

California Climate Risk: Insurance-Based Approaches to Mitigation and Resilience

July 23, 2019

UCLA School of Law

Welcome

California Climate Risk:
Insurance-Based Approaches to Mitigation and Resilience

July 23, 2019 | UCLA School of Law

Keynote Address: California Insurance Commissioner Ricardo Lara

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Panel 1: Physical Risk Assessment, Impact Mitigation, and Insurance

- **Alex Hall**, UCLA Center for Climate Science
- **Alice Hill**, Hoover Institution
- **Kristen Torres Pawling**, County of Los Angeles
- **LeRoy Westerling**, UC Merced School of Engineering

Moderator: **Sean Hecht**, UCLA School of Law

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RICARDO LARA
INSURANCE COMMISSIONER

California Department of Insurance



PSI
Principles
for Sustainable
Insurance

UCLA

School of Law
**Emmett Institute on Climate
Change & the Environment**

BerkeleyLaw

UNIVERSITY OF CALIFORNIA

Center for Law, Energy &
the Environment

Break

California Climate Risk:
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Panel 2: Nature-based Solutions

- Secretary of Ecology and Environment **Alfredo Arellano**, State of Quintana Roo, Mexico
- **David BurtonPerry**, Swiss Re
- **Deborah Halberstadt**, UC Davis Coastal and Marine Sciences Institute
- **Raghuveer Vinukollu**, Munich Re

Moderator: **Louis Blumberg**, Blumberg West Consulting

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QUINTANA ROO
GOBIERNO DEL ESTADO
2016-2022



SEMA
SECRETARÍA DE ECOLOGÍA
Y MEDIO AMBIENTE

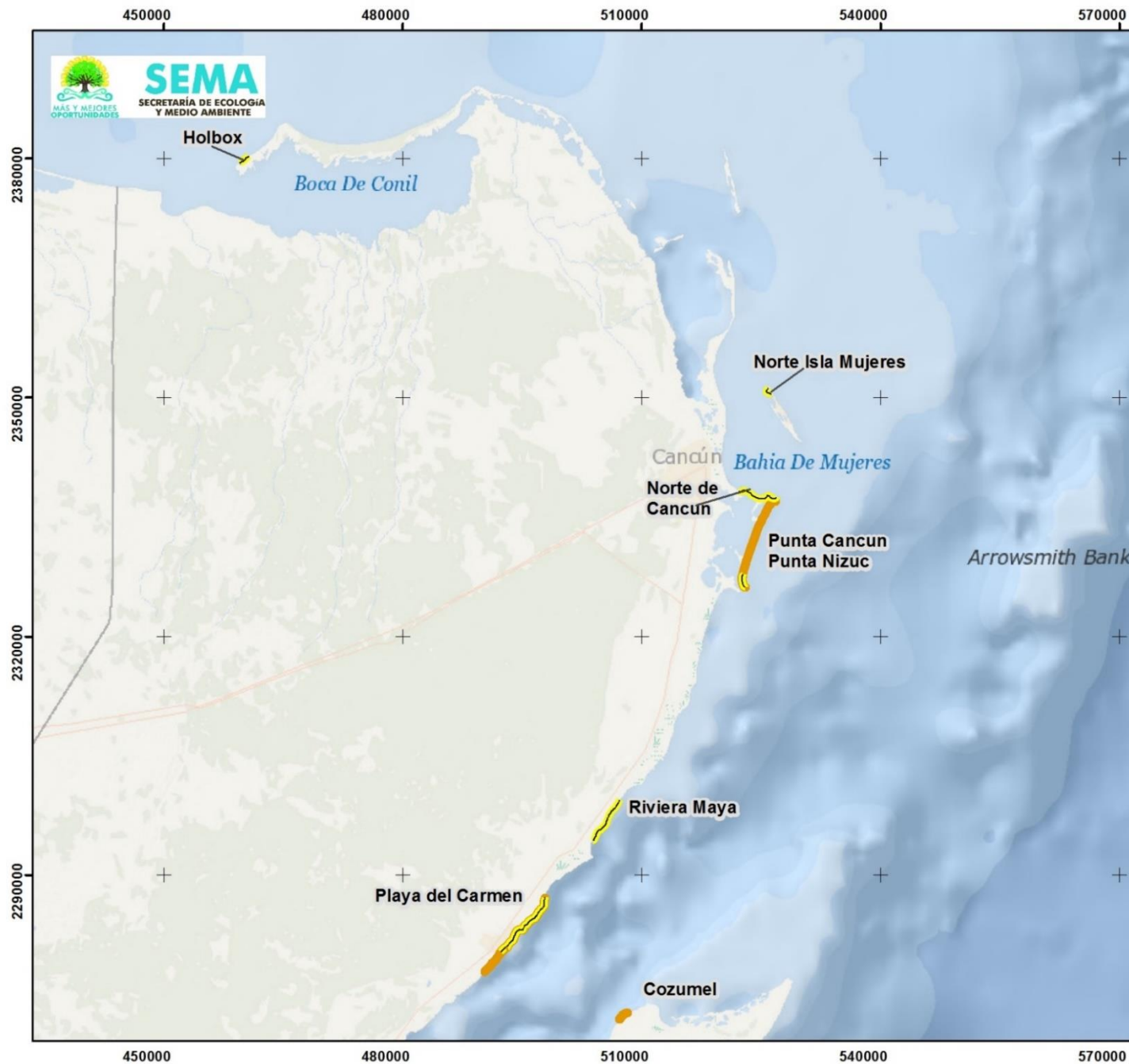
Parametric Insurance Policy to Cover Beaches Recovery and Coral Reefs Quintana Roo, México

California Climate Risk: Insurance-Based Approaches to
Mitigation and Resilience

Panel 2: Nature-based Solutions

July, 23, 2019

Alfredo Arellano Guillermo
Ministry of Environment
State Government of Quintana Roo, México
alfredo.arellano@qroo.gob.mx




ZONAS RESTAURACIÓN DE PLAYAS (MIA 2009) Y PROPUESTAS POR SECTOR 2015

Macrolocalización



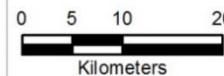
Simbología

 Zona de restauración(MIA2009)
Punta Cancun - Punta Nizuc
(12.27 Km) se cubrió 10.5 Km
Playa del Carmen
(12.8 Km. en dos fases)
se cubrió 4.2 Km.
Cozumel (1.5 Km.)

 Zonas propuestas para
restauración(SECTOR 2015)
Holbox (1.6 Km)
Norte Isla Mujeres (1.5 Km)
Norte de Cancún (5.4 Km)
Punta Nizuc (1.5 Km)
Norte de Playa del Carmen
(8.6 Km)
Riviera Maya (6.3 Km)
Cozumel (2 Km. no aparece
ya que las coordenadas
son incorrectas)

Especificaciones Cartográficas

Proyección: UTM
Zona: 16Norte
Datum: WGS 84
Escala: 1: 630,000

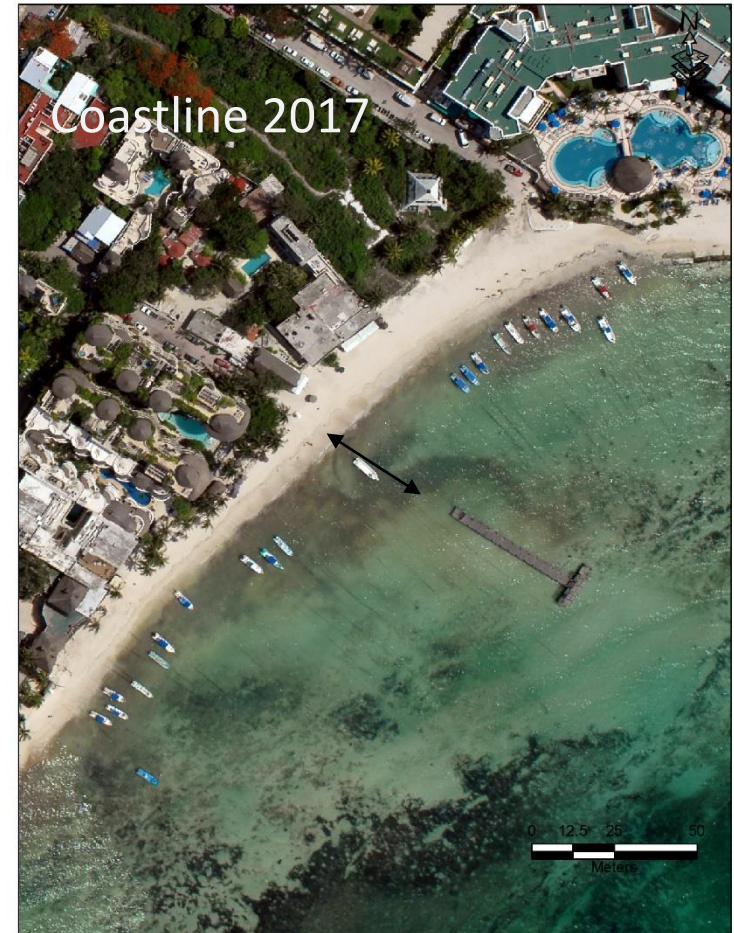


Beach Erosion

2010

Playa del Carmen

2017



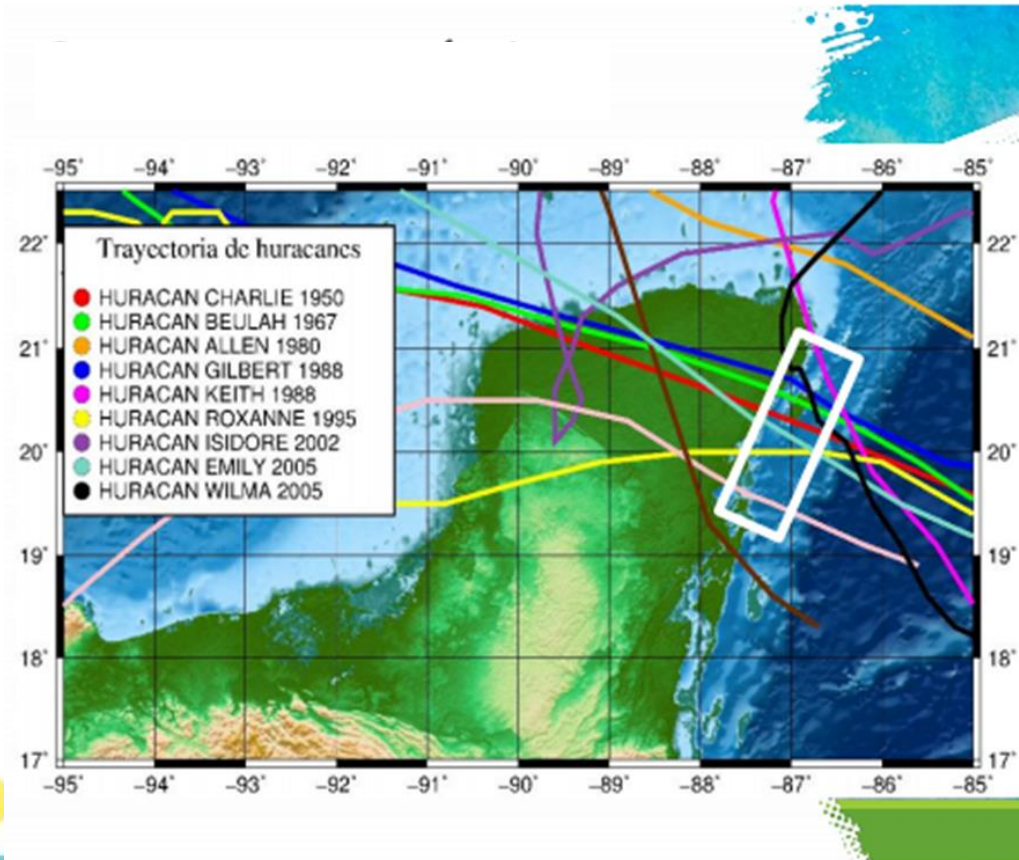


Coral Reefs on Risk

Coral Reefs are affected by:

- Diseases
- Water Pollution
- Bleaching
- Recreational activities
- Hurricanes:

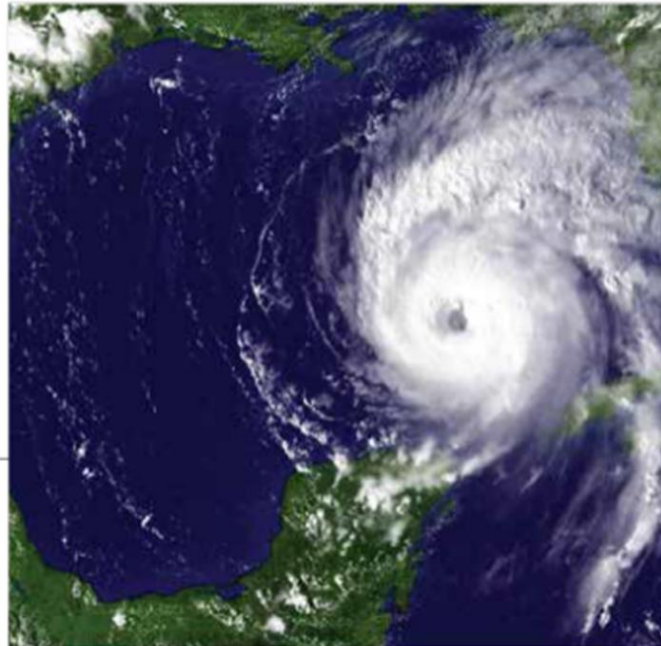
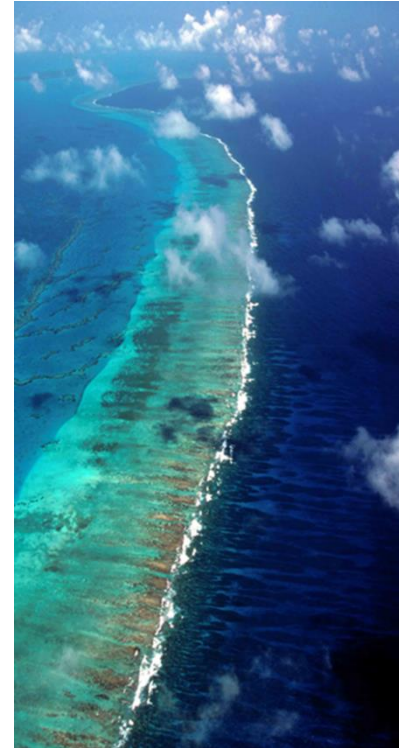
Experts consider that hurricanes category 4 and 5 passing less than 65 km from the reefs are very likely to damage it (Alvarez-Filipp, et.al. 2011).





