



Climate Risk and Financial Institutions

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Climate risk and Financial Institutions

Why should we care?



How will it affect us?



What are the opportunities?



What should we do?



Climate risk for us is neither an ideological or theoretical issue: it is a **core business issue**, as we are already seeing the impact of increasing weather-related disaster risks.

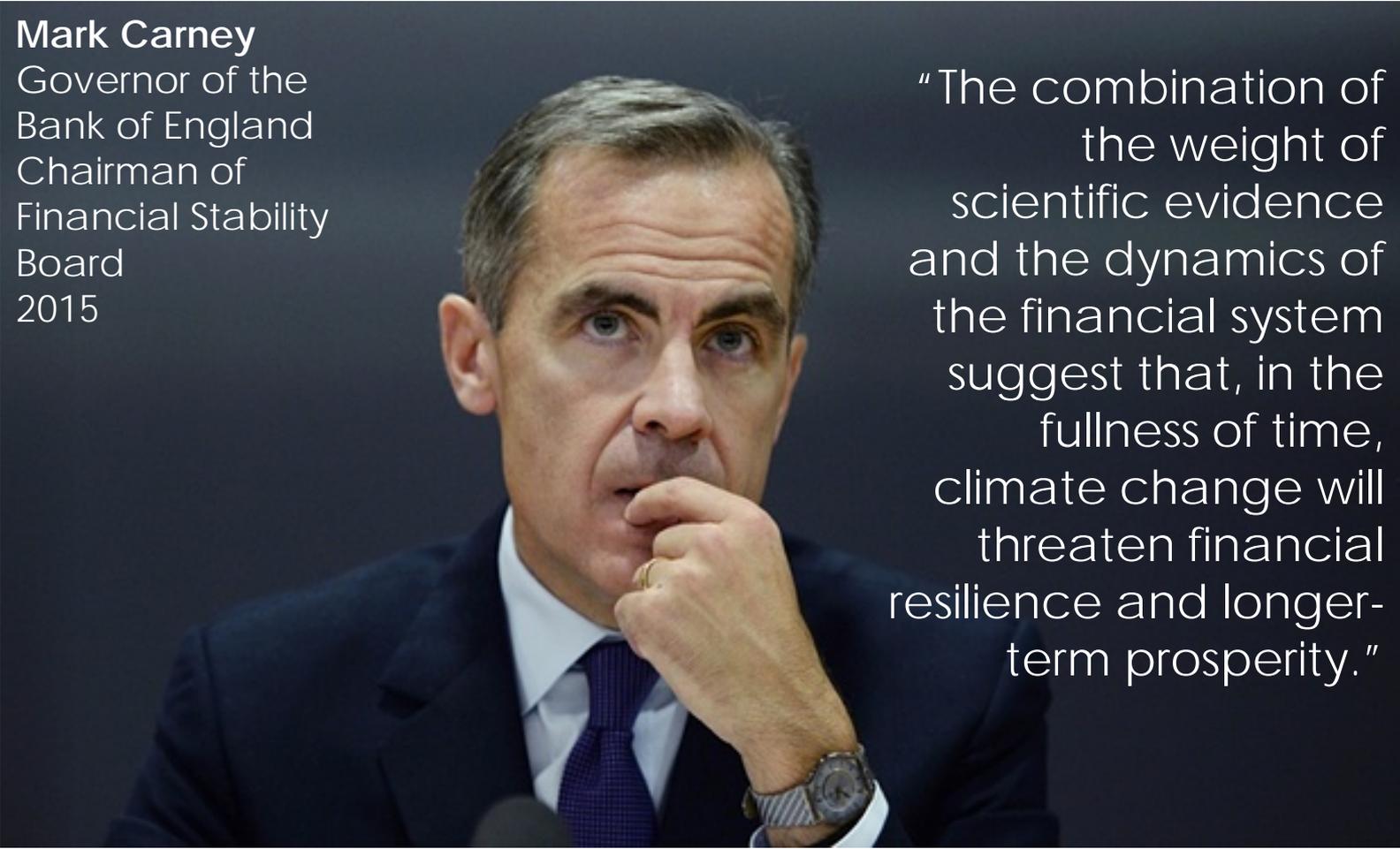
Extreme weather events are increasing in intensity and severity. Last year alone, AXA paid out over EUR 1 billion globally in weather-related insurance claims.

