intent is to improve awareness of disaster risk reduction and mitigation through various innovative study programmes such as stage performances, scientific experiment shows and panel exhibitions. These Bosai Café events provide children and their parents with good opportunities to discuss how they can prepare for disasters.





Social capital, meaning the institutions and norms in social relationships that shape the quality and quantity of social interactions<sup>18</sup>, has proven an important characteristic in helping communities in all phases of disaster management.<sup>19</sup>

In this regard, Kokumin Kyosai Co-op initiated an advocacy campaign to encourage people to recognise the necessity of mutual help in society. The situation surrounding modern citizens has been more and more harsh with the accompanying economic slowdown and uncertainty and instability on various aspects, in the period of which, mutual help and support among people must become more important. As a cooperative entity, Kokumin Kyosai Co-op launched a campaign called “Enjoy TASUKEAI” (Tasukenai means “Mutual help”) to encourage people to try helping others such as their neighbors, colleagues and sometime even strangers. The organisation held a special discussion event involving young people; launched large-scale advocacy advertisements in public spaces and on the internet; and distributed leaflets which included tips and real experience stories related to mutual help collected from members.

<sup>18</sup> See <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6506562/>

<sup>19</sup> See [https://link.springer.com/content/pdf/10.1007/978-0-387-71311-3\\_13.pdf](https://link.springer.com/content/pdf/10.1007/978-0-387-71311-3_13.pdf); <https://academic.oup.com/aje/advance-article-abstract/doi/10.1093/aje/kwaa085/5836847?redirectedFrom=fulltext>





## Länsförsäkringar Alliance (Sweden)

The Länsförsäkringar Alliance is a Swedish mutual company comprising 23 local and customer-owned regional insurance companies and the jointly owned Länsförsäkringar AB and its subsidiaries. Its 3.9 million customers are provided with a complete offering of banking, insurance, pension and real-estate brokerage services through the regional insurance companies. The company's operating profit for 2019 was SEK 14.9 billion. For more information visit [their website](#).

### Preventing natural catastrophes

Costs for natural catastrophes at Länsförsäkringar are increasing and in total represent slightly more than 10% of property-damage claims over time. Global warming is a financial risk that is difficult to predict over time, with sea levels expected to rise by 0.5-1 metre this century and the strongest type of storms is expected to grow in number.

All 23 regional insurance companies of the Länsförsäkringar Alliance have a natural catastrophe coordinator who focuses on spreading know-how and preventing natural catastrophes. Activities to prevent natural catastrophes include analysing the external environment and following scientific and technological developments. There are many reasons for higher claims costs caused by

natural catastrophes: the rising trend of more extreme weather situations and the effects of urban planning with new developments in vulnerable areas. Dialogue on climate change and development planning is conducted with decision-makers in society. Länsförsäkringar informs its customers how they can protect themselves, their families and their properties from natural catastrophes, such as hurricanes, thunderstorms, floods, heat waves, drought and heavy snowfall, and reduce the risk of starting a forest fire.

### **Construction techniques for high-risk zones**

The Länsförsäkringar Alliance raises awareness of construction techniques for new-builds in risk zones close to water that are affected by climate change and rising sea levels.

### **Claims prevention activities**

Households are taught about how to conduct a fire drill and how simple fires in the home can be prevented and extinguished. Additionally, the Länsförsäkringar Alliance implements a programme that pays for more extensive chimney-sweeping to prevent fires.

### **Circular claims adjustment**

The Länsförsäkring Alliance works on circular claims adjustment to increase the reuse, repair and recycling of home electronics.





## LB Forsikring (Denmark)

Founded in 1880, LB Forsikring is a mutual insurance company based in Denmark. It is the third largest insurance company in the country with over 400,000 members serviced by its 700 employees. LB Forsikring's purpose is "Together we make insurance redundant": a joint effort with its members as well as existing and new collaborators, to prevent most of the accidents and damages we see today, and to "invest the savings made into the pursuit of even further prevention efforts." For more information visit [their website](#).

### Rewarding safe driving through telematics



LB Forsikring has launched a telematics app solution where members can earn a lower deductible if they drive safely, avoiding traffic accidents and lowering damage losses. The solution has the potential to be further developed in several directions if it proves to be successful, for example, to mobility and transportation in a broader sense encouraging safer and climate-friendly transportation. In Denmark, approximately half of all traffic collisions are a result of drivers being distracted, typically by using their phones. Reducing distraction by phone use is one of the major objectives of this solution from LB Forsikring. Although it was only recently launched, early findings indicate a 10% improvement in the reduction of hard braking by drivers and a 46% improvement in distraction levels, which is very promising.

## Smart leak detection

Leaking water from pipes represents one of the largest claim costs for LB Forsikring. In addition, the challenge of dealing with a water damage is an exhausting experience for the member. Therefore, when looking at risk prevention and mitigation, it was natural to investigate initiatives that could reduce the damage from water leaks.

Different mechanical solutions have been on the market for some time. However, LB Forsikring wished to investigate how Internet of Things (IoT) technology would enrich a concept around mitigating damages from leakages. Therefore, LB Forsikring partnered with a Danish company that had developed a leakage sensor that could be installed on water pipes by the insured themselves. The sensor comes with a mobile app, that will warn the policyholder if a potential leak is detected. If a leak occurs and the member policyholder does not respond to the warning notification, the member will receive a call to ensure that they do not need assistance. LB Forsikring decided to launch the solution in a limited pilot to get hands-on experience with the concept. The leakage sensor was offered to 300 policyholders living in houses that the actuarial function had identified as being most exposed to leakage. The sensor was offered in a direct mail campaign and at first the policyholders were asked to buy it for a small fee of DKK 199 (approximately EUR 27). Later the sensor was offered for free to test if a fee constituted a barrier for accepting the offer. It turned out that fee or no fee - the conversion rate in the mail campaign was about 10%. The pilot was successful and contributed some great learnings for LB Forsikring. LB chose not to proceed with that specific solution, as changes at the partner required LB to be in charge of production and distribution. Instead, LB Forsikring is now piloting a similar solution where production, distribution and support are dealt with by the partner.





## LocalTapiola (Finland)

LocalTapiola is a mutual group of companies established in 2013, providing non-life, life and pension insurance, asset management, real estate and finance services to private customers, farmers, entrepreneurs, corporate customers and organisations. LocalTapiola has a network of 19 regional mutual insurance companies employing approximately 3,400 people servicing nearly 1.6 million customers. In 2019, the company had business premium income of EUR 1.2 billion and EUR 0.6 billion for non-life insurance and life insurance, respectively. LocalTapiola's vision and mission is to become a life-long security company, providing comprehensive and proactive services to safeguard its owner-customers' lives and success. For more information visit [their website](#).