Hurricanes damages

- Hurricanes with wind speeds of 50 to 100 knots caused the loss of live coral cover in a range between 0 and 10%, with an average loss of around 2-3%.
- However, hurricanes with a wind speed above 110 knots caused serious or catastrophic damage to coral reefs. Losses in live coral cover ranged from 10 to 30% at 110 knots and from 20% to 50% at 160 knots (Gardner, T, et al, 2005).





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Coral Reefs Economic Benefits

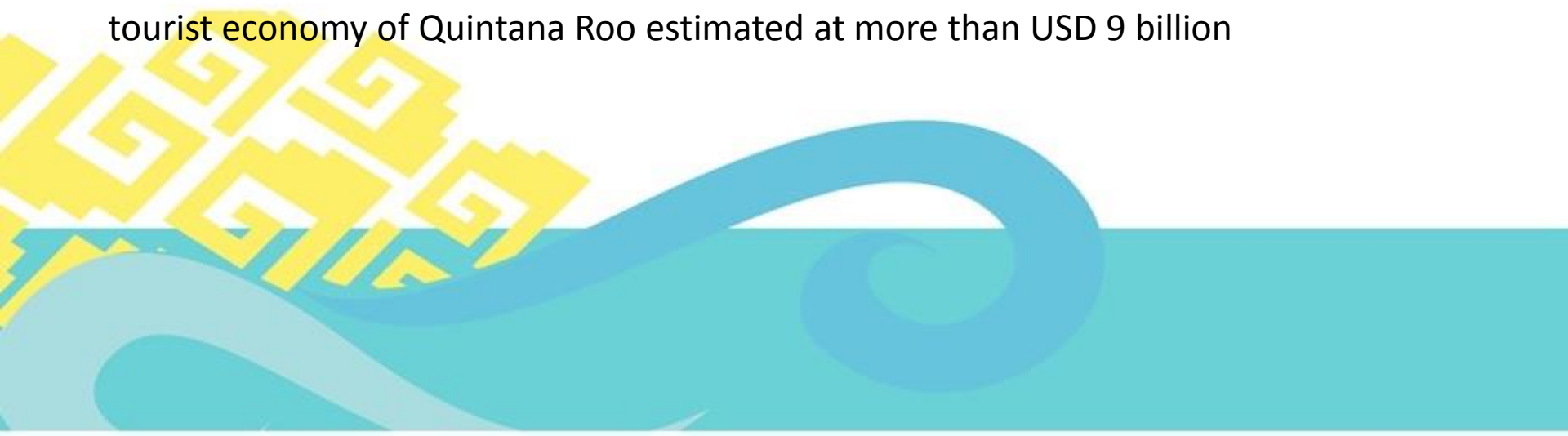


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Coral reefs reduce more than 90% of wave energy during storms protecting the coastline. If the reefs are degraded, the losses to the infrastructure caused by a storm could triple (Beck, M. et al, 2017). The reefs also reduce 60% of the wave energy under normal conditions (Mariño, I. and Acevedo C. 2017) protecting the beaches from erosion.

Cozumel, Puerto Morelos, Punta Nizuc and Punta Cancun, attracting more than one million visitors per year that leave an economic income of approximately USD \$ 60 million

Without reefs there would be no beaches; both, reefs and beaches, support the tourist economy of Quintana Roo estimated at more than USD 9 billion





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2016-2022

Background

2015. In his political campaign, the Governor of Quintana Roo offered the "planting" of one coral for each vote received



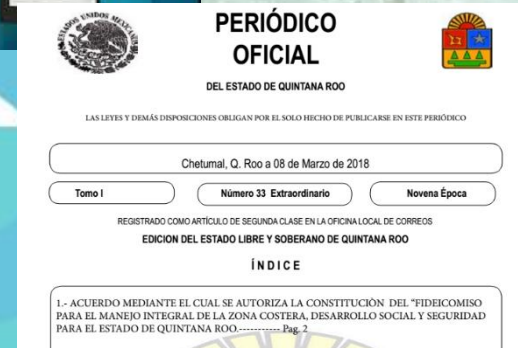
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2016. Signing of the Collaboration Agreement between the Government of Quintana Roo and the National Fisheries Institute to carry out the reproduction and sowing program.



2017. Creation of the Trust Fund for the Coastal Zone Integrated Management, Security and Social Development of the Quintana Roo State.





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Why a Parametric Insurance?



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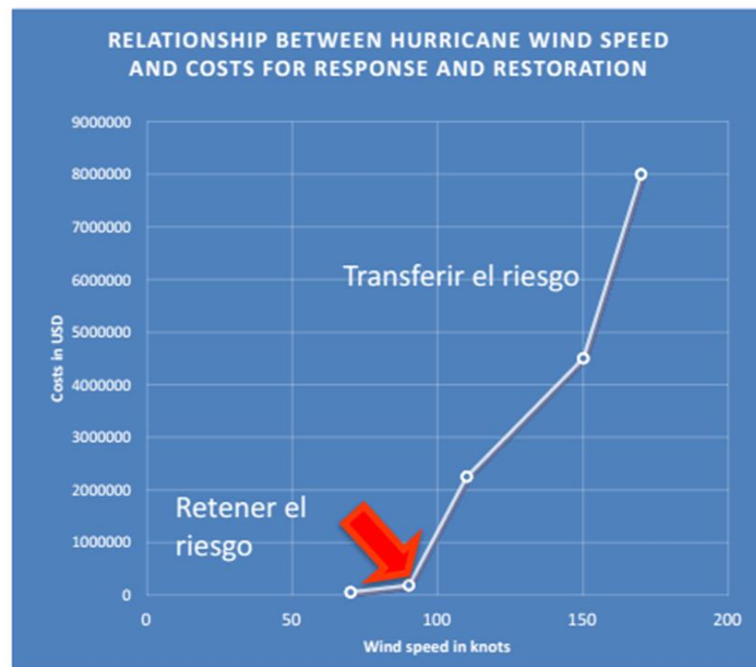
It is important to have insurance coverage to repair the damage to the reefs since it can be very expensive. The cost of the immediate response varies from 100,000 to 150,000 USD, for an area of 20 km long and requires 20 to 30 days of work, according to estimates made for the Arrecife National Park of Puerto Morelos. The cost of replenishing coral colonies over 2 to 5 years can be in the order of millions of dollars depending on the extent of the damage and the extent of the repair.



¿CUANDO TRANSFERIR EL RIESGO?

03 ☐ ☐ ☐ ☒

Los costos de restauración aumentan con vientos mayores a 110 nudos (180 kmh) o huracán categoría 4.





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Area Coverage

Parametric insurance is defined by three elements:

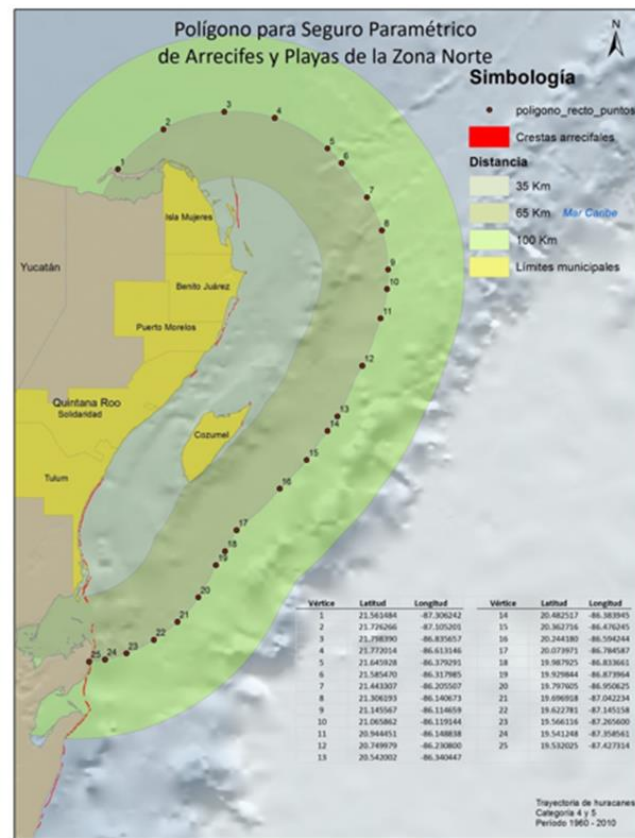
- 1) One parameter (wind speed),
- 2) Polygon where wind speed must occur, and
- 3) Compensation.

This parametric insurance will be activated if a wind speed higher than 100 knots is registered within the predefined polygon.

Vértice	Latitud	Longitud
1	21.5615	-87.30624
2	21.7263	-87.10520
3	21.7984	-86.83566
4	21.7720	-86.61315
5	21.6459	-86.37929
6	21.5855	-86.31799
7	21.4433	-86.20551
8	21.3062	-86.14067
9	21.1456	-86.11466
10	21.0659	-86.11914
11	20.9445	-86.14884
12	20.7500	-86.23080
13	20.5420	-86.34045
14	20.4825	-86.38395
15	20.3627	-86.47625
16	20.2442	-86.59424
17	20.0740	-86.78459
18	19.9879	-86.83366
19	19.9298	-86.87396
20	19.7976	-86.95063
21	19.6969	-87.04223
22	19.6228	-87.14516
23	19.5661	-87.26560
24	19.5412	-87.35856
25	19.5320	-87.42731



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Limits of Liability

The cost of the insurance policy was \$ US 500 thousand (50 % contribution of The Nature Conservancy) and 50 % contribution of State Government of Quintana Roo).

The Maximum Limit of Liability during the 12 months of validity of the policy will be approximately \$ USD 3.8 million:

The payment varies according to the registered wind speed;
The higher the speed, the greater the damage, and therefore the greater the compensation:

- Moderate damage: from 100 knots to less than 130 = 40% maximum payment.
- Severe damages: from 130 knots to less than 160 = 80% maximum payment.
- Catastrophic damage: greater than 160 knots = 100% maximum payment.



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Governance



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The Quintana Roo State Trust is the beneficiary of the insurance

The Trust has a transparent and solid governance structure led by a Technical Committee, which has the support of the Subcommittee for Coastal Zone Management and its Advisory Committee. The Trust will decide how to invest the payment in case of an event





BENEFICIOS DEL INSTRUMENTO DE TRANSFERENCIA DE RIESGO

Posicionarse como pionero e innovador en cambio climático y reducción de riesgo

- Es el primer seguro sobre sistemas naturales jamás puesto en el mundo.
- Es innovador al usar instrumentos de mercado para reducir riesgos a sistemas naturales.

Reduce la vulnerabilidad de finanzas públicas y de la economía.

- Los fondos del seguro se invierten en Quintana Roo generando empleo y derrama económica.
- Se reduce la pérdida de ingresos a los empresarios turísticos por la degradación del arrecife.
- Se evita que el Gobierno tenga que lanzar programas de recuperación alternos.