Henri de Castries,
Chairman and CEO
of AXA
France's largest
insurer
2014



Mark Carney

Governor of the
Bank of England
Chairman of
Financial Stability
Board
2015

A photograph of Mark Carney, Governor of the Bank of England, speaking at a podium. He is wearing a dark suit, a white shirt, and a blue patterned tie. He has his right hand raised to his chin in a thoughtful gesture. The background is dark and out of focus.

“The combination of
the weight of
scientific evidence
and the dynamics of
the financial system
suggest that, in the
fullness of time,
climate change will
threaten financial
resilience and longer-
term prosperity.”

Three categories of climate risk

Physical Risks

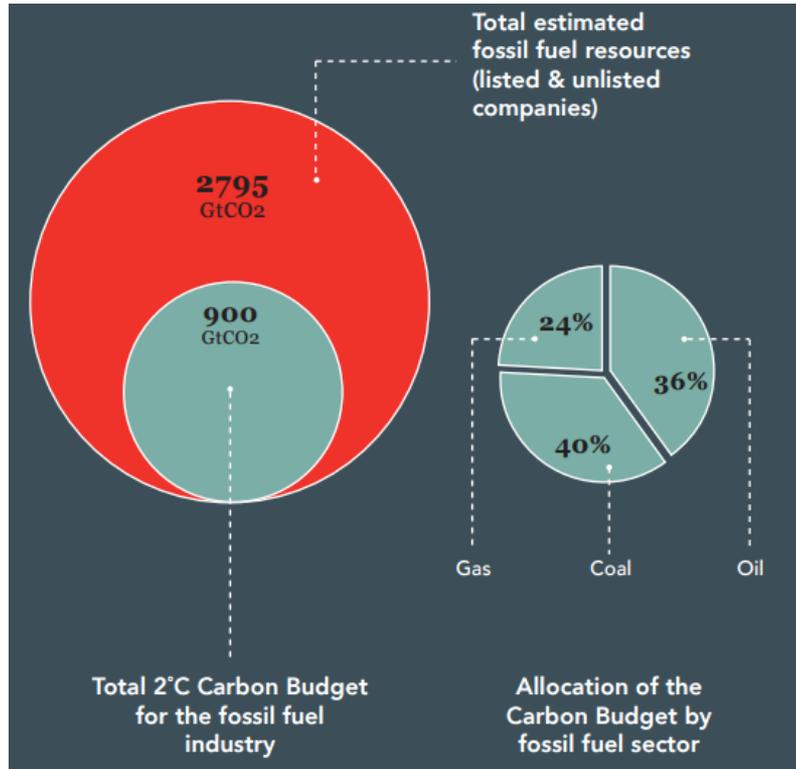
- Property damage & disruption of trade
- From weather related events
- Flood, Storms, Cyclones, Coastal Erosion
- Insurance liabilities and asset values

Transition Risks

- Financial risks from transition to low-carbon economy
- Sudden change in asset values
- Policy, technology and assessment of physical risks

