

# Central Banks and the Environment: Changing Horizons, New Challenges



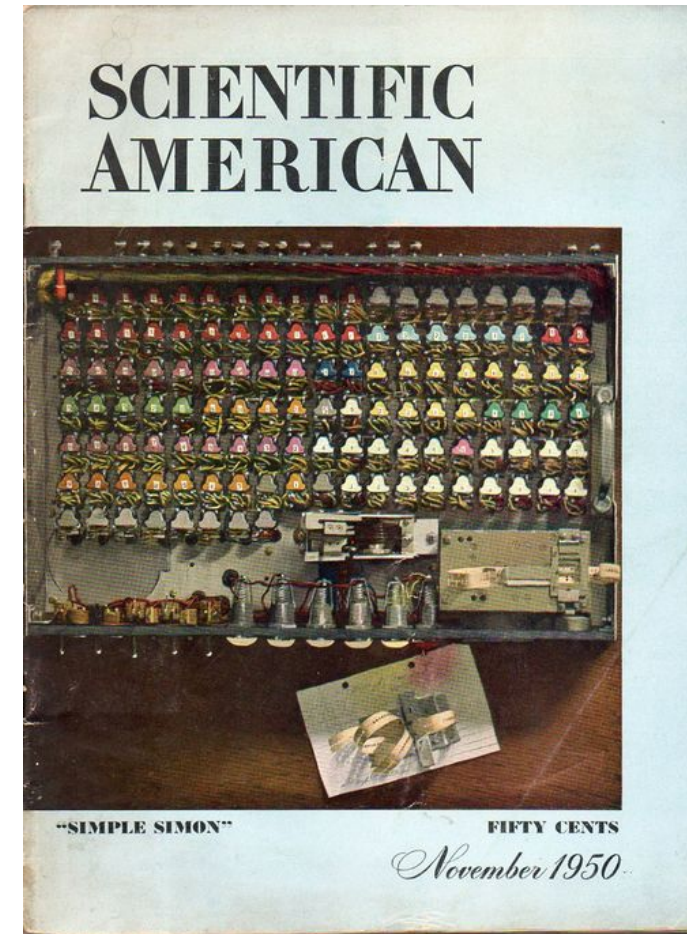
**Achim Steiner, Director  
Oxford Martin School, Oxford University**

**14<sup>th</sup> November 2016  
Bank of England**



## The state of the world in 1950

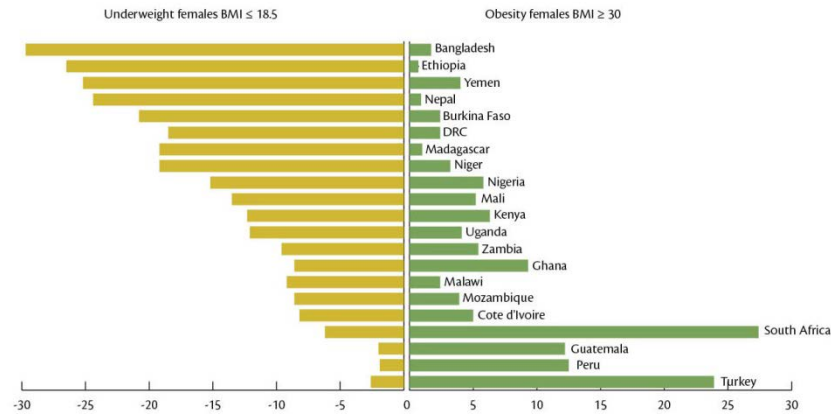
- No knowledge of DNA
- No widespread use of antibiotics
- Few co-ordinated vaccination programs
- Serious threats from smallpox, polio, whooping cough, diphtheria, and syphilis
- Little international co-ordination for scientific research
- Only the most primitive of computers
- Cost of oil (inflation-adjusted): \$26/barrel
- No space travel, no satellites
- No contraceptive pill



# Where has the 20<sup>th</sup> Century left us?

## There is less poverty, but more food inequality

- ~1.3bn still live below the poverty line (\$1.25/day)
- 1 in 4 children worldwide are stunted
- In 2008, 35% of the world population was overweight, and 29% was micronutrient deficient



