A report jointly published by

Ceres
Mobilizing Business Leadership for a Sustainable World

ClimateWise
REDUCING THE RISK FOR TOMORROW

ClimateWise is facilitated globally by
UNIVERSITY OF CAMBRIDGE
25 YEARS
PROGRAMME FOR SUSTAINABILITY LEADERSHIP

ICLEI
Local Governments for Sustainability

Building Climate Resilience in Cities: Priorities for Collaborative Action

With particular support from

AVIVA

SWISS RE
150 YEARS

the co-operators
A Better Place For You®

The findings in this report are based on a series of workshops in Boston, San Diego and Toronto.

For more information about the organisations behind this report please see page 30.

Contents

Introduction	3 - 6		
Workshop series	7 - 8		
Lesson 1 Increasing physical resilience to climate risks stands out as the priority for all	9-11	Lesson 4 Developing a standardised 'resilience rating' may be an effective way to support cross-industry practices that reward resilience	19-22
Lesson 2 Action at the local area (e.g. community or district level) can enable more effective action at the asset level	12-15	Lesson 5 Collaboration between city stakeholders and insurers can preserve and enhance insurability – a proxy for societal risk management	23-26
Lesson 3 Organising collaboration at the asset or 'local area' level requires new approaches to governance	16-18	Lesson 6 Visionary leaders can give their cities a competitive edge by combining these actions	27-29
		About the organisations	30-31
		References	32

This is one of three documents developed by insurance industry leaders and city stakeholders through the *Building Climate Resilience in Cities* workshop series convened by Ceres and ClimateWise in 2012 and 2013.

This document distils the key priorities that emerged from the workshop series for collaborative action between key urban resiliency stakeholders to build climate resilience in cities.

This concise summary is designed to be readily understood so as to catalyse and expand cross-sector collaboration.

A second, more detailed report *Building Resilient Cities: From Risk Assessment to Redevelopment* explains, in much greater detail, one of the core concepts developed through our workshop series.

This new strategic planning framework, called a "Resilience Zone" is introduced and explored through a four-stage development process.

The third document in this set contains the workshop materials, including templates and graphics that were used to facilitate each of the workshops in the series.

We are making these available so that city leaders and other urban resiliency stakeholders, may organise their own multi-stakeholder workshops.

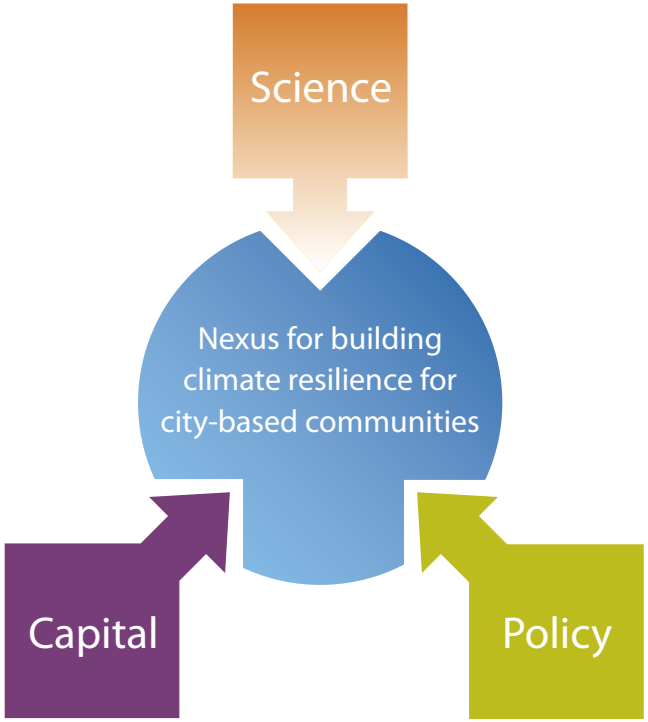
Three trends are converging to put cities at the forefront of climate resiliency efforts

1 The values of assets in cities are rising in tandem with the rapid increase in numbers of city-dwellers. [1]

2 Due to global warming and sea level rise, assets with multi-decadal lifespans will be exposed to weather events that are more extreme and less easy to predict than ever before. [2]

3 Focusing on the resilience of individual assets such as buildings is important, but not sufficient; the resilience of interdependent systems such as utility and transport infrastructure is critically important to the resilience of individual assets. [3]

Strengthened climate resilience will be the foundation for confidence, on going investment and sustainable growth.



