ClimateWise
Insuring a sustainable future

# Background briefing: Urban resilience and insurance

## Introduction

ClimateWise, the insurance industry leadership group on the risks and opportunities of climate change, has been looking for ways to promote the role the insurance industry can play in promoting urban resilience. ClimateWise believes there are many commercial opportunities for insurers to play a more proactive role in helping cities prepare for the inevitable impacts they face.

The upcoming workshops are intended to help you and your colleagues brainstorm the business case for your organisation investing in the design of products and services around urban resilience. The two workshops will:

1. Explore opportunities associated with urban resilience and then identify existing activities within the insurance industry and their potential impact.
2. Explore the specific business case for urban resilience within your own individual organisation.

Following the two workshops, the facilitator will collate the ideas and disseminate them internally to key decision-makers.

> "the protection gap is the growing divide between total growing economic losses from catastrophes and those losses covered by the insurance sector."[3]

## The growing vulnerability of urban areas

The world is changing owing to increasing global populations and rapid urbanisation. Since 1990, the number of mega-cities has nearly tripled. Globally, more than 54% of the world's population now reside in urban areas.[1] The most urbanised regions include North America (82%), Latin America and the Caribbean (80%), and Europe (73%).[1] By 2050, more than 65% of the world's population is projected to be living in cities, and the fastest growth is likely to occur in Asia.

### Urban areas

The criteria for what constitutes an urban setting varies broadly but includes factors such as: how administrations classify municipalities as urban; the minimum population threshold; the population density; the proportion employed in non-agricultural sectors; the presence of infrastructure such as paved roads, electricity, piped water or sewers; and the presence of education or health services.[2]

Consequently, urban areas are crucial in supporting the broader response to climate risks. This is because they serve as centres of economic activity, technology and innovation. However, urban centres are often exposed to an array of climate risks. These include sea-level rise, heat waves, river flooding, windstorms or landslides. Such risks pose real dangers to urban residents as well as to their livelihoods and assets, including critical infrastructure. Furthermore, many of these climate and associated pressure points overlap in urban areas, which compounds the challenges faced by decision-makers.

Urbanisation is therefore a key driver behind increasing economic exposure to catastrophes. It puts further pressure on those managing these risks and those living, working and financially invested in urban areas, including local communities, governments and the insurance sector.

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# What are recent efforts by the insurance industry to promote urban resilience?

## There is growing recognition of the value of resilience at the city level.

This increased recognition is reflected in the United Nation's approval of a stand-alone urban Sustainable Development Goal (SDG). SDG 11 sets a target of substantially increasing the number of cities that have adopted and implemented disaster risk reduction and climate change mitigation / adaptation policies by 2020:

These global policy initiatives are supported, at the implementation level, by various regional and international networks, including the C40 Cities Climate Leadership Group, 100 Resilient Cities, and ICLEI – Local Governments for Sustainability. They focus on facilitating knowledge exchange, best practice and collaboration between member cities. They highlight the importance of cities engaging with, and securing buy-in across, public and private sectors if progress in urban resilience is to be achieved. Crucially, these activities signal a more positive narrative around resilience – considering it as an investment rather than a cost.

"By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels."[5]

### Definitions of resilience[4]

**United Nations Office for Disaster Risk Reduction**
The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management.

**Stockholm Resilience Centre**
Resilience is the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. It is about how humans and nature can use shocks and disturbances, like a financial crisis or climate change, to spur renewal and innovative thinking.

**100 Resilient Cities**
Urban resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience.

**Urban Land Institute**
For the purposes of this report, the Urban Land Institute's definition of resilience was used: "The ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events".

## Who benefits from urban resilience?

The private sector can play a variety of roles to promote urban resilience, including innovative financing and infrastructure public–private partnerships[7]. In a survey of 248 business executives, conducted by the Economist Intelligence Unit, most of the companies highlighted the commercial value associated with urban resilience. However, they also expect government to take the lead in responding to urban climate risks[8].

Understanding of the cost-effectiveness and other benefits of enhanced resilience has been strengthened by improved risk assessment capabilities and climate and economic modelling following disasters. However, there are several challenges for deriving a business case for urban resilience, which are highlighting in the following box, using the real-estate sector as an example.

### The returns on resilience: the business case report[9]

In 2015, the Urban Land Institute's Center for Sustainability and the Urban Land Institute released the Returns on Resilience: The Business Case report. The report contains ten case studies of real-estate projects from across the USA. It details how each project was constructed to be climate resilient and the expected returns of those resilience measures.