Source: GloPlan, 2014

## Industrialisation, globalisation and urbanisation have led to significant greenhouse gas emissions

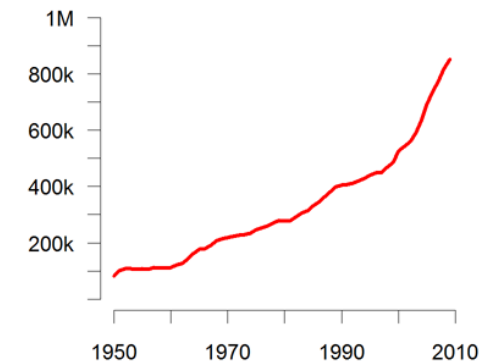


## We are more informed than ever before

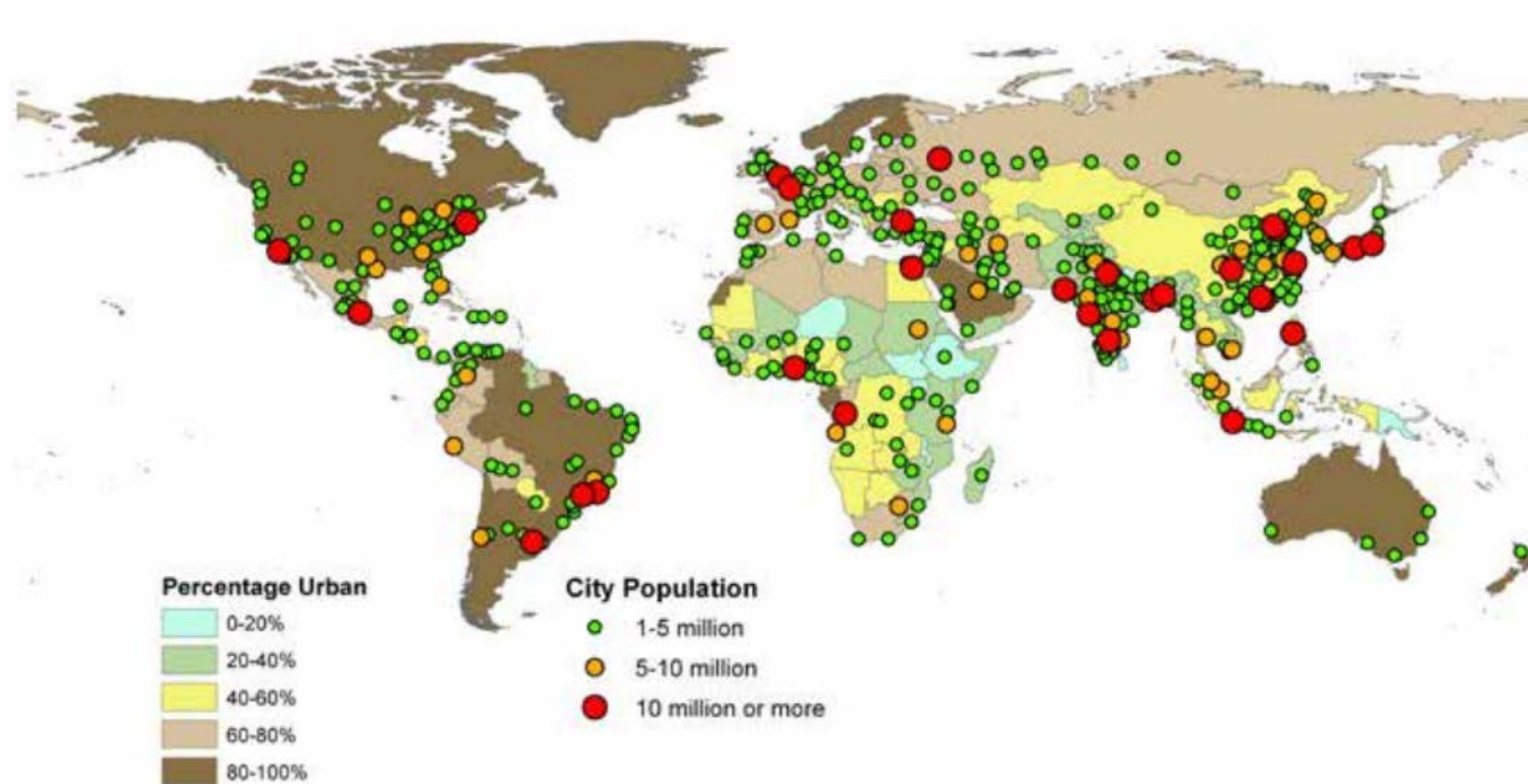
## There are major natural and physical resource pressures