LA INICIATIVA DE RESILIENCIA COSTERA ALINEADA CON OTROS COMPROMISOS



PLAN ESTATAL DE DESARROLLO
2016 • 2022

Así atenderemos la desigualdad en nuestro estado.
Conoce nuestro #PlanDesarrolloQRoo



Promover un crecimiento económico sustentable



Prevención y combate de delitos



Rendición de cuentas medibles



Desarrollo social y reconstrucción tejido social



Planear un crecimiento urbano sustentable

Panel 2: Nature-based Solutions

- Secretary of Ecology and Environment **Alfredo Arellano**, State of Quintana Roo, Mexico
- **David BurtonPerry**, Swiss Re
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David BurtonPerry
Swiss Re Public Sector Solutions
July 23, 2019



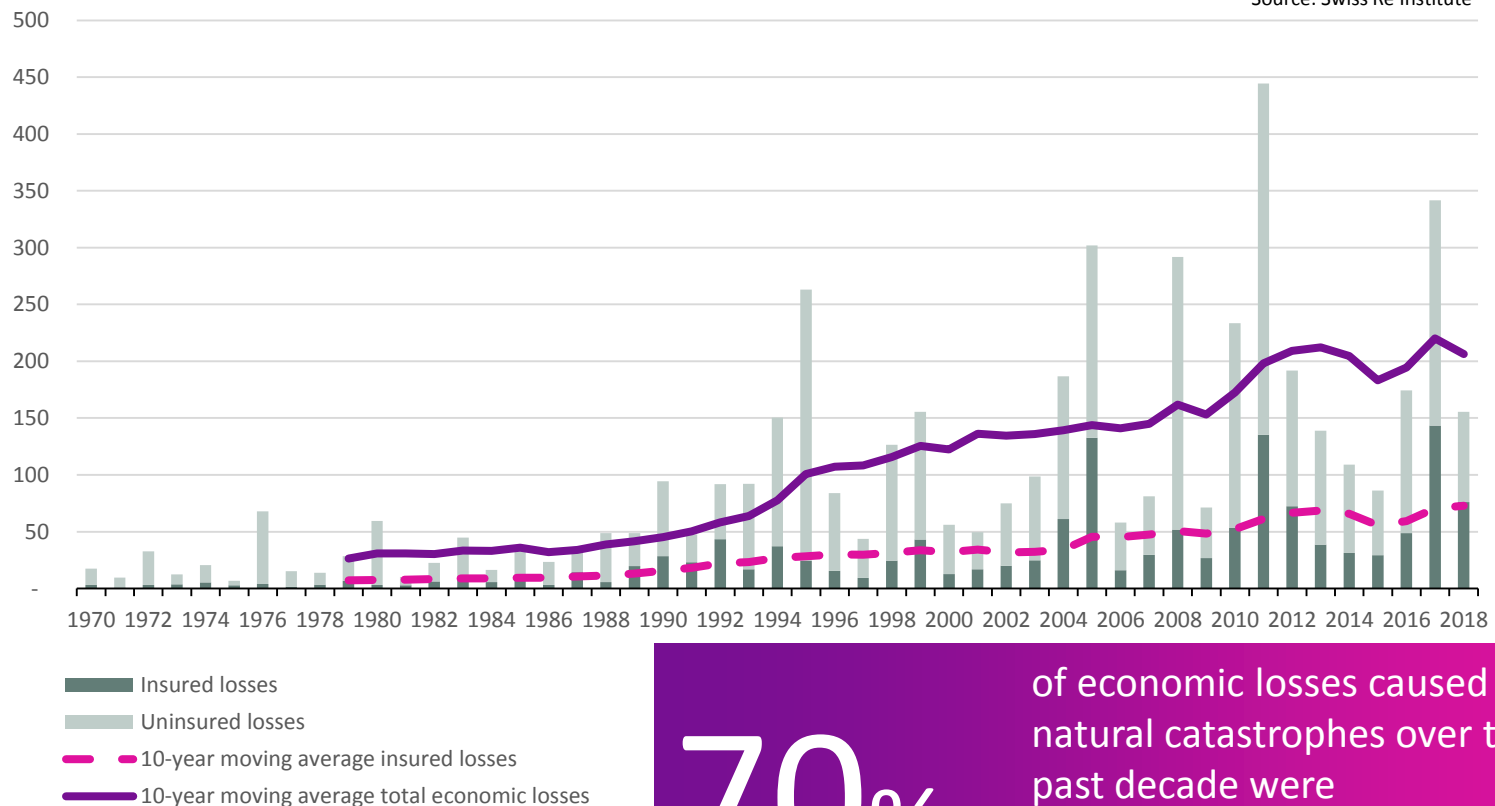
Only a small portion of catastrophe risks is insured

Long-term effect on a countries' economies can be massive

Insured vs uninsured losses

1970-2018, in USD billion at 2018 prices

Source: Swiss Re Institute

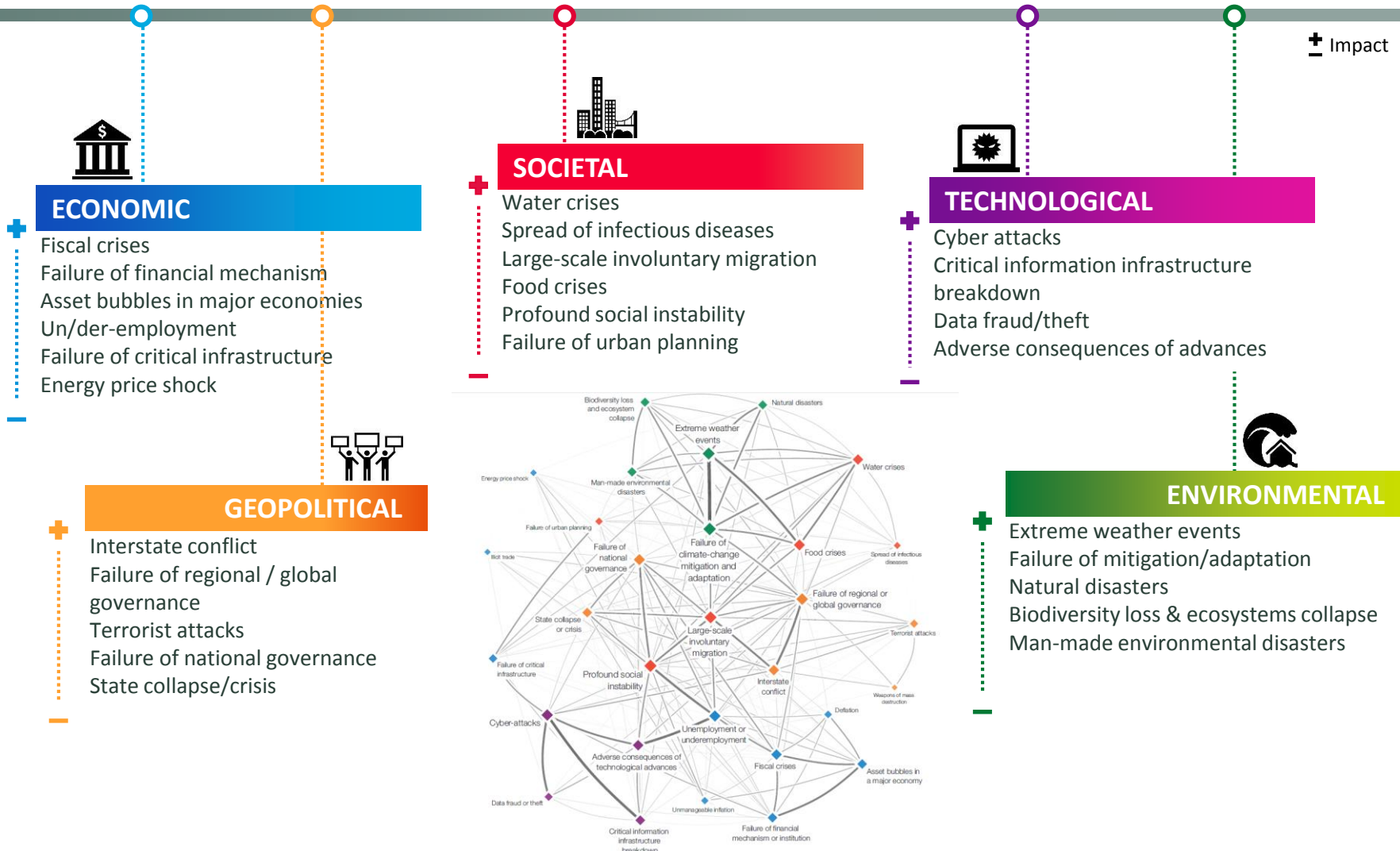


70%

of economic losses caused by natural catastrophes over the past decade were **uninsured**

Governments are exposed to manifold risks

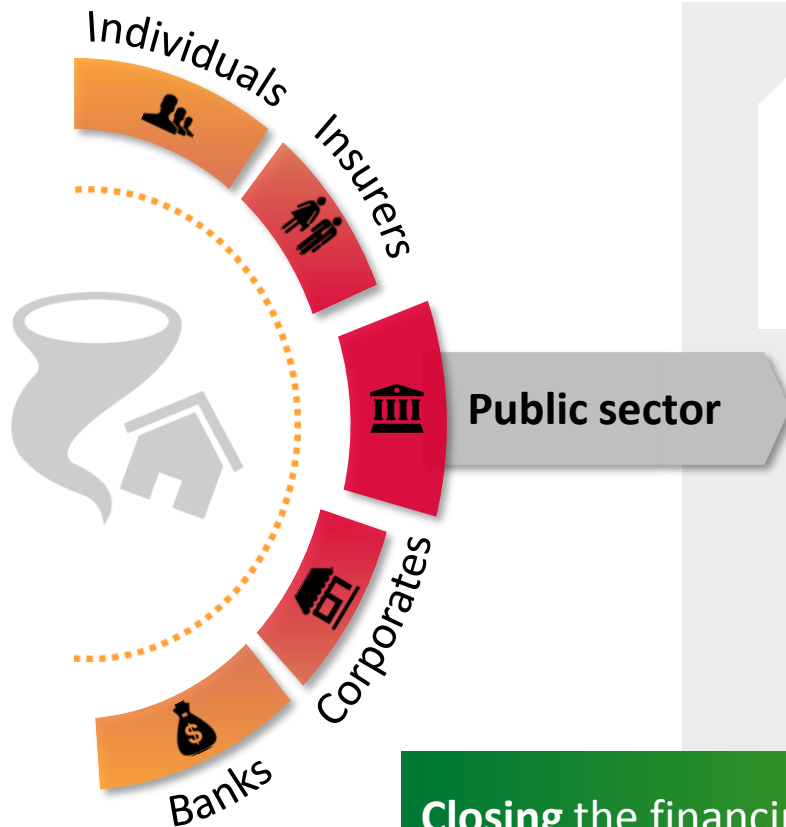
Contingent liabilities for the public sector are significant



Source: WEF, The Global Risks Interconnections Map 2019

Public sector bears a large portion of the risks

Public budgets are put under twofold strain



IMPACT ON PUBLIC BUDGETS:



Higher costs

- Emergency response costs
- Reconstruction of **public** property & infrastructure
- Support for **non-insured** households
- Cost of **replacements** (e.g. higher imports)

- Lower **tax** income
- Lower **tourism** income
- Lower **export** revenues
- Loss of **investor** confidence



Lower revenues

Closing the financing gap between insured and uninsured losses is thus in the public sector's **vital interest**

Insurance solutions provide distinctive advantages

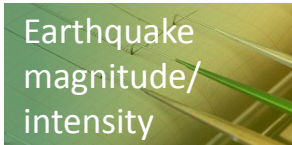
- ✓ **Efficient way** to cope with financial consequences of natural catastrophes
- ✓ **Guaranteed access** to required funds for recovery, up to agreed cover limits
- ✓ **Speedy delivery**, especially with innovative instruments such as parametric solutions
- ✓ **Pre-determined premium allows for budget planning certainty**, particularly in multi-year contracts
- ✓ **No payback obligation** (in contrast to loans)
- ✓ **Reduction of a country's contingent liabilities** to acceptable levels (positive implications for sovereign rating and currency)
- ✓ **Limits the pressure** to divert own funds from other projects to affected areas



Parametric insurance is an innovative risk transfer tool for the public sector



Insurance relies on **measurement** of a natural phenomenon or index, such as:



Earthquake
magnitude/
intensity



River
flooding



Excess/
lack of
rainfall



Heat /
cold
waves



Payout of pre-defined amount is made when contractually agreed **threshold** of parameter/index is **exceeded** (e.g. intensity of EQ or amount of rainfall)



Advantages

- **Fast** payout (2-6 weeks)
- Otherwise **uninsurable** risks can be insured (e.g. emergency costs, loss of revenues)
- No loss **assessment** required
- **Flexibility** in the use of funds
- **Transparency** to both insurer and insured
- Avoids **adverse risk** selection

Disadvantages



- Need **Basis risk** (insurance payout may deviate from actual loss)
- for objective and accurately measured **historical data**