Efforts to build climate resilience in cities have historically been led by public policy and planning approaches. These are vital foundation stones, but have limitations in their ability to deliver the pace and scale of investment and behaviour change required to ensure cities protect people and property from rapid climate change as the public and the private sectors expect.

This is an important realisation because ensuring cities – increasingly the beating hearts of economies and societies – are adapted to climate impacts is an issue of interest to all. An improved set of approaches is therefore required in order to build on the efforts already being made at the public level and harness the know-how and capital of the private sector, and which catalyse a collective response to what is a collective issue.

Undoubtedly, the scientific, policy and private sector communities have made great strides individually. However a more integrated will be needed to create true resilience. Efforts need to be concentrated at the nexus between these three areas to ensure an effective response.

There are clearly many private sector actors that will be involved in this journey but the insurance industry has a particularly significant perspective and potential role.

If we look at historical precedents, the insurance industry – society's traditional risk manager – should be at the vanguard of these efforts. In the US, for instance, the insurance industry supported economic growth and societal progress by playing a leading role in identifying and catalysing the collective management of extensive fires in cities (urban conflagration).

The key difference between such precedents and climate change risks is that society is not currently experiencing the full extent of the coming climate impacts and so action is not perceived as urgent.

The potential catalytic role of the insurance industry, with its long-term view of evolving risk trends, becomes even more important in this context. Insurers, working with other partners, can use their strategic view of societal risk management to propel our thinking forward and focus us on what needs to be done to head off these risks.

What could we achieve with the principles and expertise of the insurance industry acting as the 'anchor' for society's risk management efforts?

‘Building Climate Resilience in Cities’

Workshop Series

In 2012 and 2013, a workshop series was designed and delivered in the US and Canada, bringing together insurance industry leaders (through Ceres and ClimateWise) and city stakeholders (through ICLEI) in Boston, San Diego and Toronto.

The aim of the series was to create a systematic understanding of where there could be mutually beneficial collaboration between multiple stakeholders to build climate resilience in cities and identify practical actions to take this forward.

The process was a rich learning experience journey for insurers and city stakeholders alike and each resulted in a consistent set of priorities.

The document has been divided into six sections, each outlining a key lesson learned and distilling a recommended priority for collaborative action. Further questions that emerged are highlighted, along with examples of organisations or initiatives already making important contributions to each area

This document aims to

- Distil the lessons learned across the three workshops into practical recommendations for collaborative action for each of the major sectors involved – city officials, major infrastructure providers and insurers;
- Provide an entry point for others to develop this thinking further, including by replicating the workshops in other cities if desirable. Workshop rationale and input materials and a facilitation guide has been developed with the support of The Next Practice and is being published with this paper;
- Highlight examples of initiatives and organisations holding some of the key pieces of the puzzle to enabling collaborative action in this area.

‘Building Climate Resilience in Cities’

Workshop Series

Lesson 1

Increasing physical resilience to climate risks stands out as the priority for all.

Lesson 2

Action at the local area level (e.g. community or district level) can enable more effective action at the asset level.

Lesson 3

Organising collaboration at the asset or local area level requires new approaches to governance.

Lesson 4

Developing a standardised ‘resilience rating’ may be an effective way to support cross-industry practices that reward resilience.

Lesson 5

Collaboration between city stakeholders and insurers can preserve and enhance insurability – a proxy for societal risk management.

Lesson 6

Visionary leaders can give their cities a competitive edge by combining these actions.