## MEDLINE-indexed articles published per year

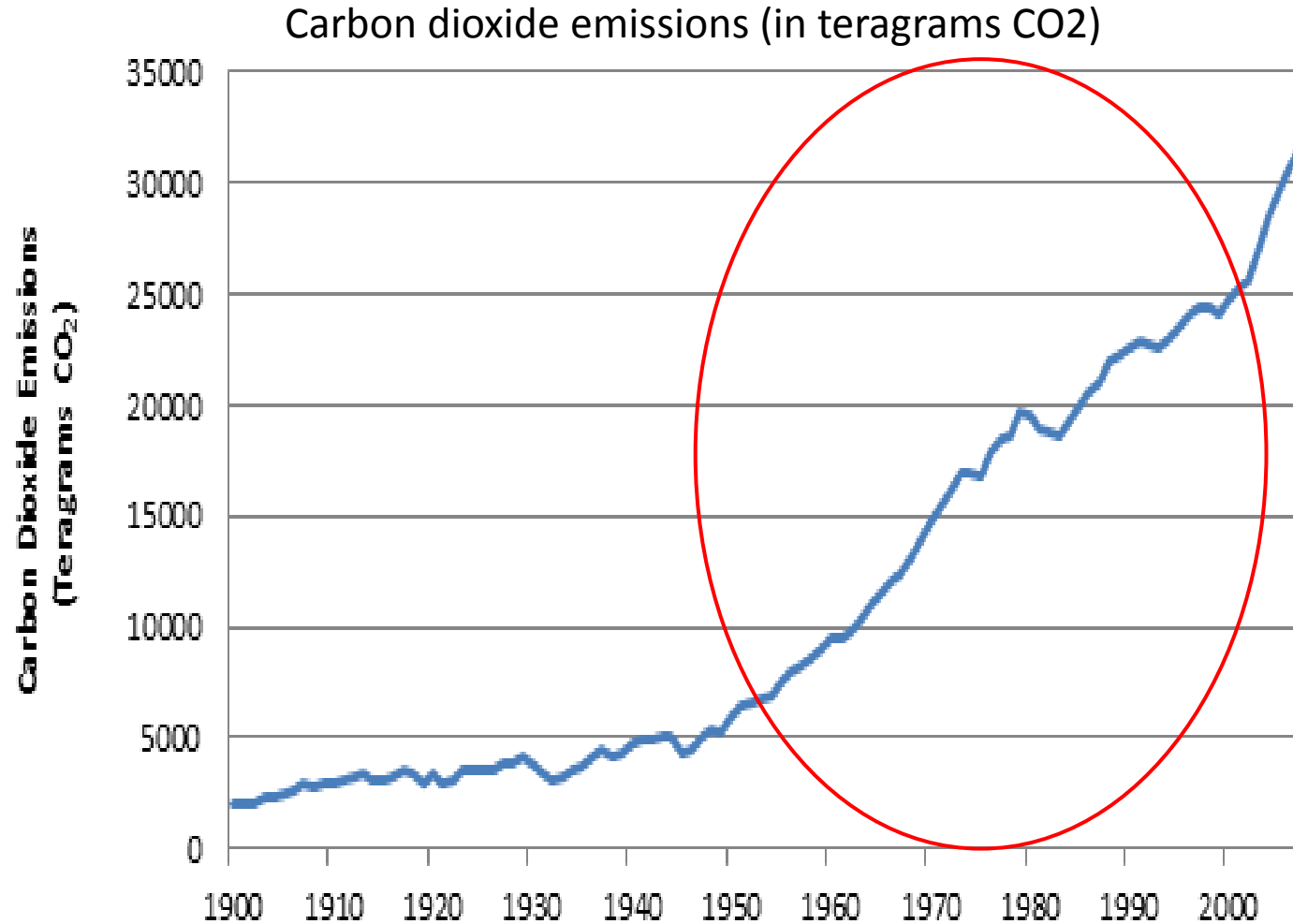


## Urban Agglomerations in 2015



- 54% of the world's population live in urban areas
- Nearly half of the world's urban dwellers live in relatively small cities of less than 500,000 inhabitants
- Around 1 in 8 live in 28 mega-cities with more than 10m inhabitants
- Currently, the world's cities emit almost 80% of global CO<sub>2</sub>

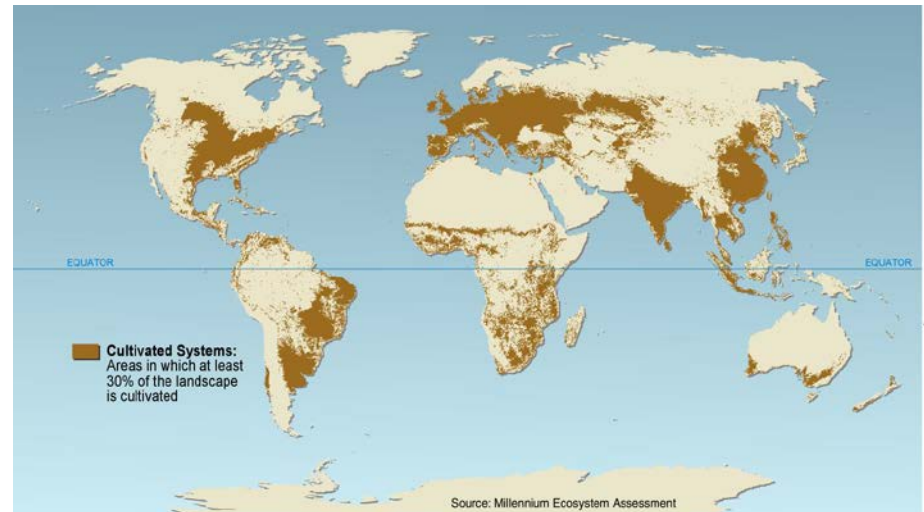
## Consequences: emissions



60% of the increase in the atmospheric concentration of CO<sub>2</sub> since 1750 has taken place since 1959

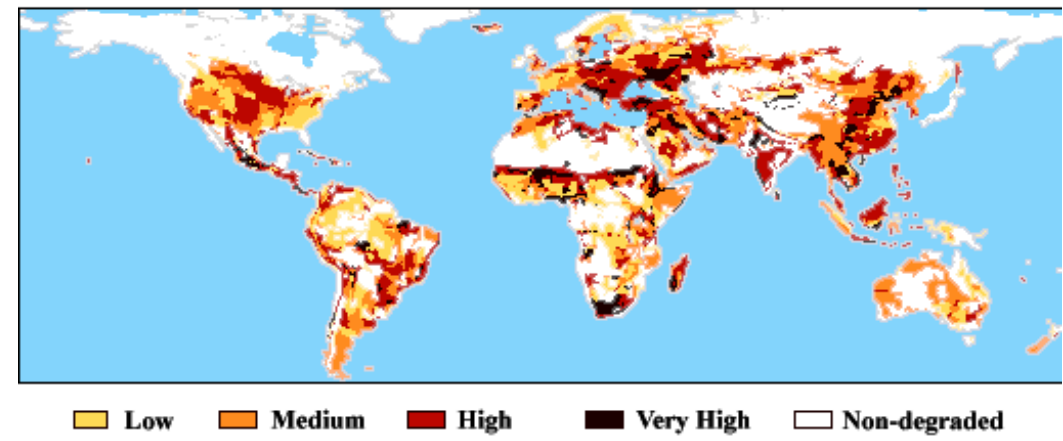


# Consequences: land use change



- More land was converted to cropland in the 30 years after 1950 than in the 150 years between 1700 and 1850
- In 2000 cultivated systems cover 25% of Earth's terrestrial surface

