

Session 4



Efforts Questioned?: Impacts and Challenges of Climate Change

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Canada Research
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du Canada

The New Realities of Tourism in an Era of Global Climate Change



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Economic Affairs IDEA
State Secretariat for Economic Affairs SECO

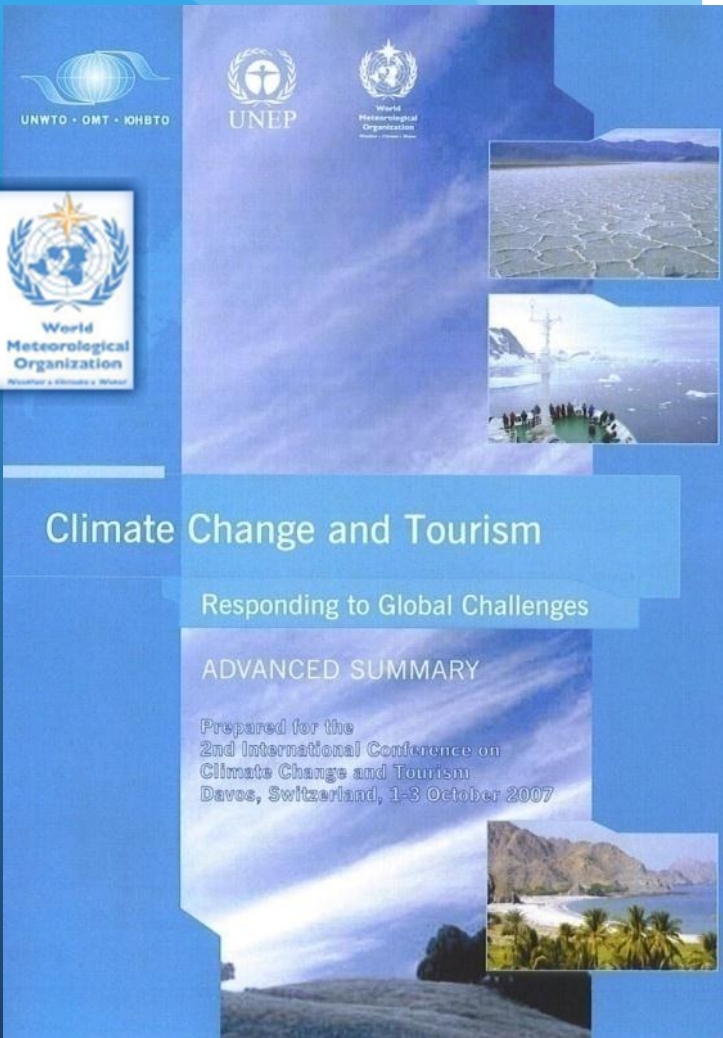


COMMITTED TO
IMPROVING THE STATE
OF THE WORLD



‘The scientific evidence is clear - climate change must be considered the greatest challenge to sustainable tourism in the 21st century.’

-Davos Declaration on
Climate Change and Tourism (2007)

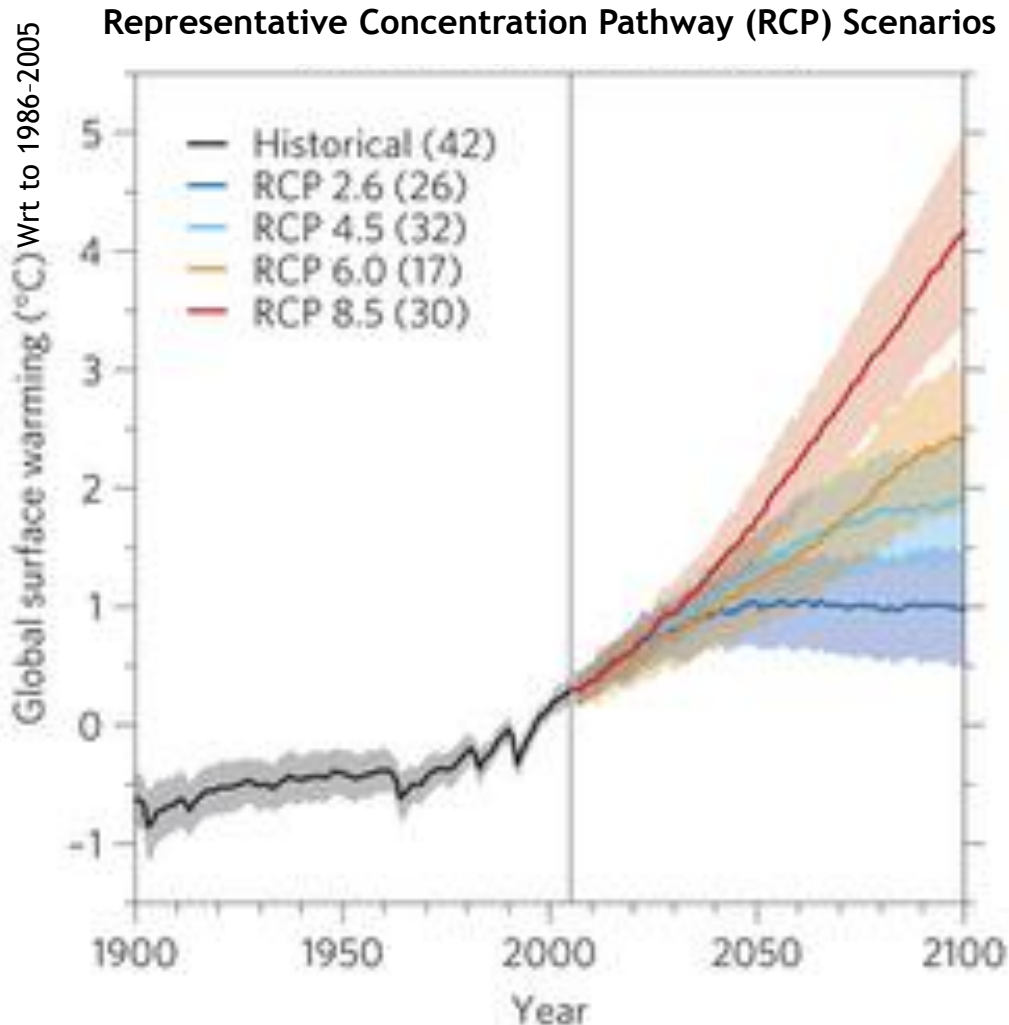


The State of Climate Change Science

IPCC 5th Assessment (2013, 2014)

- Confidence is ***stronger*** that changes in the climate system, are significant or unprecedented on time scales of decades to hundreds of thousands of years.
- Globally CO₂ is by far the ***strongest driver*** of climate change
 - CO₂ concentrations are unprecedented in the last 800,000 years
 - *Very high confidence* that natural forcings contribute a small fraction to climate change
- Many aspects of climate change will ***persist for centuries*** even if greenhouse gases are stabilized.