Liability Risks

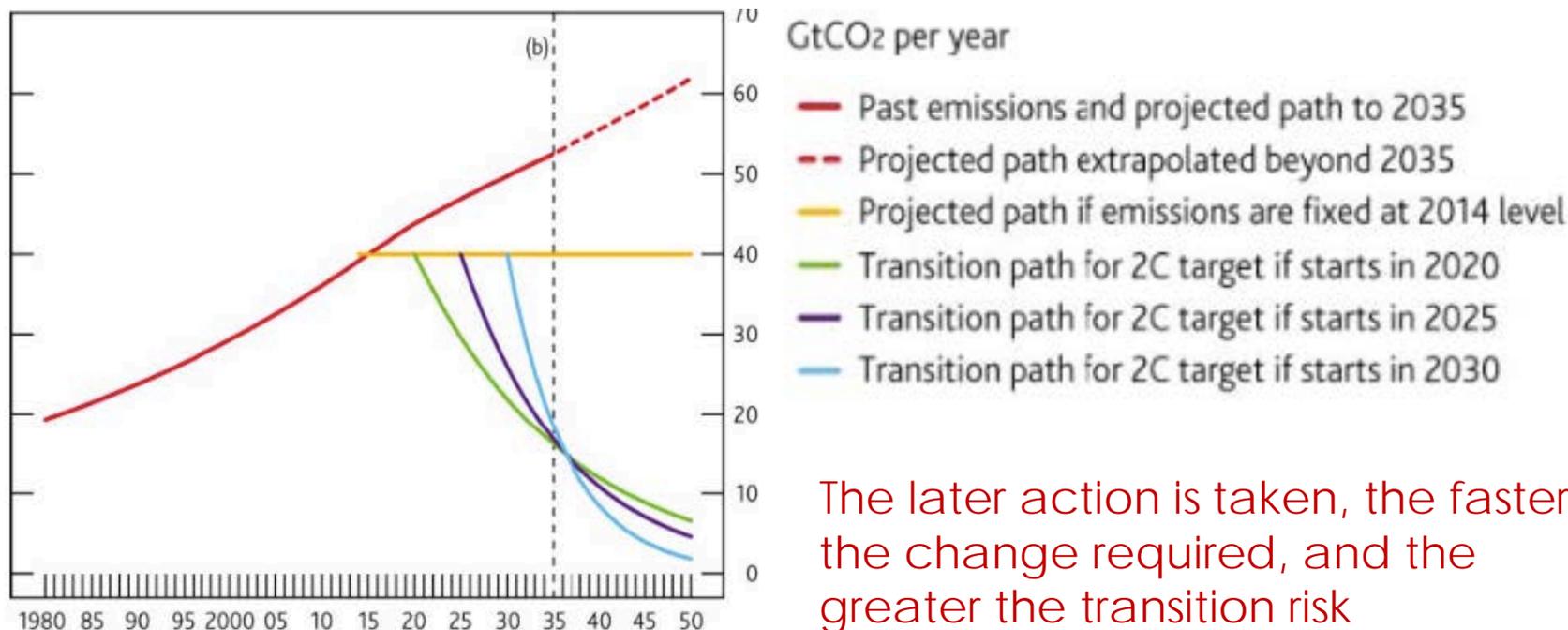
- Insured liabilities for losses arising from compensation for damage from climate change
- Legal actions against directors and companies for failing to adapt to or mitigate against climate change



Carbon Tracker Initiative's reference for budget to 2050, based on 80% probability of staying below the 2 degrees threshold.

"No more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2 °C goal, unless carbon capture and storage (CCS) technology is widely deployed."
- International Energy Agency