Lesson 1
Increasing physical resilience to climate risks stands out as the priority for all

Climate risks can never be completely eliminated, but increasing physical resilience to climate risks is vital in order to preserve and enhance insurability [4] – a good proxy for societal risk management. A prerequisite for successful collaboration on increasing physical resilience is for stakeholders to agree **how much** the optimal level of physical resiliency that is acceptable.

Should cities and their communities be resilient to a 1-in-50 year extreme event? A 1-in-100 year event? 1-in-200?

It is not guaranteed that all stakeholders will start with the same views. However, through open dialogue, we can build consensus about our desired goals, and unlock the potential for collaboration.

Increasing physical resilience to climate risks stands out as the priority for all

It is worth clarifying upfront whether all stakeholders have an interest in promoting greater collaborative action on physical resilience. The workshop series identified clear motives for a variety of stakeholder groups to support such action:

Insurers have an interest in seeing that cities and their communities do not become more difficult to insure; in certain geographies, current loss trends could in future threaten the concept of insurability if left unchecked. This poses a real challenge for the industry as regulators may not allow insurers to continue to raise rates to reflect uncertain but nonetheless heightened risks in many places and greater market segmentation (i.e. denial of coverage to those at highest risk) is not an outcome desired by society, and could threaten insurers' license to operate.

Therefore, for risks to remain insurable, investment in physical resilience is needed to reduce the levels of risk to which insureds are exposed. Insurers do not currently invest directly in risk reduction – their core business being risk transfer – although in certain circumstances they can reflect risk reduction efforts proven to reduce damages in their pricing.

Utilities and infrastructure providers are well aware that action is needed to make their infrastructure systems (on which so many other stakeholders depend) more resilient to climate risks. However, financing this investment on their own is challenging, either because of limitations on their capital expenditure imposed by regulators or their own revenue-raising models. They therefore face a known gap in their own systems' resilience, but are unable to act on it on their own.

Municipalities and city officials are acutely aware of the interdependencies between a city's infrastructure systems, as well as the dependencies that communities have on them. They are also aware that their own financial resources alone cannot fund the work that needs to be done, and that it cannot be achieved solely through the tools of planning, regulations and laws if significant behaviour change is to be delivered. There is therefore an emerging recognition that mobilising the private sector will be critical.

Increasing physical resilience to climate risks stands out as the priority for all

Recommendations

City convenors [5] should bring together insurers, municipal and city authorities, utility and infrastructure providers (and others) in their city to identify shared priorities and actions for enhancing physical resilience (e.g. building codes, land use planning). This will need to be supported by data sharing about known vulnerabilities, the challenge of which should not be underestimated as this may involve collaboration between different actors.

This collaboration will be most fruitful when a common acceptable risk threshold or appetite has been defined and agreed amongst key stakeholders to answer the question 'how resilient do we want our cities to be?' The insurance industry can offer crucial guidance here.

Questions that emerged

Property developers, investors and mortgage providers are also likely to have an interest in enhancing the physical resilience of cities to climate risks.

How can they best be engaged and do their interests align with the stakeholders on the previous page? [6]

Lesson 2

Action at the local area level (e.g. community or district level) can enablemore effective action at the asset level

There is undoubtedly shared interest in, and the need for, greater collaboration to enhance community resiliency at the building or asset level.

However, each workshop clearly identified that when you add up all of the existing or potential resiliency actions at the asset level, this still left levels of unmanaged risk that were deemed unacceptable to most stakeholders. Collaboration can therefore add significant value when focused on whole areas or districts – what we might then term a 'Resilience Zone'.

At the community level is where risks accumulate and where the benefits of action accrue.

Action at the local area level (e.g. community or district level) can enable more effective action at the asset level

What is a 'Resilience Zone'?

A Resilience Zone is a special improvement district, precinct, neighbourhood, or corridor designated in official planning documents for comprehensive risk management and upgrading so that it is more resilient in the face of a variety of predictable and unpredictable extremes.

'Resilience' is itself proposed here as a new category of urban performance. It has been defined as the ability of a property and its surrounding urban area to provide predictable, targeted benefits to tenants, residents and users, and predictable returns to owners and investors, under a wider range of often unpredictable circumstances.