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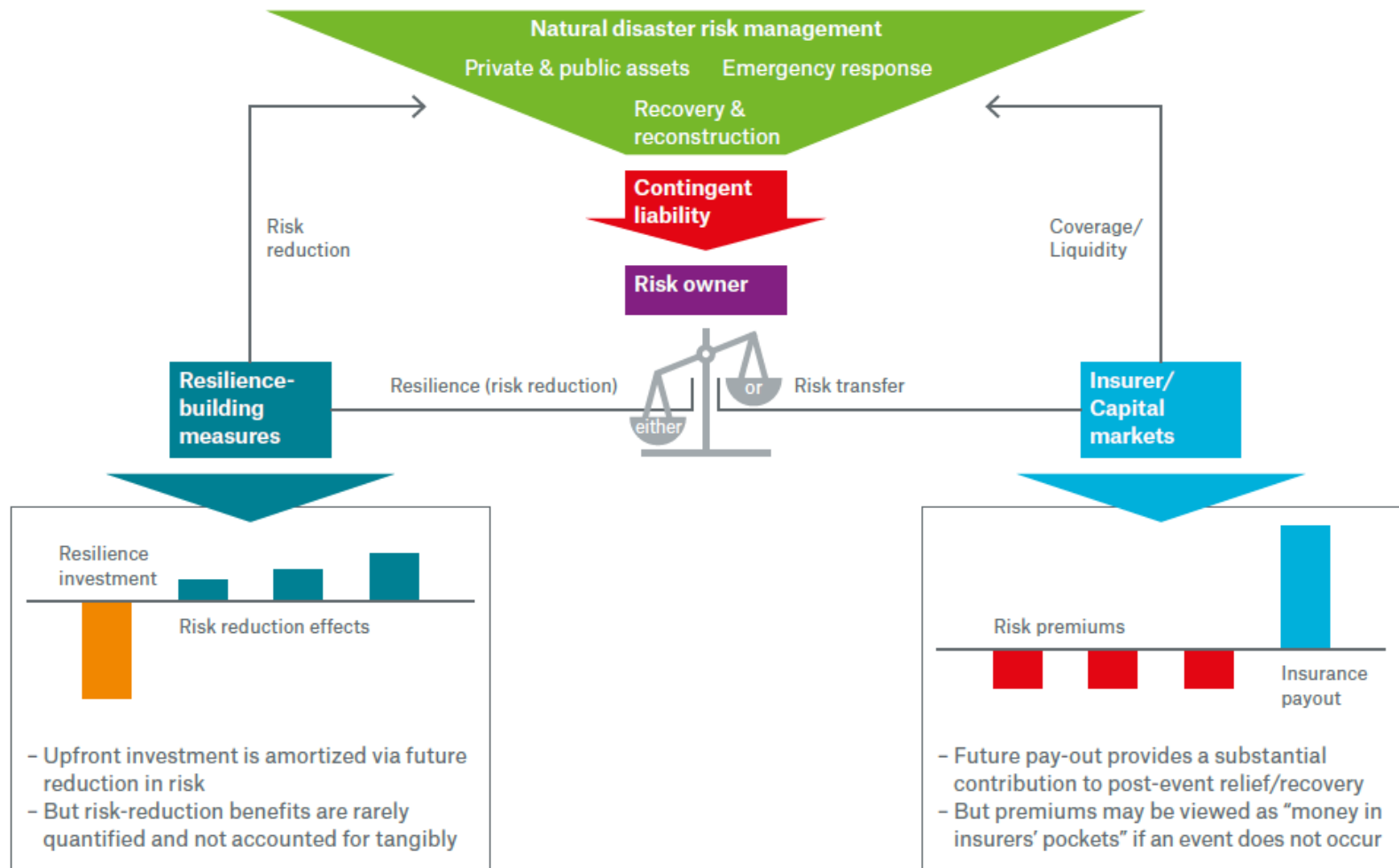


A Sustainable and Integrated Approach to Risk Transfer and Risk Reduction

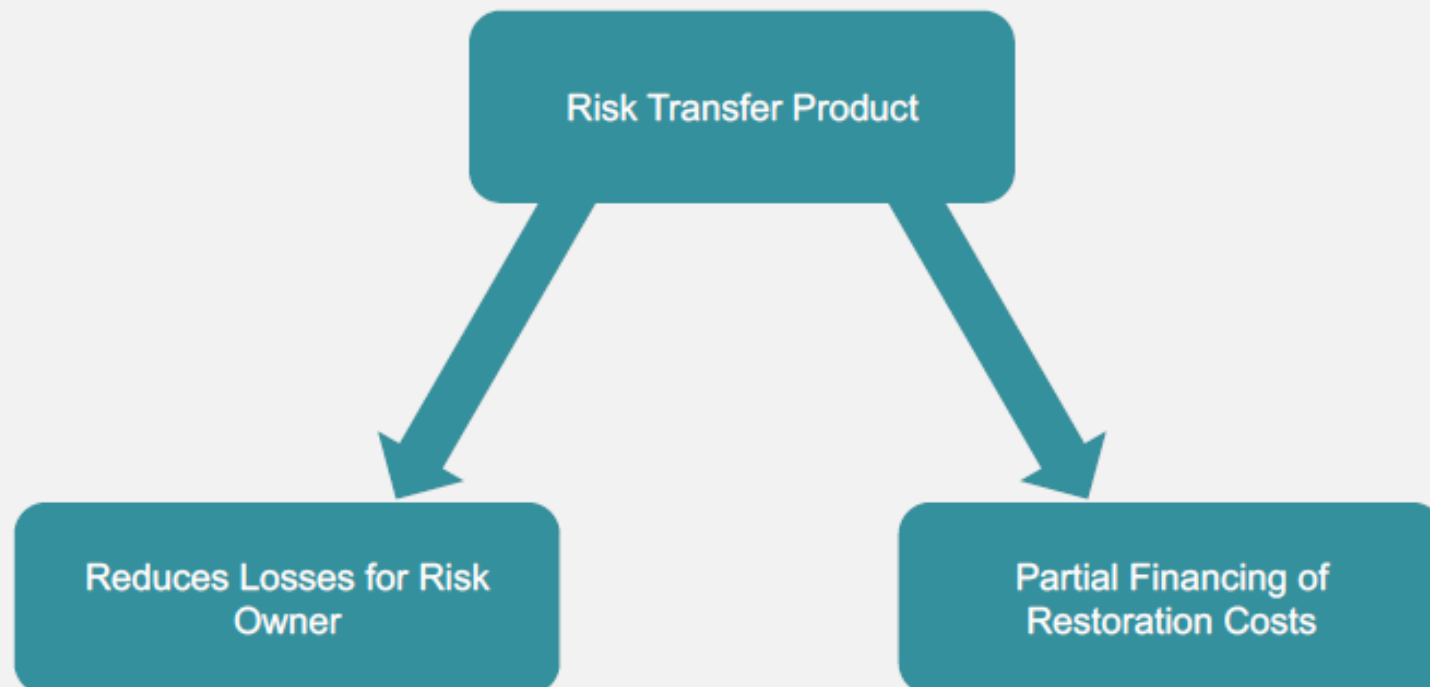
Raghuveer Vinukollu

23 July 2019

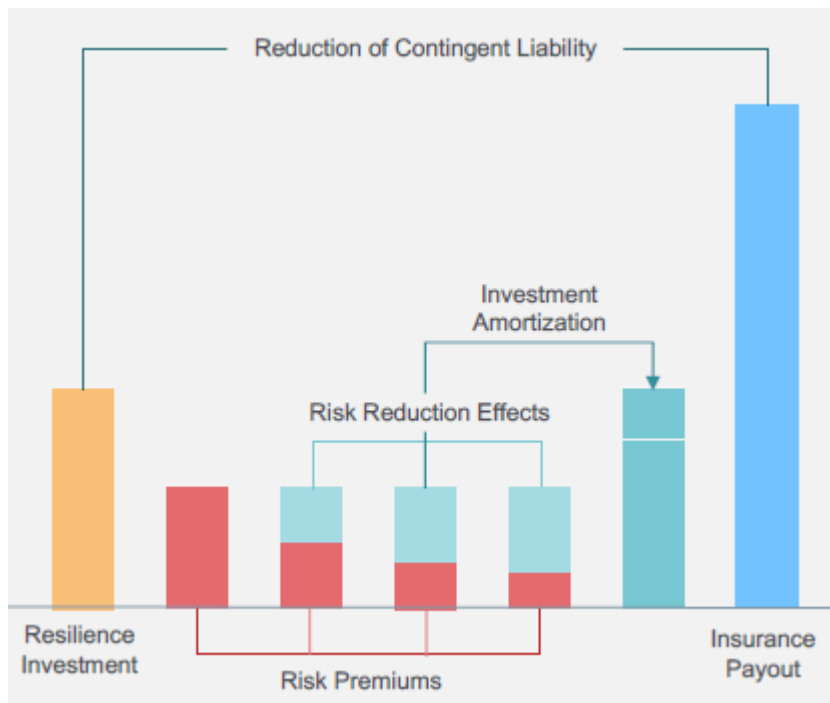
Trade off: Risk Transfer and Resilience Building Measures



Dual function of insurance:



Combined Insurance Solution: Coupling of Risk Reduction and Risk Transfer



- A resilience insurance solution aims to overcome the trade-off between risk reduction and risk transfer, linking the risk reduction effect with an insurable risk within a combined solution:
 - ✓ A resilient investment at the beginning of the period reduces the underlying risk
 - ✓ The risk mitigating impact is monetized via reduced premiums
 - ✓ An incentive is created both for risk reducing infrastructure as well as for risk transfer resulting in increased community resilience

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Remarks on Climate Policy Opportunities:

Dave Jones, The Nature Conservancy and Climate Risk Initiative, Center for Law, Energy & the Environment and former California Insurance Commissioner

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RICARDO LARA
INSURANCE COMMISSIONER

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Lunch: Shapiro Courtyard

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Afternoon Keynote: Insurance Markets, Climate Risk, and Sustainability

Butch Bacani, Global Leader, UN Environment's Principles for Sustainable Insurance Initiative

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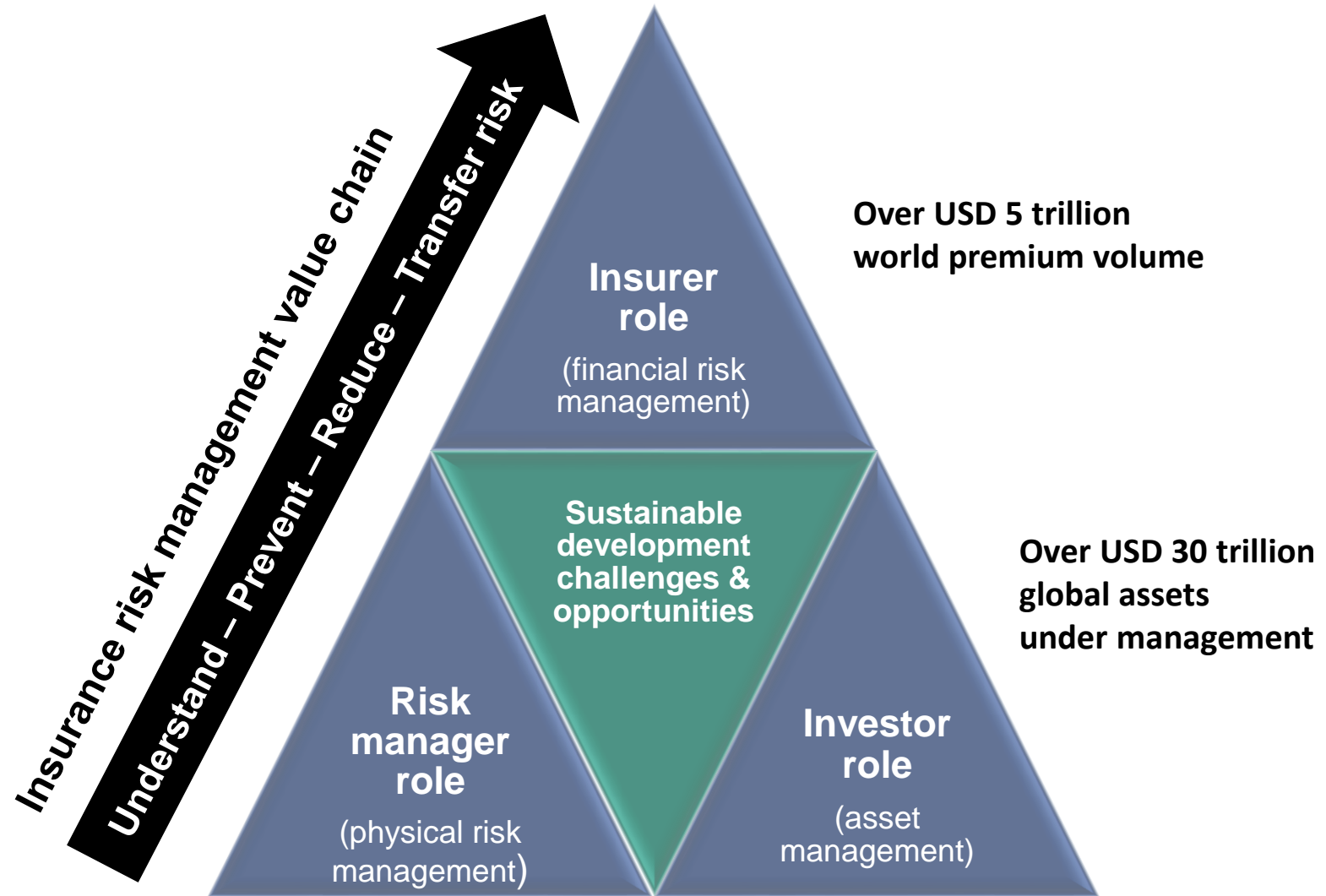
Insurance Markets, Climate Risk and Sustainability

