



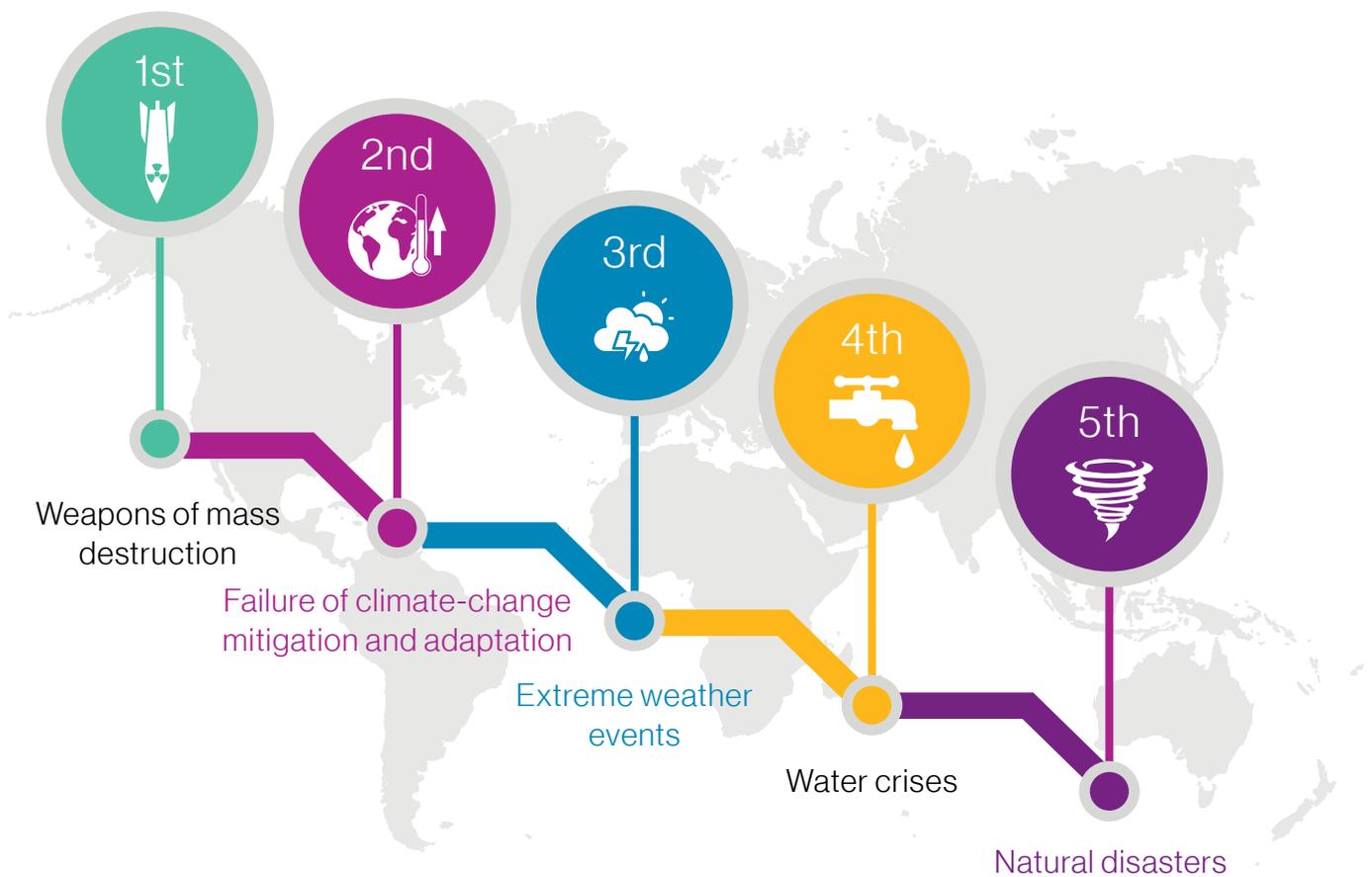
Climate Risk Solutions
for Our Changing World

Climate Risk: The World As We *Should* Know It

Climate risks are a widespread threat to financial, social and political systems. The World Economic Forum in 2019 placed climate risks within four of the top five global risks. From the destruction caused by extreme weather events to environmental degradation, economies are already

experiencing the effect of acute and chronic climate-related risks. It is therefore vital for public and private actors to consider climate risk financing and management to protect financial sustainability and also unlock otherwise hidden opportunities for growth.