Transition risk = steepness of turn



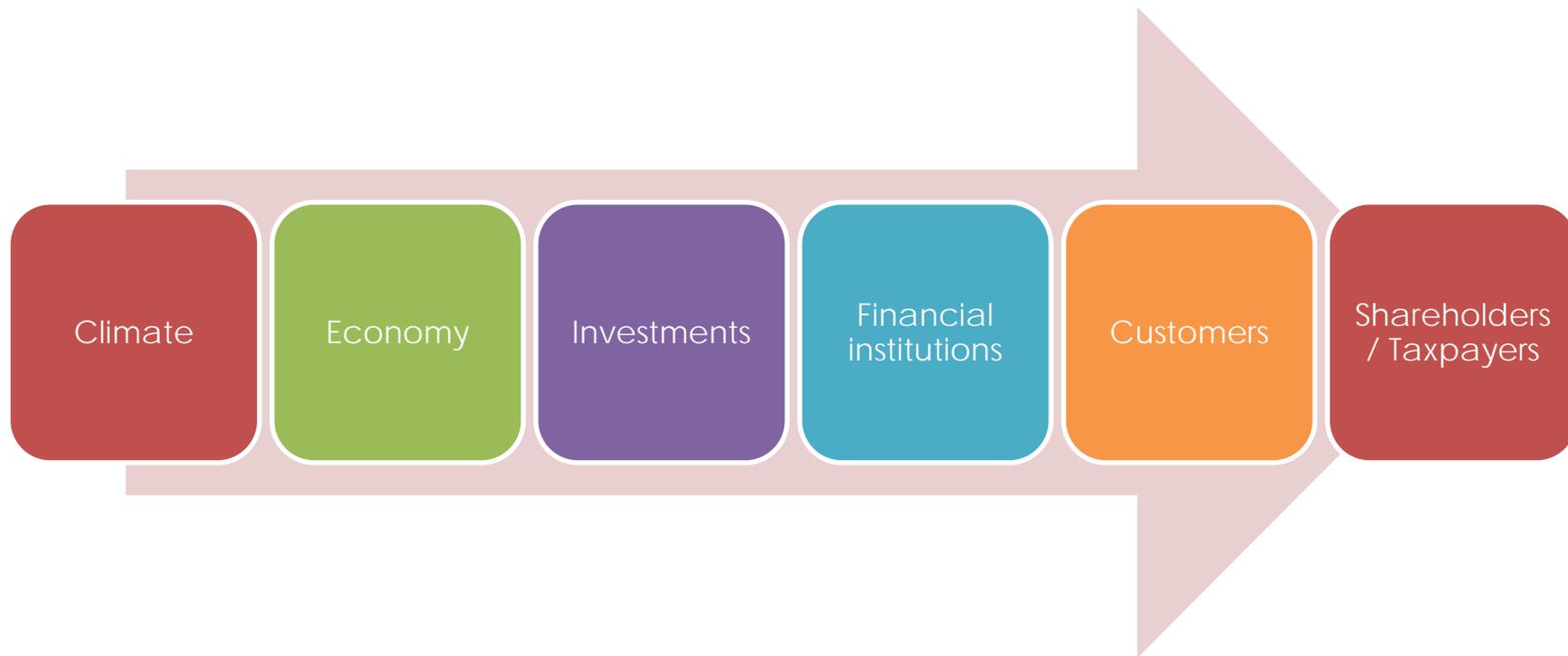
The later action is taken, the faster the change required, and the greater the transition risk

Source: Prudential Regulation Authority (PRA) (2015).

Note: The historical growth rate in carbon emission is inferred from its 1970-2013 average; forward growth rates are based on PRA calculations using International Energy Agency (IEA) World Energy Outlook (WEO) 2013 projections and fixed at their 2035 level thereafter. The vertical line at (b) refers to the estimated date at which the carbon budget is expected to be exhausted if the flow of emissions were fixed at the current level (shown by the orange line). This estimate assumes that CO₂ emissions from fossil fuels, industrial processes and land use remain fixed.