July 23, 2019, Los Angeles, California, USA

Butch Bacani

UN Environment's Principles for Sustainable Insurance Initiative

The triple role of the insurance industry in sustainable development



Pioneering global studies by the UN and the insurance industry on ESG issues and sustainable development

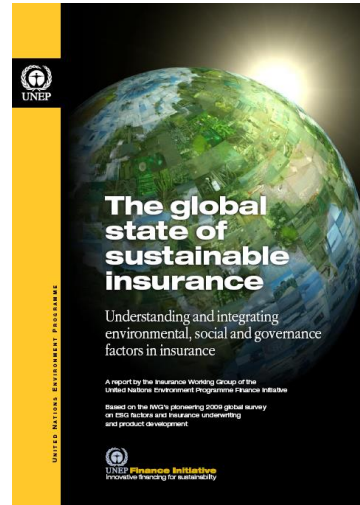
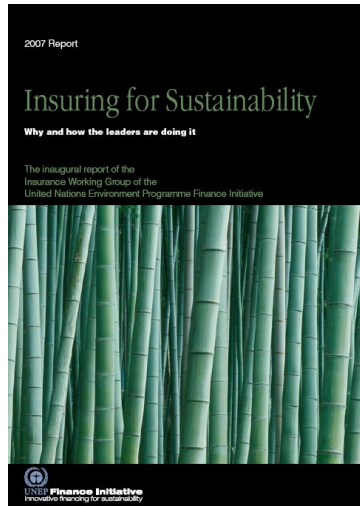


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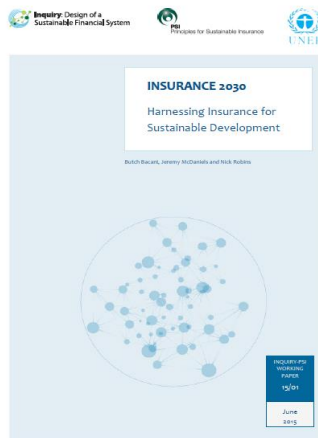
Principles for Sustainable Insurance

2007: 1st sustainable insurance study

2009: 1st global sustainability survey of insurance industry



2015: 1st global consultation on insurance policy, regulatory & supervisory frameworks and sustainable development



Examples of key environmental, social and governance (ESG) issues (or “sustainability issues”)

- Climate change & extreme weather events
- Natural disasters
- Biodiversity loss & ecosystem degradation
- Water scarcity
- Food insecurity
- Environmental pollution
- Violation of human rights & labour standards
- Social inequality & financial exclusion
- Emerging health risks & pandemics
- Ageing populations & demographic change
- Technological risks including big data
- Accountability & transparency issues
- Trust & reputation issues
- Unethical business conduct & practices
- Corruption
- Unfair treatment of customers



PSI

Principles for Sustainable Insurance

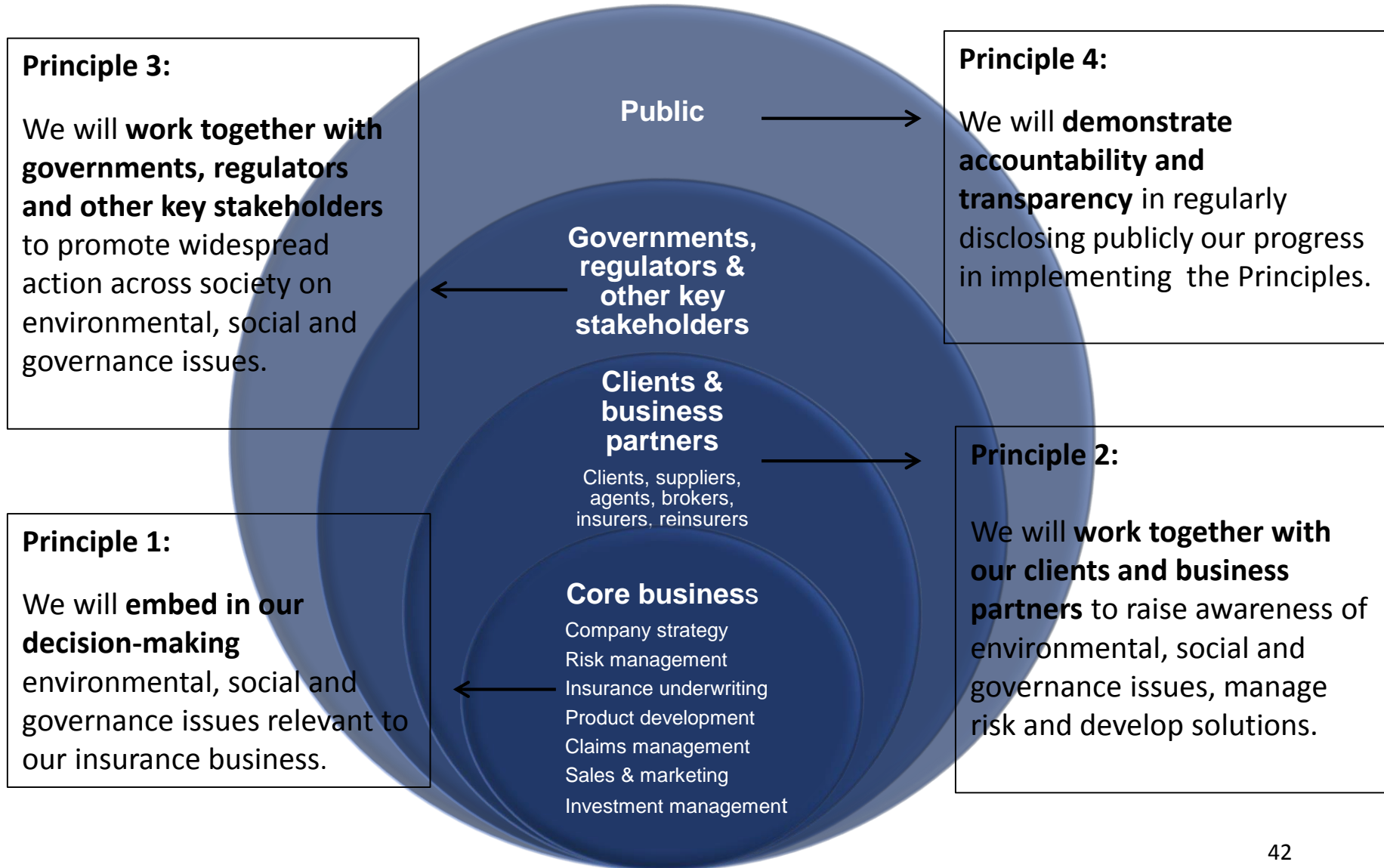
Sustainable insurance defined

“Sustainable insurance is a strategic approach where all activities in the insurance value chain, including interactions with stakeholders, are done in a responsible and forward-looking way by identifying, assessing, managing and monitoring risks and opportunities associated with environmental, social and governance issues.

“Sustainable insurance aims to reduce risk, develop innovative solutions, improve business performance, and contribute to environmental, social and economic sustainability.”

(Source: Principles for Sustainable Insurance, UN Environment, 2012)

The Principles for Sustainable Insurance: A global roadmap to drive systemic change



Launch of UN Environment's Principles for Sustainable Insurance Initiative (PSI) in 2012



June 2012, Rio de Janeiro, Brazil



“The Principles for Sustainable Insurance provide a global roadmap to develop and expand the innovative risk management and insurance solutions that we need to promote renewable energy, clean water, food security, sustainable cities and disaster-resilient communities.

“With world premium volume of more than \$4 trillion and global assets under management of more than \$24 trillion, insurers that embed sustainability in their business operations can catalyze the kinds of financial and investment flows and long-term perspectives needed for sustainable development.

“The United Nations looks forward to working with all sectors of society towards the global embrace of this important new initiative as we shape the future we want.”

Ban Ki-moon, UN Secretary-General



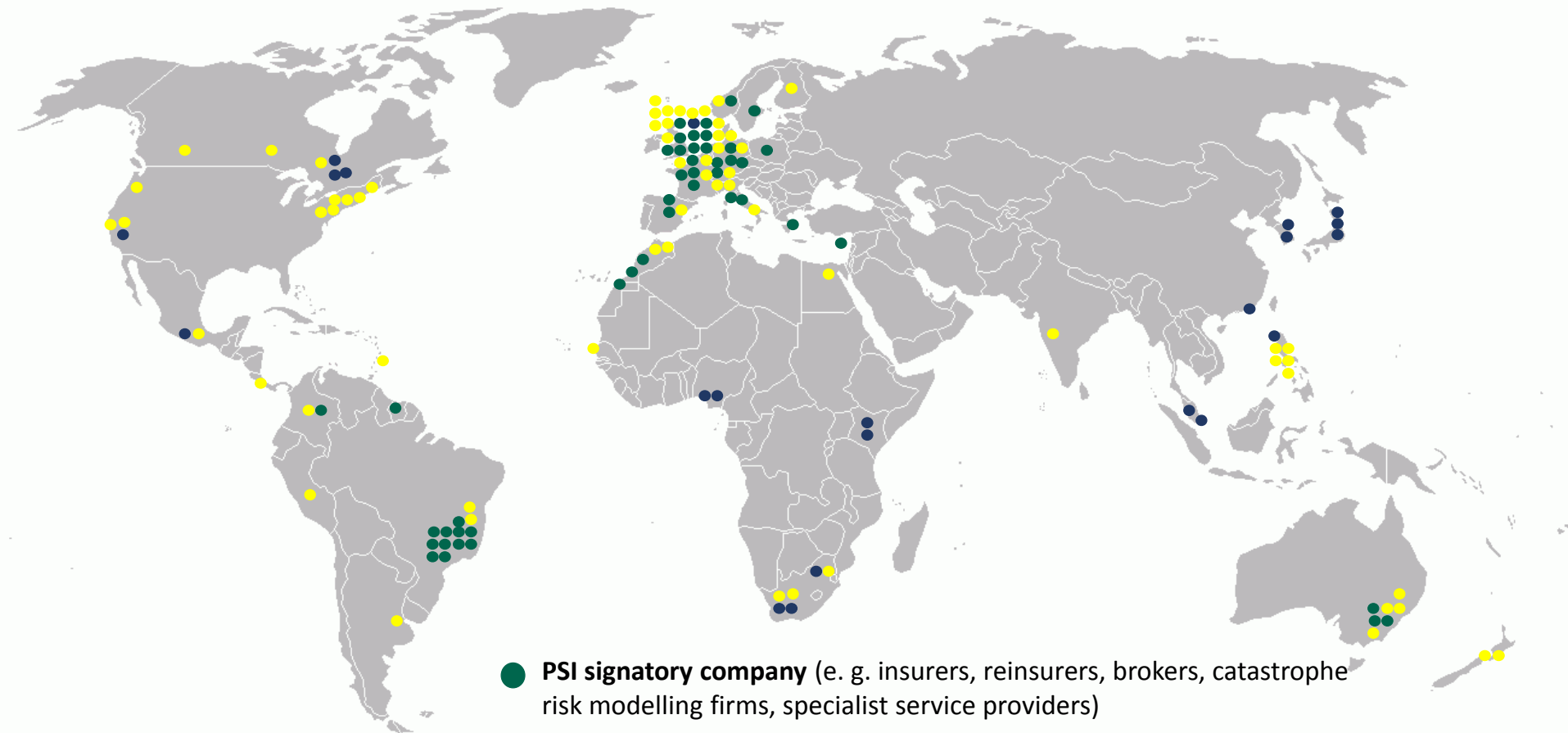
PSI membership by country of domicile



PSI

Principles for Sustainable Insurance

- Over 130 members and growing
- Insurers representing about 25% of world premium + USD 14 trillion in assets under management
- Largest collaborative initiative between the UN and the insurance industry



- **PSI supporting institution** (e.g. insurance associations, insurance initiatives, insurance regulators and supervisors, academia, civil society organisations)