World Economic Forum 2019 Top 5 Global Risks¹



Globally, the realities of Climate Change are increasingly being felt, from intense hurricane activity in North America and the Caribbean to long-term droughts bringing macro-economic consequences for Argentina and Australia. Climate risk is expected to cause at least

USD 4.2 trillion in losses to existing global assets by 2100², and is therefore becoming more relevant for businesses, economies and communities both now and into the future.

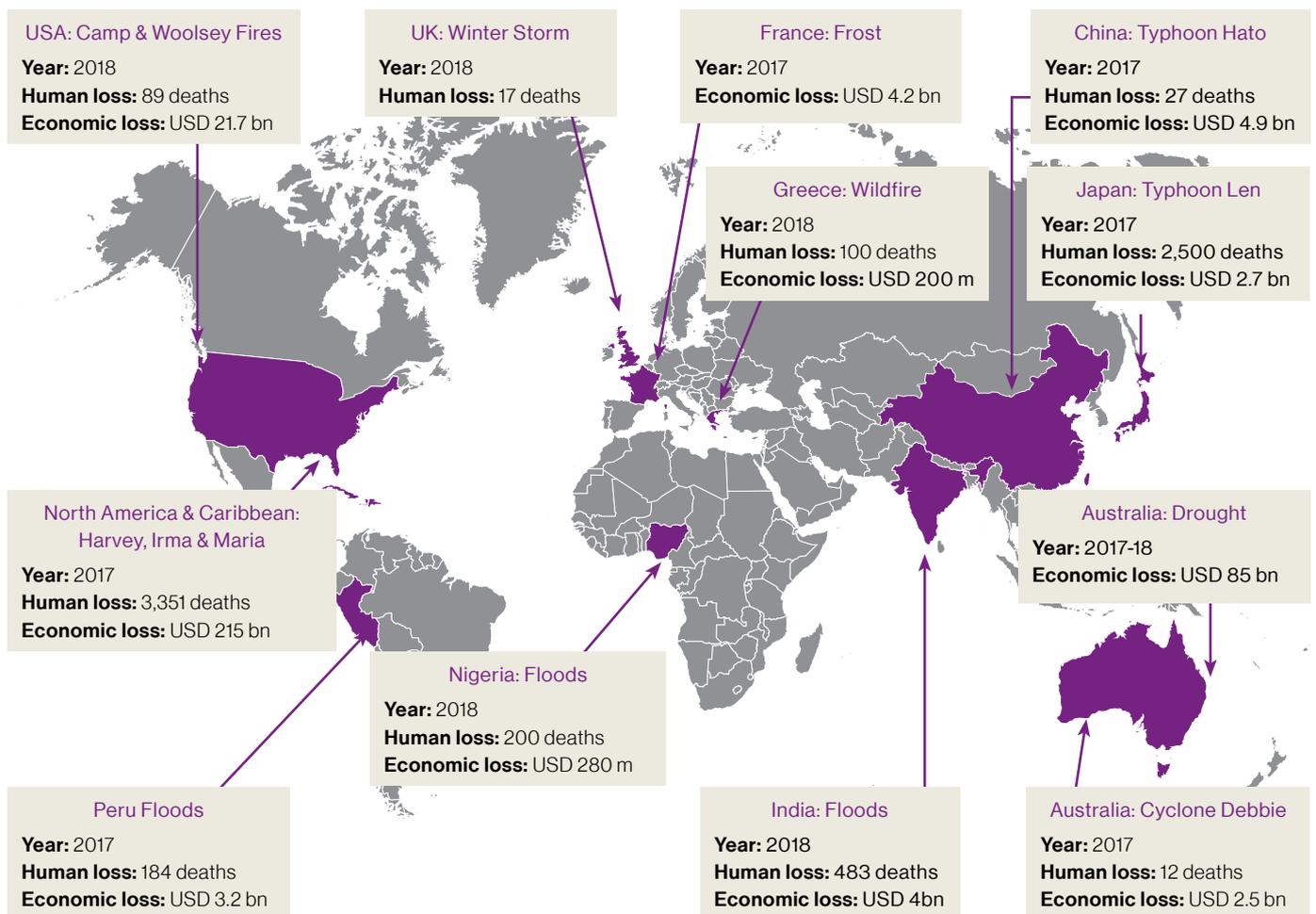
¹ WEF, 2019

² The Economist, 2015

The Real Impact of Climate Risk

Recent Climate-related Natural Hazards

In recent years, the planet has seen an increase in the frequency of climate-related disasters with extreme human and economic losses:



Data Sources: Munich Re NATHAN³ and Swiss Re SIGMA⁴

³ Munich Re NATHAN, 2019

⁴ Swiss Re SIGMA, 2019

Climate risks create impacts at macro and micro levels. The potential consequences vary from **physical** and **economic** impacts to **liability** risks as well as risks arising from the **transition** to a low carbon economy.