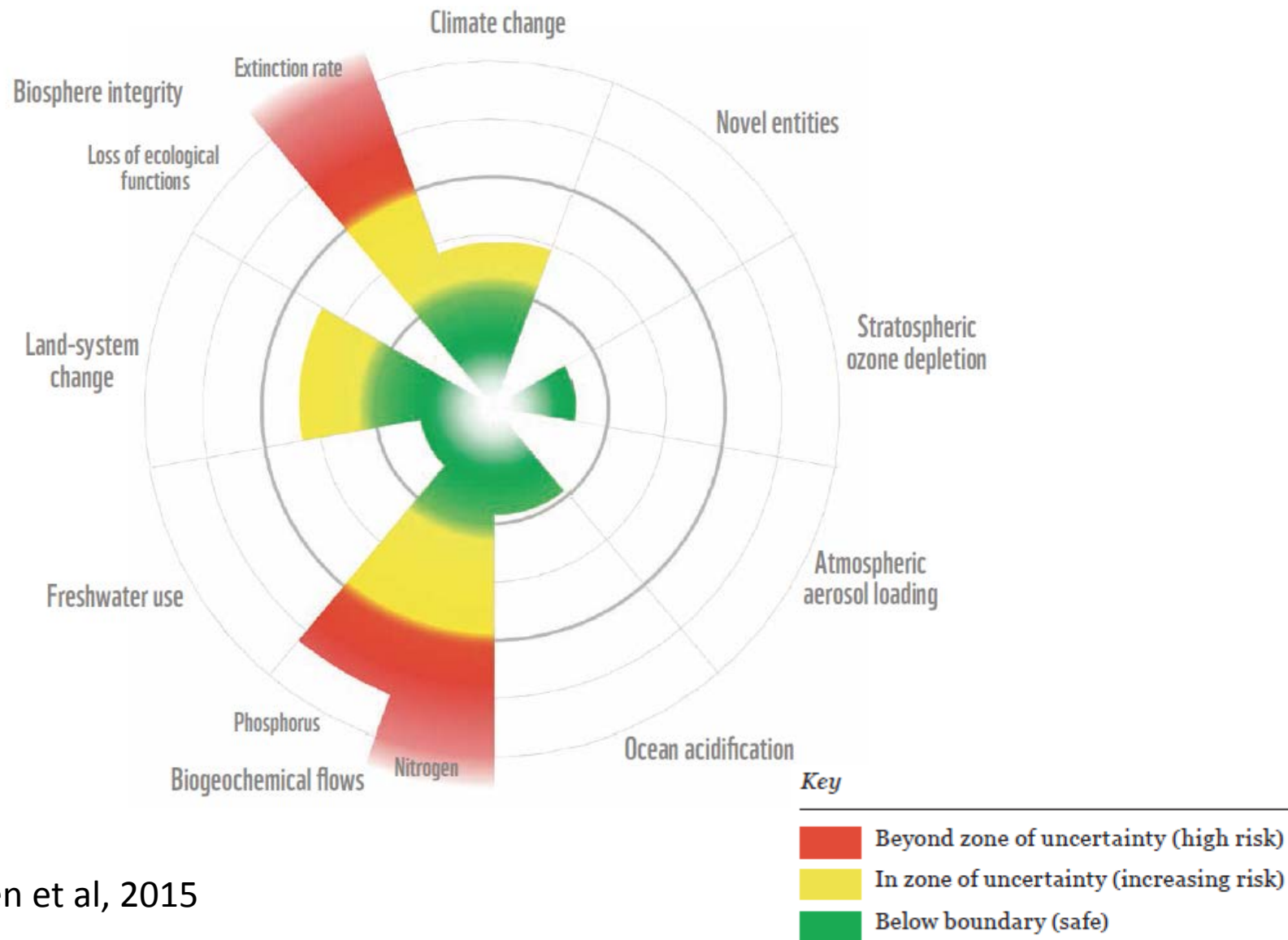
- An estimated 23% of all usable land is degraded
- 20% of the world's pasture and rangelands have been damaged
- 580m ha of forests have been degraded by logging and clearance, nearly 40% of this since 1975



PROJECTION: Geographic  
SOURCES: UNEP/ISRIC



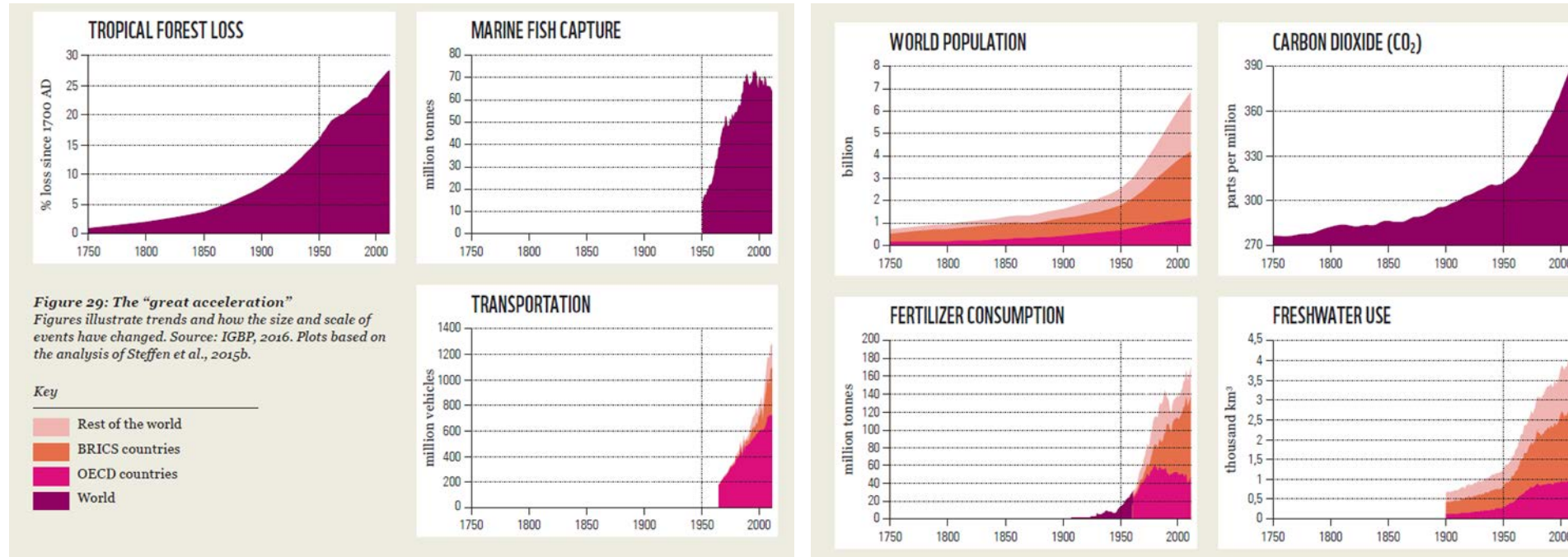
# Human activity now affects Earth's life support systems