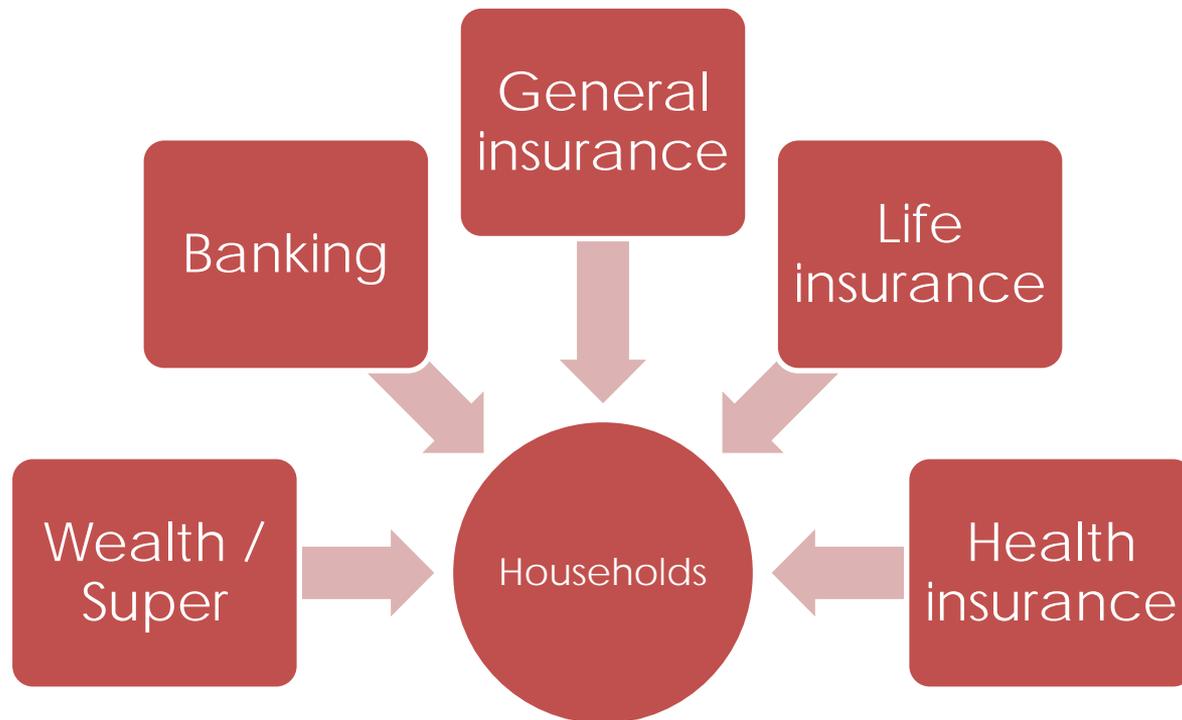


Why should we care about climate risk?