### Water damage prevention programme

LocalTapiola has a vision to reduce water damage claim payouts by 50% by the year 2025. They have learned that the easiest way of starting to prevent water damage was to pinpoint focus into single family homes and invest in technology. The concept is to offer the a Sense Guard kit to family homes free of charge with valid insurance.

### Farm safety programme

LocalTapiola's Farm Safety Programme was created to provide a unified means for assessing risks on the farm with the aim to encourage farmers to take action to improve safety. The safety mapping assessment covers a range of risk areas including document storage, fire, electrical installations and equipment, combustion engines, heating plants, fire work, oil tanks and occupational health.





## NFU Mutual Insurance (UK)

Founded in 1910, NFU Mutual provides insurance, financial planning, and risk management services to its members through 300 branches across the United Kingdom serving some one million members and covering two-thirds of the agricultural land in England and Wales. For more information visit [their website](#).

### The Farm Safety Foundation

The Farm Safety Foundation was established by NFU Mutual in 2014 to raise awareness of farm safety among the next generation of farmers aged 16- 40. The Foundation set out to reduce the number of life changing and life ending accidents that had continued to give farming the poorest safety record of any occupation in the UK. The Foundation works closely with partners in the industry to engage, educate and communicate strong and relatable farm safety messages.

Through award-winning national campaigns such as Farm Safety Week and Mind Your Head, the Foundation is preserving and protecting the physical and mental wellbeing of the next generation of farmers, ensuring that those making their journey into agriculture are equipped with smart strategies and specific skills to live well and farm well. Among the initiatives of the Farm Safety Foundation are:

- New Farm Safe session for young farmers clubs developed and delivered to 3,627 additional young farmers in 205 clubs;
- Pioneering virtual reality farm safety training session introduced in 2020;
- With educational establishments closed during national lockdowns, the Foundation used a web-based platform to adapt this virtual reality training and deliver the Introduction to Farm Safety sessions by webinar to 29 land-based colleges/universities and 1,400 agricultural students across the UK;
- New Introduction to Mental Health in Farming session developed and delivered to 1,411 participants in agricultural business across the UK; and
- Delivered Coping with the Stress of COVID19 mental wellbeing campaign as part of the NFU Mutual customer support package.

### NFU Risk Management Services Ltd.

As a wholly owned subsidiary of NFU Mutual Insurance, NFU Mutual Risk Management Services provides technical advice and guidance to farmers. In recent years, the business employs over 80 home-based surveyors and sales personnel located throughout the UK. Safety reviews conducted by NFU Risk Management Services will help farmers identify ways to improve safety and keep workers safe, thereby reducing deaths and injuries due to accidents as well as reducing emotional and financial costs.



## Royal Automobile Club of Western Australia (RAC) (Australia)

Founded in 1905, the Royal Automobile Club of Western Australia (RAC), is a diversified mutual with operations spanning roadside assistance and mechanical repairs, travel and tourism, aged care, finance, and insurance. Its insurance company commenced in 1947 and in common with other Australian financial institutions is regulated by the Australian Prudential Regulation Authority (APRA). RAC services 1.1 million members through its over 1,400 employees. For more information visit [their website](#).

### Less Emissions Mission<sup>20</sup>

RAC's Less Emissions Mission is a rewards programme designed to incentivise customers to drive lower emission vehicles, including up to 25% off automobile insurance, 0.5% lower interest rate for car loans, free upgrades on roadside assistance, and a 10% discount on labour at RAC Auto Services.

### Risky Roads campaign<sup>21</sup>

RAC's Risky Roads survey asks road users to nominate roads or intersections they believe pose a safety threat, from local streets to major highways. Nominations are received from all corners of the state and members from regional areas, where roads are often particularly dangerous, are encouraged to contribute. Those with the most nominations are shared with government agencies and used by RAC to advocate for more action on road safety.

<sup>20</sup> See <https://rac.com.au/about-rac/advocating-change/sustainability/less-emissions-mission>

<sup>21</sup> See <https://rac.com.au/about-rac/advocating-change/initiatives/risky-roads>



## SANASA (Sri Lanka)

SANASA Insurance Company Ltd. (SICL) is a public limited liability company in Sri Lanka. The company's roots date back to 1989 when a survey conducted by the Forum of Development revealed the dire needs of the rural population. Today, SANASA operates under two affiliations, SANASA Life Insurance and SANASA General Insurance providing a range of products and services in the area of investments, dowries, pensions, loan protection and life insurance. For more information visit [their website](#).

### Communicating weather data

To help its customers prevent disaster risks, SANASA communicates weather data to help policyholders forecast the weather.

### Awareness programmes for low-income policyholders

SANASA's awareness raising efforts offer low-income earners knowledge about insurance as a mechanism for reducing risk through risk transfer. These awareness programmes will help to explain the importance of insurance to policyholders and encourage the use of insurance as a risk-reduction method.



## Sancor Cooperativa de Seguros (Argentina)

Sancor Cooperativa de Seguros is a cooperative insurance company founded in 1945 in Argentina. The company provides coverage in the areas of property, personal, agricultural, occupational risk and medical. For more information please visit [their website](#).

### Ciudadano Sustentable (Sustainable Citizen)

Ciudadano Sustentable (Sustainable Citizen) is a transversal, comprehensive programme which encourages the various stakeholders of Sancor Seguros to contribute to a more sustainable future. The programme has five dimensions:

- **Insurance awareness:** The sustainable citizens have to be forward-thinking and interested in insuring themselves, their family and take steps to protect the future of their children,
- People have to **think about prevention:** for example they should wear bicycle or motorcycle helmets; use car seatbelts; they should try to prevent domestic home accidents and; they should implement the best practices of health and safety,
- The third dimension is **health and wellbeing:** which involves doing regular physical activity, eating healthily, taking care of their health in general by having medical check-ups and avoiding addictions,
- The fourth dimension is **ethics and the integrity:** abiding by the rules; do not commit or facilitate fraud; and living according to cooperative values,
- And the final dimension is **taking care of the environment:** helping to tackle climate change.

The impact of the programme directly helps Sancor Seguros' business since by encouraging these prevention activities listed above the number of accidents, frauds, deaths, diseases, delays, legal processes and expenses decreases greatly and we foster wellbeing, safety and solidarity among people by creating economic, social and environmental value for society. The communications campaign for the programme, called "Being Sustainable", reached **2,914,633** people in Argentina.