Steffen et al, 2015



# What does the Anthropocene look like?





# Sustainable Development Goals

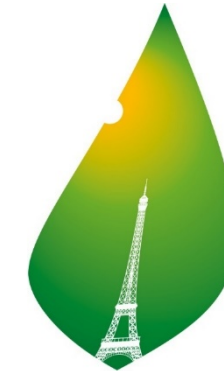
The best guide of what value creation in 2030 looks like in 2016



# COP Paris 2015: 21 years of negotiations



- An agreement to limit temperature rises to “well below 2°C” and efforts to limit rises to 1.5°C
- A long term emissions goal to peak global emissions “as soon as possible” and to achieve ‘balance’ between emissions and sinks in the second half of the century, i.e. reaching net zero after 2050
- A legal obligation on developed countries to continue to provide climate finance to developing countries
- A five year review cycle on national targets, with ratchet mechanisms to maintain progression



COP21 • CMP11  
**PARIS 2015**  
UN CLIMATE CHANGE CONFERENCE

188 countries have made pledges which cover 99% of global emissions and will cost an estimated \$3.5trn to implement

- EU: at least a 40% reduction in greenhouse gases by 2030 compared to 1990 levels
- US: 26-28% domestic reduction in greenhouse gases by 2025 compared to 2005 levels, including the land sector & excluding international credits
- China: a peak in CO2 emissions, 20% of energy from low-carbon sources, and emissions per unit GDP cut to 60-65% of 2005 levels, all by 2030

## Keeping to 2<sup>0</sup>: the required financial investment



- IEA: cumulative investment of \$53tn required by 2035 in the energy sector alone
- New Climate Economy: investment of \$93tn by 2030 required across the whole economy
- Citi: global investment on fuel costs and capex \$190.2tn by 2040 (versus a cost of inaction estimate of \$192tn)
  
- This will not be achieved by public spending alone
- OECD government public expenditure is ~30% of GDP
- Global GDP in 2014: \$78tn
- Inertia in financial institutions and markets needs to be countered

# MOMENTUM IS NOT ENOUGH



TRANSFORMATIVE CHANGE  
NEEDED IN ECONOMY



**THE GLOBAL GOALS**  
For Sustainable Development

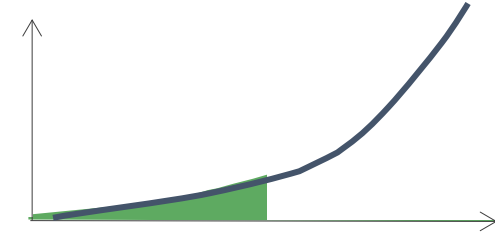
- **One-third** of the world's arable land jeopardised by land degradation.
- **Half** of largest aquifers beyond sustainability tipping point.
- **17%** of the world's population lack access to electricity.

MOBILISING FINANCE IS  
CRITICAL

**US\$90** TRILLION  
OVER 15 YEARS

- **US\$260 billion** annual investment gap in agriculture in developing countries.
- **US\$600 billion** needed in green investment in China; only 15% from public sources.

SUSTAINABLE FINANCE  
NEEDS TO SCALE



- **Only 5-10%** of bank loans are 'green' in countries where measured.
- **Less than 1%** of total bond issuance is made up of labelled green bonds.

*“Achieving the SDGs will require mainstream finance. We need to build a new system – that delivers sustainable investment flows, based on both resilient market-based, and robust bank-based, finance.”*

*Mark Carney, Governor, Bank of England*

# THE UNEP INQUIRY APPROACH



## COUNTRY ENGAGEMENT\*



**CHINA:** green finance as a national strategy



**INDIA:** new tools for financing clean energy



**KENYA:** from mobile banking to green finance



**UK:** City of London Green Finance Initiative

## SECTORAL FOCUS\*



## POLICY DIALOGUE\*



## ‘THE FINANCIAL SYSTEM WE NEED’

1<sup>st</sup> Edition



2015: ‘ALIGNING THE FINANCIAL SYSTEM WITH SUSTAINABLE DEVELOPMENT’



WORKING PAPERS (80+)

2<sup>nd</sup> Edition



2016: ‘FROM MOMENTUM TO TRANSFORMATION’

\* Examples only

downloadable at [www.unepinquiry.org](http://www.unepinquiry.org)