It will be our management and optimisation of these climatic changes which will determine future stability and success.

Economic Risk

The most recent Global Assessment Report on Disaster Risk Reduction estimates that the economic losses from disasters are nearly US\$300 billion each year. The economic impacts of extreme and adverse weather are far-reaching and affect the performance of business globally. Almost every industry faces weather related disruption to business operations which result in reduced revenues or increased costs.

Examples of such impacts by industry include:

Industry	Weather exposure
Real Estate	Severe winters increase energy bills, maintenance and snow removal costs
Construction	Excessive rain, wind or snow delays projects resulting in liquidated damages
Food & Agriculture	Drought, frost or extreme heat damages crops and reduces yields
Leisure & Hospitality	Excessive rain, cold, or snow forces cancellation or reduces attendance
Natural Resources	Excessive rain causes shut down of mines
Power Utilities	Warm winters reduce energy demand
Public Authorities	Severe winters increase snow removal and road gritting costs
Renewable Energy	Lack of consistent wind, water or solar energy reduces power generation and thus revenue
Retail	Excessive rain or snow reduces footfall and unseasonal weather reduces demand for seasonally sensitive ranges
Transport and Logistics	Excess snow or extreme cold/heat causes flight delays and cancellations; increased clear air turbulence
Water Utilities	Low rainfall results in water shortages 'Freeze-thaw' events can lead to massive disruption and costs

“ Many of today’s extremes will become tomorrow’s everyday reality ”

John Carey
Scientific American

“ The idea that taking action to address climate change is a luxury or a financial burden is redundant ”

Geoff Summerhayes
United Nations, 2019

Physical Risk

Climate-related events have the potential to pose a significant physical risk to companies and industry-wide supply chains causing damage and disruption at a global scale.

Evidence of Supply Chain Disruption

Thailand is the second largest exporter of hard disk drives (HDD) in the world, serving many global businesses. In 2011, Tropical Storm Nock-ten ripped through the country during the monsoon season. HDD production ground to a halt due to large scale flooding across Bangkok. Companies such as Samsung, Lenovo and Honda were severely affected, causing constraints in production levels for the rest of the year. This event exposed the vulnerability of global supply chains to risks from climate and weather-related incidents⁵.

Hurricane Maria: Evidence of Infrastructure Supply Chain Disruption

Puerto Rico is a manufacturing hub for pharmaceuticals and medical products, over 13 (30%) of the manufacturing facilities produce drugs which have no alternative supplier. In 2017, Hurricane Maria ripped through the US and Puerto Rico, only one week after hurricane Irma. Their combined impact had devastating effects on properties and infrastructure. Following Maria, all pharmaceutical facilities in Puerto Rico lost power and significantly reduced production for the rest of the year. Companies such as Baxter which produces vital IV fluids were severely affected.⁶

Liability Risk

Climate change poses several liability risks, current notable trends in climate change litigation include an increase in:

- Product liability claims brought by states, cities and activists against major oil companies.
- Claims brought against businesses failing to adapt to a transition to a low-carbon economy or
- Claims brought against those who fail to adapt professional advice to physical risks impacts upon supply chains, infrastructure and processes.

Transition Risk

Climate-related transition risks include multiple themes:

- Policy and Legal
- Technology
- Market
- Reputation

With an increased understanding of climate change, its uncertainties and opportunities, comes further regulation and accountability requirements. The Task Force on Climate-related Financial Disclosures (TCFD) provides key recommendations for industry to develop financial disclosures relating to climate risks⁷. The aim is to ensure sustainable pricing of risk within financial industries and encourage a culture of transparency. Consequentially it is crucial for your organisation to define its climate risks and associated financial impacts.

“ Financing the transition to a low carbon economy is a major opportunity for investors and creditors...climate finance and risk management is moving into the mainstream ”

Mark Carney, 2018

⁵ Schroders, 2018

⁶ CAN, 2018

⁷ TCFD, 2019

Why Willis Towers Watson?

How can Willis Towers Watson help you to understand, manage and develop resilience to climate risk?