Global Temperature Projections



20st century warming
+0.8°C

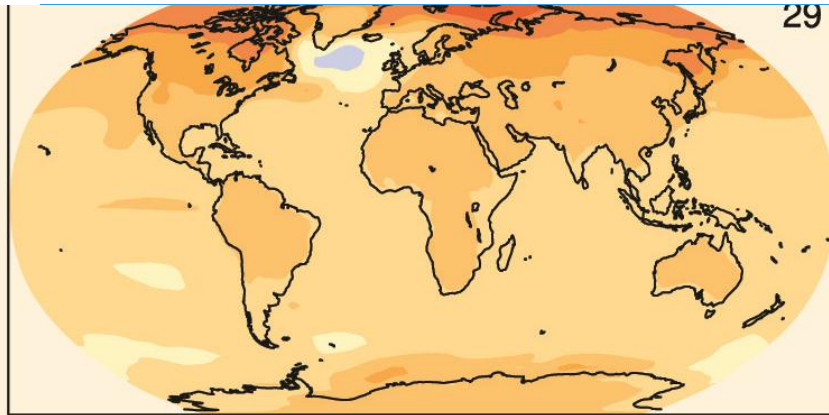
21st century warming
+1°C to +4.2°C

All RCP scenarios
exceed AOSIS
+1.5°C target

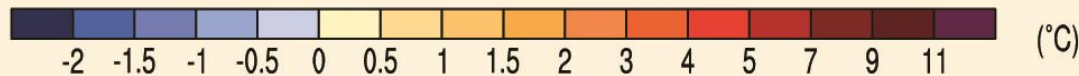
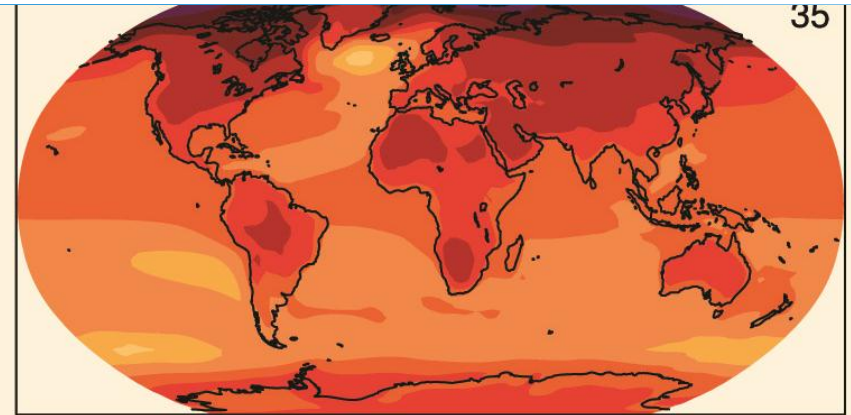
Current emissions
trajectory slightly higher
than 'worst case'
RCP8.5 scenario

Warming in Island Regions (by 2100)

RCP 2.6



RCP 8.5



Caribbean
+1.4°C to +3.2°C

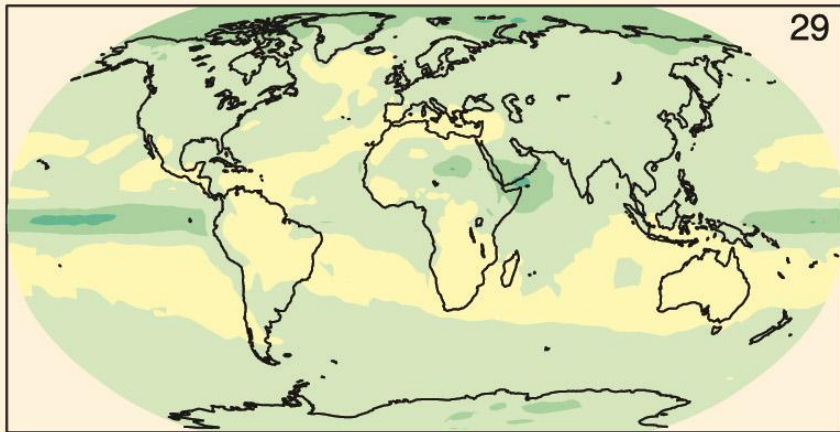
Indian Ocean
+1.4°C to +3.7°C

South Pacific Ocean
+1.4°C to +3.1°C

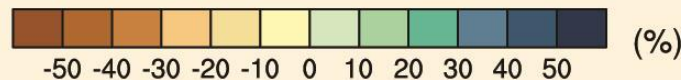
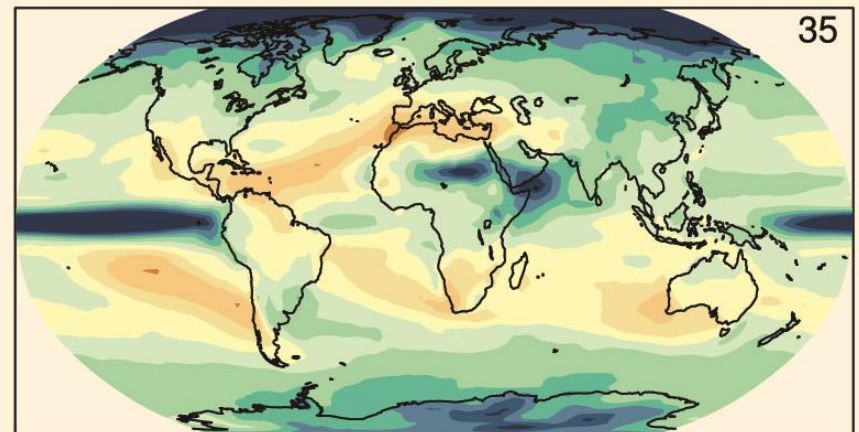
Under RCP8.5 scenario maximum temperature events become 10 to 20 times *more frequent*

