

# Investing for **clean** and **inclusive** growth

## **Climate change in India**

A villager waits on the side of the flooded Brahmaputra River in Assam, India.



# Executive summary

**Deforestation** is one of the leading drivers of climate change



# Climate change as a **cross-cutting theme**

*Unique in scale, urgency, magnitude and complexity of action*



## **Scale**

A global challenge that affects us all

Average temperature in India increased by 0.6 °C over the last century



## **Urgency**

Temperatures already at 1°C above pre-industrial levels

Next 10 years essential to keep temperature rise well below 1.5°C



## **Magnitude**

Risks to health, livelihoods, food security, water supply, and economic growth



## **Complexity of action**

Paris Agreement Article 2.1c: alignment of financial flows with 1.5/2°C trajectory

Fundamental reorganisation of the financial system and the economy

# Our climate change approach so far...

Our investments and investment framework have achieved strong climate impacts

## Investments



We have focused our **power sector investment strategy to accelerate investments in renewable power projects** across our markets, including:

- + establishing Ayana, a new renewables development and investment platform in India
- + supporting innovative renewables projects in 'frontier' geographies (Democratic Republic of the Congo, Pakistan)



We have established **two new facilities to promote and support new climate-smart technologies in our markets**

- + off-grid solar debt facility
- + resource efficiency facility



We have supported other crucial climate sectors beyond infrastructure, including **green buildings, forestry and low-carbon construction material, as well as supporting the resilience** of agriculture and ports

2019

We committed **\$294m** to climate-finance

- + Since 2017 Climate finance represents 20% of our overall commitments – up from 5% in 2016

Since 2017, we have committed more than **\$1 billion** in climate finance

## Investment framework

**Climate change policy (2014):** committed us to considering climate change in every investment we make.

**Coal policy (2014):** excluded investment in coal-fired power plants except in exceptional cases

**HFO policy (2018):** Heavy fuel oils are only invested in where there is an exceptional development case

**IFC Performance Standards:** We also actively consider an investment's impact on the environment.

**Just transition commitment:** UNPRI Statement of Investor Commitment to Support a Just Transition on Climate Change

**Climate change strategy 2020**

Climate change strategy 2020

# Our **future** climate change approach

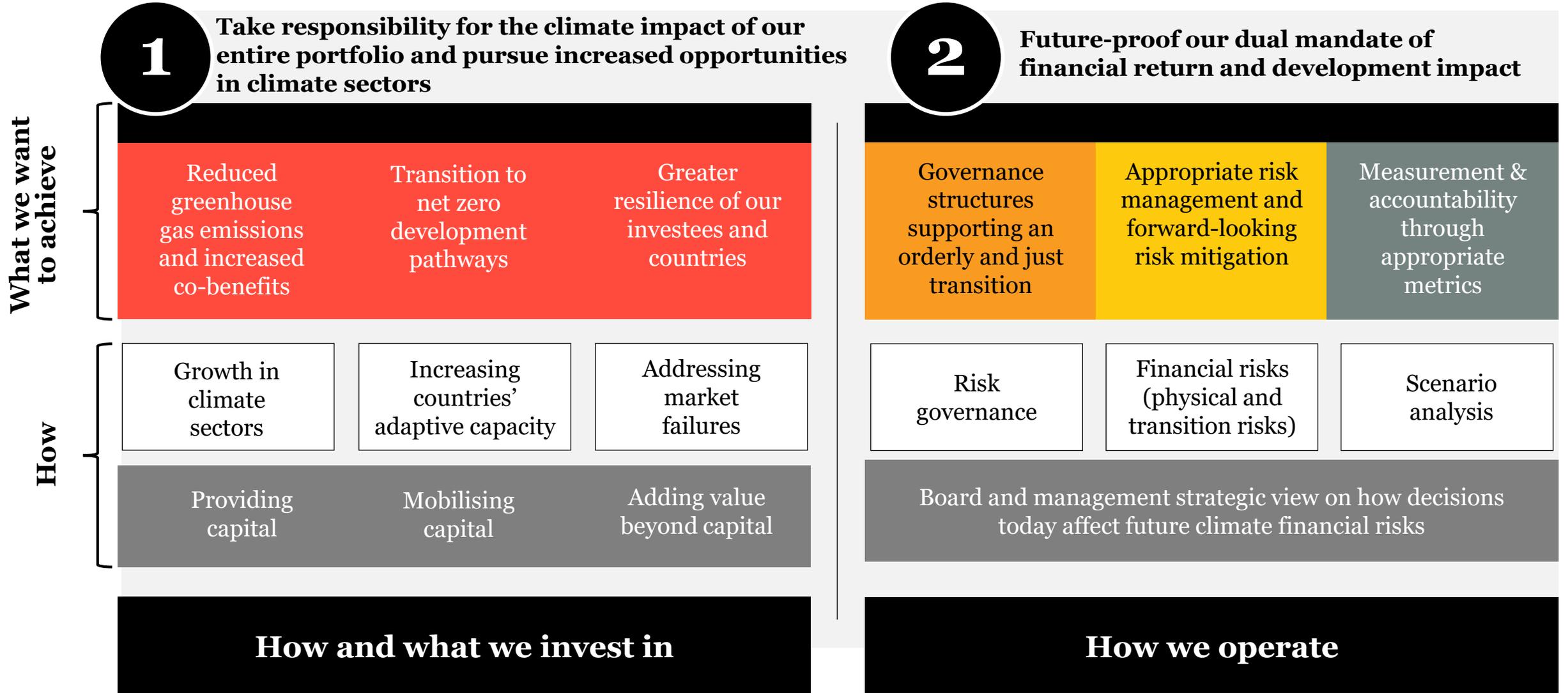
We have organised the strategy along the four Task Force on Climate Related Financial Disclosures (TCFD) pillars – the international framework for integrating climate change (opportunities and risks) in management systems of financial institutions and businesses