## **Gen PRE<sup>22</sup>**

For Sancor Seguros Group, talking to young people about the importance of insurance and risk prevention in the framework of a policy based on life value of their own life and their friends is very important. Therefore, through Gen PRE, Sancor Seguros fosters dialogue between companies and youngsters. At the same time, it works together with organisations such as “Divertite sin Alcohol” (Have fun without Alcohol); “Conduciendo a Conciencia” (Conscious Driving); “CESVI” (The Centre for Research and Road Safety); and “El Desafío” (The Challenge) in the development of programmes which foster health, safety and inter-generational solidarity.

## **Preveniños (risk avoidance for children)<sup>23</sup>**



In 2005, Sancor Seguros launched a “Prevention in Schools” programme with the objective of contributing to the improvement of hygiene and safety conditions in educational establishments and promote the formation of a preventive culture in future generations, providing them with knowledge that allows them to recognise key risks and reduce the chances of an accident.

In addition to the “Prevention in Schools” programme, Sancor Seguros recognised that other tools such as the internet would be useful. Therefore, within “Prevention in Schools”, the Preveniños programme was created. Initially it was a website with conceptual and dynamic content, a virtual space conceived as a place for the formation of children and the integration of their parents, based on the concept of learning through play. The programme has since grown and Preveniños is now present in social networks such as Facebook, Instagram, and YouTube, areas where children connect, maintaining the concept of using recreational space to provide training in self-care and prevention.

In 2015, the programme signed up to the Children´s Rights and Business Principles, a set of principles developed by UNICEF, the United Nations Global Compact and Save the Children, as the framework to guide its work and to understand the impact that businesses have on children’s wellbeing. Thus, Preveniños included the work of entities such as UNICEF and Children´s Villages to its virtual spaces to foster children´s right to play, to express themselves and participate in learning about how to ensure their own safety.

## **National traffic loss prevention programme “Rutas en Rojo” (Red Routes)<sup>24</sup>**

Launched in 2007, the objective of the “Rutas en Rojo” programme is to help reduce the number of deaths and injuries caused by road traffic accidents. It has different lines of action:

- **Mobile unit that travels all over the country:** this is a trailer equipped with eight computerized stations that carry out free and confidential tests to evaluate the psychophysical and cognitive abilities to drive vehicles,
- **Training sessions:** talks by road safety specialists; aimed at different audiences.
- **Road safety commitment:** agreements and actions with municipalities in Argentina to contribute to the training of people who work in positions related to road safety.
- **YouTube channel:** audiovisual training material, journalistic investigative articles and awareness raising.

<sup>22</sup> See <https://www.gruposancorseguros.com/programs/19040>

<sup>23</sup> See <https://www.gruposancorseguros.com/programs/19539>

<sup>24</sup> See <https://www.gruposancorseguros.com/programs/20040>

The “Rutas en Rojo” programme has reached 7,208,000 through these various lines of action since 2007.

### **Auto Inteligente (Intelligent Car)**

The “Auto Inteligente” product involves installing a cutting-edge device which uses telematics technology in vehicles. The installation is voluntary. This device provides information about how a driver is braking, speeding-up, kilometres driven, how they drive in rush-hour, among others. As a result, it provides a rating for every person on how they drive. The client can use this information to accrue points quarterly in the “Sancor Seguros Beneficia” rewards programme if they are driving in a safe way. Clients can also download an app where they can access exclusive information about their driving behaviour; geolocalisation in case of theft; and - if another person is driving their car - they can see where and at what speed. This technology enables the early notification of accidents and improves the response time. Sancor Seguros hopes that through this technology it will know its clients better and therefore be able to reward the best drivers.

### **Empresas Guías (Guide Companies)**

The “Empresas Guías” (Guide Companies) programme was developed by Prevención ART which is the workplace/labour insurance business unit of the Sancor Seguros Group. Prevención ART provides cover against accidents at the workplace and occupational diseases.

From 2000, the Argentinian Labour Risks regulator implemented prevention programmes in employers with skewed percentage in accidents frequency, setting obligations to be covered by the insurers which were providing the employers with their cover. However, these programmes had a limited scope to obtain the required outcomes in terms of risks prevention.

Therefore, Prevención ART decided to broaden the scope of the preventative measures and include a more representative sample of companies to be targeted. This led to the development of the “Empresas Guías” (Guide Companies) programme which aims to reduce the frequency rate of accidents in a group of clients with specific characteristics.

This programme has been successfully implemented for several years now with a different representative sample of companies from various sectors and regions within Argentina selected each year. These companies are then allocated resources to help them with preventative measures in the workspace above the minimum requirements set by current regulations at the time. The main resource made available is a Risk Consultant, who is a professional trained in the fields of hygiene and safety who then assists companies with their risks and implementing preventative measures to reduce risk in the workplace. They will do a risk assessment and then help the company develop an action plan which is likely to include on-site training, training materials and online learning. An app “Estoy Seguro” (I’m safe) was also developed which provided training on specific risks. The outcome of the preventative measures is calculated every year and potential improvements shared with the business to ensure continuous improvement at the organisation.



## Swiss Mobiliar (Switzerland)

Founded in Bern (Switzerland) in 1826, Swiss Mobiliar is the oldest private insurance company in the country and is still anchored in a cooperative. The company services more than 2.1 million customers. Customer groups include private individuals, agriculture, trade, industry, trade and service companies as well as the public sector. For more information visit [their website](#).

### Flood prevention financing<sup>25</sup>

Since 2006, Swiss Mobiliar has donated around 38 million Swiss francs for prevention projects to protect against natural hazards throughout Switzerland. Start-up and partial financing were provided for over 146 projects in order to avoid damage to people, movables and real estate.

To support the financing efforts, Swiss Mobiliar provides prospective project applicants with a checklist of success factors for flood protection based on a study conducted by the Mobiliar Lab for natural risks at the University of Bern. The checklist consists of nine different thematic blocks, including one related to long-term protection including emergency planning, new building construction, and land-use planning and zoning.



<sup>25</sup> See <https://www.mobiliar.ch/die-mobiliar/engagement/praevention>



## Unipol (Italy)

Unipol is the largest non-life insurance provider in Italy and the country's second largest insurance group. The company provides a wide range of insurance and financial products and services, including pension schemes and health insurance as well as in real estate, agriculture, long-term rental and NPL recovery. Unipol services 16,7 million customers through its network of 2,532 agencies and 5,401 sub-agencies across Italy, backed by its 11,836 employees. The company's main shareholders are key companies of the Italian cooperative movement. At the end of 2020, the Unipol Group had direct insurance premiums of EUR 12.2 billion, of which EUR 7.9 billion in non-life business and EUR 4.3 billion in life business. For more information visit [their website](#).