Precipitation Change in Island Regions (by 2100)

RCP 2.6



RCP 8.5

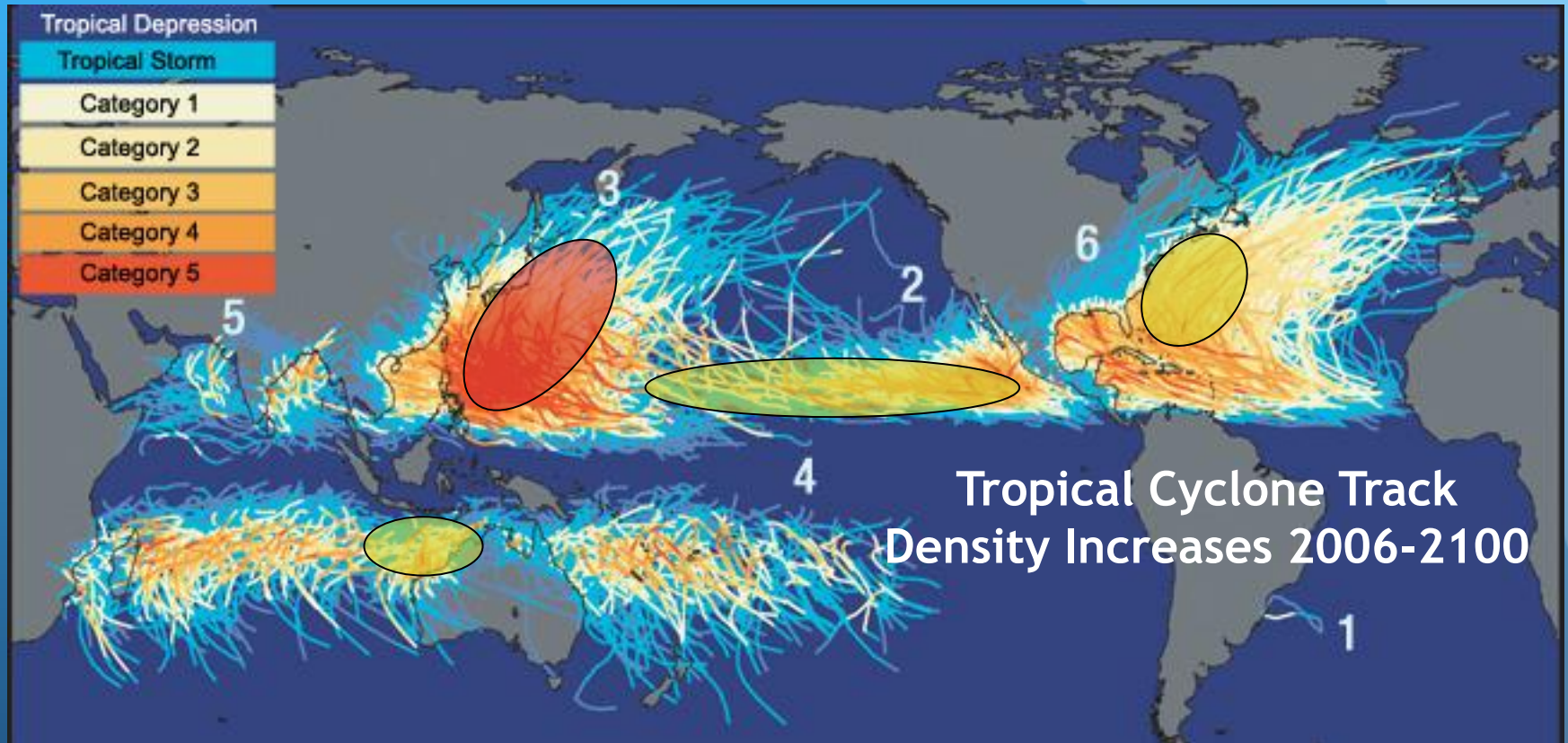


Caribbean
mean -12%

South Indian
Ocean
mean -4%

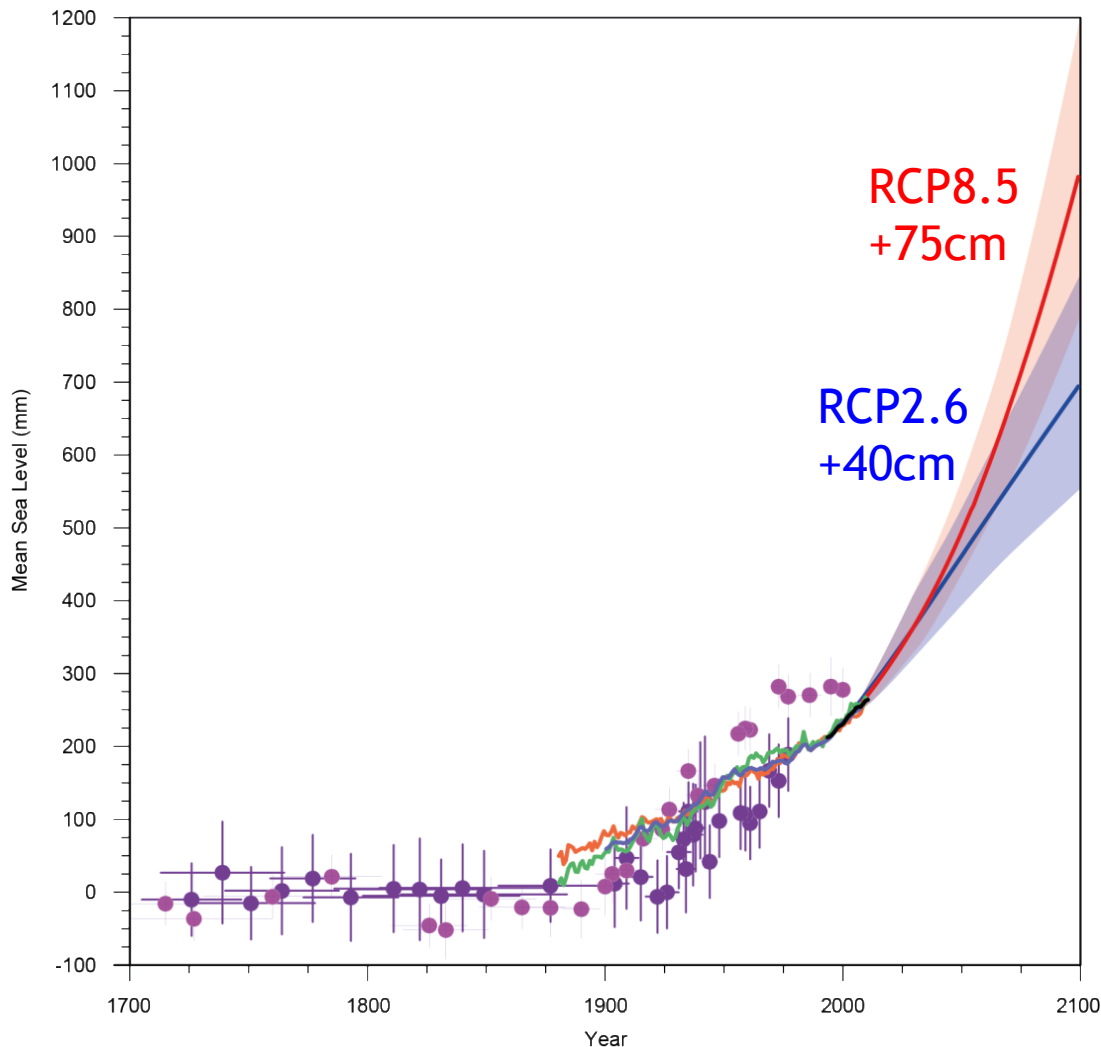
South Pacific
Ocean
mean +3%

Changes in Tropical Cyclones (by 2100)