Because it will impact our customers



Examples



Battery storage disrupts electricity industry



Policy responses reduce carbon intensive energy generation



Sea level rises threaten values of home loan portfolios



Viable regions for agricultural land change

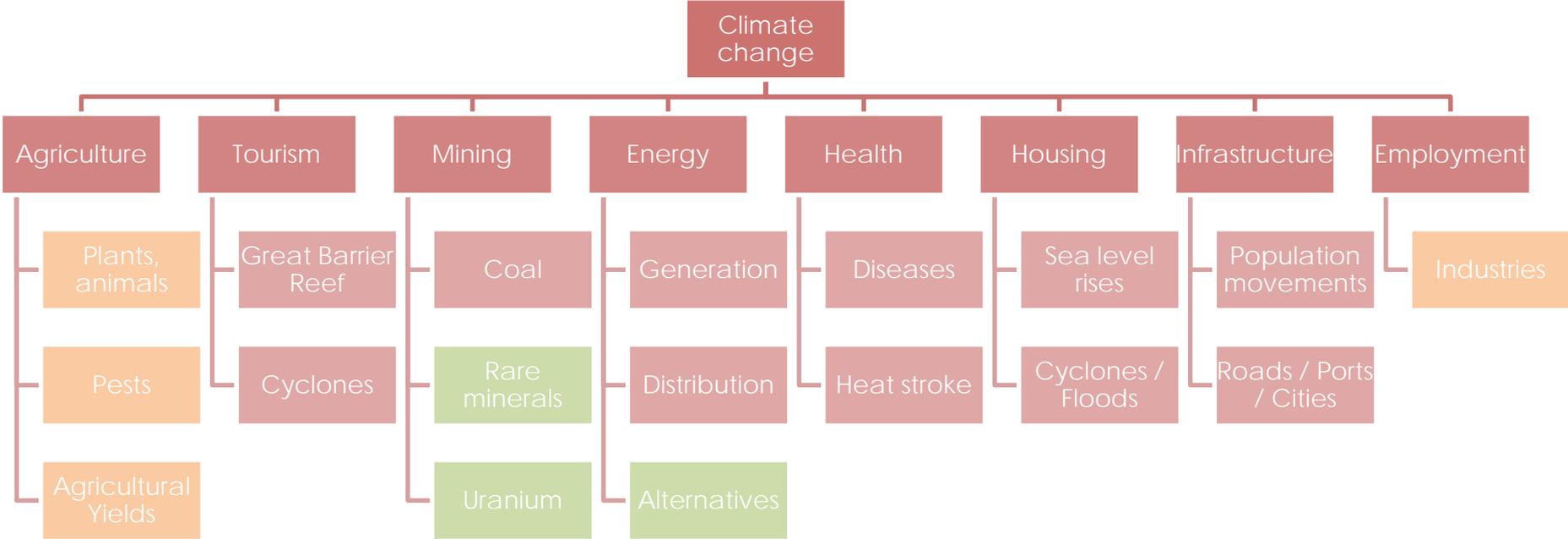


Increased tropical diseases changes health needs



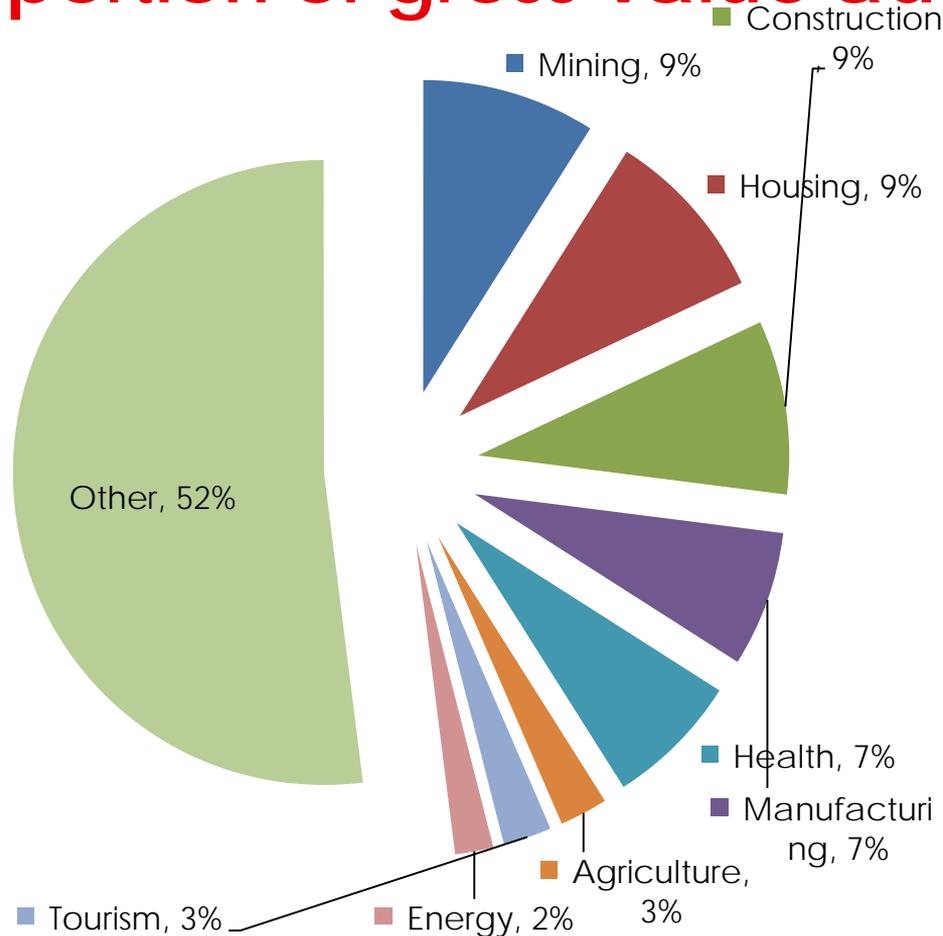
Coral bleaching reduces tourism industries

Real economy examples





Proportion of gross value added



About 48% of economic activity is potentially exposed to physical impacts of climate change

There will also be secondary impacts

Source – ABS

Examples – Financial Institutions

General insurance

- Increased frequency & severity
- Change in location
- Relatively small change to *average* premiums at national level, but massive increases in exposed areas
- Much larger increases in capital requirements – uncertainty
- Main risk is the significant loss of business over time

Life & Health

- New distribution of diseases
- Heatwaves are the biggest killers
- Population movements
- Already at risk

Banking

- Residential housing exposed
- Already at risk
- Sea level rises, change in location, frequency & severity of storms, floods & cyclones
- Insurance becomes unaffordable
- House values fall rapidly
- Loan assets exposed



Case studies: Investment risk Transition losses



March 2016: Raises forecast writedowns by \$100m than indicated just a few weeks earlier, due to resource sector losses.

Loans to Peabody Energy Corp., the largest U.S. coal miner, and Australian steel and iron ore producer Arrium Ltd. were among those contributing to ANZ's forecast increase in charges, two people with knowledge of the matter said.