### **UNIPOLSAI risk analysis and loss prevention team**

Considering the high vulnerability of Italy to climate change and the lack of businesses' awareness on climate risks, Unipol decided to focus on enhancing a risk culture among businesses. Thus, the UnipolSai risk analysis and loss prevention team is supporting customers in the identification and assessment of the risk profile connected to the activity carried out through risk identification, risk assessment and risk mitigation (loss prevention activities and identification of insurance solutions).

Building upon the consolidated experience of UnipolSai's loss prevention team with big corporate clients, Unipol decided to transfer this expertise to SMEs to increase their risk culture and build their capacity to reduce climate-related risks. Indeed, in Italy, SMEs do not have adequate tools for assessing and managing these phenomena. Therefore, in September 2015, Unipol Group launched an EU-funded project entitled the LIFE DERRIS (Disaster Risk Reduction Insurance) project, together with the partners ANCI, CINEAS, City of Turin, Coordinamento Agende 21 Locali Italiane and Unipolsai. DERRIS is the first European project that combines public administration (PA), businesses, and insurers to reduce risks caused by exceptional climatic events.

## **CRAM tool**

Unipol's LIFE DERRIS project developed a user-friendly, free tool, called the CRAM tool, that enables SMEs to understand which risks they are exposed to in the event of extreme weather events, and which solutions they could apply within their business to prevent damages.

Furthermore, to promote greater risk culture, the project designed specific training sessions on risks prevention and management to transfer knowledge from the insurance sector to the PA and SMEs.

Following the pilot project carried out in Turin, from 2017 onwards, the DERRIS project was extended to 14 additional local entities. Alghero, Almese, Avigliana, Bassano, Bologna, Genoa, Milan, Molfetta, Padua, Pescara, Rovereto, Udine, Varese and the Union of municipalities of Valdelsa joined the project. As of 2020, the number of people using the CRAM tool totalled almost 7,000 (with a total of over 9,000 sessions), around 15% more than at the end of 2019. In addition, at the end of 2020, over 200 action plans for adapting to climate change had been drawn up, containing over 6,600 climate-related risk prevention and management measures.

## **The Alert Meteo system**

In 2019, to help its customers prevent risks connected with intense meteorological events and thus reduce potential damage, UnipolSai, in conjunction with DataMeteo® and Leithà (the Unipol Group company specialised in Big Data analysis), has developed a predictive model able to alert customers in advance of risks of hailstorms, strong wind, heavy rain or snow. The Alert Meteo system works by sending messages through the UnipolSai app or by SMS (for very intense events). In 2020, the alert system was extended to Linear customers (UnipolSai's company specialised in direct sales, online and through a call centre, of MV products). Approximately 3,400,000 customers have been involved in the campaign so far and over 3 million SMS messages have been sent since the beginning of the project in July 2019.

## **The LIFE Adaptation in Agriculture (ADA) project**

Following the experience gained with the DERRIS project, from September 2020 to December 2023, UnipolSai will lead an EU-funded project entitled LIFE ADA (Adaptation in Agriculture) which aims at boosting the resilience to climate change along three agricultural supply chains through the implementation of an innovative Public-Private Partnership (PPP) between insurers, regions, scientific institutes and producers' organisations (POs). The LIFE ADA project will build a tool designed for POs and individual farmers to support their decision-making process to define and implement effective and concrete adaptation plans at farm level and at supply chain level. The main target audiences are individual farmers and POs in three value chains: dairy (Parmigiano cheese); wine, fruit and vegetables, with some focus on quality chains; and Geographical Indications Products, given their specific vulnerability and value for the local economy and environment.





## Unique Insurance (Ghana)

Unique Insurance (UIC) is a limited liability company, incorporated in 1999 in Ghana and licensed by the Ghana National Insurance Commission to underwrite General Insurance businesses. The company is owned by influential local workers' unions, a Financial House and high net worth individuals. Through its nine branch offices, UIC offers a range of insurance products including motor, fire, security, travel, marine, workers compensation, goods in transit, assets and money insurance. For more information visit [their website](#).

### In the area of policy underwriting and policy documents

To help its customers prevent disaster risks, UIC conveys relevant information on its policy jackets relating to risk reduction and safety. A pre and post-risk underwriting survey is also administered, accompanied with recommendations. Additionally, policy wording and clauses are used to enforce the need to have certain risk reduction measures in place.

### Incentives and discounts

Incentives in the form of discounts and premium reductions are provided for clients who have risk reduction measures in place such as fire extinguishing appliances, sprinklers, security cameras and alarms.



## Zenkyoren (Japan)

Zenkyoren (National Mutual Insurance Federation of Agricultural Cooperatives) was founded in 1951 as a cooperative insurance organisation to insure members of the farming community. The 10 million member strong JA (Japan Agricultural Cooperatives) Group, to which Zenkyoren belongs, comprises agricultural cooperatives (known as JAs) at the local level and supporting organisations at the prefectural and national levels. Zenkyoren provides insurance products in the areas of comprehensive life, building endowment and automobile. For more information visit [their website](#).

### Earthquake mitigation measures

Zenkyoren is undertaking discussions with local governments for the purpose of developing earthquake mitigation measures. These discussions include the organisation of disaster prevention classes using an earthquake experience device in the form of a chair and virtual reality to learn the necessity of disaster preparedness by having a realistic experience of what can happen when an earthquake strikes.

## Traffic accident prevention measures

Zenkyoren engages in various activities with the aim of helping realise a society free of traffic accidents, including traffic accident prevention measures and assistance for traffic accident victims. For example:

- JA Kyosai Anpanman Traffic Safety Caravan – This is a nation-wide tour with a fun show to teach traffic rules to small children, featuring the popular animated character, JA Kyosai Anpanman;
- Parent-Child Traffic Safety Musical - Zenkyoren holds traffic safety classes in the form of a musical all over Japan;
- Traffic Safety Classes - Traffic safety classes are organized for junior and senior high school students, such as demonstrations of traffic accidents caused by dangerous bicycle riding.
- Traffic safety awareness - Zenkyoren has shared a video on its website that explains traffic rules and courtesies which is suitable for all generations to clearly understand. Zenkyoren has also donated DVDs with the same content to elementary schools, police stations and local municipalities.

## Reborn campaign (re-use and recycling)

In order to promote the effective use of resources and protection of the global environment, Zenkyoren engages in enlightenment activities which encourage the use of reconditioned or recycled parts instead of purchasing new parts at the time of repair and overall maintenance of motor vehicles.