- *Slight increase* in number of tropical cyclones globally, but with distinct regional patterns
- shift towards *stronger* storms - global increase of 40% of Category 3+ (under RCP 8.5 scenario)

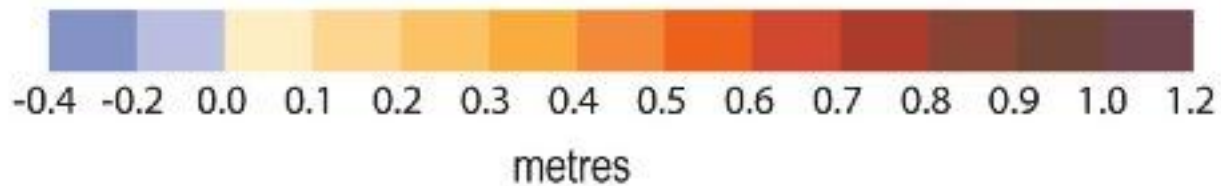
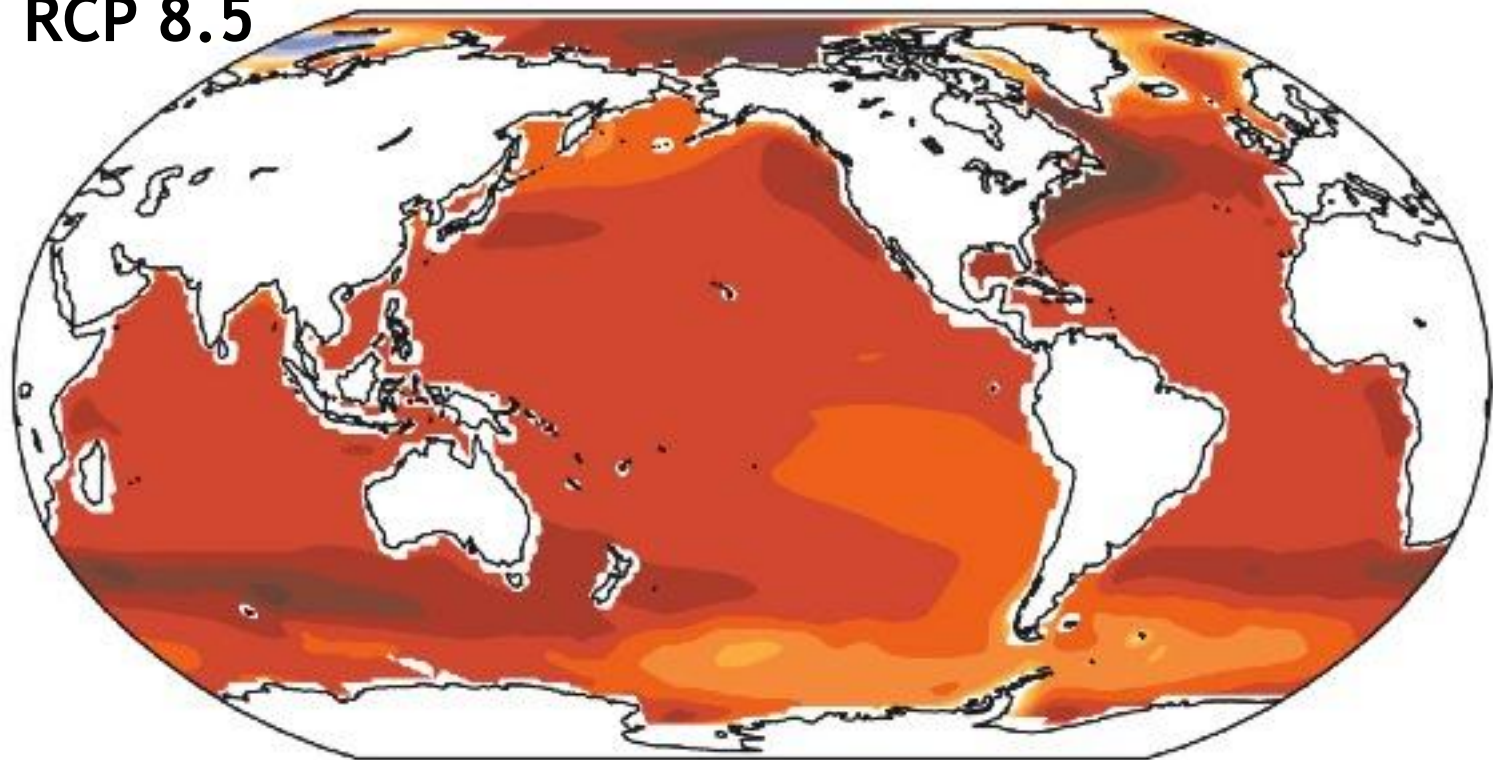
Global Sea Level Rise (to 2100)