In this sense, an area or zone that is purposefully managed and upgraded to have increased resilience relative to competing areas, should become a preferred location. On this basis, it might also attract increased economic activity, and secure increased rents, asset values and returns on investment.

Careful consideration needs to be given to issues of social equity to ensure that development of Resilience Zones does not further marginalise disadvantaged or most 'at risk' communities.

Action at the local area level (e.g. community or district level) can enable more effective action at the asset level

Creating resilience to a range of climate risks, e.g. flooding or heat waves, at the building or structure level relies on action at a larger geographic scale. For instance, watercourses need to be managed on a catchment basis for property-level flood defences to be as effective as possible. Whole transport systems need to be adequately resilient to avoid individual business interruption losses during an extreme weather event.

Delivering action at this scale requires stakeholders to recognise that cities operate as a series of interacting 'systems' (whether natural or manmade) and that the interests of individual assets can only be fully protected by also acting at the level of those critical systems. Developing stronger 'systems-thinking' approaches to resilience in cities is vital.

Examples of variations of this approach being recognised and championed by insurers already exist, e.g. the Institute for Catastrophic Loss Reduction's 'RSVP…for Cities' program in Canada, the US National Flood Insurance Program's Community Rating System, The Community and Regional Resilience Institute (CARRI) in the US and the South African insurance industry's 'Adopt a Municipality' programme.

Whole transport systems need to be adequately resilient to avoid individual business interruption losses during an extreme weather event.

Action at the local area level (e.g. community or district level) can enable more effective action at the asset level

Recommendations

City convenors [5] should assess where asset-level resilience is reliant on 'local area' or systems-level resilience in their city to create an agenda for collaboration. The boundaries of different inter-connected systems (be they infrastructure, watershed or others) will need to be identified, along with the spheres of influence over these systems.'

Insurers' perspectives from their risk modelling and experience of business interruption losses, for example, may be instructive.

Questions that emerged

Is it possible to clearly delineate the boundaries of critical infrastructure within cities to focus action at the local area level to create a 'Resilience Zone'?

What happens when systems cut across already-defined political or regulatory boundaries?

Lesson 3

Organising collaboration at the asset or 'local area' level requires new approaches to governance

Collaboration to enhance physical resilience at the asset or local area level for communities is in the interests of many stakeholders, but one single stakeholder rarely stands out as having sufficient motivation to organise the required action on their own.

There is a central governance challenge at play here akin to the 'Tragedy of the Commons'; it is in the interests of the many to see the climate resilience of an area enhanced, but it is not sufficiently any one entity's responsibility, nor do they individually have enough to gain, to drive the required collaborative action themselves.

Organising collaboration at the asset or 'local area' level requires new approaches to governance

There is no shortage of individual actions on resilience taking place in leading cities, or of ideas for what more needs to be done collaboratively when these groups get together.

The challenge that was raised in all of the workshops is how to make it a sufficiently shared problem that the agreed actions are actually taken.

Ultimately, a combination of public sector, private sector and public-private collaborations are required to develop effective solutions. Bringing these new partnerships together to drive successful innovation to meet the needs of target communities will likely require new leadership. [7]

One solution to champion, which already has favour within the insurance industry as outlined in the *NYS 2100 Commission Report: Building Resilience in New York*, is the creation of a new position within city government, that of a "Chief Resilience Officer" for cities. This could focus the mandate and responsibility to co-ordinate the various different actors in a city to drive the collaboration needed to enhance certain 'Resilience Zones' or priority areas.

The UN's own 'Making Cities Resilient' campaign identifies the same point as the first priority on its 10-point essential checklist [8] and the Rockefeller Foundation is currently running a programme to install 100 Chief Resilience Officers in 100 cities around the world.[9] They describe the mandate of the Chief Resilience Officer as being to "oversee the development of a resilience strategy for the city". ICLEI Canada's Building Adaptive and Resilient Communities program also places this model at the heart of its strategy by requiring the establishment of an Adaptation and Resilience Lead.