([Narayanan Somasundaram](#), Bloomberg News, 24/03/2016)

Case studies, I – cont'd

“While total mining exposure is small, challenges widen when one factors in the second order effects, for example from loans to the businesses built around the mining companies.” Watermark Investment

Higher mortgage impairments have been identified (or reported) for most banks in mining regions in the past 12-18 months. (Digital Finance Analytics, Fitch Ratings)



Case Studies II – Managing risk

HOME | GIO PROFILES | GOVERNANCE | INSURANCE | REGULATION AND POLICY | POST-RETIREMENT AND ADVICE | INVESTMENT

Home » Investment » First State Super 'weatherproofing' portfolio

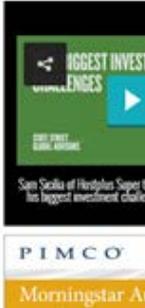
First State Super 'weatherproofing' portfolio

By Dan Purves | 21/03/2016

[in](#) [Twitter](#) [Email](#) [Facebook](#) [+](#)

First State Super is implementing a portfolio-wide Climate Change Adaptation Plan to increase the fund's resilience to the direct and indirect impacts of climate change.

The plan has three core elements: portfolio "weather-proofing".



(Investment Magazine,
21/03/2016)

“Climate Change Adaptation Plan is essentially our response on the whole-fund level across all our options.” Dr Ross Barry, head of investment research [...]

Portfolio “weather-proofing” involves a detailed, technical review of all the fund’s holdings over time to assess the level of climate change risk exposure and to implement options to increase resilience.

Governance and risk: litigation

Illinois Farmers Insurance v. Metro Water Reclamation District of Greater Chicago 2014

“By adopting “the scientific principle that climate change has caused increases in rainfall,” the Plaintiffs insist that the Defendants acknowledged a causal link between climate change and heavier rainfall.[11] In short, the Defendants allegedly knew that the infrastructure was insufficient and failed to cure it.” - Columbia Law School blog

“Farmers spokesman Trent Frager issued a statement saying company officials had hoped the suit would encourage cities and counties to do more to reduce the risks of future flooding.” – Chicago Tribune, 06/03/2014

Governance and risk: Shareholder disclosure

- 2016: NY Attorney General & 14 other state AGs subpoenaed Exxon documents.
- Company had been aware of climate change & incorporating impacts into planning since 1970s
- Disclosure to public and **shareholders** of material risk that the company was aware of.
- Previous responses to shareholder questions downplayed transition risk to company.

What can financial institutions do about climate risk?

- If it can be measured, it can be managed – and traded
- Measurement and quantification is now possible
- Climate risk management strategy – board level



Investment opportunities

Equities

- individual stocks
- indexes

Fixed income

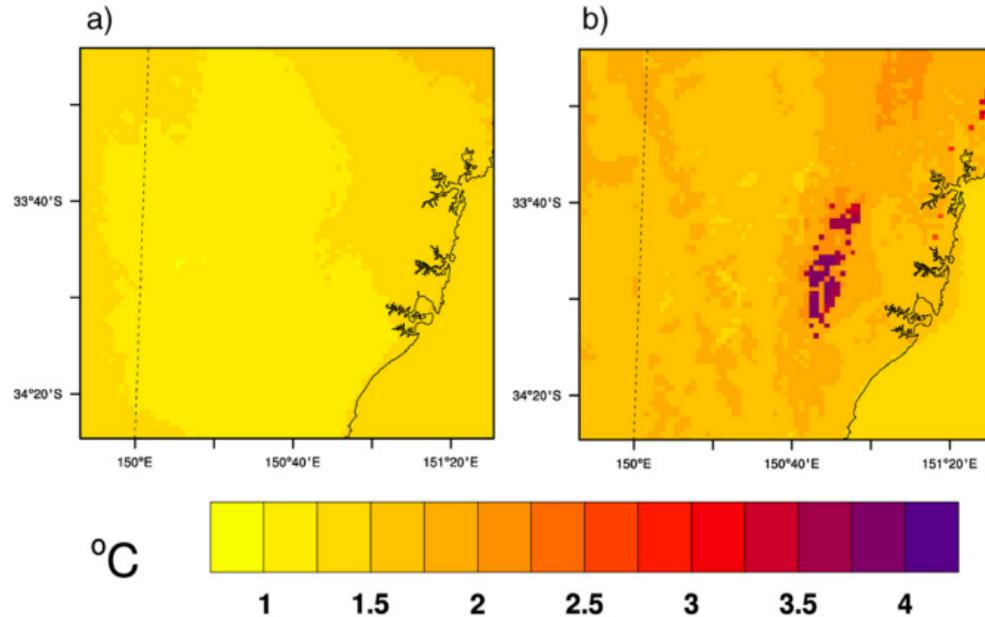
- climate bonds
- green bonds

Infrastructure & property

\$5tn Shortfall?