- Rate of sea level rise has **increased** over last 30 years
- Greenland and Antarctic Ice Sheets are **losing** mass
- SLR of 8-15 mm/yr in 2090s (RCP8.5)

Regional Sea Level Rise (to 2100)

RCP 8.5



Climate Change Vulnerability of Islands

- Climate change is *already affecting* economic growth, health, water availability, food production and ecosystems of islands (UN-OHRLLS)
- Climate change will *increasingly impact* the lifestyles, livelihoods, and health of island populations in the 21st century (IPCC)
- UN Framework Convention on Climate Change recognizes small islands *merit particular consideration* for understanding the risks of climate change and adaptation assistance.

Island Destinations Will Not be 'Too Hot' for Tourism

BBC
NEWS

Last Updated: Saturday, 26 August 2006, 00:32 GMT 01:32 UK

Package holiday 'will be history'

Climate change may lead to the British package holiday to the Mediterranean becoming "consigned to the scrapbook of history", a report claims.

Places like Majorca may be too hot by 2030, and replaced by UK holidays, and health, sport and cultural visits, the Halifax Travel Insurance study said.

The report said more extreme weather events and higher temperatures may put tourists at greater risk abroad.



Popular destinations may lose their attraction

THE  **HINDU**

2007 - Over-heated Mediterranean Stokes Tourism Fears

Experts warn global warming may severely hit traditional holiday spots.

Island Water Security and Tourism



- UN has described water security as a '*disaster in the making*', with a 40% gap between demand and supply by 2030.
- Climate change will *reduce* freshwater on many islands.
- Tourism is an important sectoral water user on many islands (e.g., Mauritius 39%, Barbados 13% of domestic water use).
- Need to re-evaluate tourism strategies (golf tourism, cruise ship provisioning) with *diminished and more expensive* water resources.

Extreme Events and Insurance

- Increase in tropical cyclone intensity (higher wind speeds and rain) and changing storm tracks.
- Gulf of Mexico-Caribbean premiums likely *increase* 40-100% (Association of British Insurers).
- *Crisis of insurance availability and affordability.*
- Uninsurable high-risk coastal areas will *alter tourism investment and development.*
- Governments as insurers-of-last-resort.



Sea Level Rise and Coastal Tourism



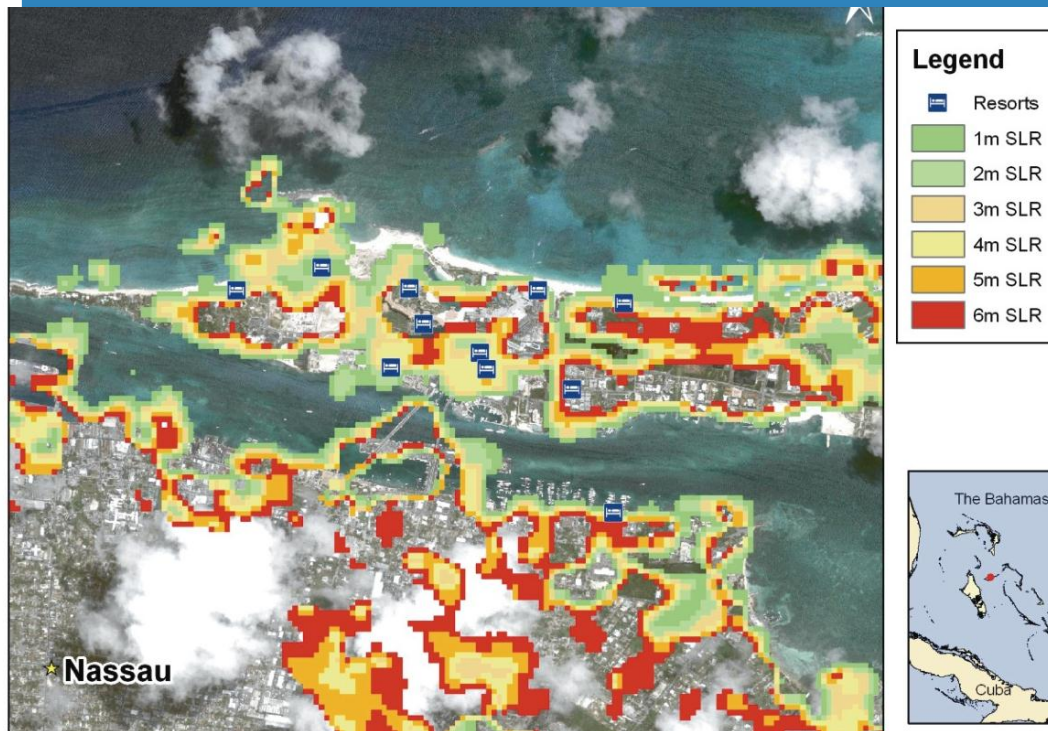
- Degraded beaches and flood-erosion risks have major implications for property values, insurance costs, destination marketing and competitiveness.



‘Coastal Squeeze’:
when 3S tourism, becomes 2S

Mapping Coastal Tourism Risk to Sea Level Rise in 19 Caribbean Countries

- 29% of coastal resorts partially *flooded* by +1m SLR
- 49% to 60% of coastal resort properties damaged by *erosion* associated with +1m SLR



What does 1m Sea Level Rise look like?