Organising collaboration at the asset or 'local area' level requires new approaches to governance

Recommendations

Cities should appoint a Chief Resilience Officer (or equivalent) with the explicit mandate to act as convenor and driver of multi-stakeholder collaboration on climate resilience.

Communities which cannot feasibly establish a risk-focused position on their own would benefit from pooling and leveraging resources on a regional basis to support a convening officer. The insurance industry could be an active supporter of such initiatives.

Lesson 4

Developing a standardised 'resilience rating' may be an effective way to support cross-industry practices that reward resilience

Some actions to increase physical resilience to climate risks are inexpensive and others are more costly. For those that will require significant investments, the question of who pays will depend first on whether the resilience benefits accrue primarily at the asset level (and therefore perhaps to a private property owner) or at the 'local area' level (and are therefore shared amongst the community).

At present, however, risk reduction through physical resilience enhancements at the local area or 'system' level is not signalled in a standardised way to market participants. This means that the insurers, investors and others are not able to recognise and potentially incentivise these actions. A common 'resilience rating' could be an effective tool for creating these market conditions.

Developing a standardised 'resilience rating' may be an effective way to support cross-industry practices that reward resilience

An interesting initiative being led by the Insurance Council of Australia is encouraging stronger resilience to extreme weather by focusing on building standards, appropriate land-use planning and effective hazard mitigation.

An important component of this effort has been the development of a 'Building Resilience Rating Tool' intended to rate the resiliency of homes to common extreme weather hazards.[10] Elsewhere, standardised methodologies have already been developed for assessing the benefits of physical risk reduction measures in terms of enhanced resilience. These have been developed with the support of the insurance industry and applied in cities such as New York.[11]

Based on a shared agreement on what is an acceptable level of physical resilience, each workshop consistently suggested the creation of 'resilience ratings' or standards so that the impact of resilience enhancements can be objectively assessed, communicated and recognised by market participants and subsequently drive new market behaviours and norms. This could, for instance, build on the success of LEED/BREEAM energy efficiency standards in the building sector, the success of which has now started to support the development of an 'energy efficiency premium' for the best-performing properties.

Current Status of the Building Resilience Rating Tool

The Insurance Council of Australia has been working on increasing the resilience of the built environment for a number of years and has been developing the 'Building Resilience Rating Tool (BRRT)' since 2010. The development team has engaged with over 120 stakeholders, extensively researched the resilience and durability of building materials, and developed calculations and formulations to form the basis of the tool. The BRRT 2.0 has been released for beta testing by relevant experts and stakeholders.

Developing a standardised 'resilience rating' may be an effective way to support cross-industry practices that reward resilience

The workshops noted that it would be most powerful to develop this rating not just at the asset level, but at the local area level as well. Participants observed that there will be sensitivities in terms of how such information could be used for the poorer performing areas and learning from previous community level rating systems will be important, e.g. the US's National Flood Insurance Programme Community Rating System.

Further, it will be crucial to ensure that the metrics at the heart of such a rating are used consistently across a city's financial decision-making processes, which could be a further mandate of the Chief Resilience Officer. For example, if the insurance industry view and societal expectation is that infrastructure should be resilient up to a 1-in-200 year event, but the discount rates used in investment decisions discount the benefits of an investment to zero after 50 years, there will always be a disconnect, effectively undermining the likelihood of the necessary investment taking place.

By recognising resiliency investments and standardising how these are evaluated, such metrics could also support the development and deployment of innovative financing mechanisms.

Examples include:

- **Value capture schemes.**
  A type of public financing that recovers some or all of the value that public infrastructure generates for private landowners.
- **Tax-increment debt financing.**
  A method to use future gains in taxes to subsidise current improvements.
- **Revolving loan funds, project guarantees or 'resilience bonds'.**
  Municipal bonds where the proceeds are ring-fenced for use in resilience investments.