## Climate change strategy

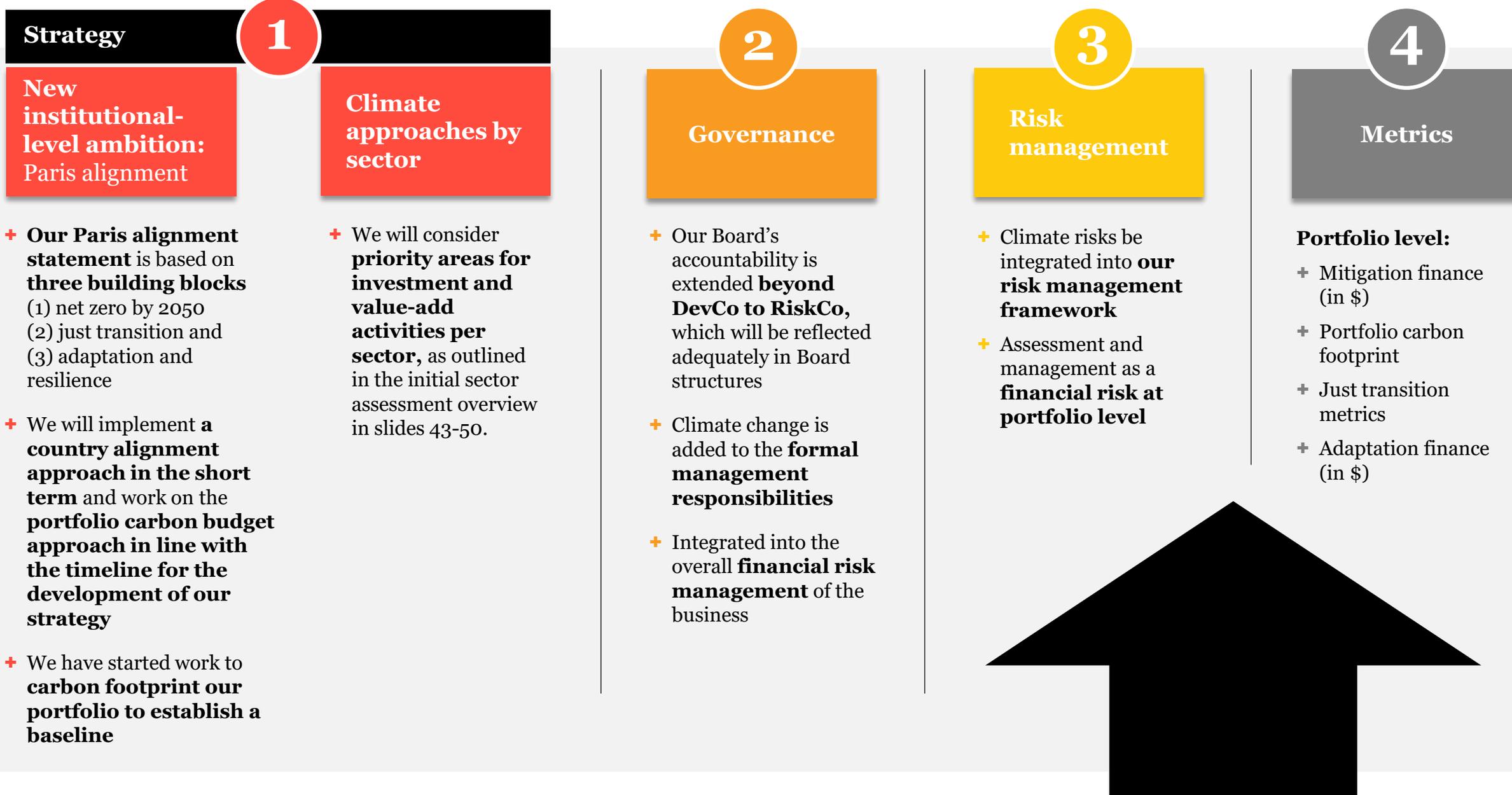


# Our strategy has **two main objectives**

*The question is not about determining whether an organisation is a climate finance organisation or not, but how an investor can support building a carbon-free world and future-proof its operations*