Although no generic definition of 'business case for resilience' is used, the report provides guidance on when such a business case may exist. In particular:

- A business case for resilience may exist when the cost savings of being climate resilient exceed the premium that must be paid to adopt resilience measures (eg the Spaulding Rehabilitation Hospital in Boston, Massachusetts, and the 1450 Brickell development in Miami, Florida).
- A business case for resilience may exist when investing in resilience measures helps to enhance the value of the development (eg the Ritz-Carlton in the Cayman Islands).
- A business case for resilience may exist when investing in resilience measures provides improved business opportunities owing to, for example, better marketability (eg ENR2 in Tucson, Arizona).

Improved cost savings will be project specific. However, particularly important cost savings identified across the case studies included reduced insurance premiums, reduced energy costs and reductions in general maintenance costs.

The report identifies a number of common themes about resilience that should be kept in mind. Firstly, simply complying with building codes may be insufficient; developers should be willing to invest more in resilience and be innovative (provided the cost benefits exist). Secondly, project developers should learn from the resilience strategies of others in order to understand and assess the value of strategies to deal with risks. Thirdly, sustainability and resilience often work in tandem; promoting one can play a key role in promoting the other. And finally, improving resilience can make a property more attractive; businesses should be more open to the idea of resilience as a business opportunity rather than as a cost.

Establishing a business case for urban resilience requires a better understanding of the interests and priorities and their potential contributions across a variety of stakeholders in the urban development process. Often these interests and priorities do not align:

- **Local governments:** can improve their first line of response to natural hazards, potentially minimising associated political, economic and social risk.
- **Infrastructure developers:** can benefit from business opportunities for new goods and services (eg new materials, technologies). However, this can lead to higher short-term costs for upgrades in design and implementation.
- **Utilities providers:** can benefit from reduced service disruption and maintain profitability if the relevant utilities are privately owned. Urban resilience can reduce the risk of serious incidents involving utilities due to natural hazards (eg damage to electricity grids).
- **Real-estate financiers:** can benefit from reduced financing risk and provide for more sustainable future cash flows (eg rent) when property markets adequately internalise the price of disaster risk.
- **Property developers:** can benefit from business opportunities for developing new goods and services, and access to areas that are otherwise considered unattractive for development. However, in the short term, urban resilience is likely to be regarded as costly.
- **Owners / managers of assets:** may require further investment to make existing infrastructure more resilient and may be concerned about government assistance for risk reduction.

For insurers, there are clear opportunities of working with stakeholders and helping them to realise the benefits of resilience. However, insurers often struggle to identify the business case for promoting urban resilience within their own sector.

# What are the risks and opportunities of urban resilience for insurers?

Overall, urban resilience can add value for the insurance industry by:

- Enhancing reputations (eg being seen as socially engaged) by providing technical know-how and capital, and improving the long-term insurability of urban areas.
- Creating efficiency and sustainability in urban areas, further improving long-term insurability.
- Providing an opportunity for the development and sale of new insurance products, and tapping into new markets.

Developing risk knowledge and expertise is likely to be the starting point for most insurers. It is particularly important in the creation of insurance markets in developing countries. Achieving resilience requires a comprehensive understanding of:

- The vulnerability and exposure to different stressors. For example, in New York City, a large amount of equipment was moved to the basement of buildings post-9/11. Although the intention was to protect it from terrorism, it also exposed it to severe flood risk.
- The different types of resilience strategies and the kinds of disasters insurers can address in each specific context (eg flood defences may have a greater impact on reducing risk in coastal cities compared with inland cities).

Various studies have emphasised the potential benefits of resilience for insurance and other stakeholders, and are considered below.

### Building Resilient Cities study[10]

This report by CERES, ICLEI and ClimateWise explored how resilience can become a cornerstone of urban planning and redevelopment, by bringing together insurers and other urban decision-makers in a series of workshops across the USA and Canada. The series aimed to create a systematic understanding of where mutually beneficial collaboration could exist between these stakeholders to reduce the risks and increase the performance and value of today's climate-vulnerable local areas. The project led to the development of a four-stage strategic planning framework that was tested and refined in these workshops, and based on the diverse ideas and innovations identified by workshop participants.

**The four cornerstones of a 'resilience zone' strategy**

| 1. Asset-focused risk management | 2. Local area risk management | 3. Resilience upgrading | 4. Communicating resilience benefits |
|---|---|---|---|
| Develop mechanisms to support household & enterprise level action. | Develop mechanisms for risk management & transfer at the scale of the local area. | Design risk reduction measures to enhance today's performance and benefits. | Ensure understanding of benefits and effective use of the new Resilience Zone'. |
| Strategy questions for stakeholders | | | |
| How could we motivate and support asset owners to more fully manage their climate and disaster risk exposures? | How could we manage, pool, spread & transfer the remaining risks on a district or other local area basis? | Could risk management investments be designed so as to improve the area's benefits today? | How would users be supported to fully secure new benefits? How would the area's unique benefits be communicated to the market? |
| Factoring the above, to which risks will the local area remain exposed over the near/ medium term? | How could such new approaches be developed into market opportunities for insurers and other city-building enterprises? | Could risk management investments be designed so as to improve the area's benefits today? | How do you help establish resilience as a new standard in city-building and location choice? |