Developing a standardised 'resilience rating' may be an effective way to support cross-industry practices that reward resilience

Recommendations

City convenors should engage insurance, risk management, engineering and finance sector experts to further develop 'resilience ratings' appropriate to their country context so that a new market norm for valuing resilience can be developed.[12]

Questions that emerged

How can we manage the potential negative consequences for property values of buildings assessed as highly exposed to climate risks?

If asset values appreciate as investment is directed towards resilience-rated zones, what is the impact on disadvantaged communities and how can social equity be maintained?

Can standardised metrics be developed that would be context-sensitive and accurately reflect the resilience of a wide diversity of place types and climate impacts/hazards?

Lesson 5

Collaboration between city stakeholders and insurers can preserve and enhance insurability – a proxy for societal risk management

Insurability can be preserved and even enhanced by organising actors to deliver local area – level physical resilience enhancements that enable more effective asset-level resilience, and by developing a standard by which resilience investments can be measured and communicated.

These two measures in combination could have a significant impact on maintaining and expanding insurability – a key objective for many – and a proxy for how well society is managing the risks it is exposed to. In this sense, the insurance industry would be acting as the mechanism to ground and focus society's collaborative action on resiliency. A recent example of an insurance company seeking to fill this role comes from Canada, which is the only G8 country where homeowner insurance for overland flood is not available. The Co-operators Group Ltd instigated a study *"Assessing the Viability of Overland Flood Insurance: The Canadian Residential Property Market"*, [12] which examined the thoughts of senior executives in the largest insurance companies in Canada on the issue and highlighted the close links between physical resilience enhancements and the viability of insurance risk transfer approaches. It is intended that this will now pave the way for action.

Collaboration between city stakeholders and insurers can preserve and enhance insurability – a proxy for societal risk management

Equally, in areas where the risks associated with severe weather impact are not adequately reflected in the premiums, insurability will be an issue. Lack of insurance coverage undermines society's ability to rebuild after a disaster. Insurers, individuals, and local communities therefore share an interest in making smart risk reduction investments to enhance resiliency and insurability.

Such action may even mean that the conditions are right to enable new private sector insurance products that aggregate insureds into new purchasing groups at the 'local area' scale, forming new 'insurance pools'. Such a pool arrangement would be established to incentivise or require priority local area risk reduction, with the benefit of further preserving insurability as an outcome. The insureds would need to have similar risk exposures and the pool would need to be structured by insurance brokers skilled at designing similar arrangements for the transfer of risk to both insurers and reinsurers. Risk would be transferred to the insurance industry according to individual (re)insurer risk appetites and on the basis of risk-based pricing. Careful consideration needs to be given to issues of social equity to ensure that the development of Resilience Zones does not further marginalise disadvantaged or most-at-risk communities.

Collaboration between city stakeholders and insurers can preserve and enhance insurability – a proxy for societal risk management

Another possible direction for insurance innovation to cover the widely distinct exposures confronting urban areas could be parametric insurance. Parametric insurance particularly lends itself to situations when a heterogeneous mix of buildings and other assets would be too complex to underwrite and insure via a risk pool arrangement. Parametric insurance is an index-based policy that provides a payout when local climatic conditions deviate by a specified percentage from the historic average of a chosen weather parameter (e.g. temperature or precipitation).

The insured party receives an insurance payment according to the extent of deviation from the agreed climate index and according to a pre-defined payment formula. For instance, an automatic insurance payment may be made in the event of drought as a result of less than an anticipated amount of rain, or each time rainfall exceeds a chosen threshold over a specific number of days, or when surges in temperatures significantly exceed the historic average.

As described above, public-private collaborations to build resiliency can offer long-term sustainability for the private insurance sector, and opportunities for innovative new products and services. Each partner will have clear and distinct roles to play. For instance, while both sectors will need to collaborate in the design of risk management tools to meet local-area-specific resiliency requirements, the public sector will need to implement policies and possibly provide financial incentives that promote market adoption. On the other hand, the private insurance sector will implement the new product offerings, educate prospective customers and ensure efficient and effective programme administration.