PSI as a global sustainability framework for the insurance industry



Dow Jones Sustainability Indexes



FTSE4Good

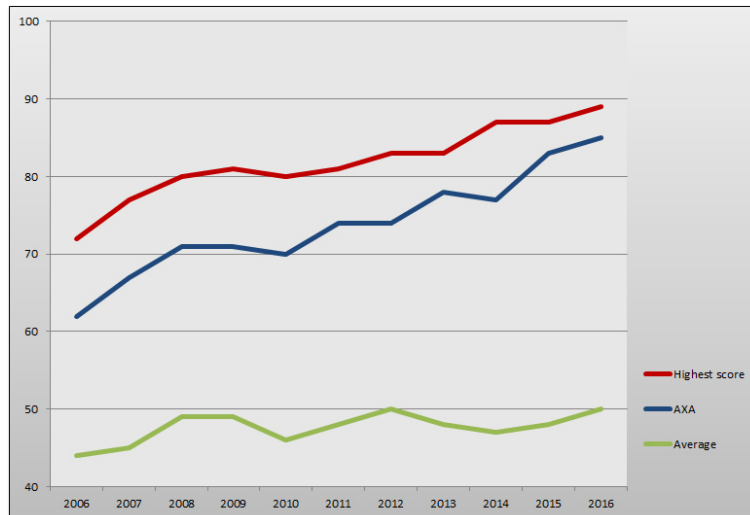
Corporate Sustainability Index ISE



2016 DJSI: Swiss Re remains insurance industry leader in sustainability
Swiss Re remains the insurance industry sector leader in the DJSI for the third consecutive year, and the tenth time since 2004

2017 DJSI: AXA's sustainability performance improves again
AXA moves from fifth position to second-best player in the insurance industry – the Group's best performance ever

AXA's historical DJSI performance



Source: AXA

PSI part of insurance industry criteria of sustainability indices
Dow Jones Sustainability Indices, FTSE4Good, and Brazil's BM&FBOVESPA Corporate Sustainability Index

2017 & 2018 DJSI rankings:
Allianz ranked No.1 insurer



2018 DJSI rankings:
15 of 16 insurers are PSI signatories

Source: Allianz

Industry best score Industry average score Allianz SE



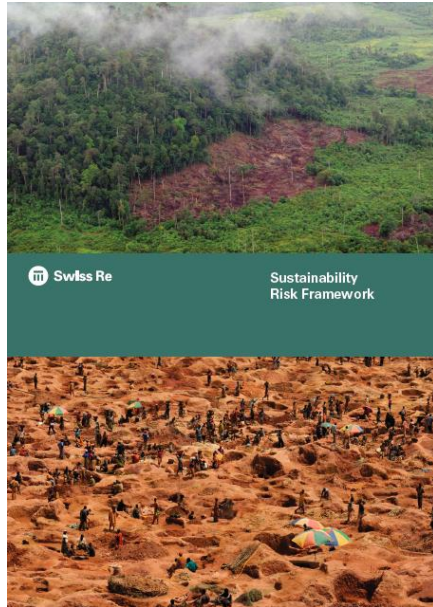
Source: DJSI

Principle 1:

Insurance industry leadership and commitments

Implementing the Principles: Examples

A company commitment



Swiss Re's Sustainability Risk Framework

Umbrella policies

- Human rights & environmental protection




Guidelines

- Animal testing
- Dams
- Defence sector
- Forestry, pulp & paper, palm oil
- Mining
- Nuclear non-proliferation
- Oil & gas
- Thermal coal

Swiss Re among first in insurance industry to integrate environmental, social & governance (ESG) benchmarks into investment decisions (Jul 2017)

- Swiss Re publication explains why ESG integration makes economic sense for long-term investors
- Swiss Re selected benchmarks based on the MSCI ESG methodology for its equities and fixed income portfolios

Environmental, social and governance aspects

Environmental, social and governance aspects		
		
Environmental aspects	Social aspects	Governance aspects
Pollution	Political environment and public perception	Responsible and careful planning and assessment
Natural resources and biodiversity	Working conditions	
	Health and safety for the community	Compliance
	Resettlement of people	Consultation and transparency
	Cultural heritage	

Munich Re's processes, guidelines and tools to assess ESG issues in insurance underwriting and investment

Allianz's screening process for ESG issues in insurance and investment transactions

SCOR's scoring grid to help insurance and reinsurance underwriters assess ESG practices in sensitive sectors and lines of business

Implementing the Principles: Examples

A company commitment



“The debate is no longer about whether, it's about when.

“As an insurer, I have personally witnessed many times humanity's capacity for resilience. This gives me hope that we will learn from the errors of the past and set ourselves on a path towards a more sustainable future, beginning here today and resulting in a comprehensive, fair and ambitious agreement this December.

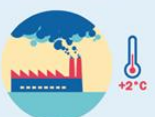
In any case, we have no choice: a 2°C world might be insurable, a 4°C world certainly would not be.”

Henri de Castries, Chairman & CEO, AXA Group
22 May 2015, Climate Finance Day, Paris

Various PSI members have made commitments to disengage from coal-intensive business through their investments and/or insurance underwriting, and to increase green investments


Henri de Castries at the Climate Finance Day | May 22nd 2015
“As our business is about understanding risks and managing them for our clients, insurers are uniquely positioned to provide innovative solutions in partnership with public authorities but also relevant private players.”

COAL DIVESTMENT



AXA has decided to divest from the companies most exposed to coal-related activities.
This initiative represents a divestment of € 0.5 billion


“GREEN” INVESTMENTS



AXA commits to its green investments X3
aiming to reach over € 3 billion by 2020


Climate Finance Day

ESG* INTEGRATION AND SIGNING THE “MONTREAL CARBON PLEDGE”



AXA has committed to reviewing the ESG* footprint of all relevant asset classes of its greatest success investments by the end of 2015.
And we are the first global insurer to sign the Montreal pledge, an initiative to disclose the carbon footprint of our investments, launched under the auspices of the UN Principles for Responsible Investment.

AFRICAN RISK CAPACITY



AXA has joined in May 2015 the African Risk Capacity initiative.
A regional insurance pooling mechanism that helps mitigate the short-term cash flow problems that cripple developing countries after natural disasters.

* environmental, social and governance

Allianz 


AVIVA




GENERALI

Munich RE 


QBE

SCOR
The Art & Science of Risk

 **Swiss Re**

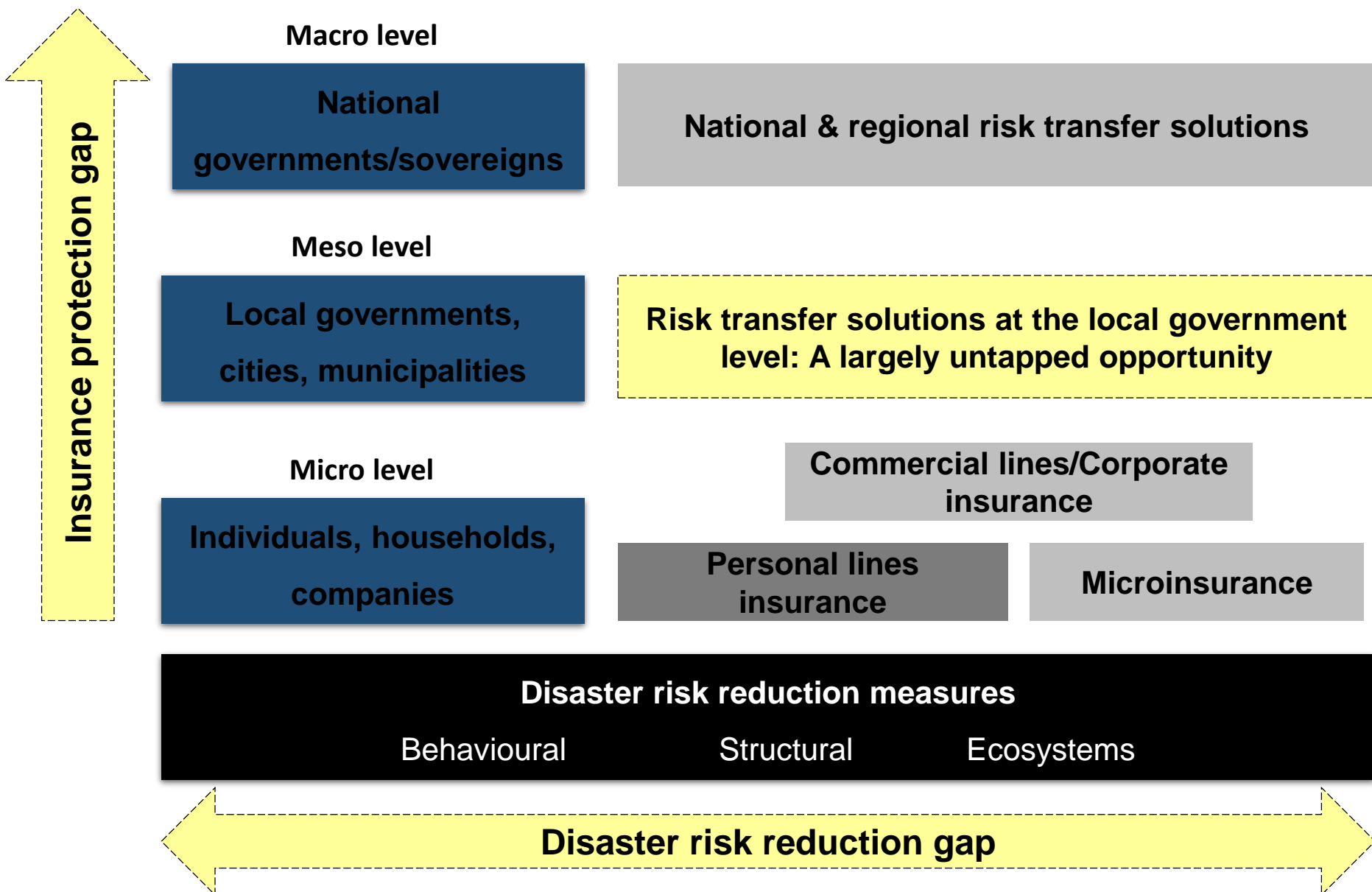

ZURICH

Principle 2:

Insurance industry partnerships

PSI Global Resilience Project led by IAG

Building disaster-resilient communities and economies



AXA-PSI international climate resilience survey of cities & SMEs



PSI

Principles for Sustainable Insurance

- **Over 40 city/urban leaders** (e.g. mayors) in developed and developing countries
- **Over 1,100 small-to-medium-sized enterprises (SMEs)** in Europe, Asia & the Americas
- **Cities** emphasising need to **combine adaptation with mitigation** in climate change response
- Cities need to be **well prepared** to withstand climate impacts, including a **resilient economy**
- **Only 27% of SMEs are well prepared** for consequences of climate change; **only 27% adapting their business** to be more resilient
- **79% of SMEs** think insurers should do more to **help businesses adapt** to the consequences of climate change
- Adaptation and resilience should be **proactive and integrated** into business strategies. **Private sector engagement** is key



A call for collective action to tackle climate change



UNEP FI Global Roundtable, 26 Nov 2018, Paris



“To tackle climate change, we must use every lever possible. This means implementing an ambitious strategy everywhere we can. This is why I am very proud to onboard AXA XL into adopting our sustainability strategy. Above all, our conviction has always been that the fight against climate change requires collective action, therefore AXA is happy to support the future UN PSI Climate Ambition Coalition.”