## 2016: THE QUIET REVOLUTION GETS LOUDER



**FINANCIAL STABILITY BOARD:** task force on climate-related financial disclosures



**CHINA:** adopts national policy package for transformation “Guidelines for establishing a green finance system”

**GREEN BONDS:** A US\$694 billion investment universe



**G20:** “In order to support environmentally sustainable growth globally, it is necessary to scale-up green financing”

2016

**EUROPEAN UNION:**  
EU to develop green finance strategy

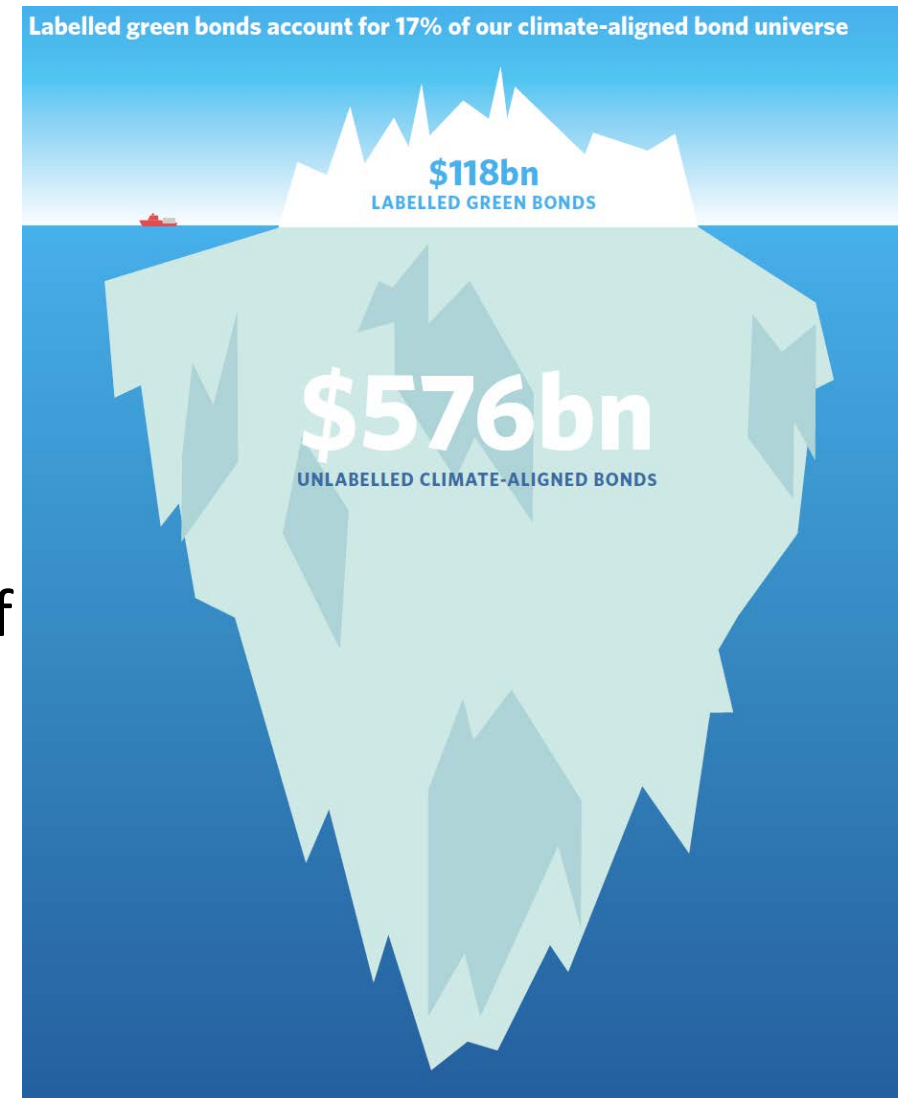


2017?

*“Meeting the Paris Agreement’s goals will require the full mobilization of all stakeholders, including finance. I fully support efforts to make financial flows consistent with the needed limitation of greenhouse gas emissions and the financing of climate resilient development.”*