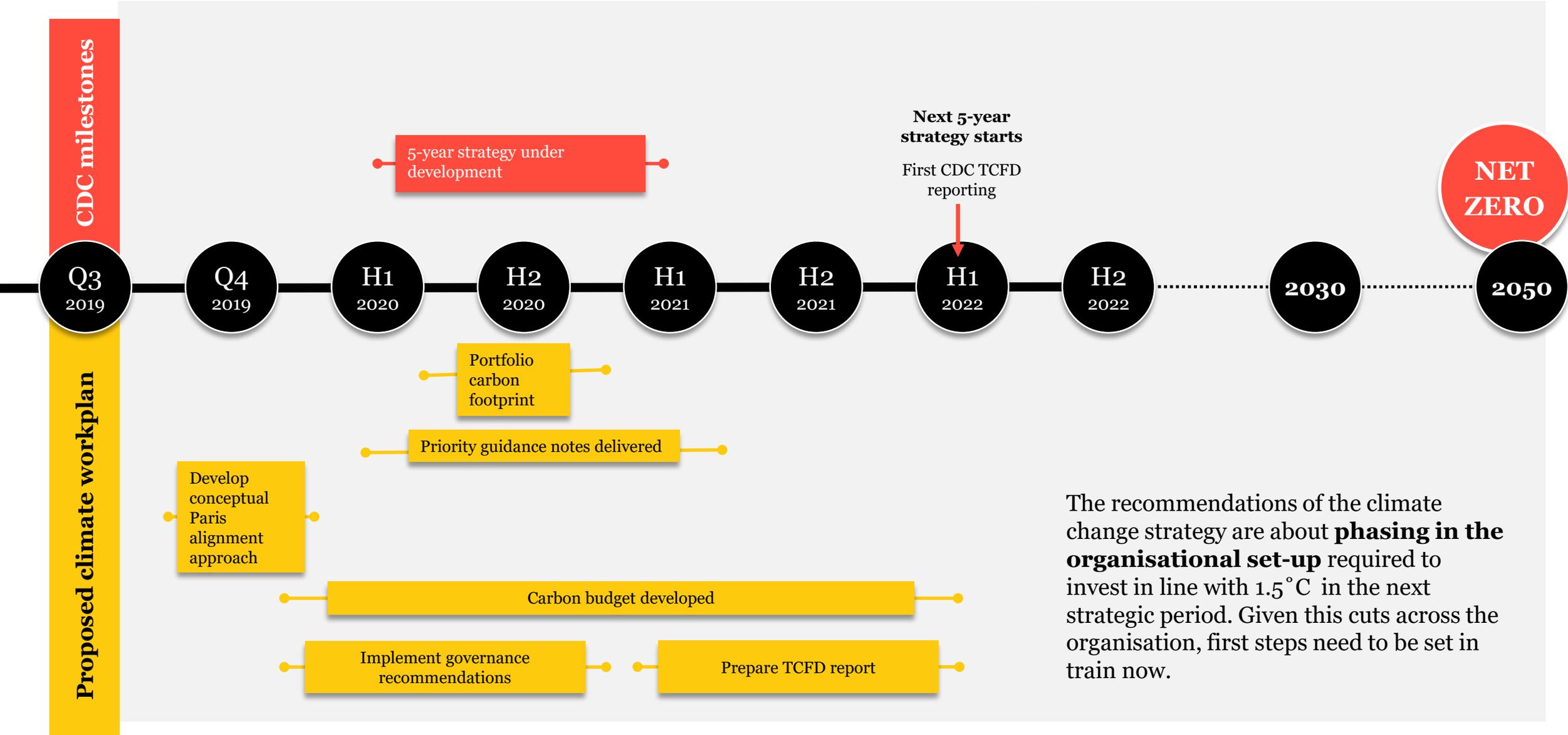


# Overview of key changes in progress



# Potential implementation timeline

A phased approach is necessary to allow for baselining and integration into the next strategic period



The recommendations of the climate change strategy are about **phasing in the organisational set-up** required to invest in line with 1.5°C in the next strategic period. Given this cuts across the organisation, first steps need to be set in train now.

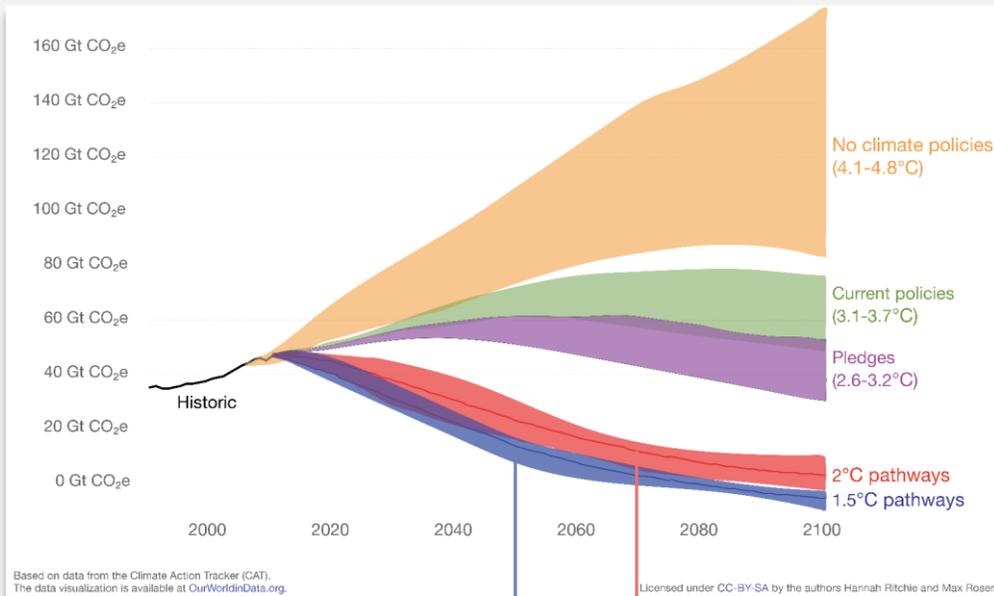
# Context

*Climate change as a  
cross-cutting theme*



# Action now to transform economies is essential

Continuing current emissions trajectories means reaching 1.5°C in 2030 – giving us ten years to drastically reduce emissions



Based on data from the Climate Action Tracker (CAT). The data visualization is available at OurWorldInData.org. Licensed under CC-BY-SA by the authors Hannah Ritchie and Max Roser.

**i** Important to prevent tipping points **1.5°C**

Net zero in 2050

**2°C**

Net zero in 2070

**Current NDCs**  
These are not currently aligned to the Paris Agreement goal

**Paris alignment** and Climate Justice Policy uses a **1.5°C** temperature goal



**A dramatic change in policy and investment is urgently needed to stabilise world temperatures**



Current pledges until 2030 (the Nationally Determined Contributions) would result in about 3°C by 2100, with warming continuing afterwards.