Thomas Buberl, CEO, AXA Group

Insurers piloting the recommendations of FSB Task Force on Climate-related Financial Disclosures (TCFD)



21 leading insurers: > 10% of world premium & USD 5 trillion assets

Will develop new generation of tools to assess climate-related physical, transition and liability risks



Brazil becomes first insurance market in the world to commit to climate risk transparency (May 2018)



Latin America's largest insurance market declares support for promoting dialogue on practical and effective ways to meet recommendations of Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD)

"Rio Declaration on Climate Risk Transparency by the Brazilian Insurance Industry" signed by Brazilian insurance association (CNseg) and Brazilian insurance regulator (SUSEP)

- Brazil insurance industry **fully supports aims of Paris Agreement on Climate Change** and insurance industry has important role to play as **risk managers, underwriters and investors**
- Managing risk is core business of insurance industry → includes **understanding and reducing climate-related physical, transition and liability risks** associated with **underwriting and investment activities**
- Brazilian insurance industry believes **climate risk transparency essential to better managing impact of climate-related risks on the insurance industry**, and to **promoting sustainable insurance markets**
- Brazilian insurance industry **supports dialogue on practical and effective ways to meet TCFD recommendations** → should consider **particularities of local insurance and financial markets and materiality of climate-related risks across lines of insurance business and asset classes**

First-ever global insurance industry guide to manage environmental, social and governance (ESG) risks in non-life insurance (Feb 2019)



Working draft for
public consultation:
27 February to 30 June 2019



Underwriting environmental,
social and governance risks in
non-life insurance business

The first ESG guide for the global
insurance industry developed by
UN Environment's Principles for
Sustainable Insurance Initiative

This PSI project was co-sponsored by:



PSI working paper
February 2019

Objectives of the guide:

- Provide guidance to insurance industry participants in developing **approaches to assess ESG risks in non-life insurance, particularly industrial & commercial insurance**
- **Support clients, intermediaries and other stakeholders in facilitating ESG-related info** which might be required during ESG due diligence of transactions
- **Highlight materiality of ESG risks to various lines of business and economic sectors**, including characteristics which might affect ability to assess and mitigate such risks
- **Address growing concerns by stakeholders (e.g. NGOs, investors, governments) on ESG risks** and articulate peculiarities of insurance business
- Demonstrate valuable role insurance industry plays in global economy and society, and **strengthen industry's contribution to sustainable development**

Using the PSI global ESG guide

Developing
your ESG
approach

Establishing
your ESG risk
appetite

Integrating
ESG into your
organisation

Establishing
ESG roles

Escalating
ESG risks to
decision-
makers

Detecting &
analysing
ESG risks

Decision-
making on
ESG risks

Reporting on
ESG risks

ESG heat maps across economic sectors and lines of business

Criteria	Theme	Risk Criteria	Risk Mitigation Examples & Good Practice	Economic Sectors																				Progress													
				Agriculture / Livestock	Agriculture / Fishing	Agriculture / Forest & Forestry	Chemicals	Defence	Electronics / Technology	Energy Operation	Construction / Coal	Construction / Hydropower	Construction / Nuclear	Exploration / Conventional Oil & Gas	Production of Fuels / Operations from Oil & Gas	Finance (excluding non-Oil sector transactions)	Genetics	Healthcare / Pharma / Biotech / Life Sciences	Infrastructure / Construction	Food/Beverage Manufacturing	General Manufacturing	Retail/Consumer Goods	Utilities (Water & Waste)	Mining	Transport / Shipping	SDGs	UNGC	FSI	PSI								
Environment	Climate change	Regulation, greenhouse gas emissions, and transition risks	Disclosure of climate-related emissions in operations and/or products (e.g. CO2, PM, NOx, PFU, PFCs, SF6)																						10	9	4	6									
			Transition of industrial/manufacturing intensity mix relevant to the client or transaction (e.g. power generating mix and its associated sector intensity)																								1	12	1.8	1.3	3						
			Environmental & social impact assessment (ESIA) covering negative health impacts (physical and socioeconomic) where relevant																										1	1	1.8	1.3	3				
			Information transition challenges																										7	7	2.8	1.2	1.6				
	Environmental degradation	Physical risks (e.g. heat, acidity, extreme precipitation), flood, wildfires, tropical cyclones, sea level rise, water stress, environmental degradation	Water-based industries (e.g. aquaculture, fish processing) effective management, water climate resilience adaptation plans																										6	10	7.8	1.2	2				
			Adherence to international mining practices (e.g. mountain top removal, marine waste dumping, deep sea mining)																												5	6	10	7.8	1.2	2	
			Declaration or controversial site clearance (e.g. path of an pipeline or bridge, mine, illegal fire clearance logging, biodiversity loss, dam construction)	Declaration for path of pipeline, etc. Dam construction standards, IHA High Impact Sustainability Assessment Protocol, UNEP Dam & Development, Explain Process																												5	6	10	7.8	1.2	2
			Oil pollution	Oil covering possible negative health impacts, mitigation measures and accompanying plans where relevant																												5	1	7.8	1.2	1.5	
	Protected sites/species	Water pollution	Water management practices (e.g. quality, quantity, concentration), Effective ESD process covering water pollution, External water contribution																											6	10	7.8	1.2	3.6			
			Impacts on World Heritage Sites or other protected areas	ESD Red covers impacts on endangered species and sites including mitigation, avoided loss, recovery, UNESCO World Heritage Sites																												6	10	7.8	1.2	3.6	
			Impacts on species on IUCN Red List of Threatened Species	ESD Red covers impacts on endangered species and sites including necessary mitigation measures																												6	10	7.8	1.2	3.6	
			Impacts on biodiversity	ESD Red covers impacts on endangered species and sites including necessary mitigation measures																												6	10	7.8	1.2	3.6	
	Unsustainable practices	Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)	Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)																											6	10	7.8	1.2	3.6			
			Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)	Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)																												6	10	7.8	1.2	3.6	
			Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)	Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)																												6	10	7.8	1.2	3.6	
			Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)	Water energy extraction (e.g. hydroelectric, hydraulic fracturing, etc., deep sea drilling)																												6	10	7.8	1.2	3.6	
Animal welfare/health	Deep fishing vessels, conventional fishing practices or aquaculture techniques	ESD Covers goals on Regs, unreported & unreported (IUU) fishing, IUU fishing, etc., Aquaculture, Stewardship Council certification																												6	10	7.8	1.2	3.6			
		Use transport over 8 hours not held certificate including training on environmental/health, Good conditions on food, water, sleeping, lighting, etc.																													6	10	7.8	1.2	3.6		
		Unsuitable living conditions or use of chemicals/drugs (e.g. overdose of antibiotics)	Unsuitable conditions for farming or critical animals treatment during critical moments																												6	10	7.8	1.2	3.6		
		Use of antibiotics or disease reducing techniques	Compliance with Guiding Principles on Antibiotics, Reduction & Refinement																												6	10	7.8	1.2	3.6		
Social	Child labour	Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																										6	10	7.8	1.2	3.6				
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
	Human rights	Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																											6	10	7.8	1.2	3.6			
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
	Gender equality	Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																											6	10	7.8	1.2	3.6			
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
	Labour rights	Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																											6	10	7.8	1.2	3.6			
			Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6	
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Human rights	Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																											6	10	7.8	1.2	3.6				
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Human rights	Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																											6	10	7.8	1.2	3.6				
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		Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6		
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Human rights	Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																											6	10	7.8	1.2	3.6				
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		Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing																												6	10	7.8	1.2	3.6		
		Use of child workers or Good Ages in fishing	Use of child workers or Good Ages in fishing</																																		

Leaders' perspectives on the PSI global ESG guide



Oliver Bäte
CEO, Allianz Group

"Managing risks is at the heart of any insurer. **The sustainability guide for non-life underwriting transactions raises the industry's ambition to manage environmental, social and governance risks and helps to achieve the UN Sustainable Development Goals and the climate target of the Paris Agreement.**

"We are proud to share our long-standing expertise in integrating sustainability into daily business with peers and partners, who might stand at the beginning of this important development. **Driving a low-carbon and inclusive economy to secure our future only will succeed if all players are truly committed and create measurable contributions."**



Christiana Figueres
Convenor, Mission
2020 & former
Executive Secretary,
UN Climate Change

"The latest Intergovernmental Panel on Climate Change (IPCC) report shows that there's a world of a difference—in terms of adverse economic, social and environmental impacts—between a world with an average temperature increase of 2 degrees since pre-industrial levels, and one with 1.5 degrees. **As risk managers, insurers and investors, no industry has the capacity to keep us safe other than the insurance industry.**

"**The PSI's global sustainability guide is a clarion call for the ambitious action needed in the run up to the UN Secretary-General's Climate Summit and the 2020 climate turning point.**

"**As financial scientists, we need the insurance industry to complete the IPCC report by translating the latest climate change science into the language of risk that the world can fully understand and tackle with radical collaboration and stubborn optimism."**

Brazilian market collaboration on sustainable insurance goals



PSI

Principles for Sustainable Insurance

2015 environmental, social and governance (ESG) goals by the Brazilian insurance industry

Through the work of the Brazilian Insurance Confederation's (CNseg) Sustainability & Innovation Committee



Goal 1:

40% of insurers will integrate environmental, social and governance criteria into their risk underwriting policy

Goal 2:

30% of insurers will have an environmental, social and governance engagement programme targeted at brokers

Goal 3:

50% of insurance industry will integrate official public policy from municipal, state and federal governments into their social responsibility policy

Goal 4:

50% of insurers will report on environmental, social and governance criteria

CNseg monitoring progress through surveys since 2014

CNseg has developed a “Balanced Scorecard” to measure progress in achieving strategic objectives on sustainability, including the ESG goals

Insurers protecting World Heritage Sites



PSI

Principles for Sustainable Insurance



PSI
Principles
for Sustainable
Insurance

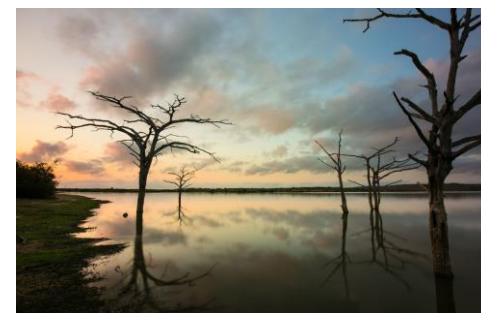
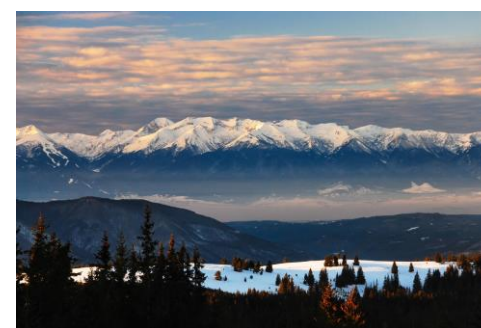


United Nations
Educational, Scientific and
Cultural Organization

In support of



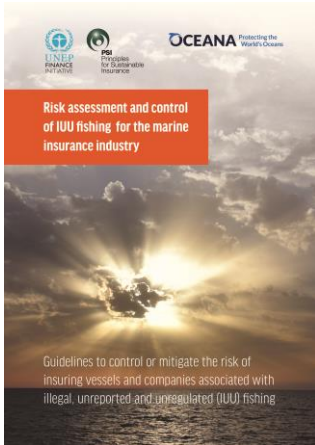
World
Heritage
Convention



- Nearly 1,100 natural, cultural, and mixed World Heritage Sites across the globe.
- Natural World Heritage Sites provide economic, social and environmental benefits → but almost half are threatened by harmful industrial activities
- Commitment to protect World Heritage Sites across risk management, insurance and investment activities of the insurance industry
- Launched at 42nd Session of UNESCO World Heritage Committee in Bahrain (July 2018)
- PSI and WWF developing first-ever insurance industry guide to protect UNESCO World Heritage Sites across risk management, insurance and investment activities

Insuring and investing in a sustainable ocean economy

PSI-Oceana global guide to tackle illegal, unreported & unregulated fishing



- Pirate fishing—or illegal, unreported & unregulated (IUU) fishing—costing global economy USD 10 to 23.5 billion yearly
- About 1 in 5 fish caught illegally, posing serious threats to environment and global fish supplies
- IUU fishing risks: Increased claims, other crimes (e.g. human trafficking, slavery, transport of illegal arms or drugs), fraud, legal liabilities, reputational damage
- IUU fishing contributes to overfishing and destruction of marine habitats and ecosystems, and marine pollution

PSI-UNEP global study on plastic pollution, marine plastic litter & microplastics



- Only 9% of 9 billion tonnes of plastics ever produced have been recycled; plastic packaging about half of world's plastic waste
- Rapidly increasing levels of marine litter negatively affecting marine biodiversity, ecosystems, animal well-being, societies, livelihoods, fisheries, maritime transport, recreation and tourism, and economies
- Microplastics added into products or generated during their lifecycle are found along the food chain; potential to negatively affect human health and food safety

Sustainable Blue Economy Finance Initiative



- If the ocean were a country, it would have the world's 7th largest economy
- Value added of world's ocean economy estimated to grow to > USD 3 trillion by 2030 and employ > 40 million
- Sustainable finance for all ocean-based industries: from shipping, fisheries and tourism; to aquaculture, energy and biotechnology
- Founding partners: European Commission, European Investment Bank, WWF, World Resources Institute and UNEP FI

The Insurance Industry Development Goals for Cities

A global action framework for the insurance industry to help make cities inclusive, safe, resilient and sustainable in line with UN Sustainable Development Goal 11

Key urban challenges and opportunities

- Goal 1:** Build climate and disaster-resilient communities and economies
- Goal 2:** Promote healthy lifestyles and prevent pollution
- Goal 3:** Develop solutions for unserved people and enterprises
- Goal 4:** Protect natural and cultural heritage sites
- Goal 5:** Promote sustainable energy and resource efficiency



Enabling factors

- Goal 6:** Leverage data, risk analytics and technology
- Goal 7:** Promote risk management, insurance and financial literacy
- Goal 8:** Help develop climate and disaster risk management strategies and plans
- Goal 9:** Help develop sustainable insurance roadmaps for cities
- Goal 10:** Promote the Insurance Industry Development Goals for Cities



Congrès mondial ICLEI
ICLEI World Congress 2018
19 au 22 juin • 19 - 22 June • Montréal, Canada

The Insurance Industry Development Goals for Cities



"This landmark initiative by the insurance industry and cities is an excellent example of the type of ambition and leadership needed to achieve the goals of the Paris Climate Change Agreement."