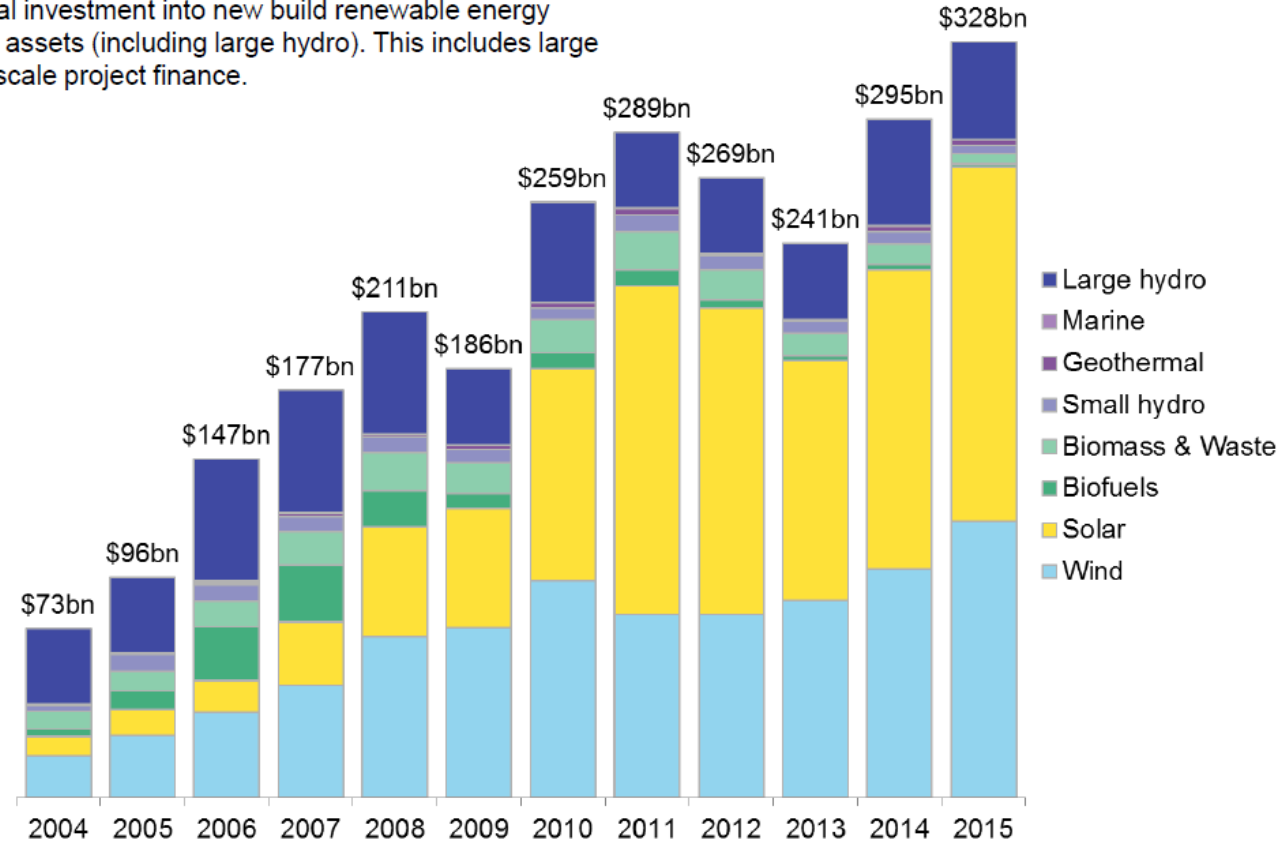
## Green bonds: the iceberg

- Value of the global bond market: \$90tn
- Assessed size of the climate-aligned bonds market, 2016: \$694bn
- 67% related to low-carbon transport, mostly rail
- Prudential Regulation Authority: recommendation of green bonds as a climate-related investment opportunity for UK insurance firms



# Renewable Energy Capacity Investment

- Total annual investment into new build renewable energy generating assets (including large hydro). This includes large and small scale project finance.

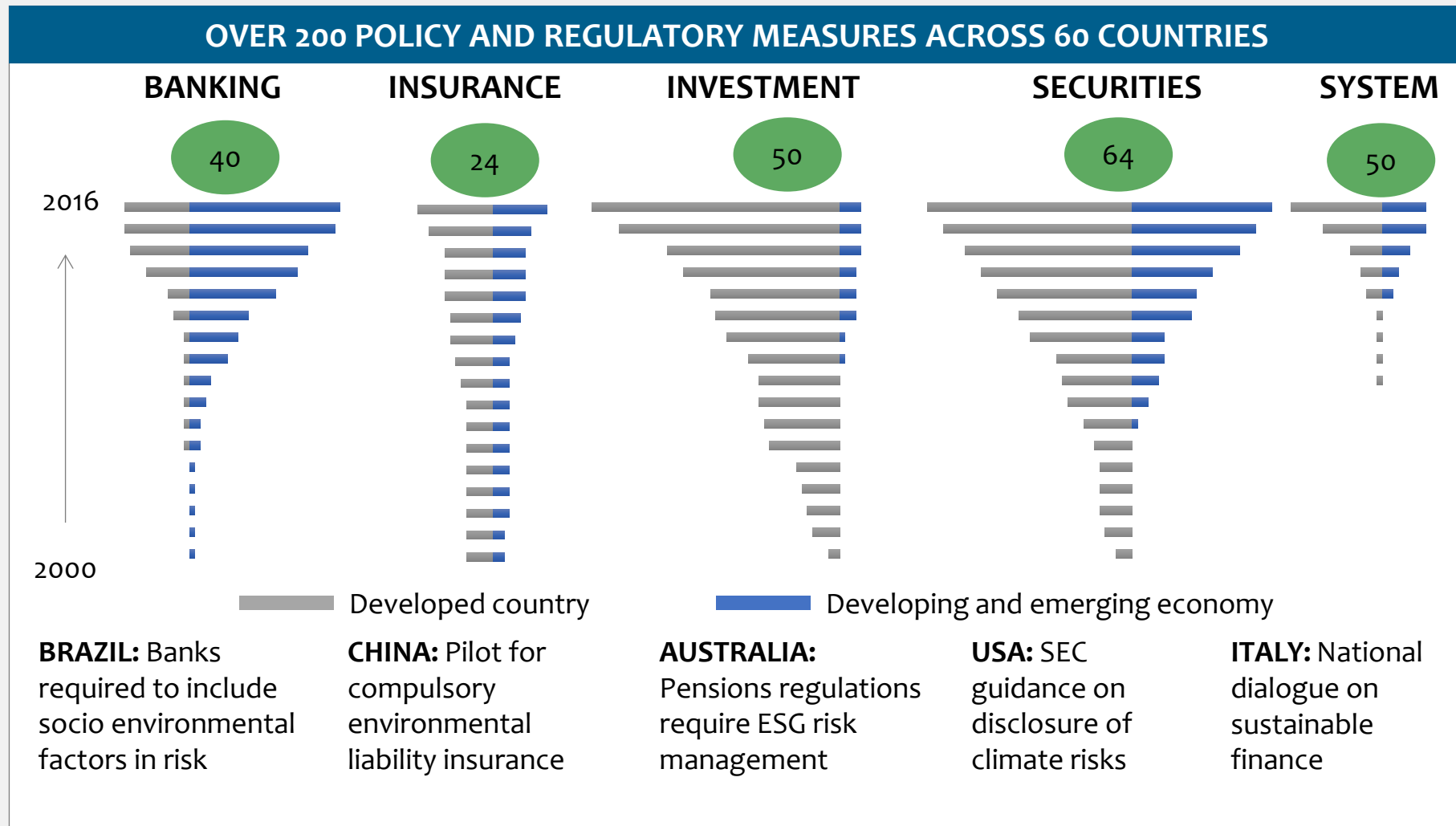


Note: Total values include estimates for undisclosed deals.