## Agricultural risk mitigation measures

Zenkyoren shares online tools for farmers on its website that propose measures to avoid and mitigate agricultural risks; introduce various measures to assist in cases of abnormal weather; and enable farmers to make a risk diagnosis. In addition, to reduce the high rate of agricultural work accidents Zenkyoren provides farmers opportunity to have simulated accident experience.

### • Desktop and mobile phone app for agricultural risk diagnosis<sup>26</sup>

An online agricultural risk diagnosis tool is provided on the company's website. This is a rapid analysis that can be done in approximately 10 minutes.

### • Agricultural work accident virtual reality experience

Zenkyoren has developed a virtual reality (VR) tool which allows farmers to experience simulated agricultural work accidents. The tool has been distributed to Japan Agricultural Cooperatives, agricultural-related organisations and agricultural academies throughout Japan. Seminars are also provided to farmers to prevent agricultural work accidents.

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<sup>26</sup> See <https://www.ja-kyosai.or.jp/agri/#anc01>



## ANNEX: CASE STUDY SYNTHESIS TABLES

**Table 1.** Case examples of the types of insurance measures for supporting disaster risk reduction (DRR)

Type of measure	Illustrative examples of supporting DRR
<b>Awareness and advice</b>	<ul style="list-style-type: none"> <li>Text messaging and seasonal email campaigns to customers to provide advice on how to prepare for and prevent damages, including flood risk (Folksam – Sweden)</li> <li>Wildfire resilience events: raising awareness and encouraging wildfire resiliency at home through the clearing of dead or combustible vegetation, the installation of wildfire-resilient landscaping, and the use of fire-resistant roofing materials. (The Co-operators – Canada)</li> <li>Communicating weather data to help policyholders forecast the weather (Sanasa – Sri Lanka)</li> <li>FloodSafe: Information portal for assessing and reducing risks of flooding (Cornish Mutual – UK)</li> <li>Gen Pre Programme: to help youth with avoiding alcohol and to encourage responsible driving (Sancor Cooperativa de Seguros – Argentina)</li> <li>New Introduction to Mental Health in Farming session from Farm Safety Foundation (NFU Mutual – UK)</li> </ul>
<b>Modelling and technology</b>	<ul style="list-style-type: none"> <li>Blue Label digital vulnerability scan to help prevent damage or loss from rain-induced flooding, flooding, heat stress and drought (Achmea – the Netherlands)</li> <li>Alert Meteo System to help its customers prevent risks connected with intense meteorological events and thus reduce potential damage (Unipol – Italy)</li> <li>Automated water pipe leak detection (LocalTapiola – Finland)</li> <li>Virtual reality (VR) for simulated agricultural work accidents (Zenkyoren – Japan)</li> <li>Intelligent car telematics technology to inform safe driving (Sancor Cooperativa de Seguros – Argentina)</li> </ul>
<b>Resource efficiency</b>	<ul style="list-style-type: none"> <li>Low carbon and fossil fuel-free exchange traded funds (ETFs, Desjardins Group – Canada)</li> <li>Re-use recycling campaign (Zenkyoren – Japan)</li> <li>Working with agricultural sector to reduce carbon and increase climate resilience (Achmea – The Netherlands)</li> <li>Net-Zero Asset Owner Alliance is group of investors with goal to have net-zero greenhouse gas emissions by 2050 (Folksam – Sweden)</li> </ul>
<b>Infrastructure enhancements</b>	<ul style="list-style-type: none"> <li>Claims-prevention activities including paying for chimney-sweeping to prevent fires (Länsförsäkringar Alliance – Sweden)</li> <li>Flood prevention financing: project specific financing and offering a checklist of success factors for flood protection (Swiss Mobiliar – Switzerland)</li> <li>Point-Park-Anchor programme for preventing damage or loss to irrigation equipment from windstorms (FMG – New Zealand)</li> </ul>
<b>Insurance pricing</b>	<ul style="list-style-type: none"> <li>Discounts and premium reduction for clients who have risk reduction items (fire extinguishers, sprinklers, security cameras, alarms, and no claims track records) (Unique Insurance – Ghana)</li> <li>Less Emissions Mission: 25% off auto insurance for low emission vehicle (RAC – Australia)</li> <li>Rewarding safe driving through telematics app (LB Forsikring – Denmark)</li> </ul>
<b>Insurance prerequisites</b>	<ul style="list-style-type: none"> <li>Life insurance exemptions include death caused by an accident while drink-driving or driving without a licence (CARD MBA – Philippines)</li> </ul>
<b>Risk analysis and continuity planning</b>	<ul style="list-style-type: none"> <li>App for agricultural risk diagnosis (Zenkyoren – Japan)</li> <li>Farm safety programme including safety mapping guide and risk tool including document storage, fire, electrical, mechanical, heating, oil tanks, health and safety (LocalTapiola – Finland)</li> </ul>
<b>Data and analysis</b>	<ul style="list-style-type: none"> <li>Risky Roads Campaign: survey to identify risk roads (RAC – Australia)</li> <li>Speed limit assessments (Folksam – Sweden)</li> </ul>
<b>Enabling social capital</b>	<ul style="list-style-type: none"> <li>“Enjoy TASUKEAI”campaign to encourage people to help and be more mindful of others in the wake of economic slowdown, uncertainty and instability (Kokumin Kyosai Co-op – Japan)</li> </ul>