Increased Pressure for Coastal Protection and Beach Nourishment

- Beach nourishment / structural protection is very expensive and has environmental impacts
- Creates adaptation path dependency
- Policy implications
- Influence resort price structure / credit risk and ROI, property price “discounting”.



Climate Change Policy and Accessibility



- **IATA** - goal to reduce net CO₂ emissions 50% by 2050 and achieve carbon-neutral growth after 2020.
 - Market-based Mechanism (mandatory carbon offsetting scheme)
 - Purchase of emission credits add US\$1-8 to ticket prices
- **UK Air Passenger Duty** - structural changes 2007-2010
 - Did *not* alter the geography of outbound tourism
 - Change in UK arrivals to long-haul island destinations was similar to other European markets

Climate Change - Is Island Tourism Future Ready?

- Climate change and climate policy *will alter* the competitiveness and sustainability of island destinations.
- For most islands, *limited information* on climate change risks continues to constrain the ability to identify effective adaptations. (IPCC AR5)
- Tourism remains in the *early stages* of understanding its climate risk (KPMG 2008, PwC 2010, Deloitte 2011).
- A new tourism sector climate change risk assessment following the IPCC 5th Assessment Report is needed to address information gaps.

Moving Forward ...

Tourism in the Low-Carbon Economy



- A +4° C world is destructive for islands and for tourism.
- Tourism is committed to the low-carbon development agenda, with strong aspirational emission targets.
- **Develop a low-carbon tourism roadmap to achieve aspirational emission reduction targets**
 1. Evaluate risks of future energy pathways *promoted by others*
 2. *Create low-carbon tourism scenarios* based on best practices and innovation (for 2015 negotiations)

Moving Forward ...

The Adaptation Imperative for Island Tourism

- *All destinations need to adapt* to minimize risks and capitalize on new opportunities in an sustainable way
- Adaptation planning needs to *commence now*
- Adaptation is an *opportunity for islands* to leverage climate-action funds for sustainable development.
- Develop a destination climate change vulnerability tool.



**‘Climate change is calling the
tourism world to a revolution ...’**

**Conclusion of Tourism Ministers Summit
London - 13 Nov. 2007**

Session 3

Distinguished Panelists

- **Mr. João Bettencourt** - Regional Director of Tourism, Azores Regional Government.
- **Mr. Miloud Bessafi** - Professor, La Réunion University, Laboratoire Energétique, Electronique et des procédés
- **Mr. Ibrahim A. Mussa** - Director of Tourism, Ministry of Natural Resources and Tourism, Dar Es Salaam - United Republic of Tanzania
- **Mr. Ahmed Salih** - Permanent Secretary of Tourism, Arts and Culture of the Maldives