Origination;
securitisation;
issuance

More granular projections are possible





Standards emerging for disclosure



~400 methodologies
according to Bank of England
& Financial Stability Board



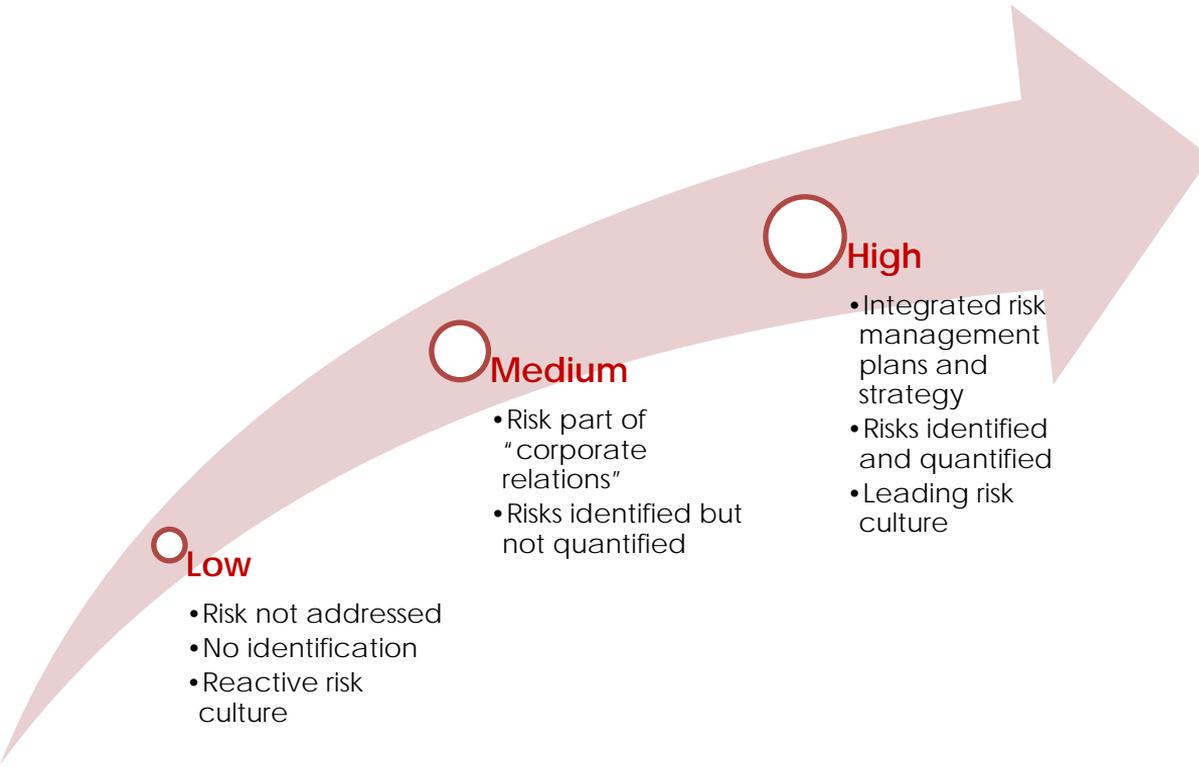
FSB's Climate-
related Financial
Disclosure
Taskforce is
developing a
voluntary
framework: [fsb-
tcfd.org](http://fsb-tcfd.org)



Addressing barriers



Assessing Capabilities



Improving Capabilities

- Several organisations specialise in climate risk, from NGOs to industry groups to consultancies
- Many reports available in the public domain
- Actuaries Institute has an active working group



Conclusions

- Need wider thinking: Climate change is everything change
- Not just about coal and natural disasters
- Exposure both through direct business operations and through investments
- Risk is pervasive and systemic, and potentially material to financial condition
- Financial institutions are already at risk – not a problem for the future
- Apply risk management framework – actuaries are experts in this
- Multiple stakeholders: Shareholders, Customers, Management, Boards & trustees
- Doing nothing is not a realistic option & may be a governance risk.