**Table 2.** Case examples of how insurance measures support DRR by reducing hazards, exposure and/or vulnerability.

DRR pathways	Illustrative examples
<b>Reducing hazards</b>	<ul style="list-style-type: none"> <li>● Working with agricultural sector to reduce carbon and increase climate resilience (Achmea – Netherlands)</li> <li>● Thermal imaging to find electrical wiring risks (FMG – New Zealand)</li> <li>● Net-Zero Asset Owner Alliance is group of investors with goal to have net zero greenhouse gas emissions by 2050 (Folksam – Sweden)</li> <li>● Circular claims adjustment to increase the reuse, repair and recycling of home electronics (Länsförsäkringar Alliance – Sweden)</li> <li>● Claims-prevention activities including paying for chimney-sweeping to prevent fires (Länsförsäkringar Alliance – Sweden)</li> <li>● Life insurance exemptions include death caused by an accident while drink-driving or driving without a licence (CARD MBA – Philippines)</li> <li>● Water First Education and Training: Paid internship opportunities for First Nations communities providing customised skills, training and tutoring for Indigenous youth needed to obtain certifications in drinking-water treatment and environmental water-quality monitoring. (The Co-operators – Canada)</li> <li>● Low carbon and fossil fuel-free ETFs (Desjardins Group – Canada)</li> <li>● Less Emissions Mission: 25% off auto insurance for low emission vehicle (RAC – Australia)</li> <li>● Re-use recycling campaign (Zenkyoren – Japan)</li> <li>● Intelligent car telematics technology and points reward system to incent and inform safe driving (Sancor Cooperativa de Seguros – Argentina)</li> </ul>
<b>Reducing exposure</b>	<ul style="list-style-type: none"> <li>● Smart leak detection (LB Forsikring – Denmark)</li> <li>● Automated water pipe leak detection (LocalTapiola – Finland)</li> <li>● Building sensors: water damage claims (EMC Insurance – US)</li> <li>● Ajusto telematics app for safe driving (Desjardins Group – Canada)</li> <li>● Aerial intelligence: roof ponding and other problems (EMC Insurance – US)</li> <li>● Risky Roads Campaign: survey to identify risky roads (RAC – Australia)</li> <li>● Club Preveniños programme: safe play for children (Sancor Cooperativa de Seguros – Argentina)</li> <li>● Gen Pre programme: to help youth with avoiding alcohol and responsible driving (Sancor Cooperativa de Seguros – Argentina)</li> </ul>
<b>Reducing vulnerability</b>	<ul style="list-style-type: none"> <li>● Point-Park-Anchor programme for preventing damage or loss to irrigation equipment from windstorms (FMG – New Zealand)</li> <li>● Awareness raising of construction techniques for new-builds in risk zones close to water affected by climate change (Länsförsäkringar Alliance - Sweden)</li> <li>● Sweden's largest fire drill programme (Länsförsäkringar Alliance - Sweden)</li> <li>● Delivered coping with the stress of Covid-19 mental wellbeing campaign (NFU Mutual – UK)</li> <li>● Credit with Education Programme including a risk reduction and resilience theme which helps build skills related to disaster preparedness, stress debriefing and conducting fire and earthquake drills (CARD MBA – Philippines)</li> <li>● Flood prevention financing: project specific financing and offering a checklist of success factors for flood protection (Swiss Mobiliar – Switzerland)</li> <li>● Loss control management and online services: safety in the workplace including industrial hygiene and indoor air quality surveys, chemical storage assessments, noise monitoring, hazard control assessments and ergonomic evaluations. (EMC Insurance – US) [also reduces exposure]</li> <li>● Blue Label digital vulnerability scan to help prevent damage or loss from rain-induced flooding, flooding, heat stress and drought (Achmea – The Netherlands) [also reduces exposure]</li> <li>● Earthquake preparedness: Disaster preparedness class with earthquake experience simulation chair and virtual reality experience (Zenkyoren – Japan)</li> </ul>

**Table 3.** Case study overviews and synthesis.

Examples	Category tags	Sendai Hazard <sup>1</sup>	Risk Reduction Pathway <sup>2</sup> (Risk Reduction Timing <sup>3</sup> )
<b>Achmea (The Netherlands)</b>			
● Blue Label digital water vulnerability scan to help prevent damage or loss from flooding	● Modelling and technology	● Estuarine/fluvial flood	● Reduces exposure or vulnerability (preparedness)
● Interpolis programme promoting green roofs to prevent damage or loss from extreme heat stress and rainfall	● Enhancements (building)	● Multi-hazard: Estuarine / fluvial flood, heatwave	● Reduces vulnerability (mitigation)
● Working with agricultural sector to reduce carbon and increase climate resilience	● Resource efficiency (carbon reduction)	● Multi-hazard (climate change impacts)	● Reduces hazard (mitigation)
<b>FMG (New Zealand)</b>			
● '3 Bucket' framework to help clients evaluate and identify different types of risks including physical, operational and key person risks	● Risk analysis and continuity planning	● Multi-hazard	● Reduces exposure or vulnerability (preparedness)
● Point-Park-Anchor programme for preventing damage or loss to irrigation equipment from windstorms	● Awareness and advice, enhancements (operational)	● Wind	● Reduces vulnerability (mitigation)
● Thermal imaging to find electrical wiring risks	● Modelling and technology	● Fire	● Reduces hazard (preparedness)
● Farmstrong programme to help farmers and growers look after themselves mentally and physically (injury prevention)	● Awareness and advice	● Rail and road accidents, violence, suicide	● Reduces vulnerability (mitigation)
<b>Folksam (Sweden)</b>			
● Developed a model to be able to follow natural events (such as thunder, heavy rain, storm and floods) on a regular basis	● Modelling and technology	● Thunderstorm, downburst, estuarine, flash and fluvial flood	● Reduces exposure or vulnerability (preparedness)
● Text messaging and seasonal email campaigns to customers to provide advice on how to prepare for and prevent damages, including flood risk	● Awareness and advice	● Multi-hazard (natural)	● Reduces exposure or vulnerability (mitigation and preparedness)
● Publishing of damages caused by natural events in the previous year	● Awareness and advice	● Multi-hazard (natural)	● Reduces exposure or vulnerability (preparedness)
● Road traffic and vehicle safety measures, including: ● car model safety ratings, ● consumer information, ● accident data disaggregation by gender, ● speed limit assessments, ● pay-as-you-go insurance and premium reductions, ● low-emission vehicle info	● Awareness and advice ● Awareness and advice ● Data and analysis ● Data and analysis ● Pricing  ● Modelling and technology	● Road traffic accident	● Reduces exposure or vulnerability (mitigation and preparedness)  ● Also reduces hazard (mitigation)
● Net-Zero Asset Owner Alliance is group of investors with goal to have net-zero greenhouse gas emissions by 2050.	● Resource efficiency	● Multi-hazard (climate change)	● Reduces hazard (mitigation)

<sup>1</sup> Sendai hazard definition and classification review: <https://www.unrr.org/publication/hazard-definition-and-classification-review>

<sup>2</sup> Risk reduction pathway: risk is a function of three factors, including the severity of *hazard*, degree of *exposure*, and level of *vulnerability*. Reducing any or all of these factors reduces risk.

<sup>3</sup> Risk reduction timing: action taken before a disaster occurs (mitigation or preparedness) or action taken after a disaster occurs (i.e., during recovery).