**Figure 2: The Four Cornerstones of a 'Resilience Zone' strategy**
Source: Ceres, ClimateWise and The Next Practice. (2013). *Building resilient cities: Curriculum guide and approach for break-out groups*. Retrieved from https://www.cisl.cam.ac.uk/publications/publication-pdfs/building-resilient-cities-from-risk-assessment-to.pdf [10]

## Realising the 'triple dividend of resilience'

The triple dividend framework proposes a new approach to accounting for resilience benefits, which would enable decision-makers, including insurers, to build stronger business cases for resilience.[11] The framework addresses a current under-valuation of resilience. This is linked to the common perception that – similar to investing in insurance – investing in flood resilience yields benefits only after disaster strikes (see Figure 3).

However, increasing evidence suggests that enhancing resilience yields other significant and tangible benefits. These 'co-benefits' of resilience investments occur independently of whether the disaster event occurs. For example, many resilience investments have 'no regrets' elements beyond the reduction of potential disaster losses. These co-benefits merit greater analysis and promotion. These full benefits of flood resilience investments are referred to as the 'resilience dividend'. They go far beyond the standard economic approach to investment appraisals.

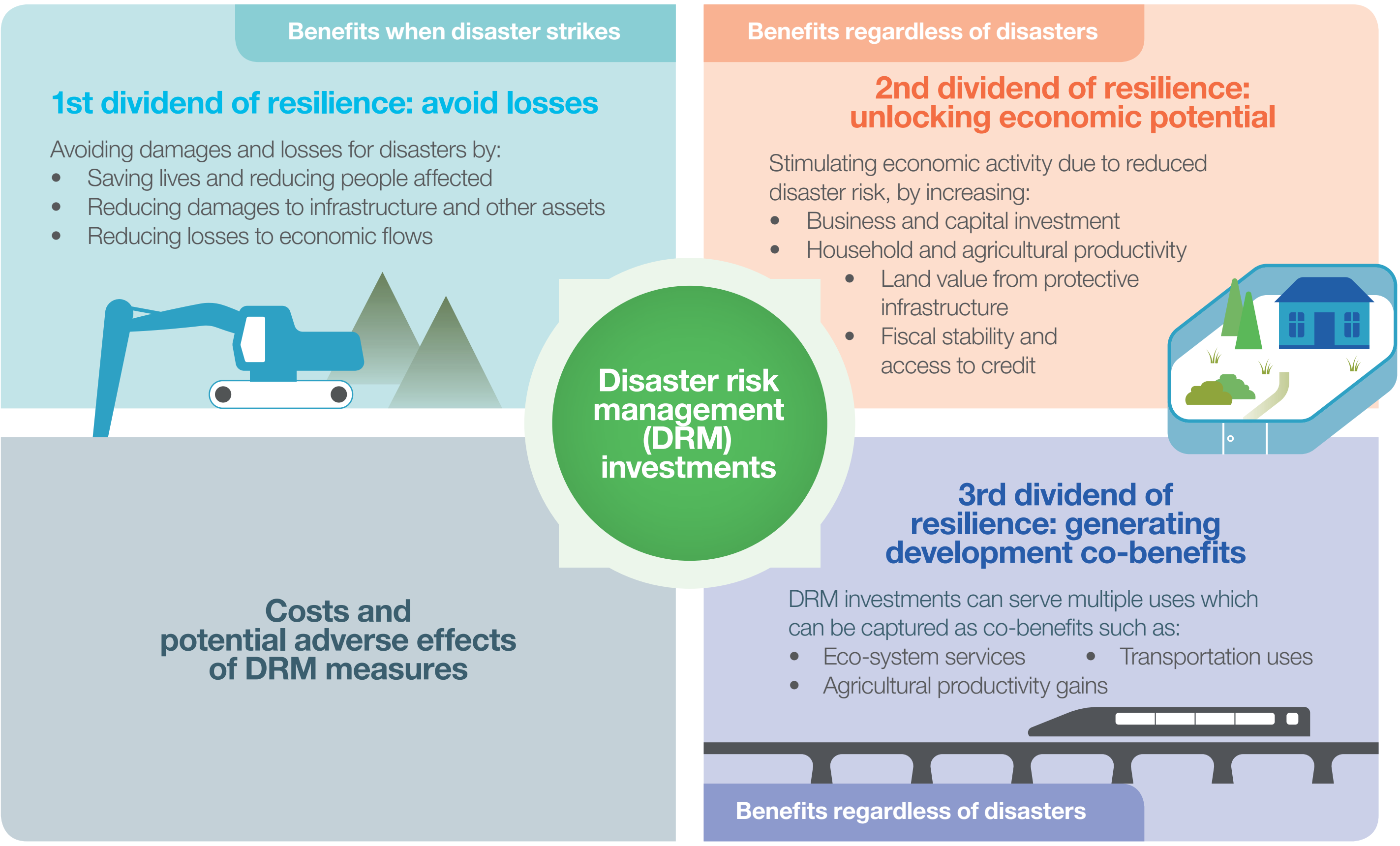


**Figure 3: The triple dividend of resilience**
Source: Surminski, S., & Tanner, T. (2016). *Realising the 'triple dividend of resilience' – A new business case for disaster risk management*. Springer International Publishing.[12]

Examples include the role flood risk management plays in helping poor households move out of poverty, creating social cohesion and stability, protecting cultural heritage, improving environmental management (eg watersheds and coastal areas) and promoting educational and skills-related benefits. Insurers can use this framework to work internally and with city authorities and other urban stakeholders to evaluate and quantify the value of resilience.

Investing in resilience reduces losses and damages in the case of disaster, it can also yield development benefits regardless of disasters. Typically, standard disaster risk management investment appraisals fail to account for the 2nd and 3rd dividends of resilience.

### Investing for Resilience

This ClimateWise report found that insurers are not the natural investors in resilience infrastructure that many external commentators perceive them to be. Although there is clearly a strong customer-oriented motive to improve risks through good risk management, to reduce losses for an individual insurer, there is not a direct relationship between increased investment in resilience infrastructure and increased underwriting profits.[4]

However, the report identifies three distinct areas of activity offering business opportunities for insurers:

- Considering resilience within insurers' own investment activities.
- Promoting resilience indirectly across the broader financial markets.
- Promoting societal resilience to climate risk in general.

The report highlights the lack of effective measurement of resilience for investors, municipalities or others with the potential to support resilience efforts. A resilience rating system may create a better understanding, and clearer cost–benefit appraisals, of resilience measures and increase their attractiveness for investors.[4]


