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

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

July 23, 2019 | UCLA School of Law
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

California Climate Risk: Insurance-Based Approaches to Mitigation and Resilience
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Panel 2: Nature-based Solutions

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

Moderator: Louis Blumberg, Blumberg West Consulting
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
Beach Erosion

Coastline 2010

Hotel Porto Real

Coastline 2017

Playa del Carmen

2010

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

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.
Why a Parametric Insurance?

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.
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.
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.
Governance

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

GLOBAL PLATFORM FOR DISASTER RISK REDUCTION
22-26 May 2017
FROM SENDAI TO COPENHAGEN - FROM COMMITMENT TO ACTION
#MEXICOGPR2017

NACIONES UNIDAS
ACUERDO DE PARÍS
SOBRE CAMBIO CLIMÁTICO

ASPY 2030

OBJETIVOS DE DESARROLLO SOSTENIBLE

13 ACCIÓN POR EL CLIMA
14 VIDA SUBMARINA
17 ALIANZAS PARA LOGRAR LOS OBJETIVOS

PLAINE ESTATAL DE DESARROLLO
2016-2022

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

Promover un crecimiento económico sustentable
Previsión y combate de delitos
Rendición de cuentas medibles
Desarrollo social y reconstrucción tejido social
Planear un crecimiento urbano sustentable
Panel 2: Nature-based Solutions

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David Burton Perry
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

- **ECONOMIC**
  - Fiscal crises
  - Failure of financial mechanism
  - Asset bubbles in major economies
  - Un/der-employment
  - Failure of critical infrastructure
  - Energy price shock

- **SOCIETAL**
  - Water crises
  - Spread of infectious diseases
  - Large-scale involuntary migration
  - Food crises
  - Profound social instability
  - Failure of urban planning

- **TECHNOLOGICAL**
  - Cyber attacks
  - Critical information infrastructure breakdown
  - Data fraud/theft
  - Adverse consequences of advances

- **GEOPOLITICAL**
  - Interstate conflict
  - Failure of regional / global governance
  - Terrorist attacks
  - Failure of national governance
  - State collapse/crisis

- **ENVIRONMENTAL**
  - Extreme weather events
  - Failure of mitigation/adaptation
  - Natural disasters
  - Biodiversity loss & ecosystems collapse
  - Man-made environmental disasters

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

**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

Natural disaster risk management
Private & public assets  Emergency response

Recovery & reconstruction

Contingent liability

Risk owner

Resilience-building measures

Risk reduction

Resilience (risk reduction)

Either

Risk transfer

Insurer/Capital markets

Coverage/Liquidity

- Upfront investment is amortized via future reduction in risk
- But risk-reduction benefits are rarely quantified and not accounted for tangibly

Risk premiums
- Future pay-out provides a substantial contribution to post-event relief/recovery
- But premiums may be viewed as “money in insurers’ pockets” if an event does not occur

Risk transfer costs

Insurance payout
Dual function of insurance:

- Reduces Losses for Risk Owner
- Partial Financing of Restoration Costs
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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Afternoon Keynote: Insurance Markets, Climate Risk, and Sustainability

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

Insurer role
(financial risk management)

Risk manager role
(physical risk management)

Investor role
(asset management)

Sustainable development challenges & opportunities

Over USD 30 trillion global assets under management

Over USD 5 trillion world premium volume

Understand – Prevent – Reduce – Transfer risk

Insurance risk management value chain
Pioneering global studies by the UN and the insurance industry on ESG issues and sustainable development

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
“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

**Principle 1:**
We will embed in our decision-making environmental, social and governance issues relevant to our insurance business.

**Principle 2:**
We will work together with our clients and business partners to raise awareness of environmental, social and governance issues, manage risk and develop solutions.

**Principle 3:**
We will work together with governments, regulators and other key stakeholders to promote widespread action across society on environmental, social and governance issues.

**Principle 4:**
We will demonstrate accountability and transparency in regularly disclosing publicly our progress in implementing the Principles.
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

- 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

![Map of PSI membership by country of domicile]

- **PSI signatory company** (e.g. insurers, reinsurers, brokers, catastrophe risk modelling firms, specialist service providers)
- **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

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

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

2018 DJSI rankings:
15 of 16 insurers are PSI signatories

Source: Allianz
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

**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.
Principle 2:

Insurance industry partnerships
PSI Global Resilience Project led by IAG
Building disaster-resilient communities and economies

Disaster risk reduction measures
- Behavioural
- Structural
- Ecosystems

Macro level
- National governments/sovereigns

Meso level
- Local governments, cities, municipalities

Micro level
- Individuals, households, companies

National & regional risk transfer solutions

Risk transfer solutions at the local government level: A largely untapped opportunity

Insurance protection gap

Commercial lines/Corporate insurance

Personal lines insurance

Microinsurance

Disaster risk reduction gap
AXA-PSI international climate resilience survey of cities & SMEs