Collaboration between city stakeholders and insurers can preserve and enhance insurability – a proxy for societal risk management

Recommendations

Working together with city convenors, insurers can identify the key actions that can be taken in a given city to best protect or enhance its insurability in the face of escalating risks and exposures, and have this analysis hard-wired into the city's plans.

Questions that emerged

How can cities draw upon insurer expertise in analysing risks and identifying adaptive responses in a way that meets insurers' business goals while protecting their intellectual property?

What are some examples of local area-scale insurance innovations, such as parametric insurance, and how might these be more broadly used in urban settings? [14]

Lesson 6
Visionary leaders can give their cities a competitive edge by combining these actions

All of the workshops pointed to political will being a key enabler for action, but also to the fact that the resilience agenda has typically been seen as synonymous with 'costly risk management'.

Meanwhile, each of the workshops also identified that cities with greater resilience to climate risk can be better cities in which to live, work and locate a business, thereby holding the potential to increase investment and economic vitality.

Visionary leaders can give their cities a competitive edge by combining these actions

For decades, city leaders have been channelling investment into work to upgrade city districts under the banner of urban redevelopment projects. To accomplish this, political will has been combined with a range of creative financing options attractive to the private sector. In this way considerable positive change has been delivered.

How have cities already derived competitive advantage from urban liabilities?

Cities and their stakeholders, working together, have time and again demonstrated the ability to convert urban liabilities and emerging risks into new development opportunities. For example, successful brownfields redevelopment, downtown business revival, and transit-oriented development are investment-based responses to risks associated with past forms of development. These different redevelopment practices suggest that for cities, the problem of emerging climate change risk may also be approached as a reinvestment opportunity as much as a risk management imperative.

There is certainly scope for shifting the resilience narrative from 'costly risk management' to 'investing in performance enhancement', effectively making climate resilience a competitive issue (a place for business to operate with fewer interruptions; a safer place for people; more stable demands on municipal budgets). However, achieving this in response to societal risks not yet acutely felt will be new territory for policy-makers, planners, utilities and insurers alike. Drawing on new tools (such as the resilience rating approach proposed in Lesson 4), and ensuring effective communication, strategies are in place to engage communities will be crucial.

Visionary leaders can give their cities a competitive edge by combining these actions

Recommendations

Elected city leaders and urban redevelopment visionaries should seize the opportunity to reframe climate resilience as a goal that would give their city a competitive advantage over others, creating better places to live and work.

About the organisations behind this document

A collaborative and creative process involving multiple organisations and individuals has informed the 'Building Climate Resilience in Cities' workshop series. The following two pages shows a list of the major parties that provided their time, ideas and expertise in various aspects of the endeavour.

Ceres is a US-based organization that advocates for the adoption of sustainable business practices and solutions to build a healthy global economy. Ceres Insurance Program is working with leaders and investors in the insurance industry to set new standards and expectations that can enable insurers to plan for emerging climate risks while moving companies and individuals toward low-carbon activities. With ClimateWise, Ceres convened insurance industry leaders to inform and participate in the workshop series.
www.ceres.org

ClimateWise is a global insurance industry leadership group to drive action on climate change risk. The group leverages the insurance industry's expertise to better understand, communicate and act on climate risks and members commit to act on the ClimateWise Principles, against which they are independently reviewed annually. With Ceres, ClimateWise convened insurance industry leaders to inform and participate in the workshop series.
www.climatewise.org.uk

ClimateWise is facilitated globally by

The University of Cambridge Programme for Sustainability Leadership (CPSL). CPSL's mission is to build strategic leadership capacity to tackle critical global challenges. We deepen leaders' understanding of the social, environmental and economic context in which they operate and help them respond in ways that benefit their organisations and society as a whole. CPSL provides the global Secretariat for ClimateWise and helped to conceive, convene and deliver the workshop series with ClimateWise and its partners.
www.cpsl.cam.ac.uk

ICLEI-Local Governments for Sustainability is a global network of more than 1,000 local governments leading on sustainability and resilience. ICLEI offers a comprehensive approach to help cities and towns achieve their goals through technical assistance, tools, networks, and leadership recognition. Both ICLEI USA (www.icleiusa.org) and ICLEI Canada (www.icleicanada.org) helped to craft the program and convene city stakeholders participating in the workshop series.