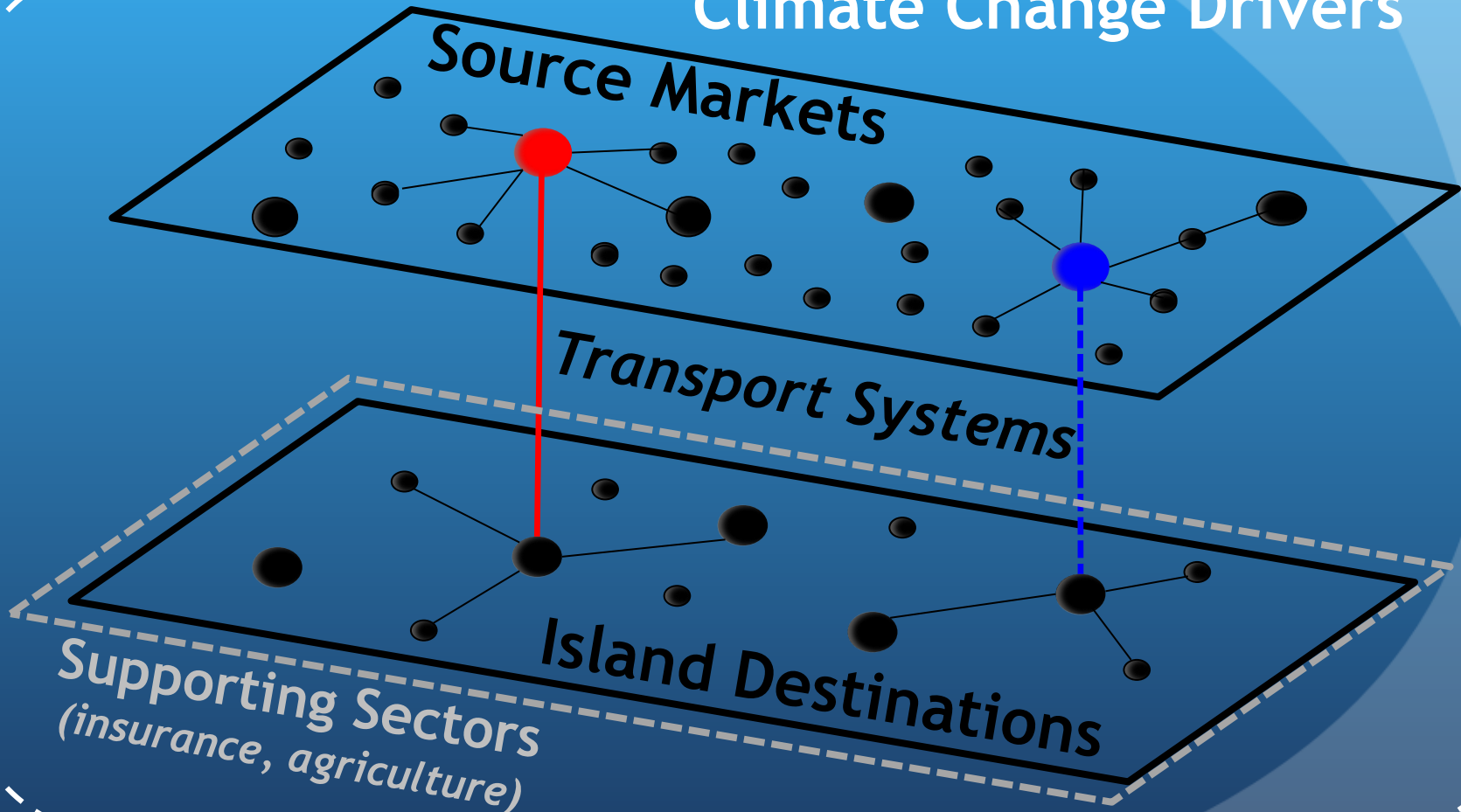


Extra Slides for Discussion Session

Understanding Climate Change Risks

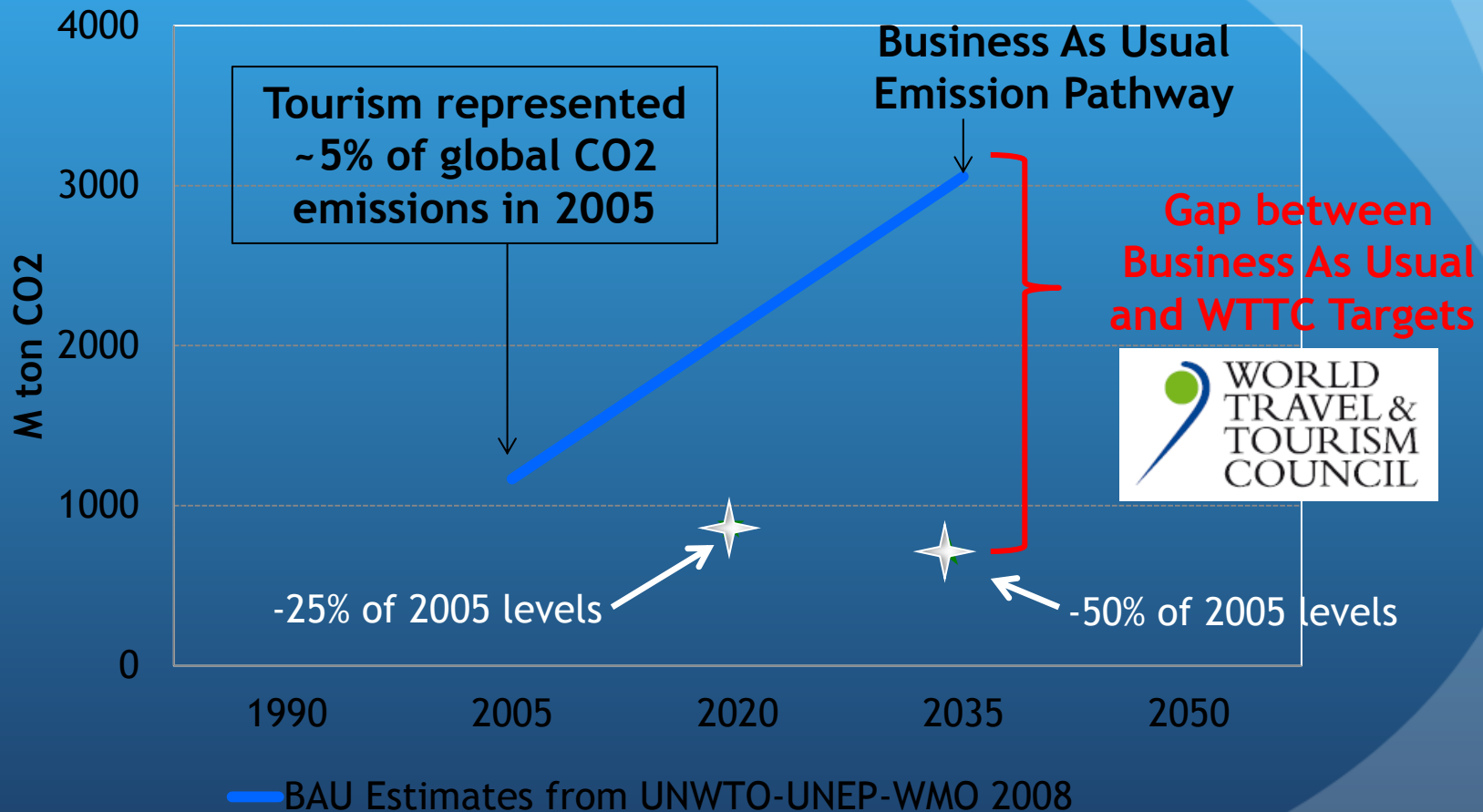
(physical, regulatory, reputational risks)