- **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 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

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)
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

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>Risk Category</th>
<th>Sub-Sectors</th>
<th>Description of Potential Risks</th>
<th>Example of Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate Change</td>
<td>Atmosphere</td>
<td>Emission</td>
<td>Air pollution, greenhouse gas emissions, and climate change</td>
<td>Compliance with Guiding Principles on Replacement, Reduction &amp; Refinement</td>
</tr>
<tr>
<td>Environment</td>
<td>Water</td>
<td>Pollution</td>
<td>Soil pollution, water quality, and scarcity</td>
<td>Water management practices (e.g. quality, scarcity, overconsumption). Effective ESIA covering possible negative health impacts, mitigation measures and compensation aspects</td>
</tr>
<tr>
<td></td>
<td>Biodiversity</td>
<td>Loss</td>
<td>Extinction, habitat destruction, and pollution</td>
<td>Specialist lists: Ramsar, UNESCO World Heritage Sites</td>
</tr>
<tr>
<td></td>
<td>Land</td>
<td>Degradation</td>
<td>Land use change, soil erosion, and pollution</td>
<td>Decarbonisation transition plan/targets</td>
</tr>
<tr>
<td></td>
<td>Ozone</td>
<td>Depletion</td>
<td>Stratospheric ozone layer depletion</td>
<td>Air pollution, greenhouse gas emissions, and transition risks</td>
</tr>
<tr>
<td></td>
<td>Wildlife</td>
<td>Extinction</td>
<td>Extinction, habitat destruction, and pollution</td>
<td>Effective occupational health &amp; safety policy that defines safety responsibilities and mitigation measures.</td>
</tr>
<tr>
<td></td>
<td>Marine</td>
<td>Pollution</td>
<td>Water pollution, marine life loss, and marine debris</td>
<td>Exposure to unconventional energy practices (e.g. Arctic oil, hydraulic fracturing, tar sands)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overfishing</td>
<td>Overfishing, depletion, and pollution</td>
<td>Illegal fishing vessels, controversial fishing practices or aquaculture techniques</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Habitat</td>
<td>Habitat destruction, pollution, and overfishing</td>
<td>Exposure to unconventional mining practices (e.g. mountain top removal, riverine mining)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acidification</td>
<td>Acidification, water quality, and pollution</td>
<td>Impacts on species on IUCN Red List of Threatened Species</td>
</tr>
</tbody>
</table>

**Example of Mitigation Measures**

- Compliance with Guiding Principles on Replacement, Reduction & Refinement
- Effective occupational health & safety policy that defines safety responsibilities and mitigation measures.
- Human rights policy that includes a statement on protecting and promoting human rights, prohibits child labour, and promotes non-discrimination, anti-slavery and anti-human trafficking, and involves workers in the development of policies and programmes.
- Environmental & social impact assessment (ESIA) covering negative health impacts, mitigation measures and compensation aspects.
- Special lists: Ramsar, UNESCO World Heritage Sites.
Leaders’ perspectives on the PSI global ESG guide

“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.”

Oliver Bäte
CEO, Allianz Group

“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.”

Christiana Figueres
Convenor, Mission 2020 & former Executive Secretary, UN Climate Change
Brazilian market collaboration on sustainable insurance goals

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
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 42\textsuperscript{nd} 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
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
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

Vulnerable Twenty Group of Ministers of Finance

International Labour Organization

UN Climate Resilience Initiative A2R
Anticipate, Absorb, Reshape

UNFCCC Clearing House for Risk Transfer
PSI events across markets:
Shaping the global sustainable insurance agenda

The US

The UK

Switzerland

Germany

Morocco

Costa Rica

Brazil

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)

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)

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

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

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

**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**

**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)

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[Diagram: Transition risks vs. Physical risks]

*Source: Bank of England*

Supervisory Statement | SS3/19
Enhancing banks’ and insurers’ approaches to managing the financial risks from climate change
April 2019

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
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

- 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
- 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 national insurance market commitment to climate risk transparency
- UN Environment’s Sustainable Insurance Forum for Supervisors
- First global insurance industry statement and risk management guidelines to tackle illegal, unreported & unregulated fishing
- Sustainable Blue Economy Finance Initiative
- First global insurance industry statement to protect UNESCO World Heritage Sites
- Supporting the UN Secretary-General’s Climate Resilience Initiative (A2R)
- Supporting the G7, G20 and V20-backed InsurResilience Global Partnership
- Piloting the recommendations of the Financial Stability Board’s (FSB) Task Force on Climate-related Financial Disclosures (TCFD)
- First global insurance industry initiative to tackle plastic pollution, marine plastic litter & microplastics
- First national insurance market commitment to climate risk transparency
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.”
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:
Insurance-Based Approaches to Mitigation and Resilience

July 23, 2019 | UCLA School of Law
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
Closing remarks

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Insurance-Based Approaches to Mitigation and Resilience

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

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