– **Patricia Espinosa, Executive Secretary, UN Climate Change**



"Through its risk management services, insurance solutions and investments, the insurance industry can strengthen its contribution to the global agenda of building resilient and sustainable cities. The Insurance Industry Development Goals for Cities provide a global framework to guide collaboration between insurers and local governments, and to accelerate action."

– **Dr Joachim Wenning, CEO, Munich Re Group**



"The insurance industry's core business is to manage risk, so it's well-positioned to support urban resilience and sustainability. We encourage our peers in the insurance industry to work together with local governments in promoting the adoption of the Insurance Industry Development Goals for Cities."

– **Eric Andersen, Co-President of Aon**



"Montréal is proud to host the ICLEI World Congress and the launch of the Insurance Industry Development Goals for Cities. These goals are a shared ambition between the insurance industry and local governments, and a shining example of leadership, innovation and collaboration for sustainable development."

– **Valérie Plante, Mayor of Montréal**

Insurers and investors supporting tobacco-free finance



UN General Assembly Week (Sep 2018, New York)

- Tobacco a primary driver of dramatic rise in chronic non-communicable disease, killing > 7 million people per year, expected to rise to 8 million by 2030
- Without urgent action, tobacco-related disease forecast to result in 1 billion premature deaths in 21st century
- Smoking costs global economy > USD 1 trillion a year, far outweighing global revenues from tobacco taxes
- UN Sustainable Development Goal 3 (Health) has target to strengthen implementation of WHO Framework Convention on Tobacco Control

The Tobacco-Free Finance Pledge

> 150 investors, insurers, banks and key stakeholders have signed the Pledge

- USD 7.5 trillion in assets under management
- USD 2 trillion in corporate loan books
- USD 190 billion in gross premiums written

Pledge developed by Tobacco-Free Portfolios, PSI, PRI, UNEP FI, AXA, BNP Paribas, Natixis and AMP Capital

Shaping the global agenda for the life & health insurance industry and sustainable development

Developing the PSI Life & Health Work Stream

PSI Life & Health Advisory Group

Life & health sessions at PSI events

1st PSI life & health event in 2019

Webinars on key topics for life & health business

Collaborative PSI activities on life & health business

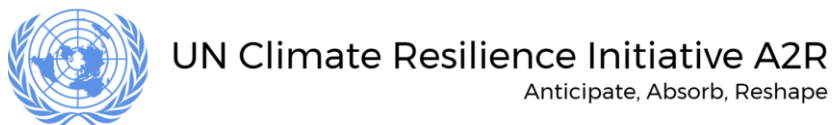
Examples of topics proposed:

- ESG guidance for life & health insurance business
- Climate change and mortality
- Primary prevention
- Tobacco
- Air pollution
- Mental illness
- Integrating health issues into investment decisions
- Inclusive life & health insurance, and insurtech
- Urban planning for healthy lifestyles
- Reaching vulnerable populations and SMEs
- Changing demographics
- Social impact measurement and rating agencies
- Antibiotic resistance
- Behavioural economics and new lifestyles
- Disclosure and reporting in life & health insurance

Collaborating to close the insurance protection gap and build climate and disaster resilience



V20 Sustainable Insurance Facility



UNFCCC Clearing House for Risk Transfer

PSI events across markets: Shaping the global sustainable insurance agenda



The US



The UK



Switzerland



Germany



Costa Rica



Brazil



Morocco



Nigeria



China



The Philippines



Colombia



South Africa



Egypt



Australia

Principle 3:

Financial policy & regulatory frameworks

European Commission (EC) High-Level Expert Group on Sustainable Finance (HLEG)

EU HIGH-LEVEL EXPERT GROUP ON
SUSTAINABLE FINANCE



Final Report 2018
by the High-Level Expert Group on Sustainable Finance
Secretariat provided by the European Commission

HLEG final report (Jan 2018):

Recommendations for comprehensive EU strategy on sustainable finance as part of the Capital Markets Union

EC will draw on recommendations to determine how to integrate sustainability considerations into EU's rules for the financial sector

EC Action Plan to Finance Sustainable Growth (Mar 2018)



PSI

Principles for Sustainable Insurance

**European Commission's proposal
for European Supervisory
Authorities to promote
sustainable finance (Sep 2017)**

5th Global Insurance Supervision Conference (Jul 2017, Frankfurt)



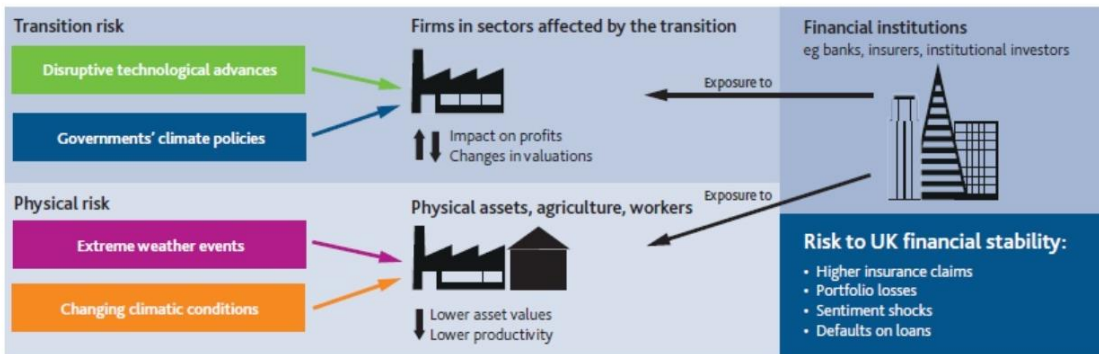
European Securities and
Markets Authority

**PSI invited by EIOPA to speak about
“Sustainable insurance: Turning
environmental, social and governance
challenges into sustainable opportunities”**

**“European Supervisory Authorities will promote
sustainable finance, while ensuring financial stability. They
will take account of environmental, social and governance-
related factors and risks in all the tasks they perform”**

California's pioneering scenario analysis to assess climate-related transition risks in insurers' investments

Primary channels for climate-related financial risks



Source: Bank of England

Transition risks → Transition to a lower-carbon economy (e.g. developments in climate policy, new disruptive technology, or shifting investor sentiment)

Physical risks → Physical impacts of climate change (e.g. increasing frequency and severity of droughts, floods and storms due to rising global temperatures)

- **Scenario analysis** covers insurers with > \$100 million in annual premiums doing business in California
- Arguably **most comprehensive financial stress-test analysis** ever conducted for the insurance industry
- Insurers analysed have > \$500 billion in fossil fuel-related securities issued by power and energy companies, with \$10.5 billion being investments in thermal coal enterprises
- **Individual insurer reports available to all 672 insurers** with > \$100 million in annual premiums and **sent for response to top 100 insurers** (investment portfolio size), representing > 80% of assets analysed
- Reports explain **how investment plans align with climate scenarios, where individual insurer ranks among its peers, and which securities are driving climate risk exposure** of their investment portfolios
- Results help insurers apply **Financial Stability Board's climate risk disclosure recommendations**

Actions by the Bank of England's Prudential Regulation Authority (PRA) on climate change: Supervisory statement (Apr 2019) & assessment framework (May 2019)



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Principles for Sustainable Insurance

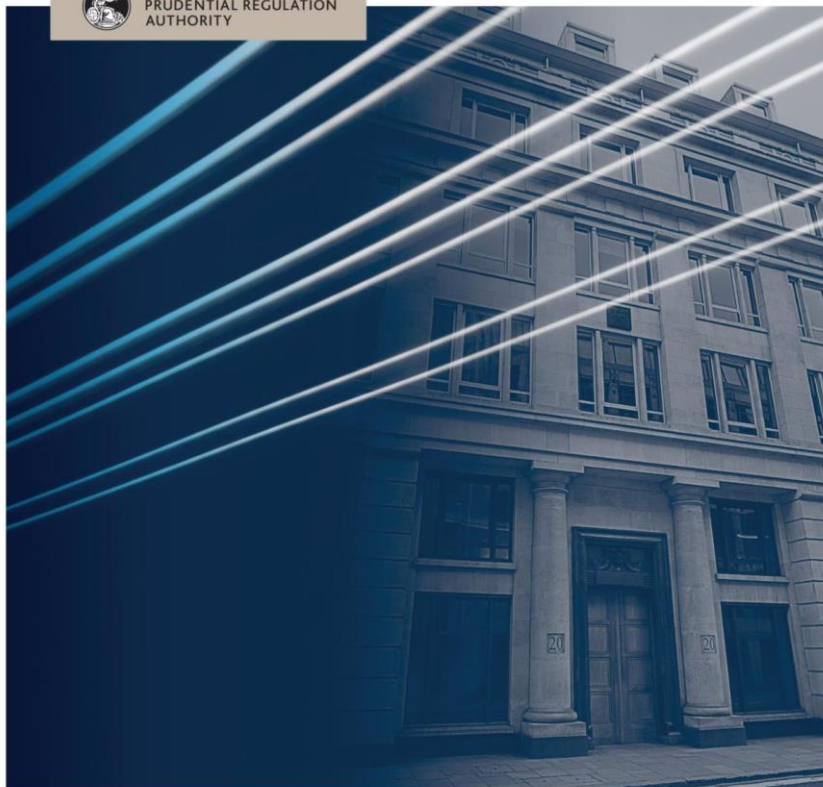
Supervisory Statement | SS3/19

Enhancing banks' and insurers' approaches to managing the financial risks from climate change

April 2019



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PRUDENTIAL REGULATION
AUTHORITY



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AUTHORITY

A framework for assessing financial impacts of physical climate change

A practitioner's aide for the general insurance sector

May 2019

This report was written by a cross-industry working group

Developing national and city sustainable insurance roadmaps spanning the industry's risk management, insurance & investment activities

Australia & New Zealand to develop national sustainable finance roadmaps (Jul 2018)



Egypt to develop national sustainable insurance roadmap (Apr 2019)



Lagos to develop a city sustainable insurance roadmap (Apr 2019)



Principle 3:

Intergovernmental initiatives & global policy frameworks

The insurance industry and sustainable development: A UN system-wide agenda



UN Global Compact



UN Framework
Convention
on Climate Change



UN Environment



International
Labour Organization



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UN DESA
UN Dept. of Economic
& Social Affairs



WHO

World Health Organization



Office of the UN High Commissioner
for Human Rights



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UN Human Settlements Programme



UNISDR
The United Nations Office for Disaster Risk Reduction

UN Office for Disaster Risk Reduction



UN Development
Programme



Food & Agriculture
Organization



World
Food Programme



UN Educational,
Scientific & Cultural
Organization



World
Meteorological
Organization



UN Conference on Trade &
Development

Launch of UN Secretary-General's Global Investors for Sustainable Development (GISD) Alliance (Apr 2019, New York)



Examples of how the PSI is addressing ESG issues and contributing to the UN Sustainable Development Goals through risk management, insurance and investment



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Global partnership with the world's microinsurance community on inclusive insurance

Shaping the global sustainable insurance agenda through PSI market events

Developing national sustainable insurance & finance strategies & roadmaps

Insurance Industry Development Goals for Cities across risk management, insurance & investment

First global tobacco-free finance pledge

Supporting the G7, G20 and V20-backed InsuResilience Global Partnership

Supporting the UN Secretary-General's Climate Resilience Initiative (A2R)

Piloting the recommendations of the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD)



First global insurance industry statement to protect UNESCO World Heritage Sites

Sustainable Blue Economy Finance Initiative

First global insurance industry initiative to tackle plastic pollution, marine plastic litter & microplastics

First global guide to manage ESG risks in insurance underwriting

UN Secretary-General's Global Investors for Sustainable Development Alliance

PSI Life & Health Advisory Group

First global insurance industry statement and risk management guidelines to tackle illegal, unreported & unregulated fishing

First national insurance market commitment to climate risk transparency

UN Environment's Sustainable Insurance Forum for Supervisors

Vision of the PSI Initiative

“A risk-aware world, where the insurance industry is trusted and plays its full role in enabling a healthy, safe, resilient and sustainable society.”



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Insuring for sustainable development

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Panel 3: Managing Physical and Transition Risks and Opportunities

- **Karen Lockridge**, Mercer
- **Jeremy McDaniels**, UN Environment
- **Clare Murray**, 2° Investing Initiative

Moderator: **Cynthia McHale**, Ceres

California Climate Risk:
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RICARDO LARA
INSURANCE COMMISSIONER

California Department of Insurance



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School of Law
**Emmett Institute on Climate
Change & the Environment**

BerkeleyLaw

UNIVERSITY OF CALIFORNIA

Center for Law, Energy &
the Environment

Break

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Panel 4: California Policy Innovations

- **California State Senator Ben Allen**
- **Kate Gordon**, California Governor's Office of Planning and Research
- **California State Senator Nancy Skinner**
- **California State Senator Henry Stern**

Moderator: **California Insurance Commissioner Ricardo Lara**

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Closing remarks

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