About the organisations behind this document

The Insurance Advisory Panel provided guidance throughout the design, development and conduct of the workshop series. The Insurance Advisory Panel was composed of senior executives representing Aviva Canada (www.avivacanada.com), The Co-operators Group Ltd (www.cooperators.ca) and Swiss Re (www.swissre.com) who came together to provide insurance sector leadership to this endeavour.

The Next Practice Ltd. is a business innovation consultancy that works with clients to develop investment worthy opportunities that address the challenges of poverty and sustainability. The TNP team led the research for this project and developed the resilience zone strategic planning framework and local area risk management concepts that were explored and further elaborated by the collaborators and participants in the Boston, San Diego and Toronto workshops. www.thenextpractice.com

In each city where we hosted a workshop, we benefited from local stakeholders committed to the concept of cross-sector convenings to define priorities for collaborative action on climate risks.

We would not have been successful without their direct engagement in all aspects of the workshops' design and delivery. We would also like to thank the many workshop speakers and participants who contributed their expertise, ideas and energy to this venture.

Cynthia McHale
Director, Insurance Program, Ceres

Andrew Voysey
Development Director, Finance System
University of Cambridge Programme for Sustainability Leadership

Nicolette Bartlett
Senior Programme Manager, Climate Change
University of Cambridge Programme for Sustainability Leadership

John Coomber
Chairman, ClimateWise

Brian Holland
Director of Climate Programs, ICLEI USA

Ewa Jackson
Acting Director, ICLEI Canada

References

1 http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en

2 See, for example: The Global Climate 2001-2010: a decade of climate extremes (http://library.wmo.int/opac/index.php?lvl=notice_display&id=15112) and The National Climate Assessment (NCA) http://www.nesdis.noaa.gov/NCADAC/index.html

3 See, for example Willis Research Network's estimation of the indirect losses from Superstorm Sandy due to electricity outages and business interruption (http://www.willisresearchnetwork.com/assets/templates/wrn/files/WRN%20Summary_Superstorm%20Sandy_Poweroutages.pdf)

4 See, The Geneva Association's (2012) paper *The Social and Economic Value of Insurance* for one of many discussions of this.

5 We use this deliberately vague term consciously so as not to presuppose that this role should only be played by one category of actor; according to local contexts, this role could be played by city authorities, infrastructure providers, community groups, the insurance industry and so on.

6 According to a recent set of interviews conducted in the context of our workshops, the mean time horizon for risks to be incorporated in risk management processes across sectors is 3-4 years. Climate change risk is therefore not considered a current priority business risk.

7 This issue was also picked out and explored in some depth by a recent report published by Arup, Siemens and RPA when they were exploring the role of technology in enhancing the resilience of cities and their critical infrastructure systems: www.siemens.com/urban-resilience

8 http://www.unisdr.org/campaign/resilientcities/toolkit/essentials

9 http://100resilientcities.rockefellerfoundation.org/pages/about-the-challenge

10 Additional information may be retrieved online at http://www.buildingresilience.org.au/brrt

11 See, for example http://www.swissre.com/rethinking/what_does_economics_of_climate_adaptation_mean_for_insurance.html and http://www.nyc.gov/html/sirr/html/report/report.shtml

12 A strong example of insurance industry public safety leadership is the Insurance Institute for Highway Safety (IIHS) which is a U.S. non-profit organization funded by auto insurers, established in 1959. IIHS seeks to reduce the number of auto accidents, injuries and property damage in the crashes that occur. IIHS collects industry data, carries out research and produces ratings for passenger vehicles as well as for certain consumer products such as child car booster seats.

13 http://www.cooperators.ca/en/About-Us/about-sustainability/extreme-weather-and-insurance.aspx