## Actions for insurers

- Initiate a virtuous circle reinforcing the desirability of resilience by adding resilience as an appropriate feature of investments (section 3.1);
- Offer options for resilience investing to policyholders
- (section 3.4);
- Develop new types of insurance cover or adapt existing ones to support the monetisation of returns on investing in resilience (section 4.3);
- Support platforms to package, market and sell investments in resilience projects (section 4.4);
- Adopt indemnity bases that include resilience reinstatement (section 5.2);
- Provide long-term incentives to policyholders through multi-year insurance policies (section 5.3);
- Provide long-term incentives to policyholders through profit-sharing insurance pools (section 5.4);
- Participate in stakeholder partnerships with municipalities and government agencies (section 5.6);
- Second staff to local and national government departments and agencies (section 5.6); and
- Increase the focus on resilience in CSR activities (section 5.7).

**Figure 4: Actions for insurers**
Source: University of Cambridge Institute for Sustainability Leadership (CISL). (2016, December). *Investing for resilience*. Cambridge, UK: Cambridge Institute for Sustainability Leadership. Retrieved from https://www.cisl.cam.ac.uk/publications/sustainable-finance-publications/investing-for-resilience [4]

## The insurer of the future

The insurance industry, as the world's largest institutional investor, can draw on its long history of risk prevention and reduction. Strengthening urban resilience should therefore be of commercial interest to both insurers and investors. However, far too often, property and infrastructure investment decisions proceed without any reflection on the climate risks they may be exposed to.[13]

> "The insurance industry has a role to play in supporting society's climate resilience – by doing this well it can enhance insurability, and protect its own assets."[3]

The 'insurer of the future' helps to promote climate-resilient cities by aligning its investment, underwriting and advisory activities. By increasing resilience, fewer assets are likely to become uninsurable. This will help to maintain or improve overall insurance penetration and enable the insurance industry to strengthen its role as society's risk manager: "We have to create a world in which it is unacceptable not to have planned in advance."[14]

**What is your future vision of your organisation?**
Improving urban resilience will lead to fewer assets becoming uninsurable. From an insurer perspective, this can help both externally and internally.

Internally:
- Reduce claims costs and increase affordability of insurance.
- Develop new products and services.
- Respond to regulatory concerns about risk exposure.

Externally:
- Maintain the insurability of key markets.
- Promote positive risk taking and develop partnerships with key stakeholders.
- Enhance the industry's reputation as society's risk manager.

Thus, the main objective of this toolkit is to help you identify the business case for your organisation to start investing in product and service development in urban resilience. We urge you to keep an open mind, as no idea – at this stage – is a bad one.