Climate Change Drivers

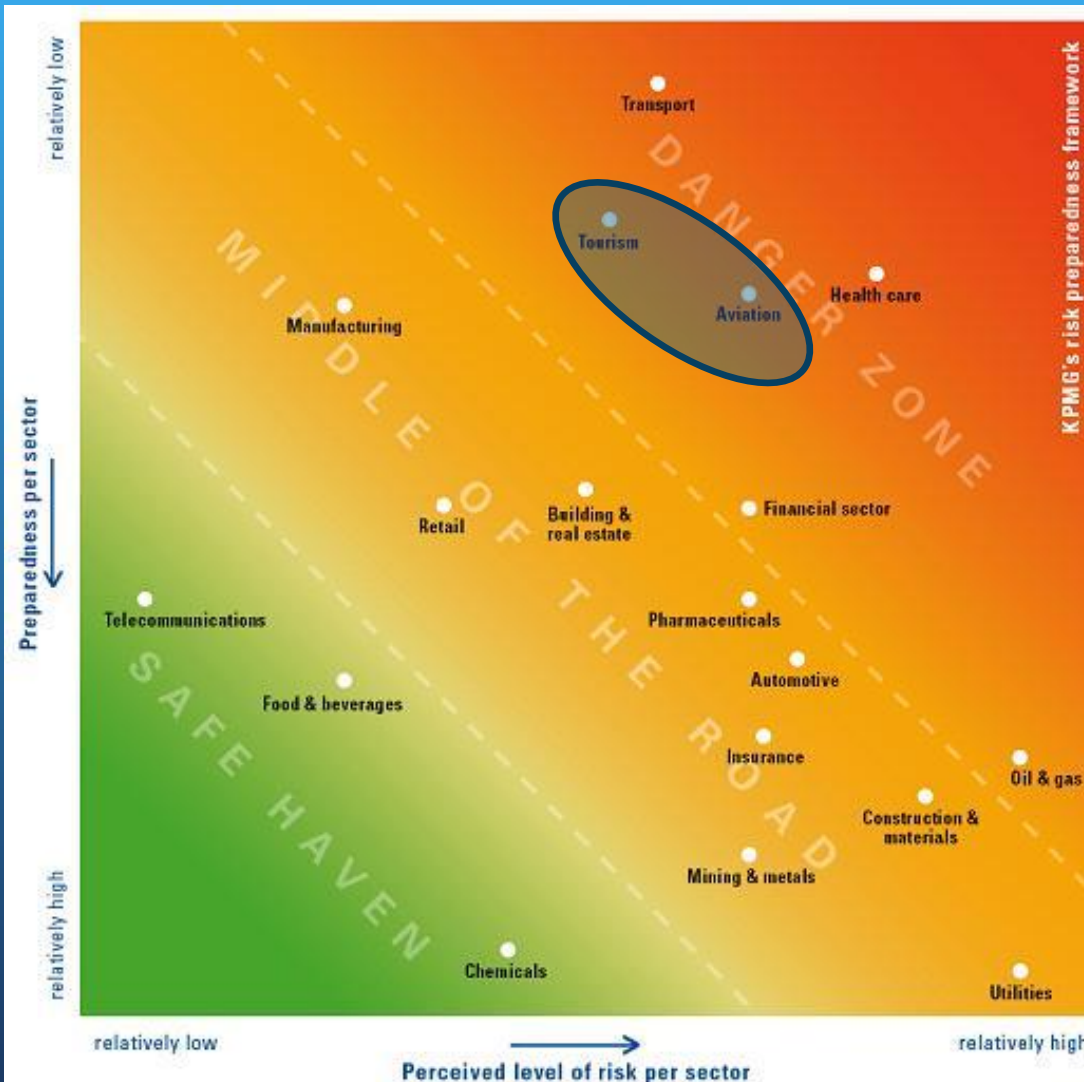


Non-Climate Drivers

The Emission Reduction Challenge for Global Tourism

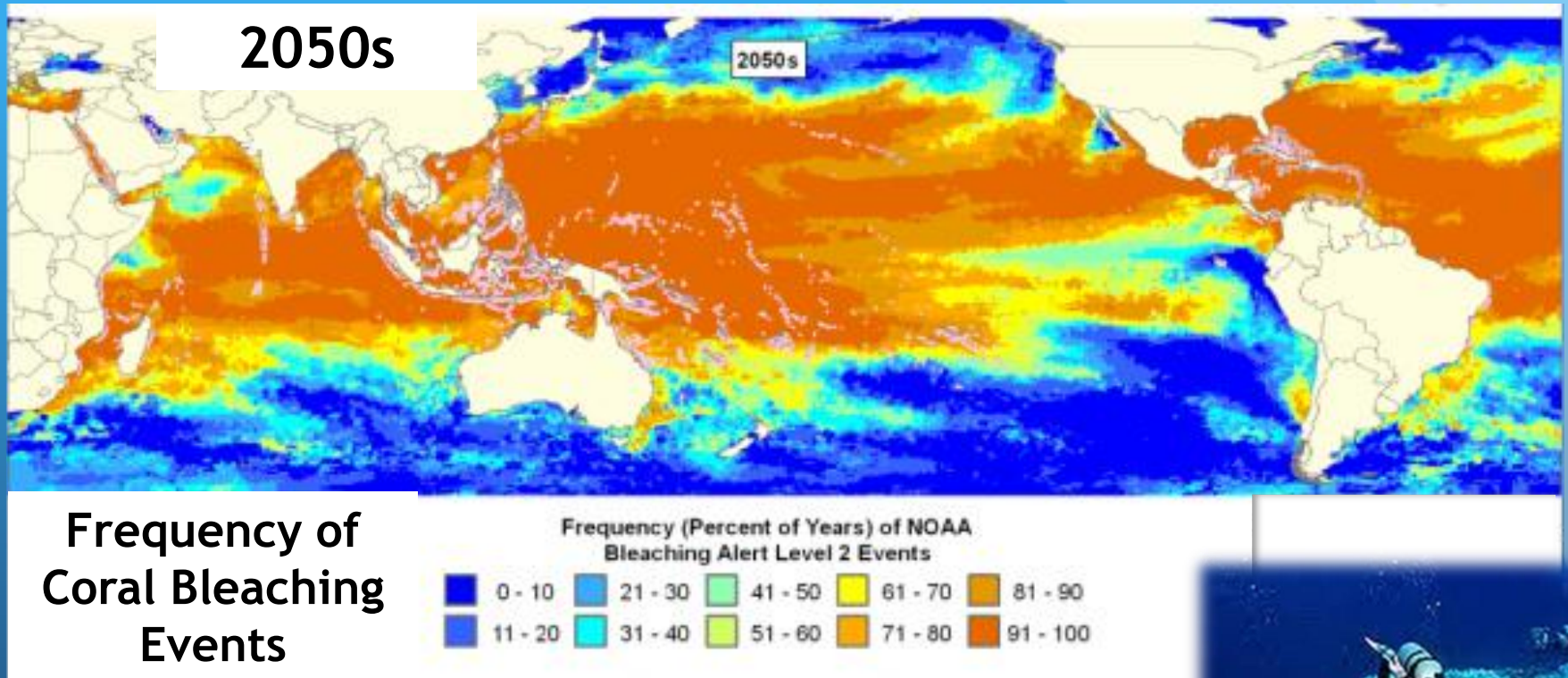


Investors Conclude: Tourism in the 'Danger Zone'



**Six Industry Sectors
Should Be on Alert Over
Climate Change Risks**

Coral Reefs and Dive Tourism



- Majority of dive tourists surveyed stated bleaching *would affect* their decision to visit.
- Dive tourists were found to have a *willingness to pay* to visit reefs that were not bleached.