Source: Bloomberg New Energy Finance

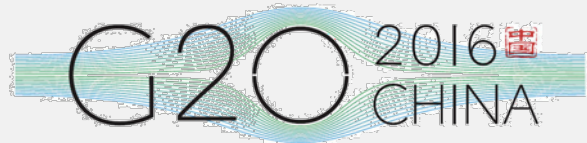


# POLICY MEASURES HAVE DOUBLED IN LAST 5 YEARS

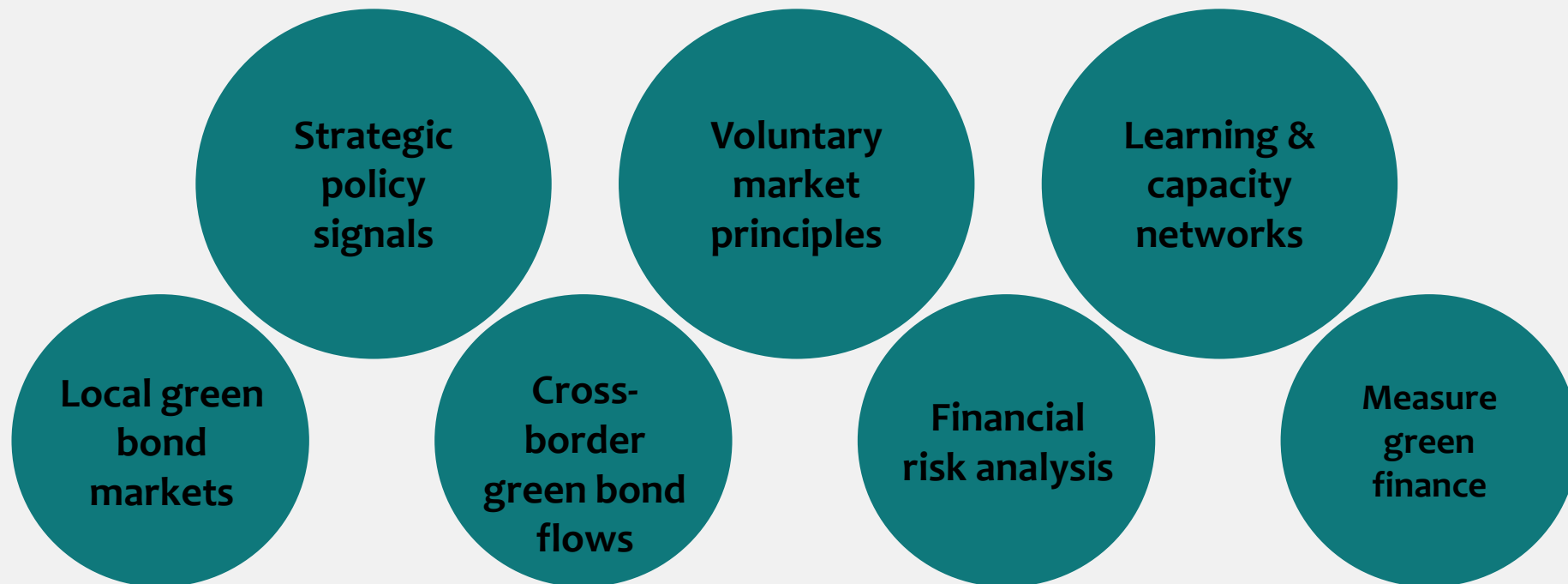


*“We need a comprehensive and coherent framework supported by political will that enables market forces to move businesses from the traditional to the green economy.”*

*Mohammed Omran, Chair, Egyptian Stock Exchange*



*Emerging options to enhance financial system ability to mobilize private capital for green investment*



[Source: G20 Green Finance Synthesis Report]

*“There is an opportunity for the G20 to create practical green financing models. The good news is there is an abundance of capital globally, but governments need to create the proper conditions.”*  
**Henry M. Paulson Jr., Chairman, Paulson Institute**

# The power of corporates in a globalised world

- 1000 businesses are responsible for half the total market value of the world's >60,000 publicly traded companies
- In 2010 those companies revenue was US\$32tn, equal to 49% of the total world market cap
- Companies can change the world at a scale historically reserved for nations

## Walmart's 2025 Sustainability Goals:

- 50% renewable energy
- 18% absolute GHG emissions reduction
- 1 Gigaton emissions reduction from suppliers
- Zero waste to landfill
- Zero net deforestation in key commodities
- 100% recyclable packaging in private brands

## The world's biggest economic entities

Based on a ranking from Global Justice Now. Data from the Fortune 500 and CIA World Factbook. Compares government and corporate revenues

|                   |
|-------------------|
| 1. United States  |
| 2. China          |
| 3. Germany        |
| 4. Japan          |
| 5. France         |
| 6. United Kingdom |
| 7. Italy          |
| 8. Brazil         |
| 9. Canada         |
| 10. Walmart       |

Source: Global Justice Now, CIA World Factbook and Fortune