We are a leading advisory, broking and consultancy firm with over 190 years' experience in the finance industry turning our clients' risk into paths for growth. Climate change is a challenge that requires a multi-disciplinary response. Willis Towers Watson is well-placed to provide

bespoke analytical solutions using state-of-the-art technology and the very latest in academic findings. Our internal climate change experts work closely across our global business network to provide tailored, client-driven, advice. Willis Towers Watson has developed a vast network of influential and extensive relationships with governments, international institutions, regulators and humanitarian organisations to advocate for an integrated approach to climate resilience.

Our multidisciplinary approach to managing your climate risk:



Helping You Find Solutions to Manage Your Climate Risk

The real risk implication of a changing climate provokes a challenge and opportunity for investors and risk managers within any business environment. At Willis Towers Watson we believe we have the unique combination of experts to unlock the ability to meet these challenges head on.

Client Requirements

Understand and quantify the impact of changing climate on the business in the short and long term.



What Willis Towers Watson can offer to you?

Willis Towers Watson can understand, quantify and provide implementable adaptation and mitigation solutions to the climate risks that affect your organisation.

Help prepare for a submission to the Task Force on Climate-related Financial Disclosures (TCFD)



We enable you to prepare for a submission to the Task Force on Climate-related Financial Disclosures (TCFD), to assess and quantify financial impacts from climate risk and disclose associated risks and opportunities also in the context of transition climate risks.

Improve financial resilience to physical risks and remain on the cutting edge of sector leadership



We can assess what a changing climate means to your business in terms of the likelihood and severity of physical risks such as adverse impacts from rising temperature, precipitation, sea level rise, windstorms and floods in the short and long term, using the latest science.

Client Requirements

What Willis Towers Watson can offer to you?

Evaluate the efficiency of current insurance programmes.



We can model natural perils and their property damage and business interruption impact on your business to inform the structuring and technical pricing for your insurance programme.



Understand portfolio level exposure to help make a more risk-sensitive investment strategy.



We can help clients improve their environmental, social and governance (ESG) conditions also in the context of transition risk, sustainable investments and enterprise risk management.



Manage the economic impact of weather uncertainty.



We structure and execute innovative parametric solutions to transfer the financial impact of adverse and extreme weather.



Assists clients in the preparation, quantification, and resolution of large and complex claims.



We can determine and quantify what financial exposure might result from climate risks, considering reliance on assets at risk of physical damage and the ability to implement loss mitigation strategies.



Understanding your climate risks ensures you are financially and operationally sustainable to the real impacts of climate change. It also enables your business to identify and optimise the opportunities associated with our changing world. If you are interested in positioning your organisation at the cutting edge of your industry and improving your financial sustainability please contact us.

Contact List

01: For Leading Academic Insight contact:

Geoffrey Saville
Senior Research Manager
Willis Research Network: Weather and
Climate Hub
+44 (0)20 3124 8858
geoffrey.saville@willistowerswatson.com

02: For Physical Climate Risk Consulting contact:

Torolf Hamm
Global Head
Catastrophe and Climate Risk Management
+44 (0)20 3124 8281
torolf.hamm@willistowerswatson.com

03: For Bespoke Risk Transfer Solutions contact:

Claire Wilkinson
Managing Director
Alternative Risk Transfer Solutions
+44 (0)20 3124 6014
claire.wilkinson@willistowerswatson.com



04: For Risk Sensitive Investment

Advice contact:
Jacqueline Wharton
Associate Director
Capital Science & Policy Practice
+44 (0)20 3124 6380
jacqueline.wharton@willistowerswatson.com

06: For Financial Quantification of Consequential Loss Risk contact:

Tom Godfrey
Director
Forensic Accounting and Complex Claims
+44(0)203 124 6945
Tom.Godfrey@willistowerswatson.com

05: For Transition Climate Risk Consulting contact:

Will Bruce
Global Head
Enterprise Risk Management
+44 (0)203 124 7296
william.bruce@willistowerswatson.com

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About Willis Towers Watson

Willis Towers Watson (NASDAQ: WLTW) is a leading global advisory, broking and solutions company that helps clients around the world turn risk into a path for growth. With roots dating to 1828, Willis Towers Watson has 45,000 employees serving more than 140 countries and markets. We design and deliver solutions that manage risk, optimize benefits, cultivate talent, and expand the power of capital to protect and strengthen institutions and individuals. Our unique perspective allows us to see the critical intersections between talent, assets and ideas – the dynamic formula that drives business performance. Together, we unlock potential. Learn more at willistowerswatson.com.



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