Examples	Category tags	Sendai Hazard	Risk Reduction Pathway (Risk Reduction Timing)
<b>Kokumin Kyosai Co-op (Japan)</b>			
<ul style="list-style-type: none"> <li>Bosai Café loss prevention events aimed at disaster risk reduction awareness through innovative means such as stage performances and panel exhibits for children</li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Multi-hazard (not specified)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces exposure and vulnerability (mitigation)</li> </ul>
<ul style="list-style-type: none"> <li>“Enjoy TASUKEAI!” campaign to encourage people to help and be more mindful of others in the wake of economic slowdown, uncertainty and instability.</li> </ul>			
<b>LB Forsikring (Denmark)</b>			
<ul style="list-style-type: none"> <li>Smart leak detection</li> </ul>	<ul style="list-style-type: none"> <li>Modelling and technology</li> </ul>	<ul style="list-style-type: none"> <li>Water supply failure</li> </ul>	<ul style="list-style-type: none"> <li>Reduces exposure (preparedness)</li> </ul>
<ul style="list-style-type: none"> <li>Rewarding safe driving through telematics app</li> </ul>	<ul style="list-style-type: none"> <li>Pricing (variable deductibles): Modelling and technology</li> </ul>	<ul style="list-style-type: none"> <li>Road traffic accident</li> </ul>	<ul style="list-style-type: none"> <li>Reduces exposure and vulnerability (mitigation)</li> </ul>
<b>Länsförsäkringar Alliance (Sweden)</b>			
<ul style="list-style-type: none"> <li>Awareness raising of construction techniques for new-builds in risk zones close to water affected by climate change;</li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Estuarine, fluvial, coastal flood</li> </ul>	<ul style="list-style-type: none"> <li>Reduces vulnerability (mitigation)</li> </ul>
<ul style="list-style-type: none"> <li>Natural catastrophe coordinator to spread important knowledge on prevention efforts;</li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Multi-hazard (not specified)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces exposure or vulnerability (mitigation)</li> </ul>
<ul style="list-style-type: none"> <li>Sweden's largest fire drill programme;</li> </ul>	<ul style="list-style-type: none"> <li>Risk analysis and continuity planning</li> </ul>	<ul style="list-style-type: none"> <li>Fire</li> </ul>	<ul style="list-style-type: none"> <li>Reduces vulnerability (preparedness)</li> </ul>
<ul style="list-style-type: none"> <li>Claims-prevention activities including paying for chimney-sweeping to prevent fires;</li> </ul>	<ul style="list-style-type: none"> <li>Incentives: Enhancements (building)</li> </ul>	<ul style="list-style-type: none"> <li>Fire, wildfire</li> </ul>	<ul style="list-style-type: none"> <li>Reduces hazard or exposure (mitigation)</li> </ul>
<ul style="list-style-type: none"> <li>Circular claims adjustment to increase the reuse, repair and recycling of home electronics;</li> </ul>	<ul style="list-style-type: none"> <li>Pricing (adjustments): resource efficiency</li> </ul>	<ul style="list-style-type: none"> <li>E-waste</li> </ul>	<ul style="list-style-type: none"> <li>Reduces hazard (recovery, mitigation)</li> </ul>
<b>NFU Mutual (UK)</b>			
<ul style="list-style-type: none"> <li>Farm Safety Foundation delivers programmes including: <ul style="list-style-type: none"> <li>New Farm Safe session for young farmers clubs developed and delivered to 3,627 additional young farmers in 205 clubs;</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Multi-hazard (accidents, mental health)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces vulnerability (mitigation, preparedness)</li> </ul>
<ul style="list-style-type: none"> <li>Pioneering virtual reality farm safety training session introduced in 2020;</li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Multi-hazard (accidents, mental health)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces vulnerability (mitigation, preparedness)</li> </ul>
<ul style="list-style-type: none"> <li>New Introduction to Mental Health in Farming session developed and delivered to 1,411 participants in agricultural business across the UK.</li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Multi-hazard (accidents, mental health)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces vulnerability (mitigation, preparedness)</li> </ul>
<ul style="list-style-type: none"> <li>Delivered Coping with the Stress of COVID19 mental wellbeing campaign</li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Multi-hazard (accidents, mental health)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces vulnerability (mitigation, preparedness)</li> </ul>
<ul style="list-style-type: none"> <li>NFU Risk Management Services Ltd provides farm safety reviews and technical advice</li> </ul>	<ul style="list-style-type: none"> <li>Awareness and advice</li> </ul>	<ul style="list-style-type: none"> <li>Multi-hazard (accidents)</li> </ul>	<ul style="list-style-type: none"> <li>Reduces vulnerability (mitigation, preparedness)</li> </ul>

<b>Examples</b>	<b>Category tags</b>	<b>Sendai Hazard</b>	<b>Risk Reduction Pathway (Risk Reduction Timing)</b>
<b>Unique Insurance (Ghana)</b>			
● Risk reduction, safety and awareness information on policy jackets	● Awareness and advice	● Multi-hazard (not specified)	● Reduces exposure or vulnerability (mitigation, preparedness)
● Pre- and post-risk underwriting survey	● Awareness and advice	● Multi-hazard (not specified)	● Reduces vulnerability (preparedness)
● Discounts and premium reduction for clients who have risk reduction items (fire extinguishers, sprinklers, security cameras, alarms, and no claims track records)	● Incentives: Pricing, Enhancements (building)	● Fire, wildfire	● Reduces exposure and vulnerability (mitigation)
<b>Sanasa (Sri Lanka)</b>			
● Insurance awareness programmes for low-income policyholders	● Awareness and advice	● Multi-hazard (not specified)	● Reduces vulnerability (recovery, preparedness)
● Communicating weather data to help policyholders forecast the weather	● Awareness and advice	● Multi-hazard (meteorological)	● Reduces exposure and vulnerability (preparedness)
<b>LocalTapiola (Finland)</b>			
● Automated water pipe leak detection	● Modelling and technology	● Water supply failure	● Reduces exposure (preparedness, mitigation)
● Farm safety programme (safety mapping guide and risk tool including document storage, fire, electrical, mechanical, heating, oil tanks, health and safety)	● Risk analysis and continuity planning	● Fire, spills, explosive agents	● Reduces exposure and vulnerability (preparedness, mitigation)
<b>CARD MBA (Philippines)</b>			
● Life insurance exemptions include death caused by an accident while drink-driving or driving without a licence.	● Prerequisites	● Road traffic accident	● Reduces hazard (mitigation)
● Credit with Education Programme, including a risk reduction and resilience theme which helps build skills related to disaster preparedness, stress debriefing and conducting fire and earthquake drills.	● Awareness and advice	● Multi-hazard	● Reduces vulnerability (preparedness)
<b>The Co-operators (Canada)</b>			
● Wildfire resilience events: raising awareness and encouraging wildfire resiliency at home through the clearing of dead or combustible vegetation, the installation of wildfire-resilient landscaping, and the use of fire-resistant roofing materials.	● Awareness and advice	● Wildfire	● Reduces hazard, exposure, vulnerability (mitigation)
● Water First Education and Training: Paid internship opportunities First Nations communities providing customised skills, training and tutoring for indigenous youth needed to obtain certifications in drinking-water treatment and environmental water-quality monitoring.	● Awareness and advice	● Water supply failure	● Reduces hazard (preparedness, mitigation)
● Flood mapping technology: Using an industry-leading flood-mapping technology, was to pinpoint flood risk down to an individual household and thereby make Comprehensive Water insurance available to all homeowners in Canada.	● Modelling and technology	● Flood	● Reduces vulnerability. (recovery). Can reduce exposure if insurance incentivises mitigation.

<b>Examples</b>	<b>Category tags</b>	<b>Sendai Hazard</b>	<b>Risk Reduction Pathway (Risk Reduction Timing)</b>
<b>Unipol (Italy)</b>			
● UNIPOLSAI Risk Analysis and Loss Prevention Team assisting SMEs with the identification and assessment of their risk profile	● Awareness and advice	● Multi-hazard (climate change)	● Reduces exposure and vulnerability (preparedness, mitigation)
● CRAM Tool enables SMEs to understand which risks they are exposed to in the event of extreme weather events, and which solutions they could apply within their business to prevent damages	● Awareness and advice	● Multi-hazard (climate change)	● Reduces exposure and vulnerability (preparedness, mitigation)
● Alert Meteo System to help its customers prevent risks connected with intense meteorological events and thus reduce potential damage	● Modelling and technology	● Multi-hazard (climate change)	● Reduces exposure and vulnerability (preparedness)
● LIFE Adaptation in Agriculture project aims at boosting the resilience to climate change along three agricultural supply chains through concrete adaptation plans.	● Awareness and advice	● Multi-hazard (climate change)	● Reduces exposure and vulnerability (preparedness, mitigation)
<b>Swiss Mobiliar (Switzerland)</b>			
● Flood prevention financing: project specific financing and offering a checklist of success factors for flood protection	● Enhancements, Awareness and advice	● Flood	● Reduces vulnerability (mitigation)
<b>Cornish Mutual (UK)</b>			
● FarmSafe: advice and guidelines	● Awareness and advice	● Multi-hazard on-farm (Road traffic accident, Pesticides, Chemical hazards and toxins, Ecoli, Structural collapse)	● Reduces vulnerability, exposure (mitigation, preparedness)
● FarmSafe for Schools: teaching curriculum	● Awareness and advice	● Multi-hazard on-farm (Road traffic accident, Pesticides, Chemical hazards and toxins, Ecoli, Structural collapse)	● Reduces vulnerability, exposure (mitigation, preparedness)
● FloodSafe: info portal for assessing and reducing risks of flooding	● Awareness and advice	● Flood	● Reduces vulnerability, exposure (mitigation, preparedness)
● HomeSafe	● Awareness and advice	● Fire	● Reduces vulnerability, exposure (mitigation, preparedness)
<b>Desjardins Group (Canada)</b>			
● Radar and alert warning system for natural hazards	● Modelling and technology	● Multi-hazard (weather)	● Reduces exposure and vulnerability (preparedness)
● Ajusto telematics app for safe driving	● Modelling and technology	● Road traffic safety	● Reduces exposure (mitigation)
● Low carbon and fossil fuel-free ETFs	● Resource efficiency	● Multi-hazard (climate change)	● Reduces hazard (mitigation)

<b>Examples</b>	<b>Category tags</b>	<b>Sendai Hazard</b>	<b>Risk Reduction Pathway (Risk Reduction Timing)</b>
<b>EMC Insurance (USA)</b>			
● Loss control management and online services: safety in the workplace including industrial hygiene and indoor air quality surveys, chemical storage assessments, noise monitoring, hazard control assessments and ergonomic evaluations.	● Awareness and advice ● Modelling and technology	● Multi-hazard (chemical hazards, Covid-19, indoor air quality)	● Reduces exposure and vulnerability (preparedness and mitigation)
● Aerial intelligence: roof ponding and other problems	● Modelling and technology	● Multi-hazard (weather, rainfall related, wind)	● Reduces exposure (preparedness, mitigation)
● Building sensors: water damage claims	● Modelling and technology	● Flood	● Reduces exposure (preparedness)
<b>RAC (Australia)</b>			
● Less Emissions Mission: 25% off auto insurance for low emission vehicle	● Pricing, resource efficiency	● Multi-hazard (climate change)	● Reduces hazard (mitigation)
● Risk Roads Campaign: survey to identify risk roads	● Data and analysis	● Road traffic accidents	● Reduces exposure (mitigation)
<b>Sancor Cooperativa de Seguros (Argentina)</b>			
● Club Preveníos Programme: safe play and hygiene for children	● Awareness and advice	● Road traffic accidents	● Reduces exposure (preparedness, mitigation)
● Gen Pre Programme: to help youth with avoiding alcohol and ensuring responsible driving	● Awareness and advice	● Road traffic accidents	● Reduces exposure (mitigation)
● Sustainable Citizen: awareness raising for: insurance protection; prevention for auto and home accidents; health and wellbeing maintenance; ethics and integrity; and taking care of the environment by tackling climate change	● Awareness and advice	● Multi-hazard (auto and home accidents, mental health, climate change)	● Reduces hazard (mitigation), Reduces exposure and vulnerability (preparedness)
● National Traffic Loss Prevention Programme: training, advocacy and communications to reduce number of deaths caused by road traffic accidents	● Awareness and advice	● Road traffic accidents	● Reduces hazard (mitigation), Reduces exposure (preparedness)
● Intelligent Car: installing telematics technology in vehicles to incent and inform safe driving	● Modelling and technology; Incentives: safe driving	● Road traffic accidents	● Reduces hazard (mitigation), Reduces exposure (mitigation)
● Guide Companies programme: aims to reduce the frequency rate of accidents in a group of clients with specific characteristics through provision of a risk consultant	● Awareness and advice, Risk analysis and continuity planning	● Multi-hazard (workplace accidents and occupational diseases)	● Reduces hazard (mitigation, preparedness)
<b>Zenkyoren (Japan)</b>			
● Earthquake mitigation measures	● Awareness and advice	● Earthquake	● Reduces vulnerability (preparedness)
● Traffic accident prevention measures: road safety	● Awareness and advice	● Road traffic accidents	● Reduces exposure (mitigation)
● Re-use recycling campaign	● Resource efficiency, Awareness/Advice	● E-waste, heavy metals	● Reduces hazard (mitigation)
● Agricultural risk mitigation measures: App for diagnosis and virtual reality safety tool	● Risk analysis, Awareness/advice	● Multi-hazard (on-farm risks)	● Reduces exposure and vulnerability (preparedness)

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ICMIF, Denzell House, Dunham Road, Bowdon, Cheshire, WA14 4QE, UK  
Tel: +44 161 929 5090

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