Action cannot be delayed as any action today affects future climate change



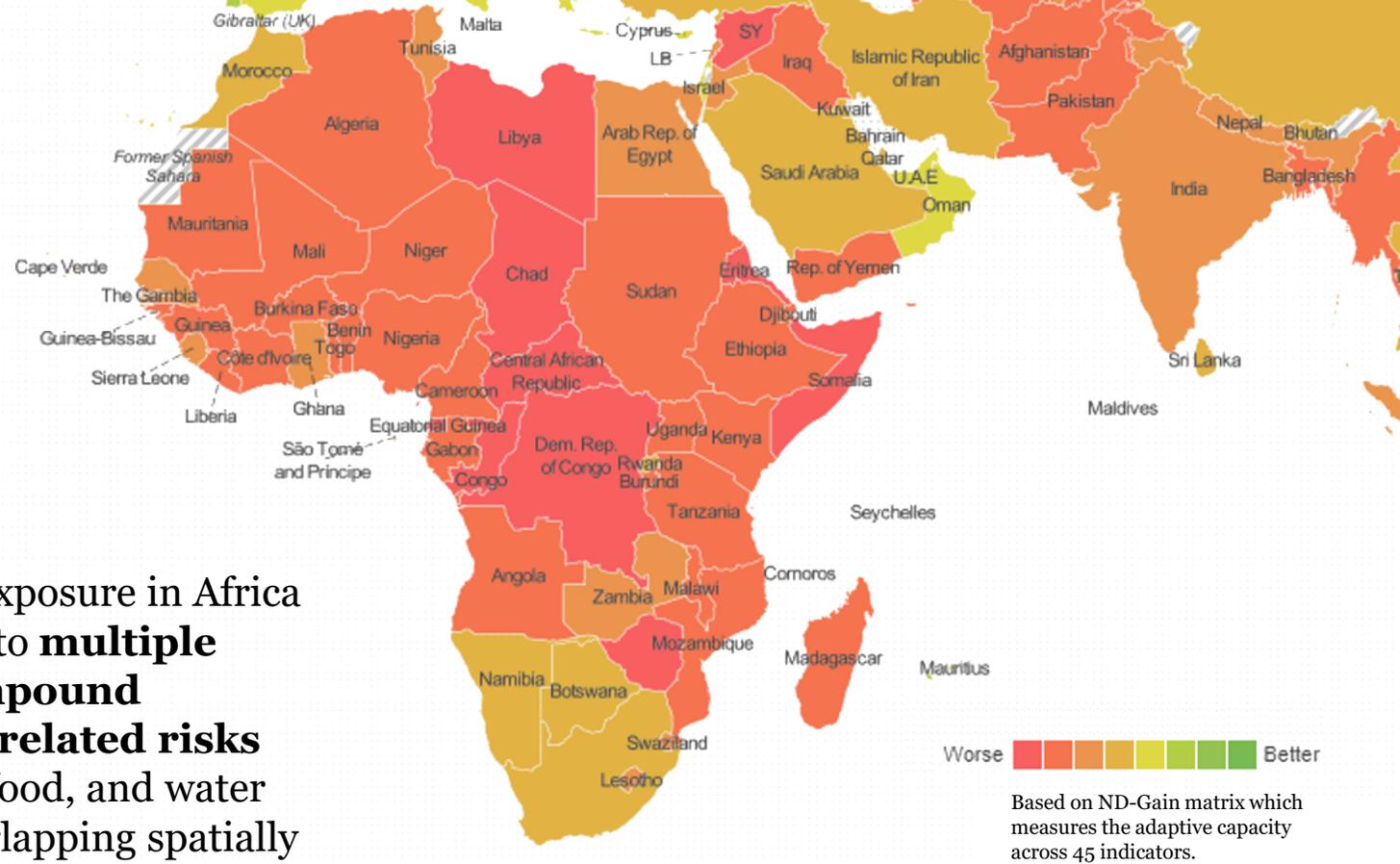
1.5°C pathways: decline of CO<sub>2</sub> emissions by 45% from 2010 levels by 2030, reaching net zero around 2050

**Maximum temperature rise** is determined by cumulative net CO<sub>2</sub> emissions and net non-CO<sub>2</sub> radiative forcing due to methane, nitrous oxide and aerosols

Future climate-related risks depend on the **rate, peak and duration of warming**

# Relevance to Africa and Asia

*Our markets are the most vulnerable – and the least prepared – for climate change, but they also offer significant opportunities for economic transformation and new development pathways*



**Across Africa,** temperatures are projected to rise at a faster rate than in the rest of the world throughout this century



Greater exposure in Africa and Asia to **multiple and compound climate-related risks** (energy, food, and water risks overlapping spatially and temporally)



In 2016, three times as many people were displaced by natural disasters as by conflict



Climate vulnerability has already raised costs of capital in Ghana, Tanzania, Kenya and Bangladesh

# The science of 1.5°C: temperature tipping points and earth system feedbacks

*We must urgently accelerate the transition towards an emission-free world economy*

## Climate tipping points and 'Hothouse Earth'

### Our climate is rapidly warming

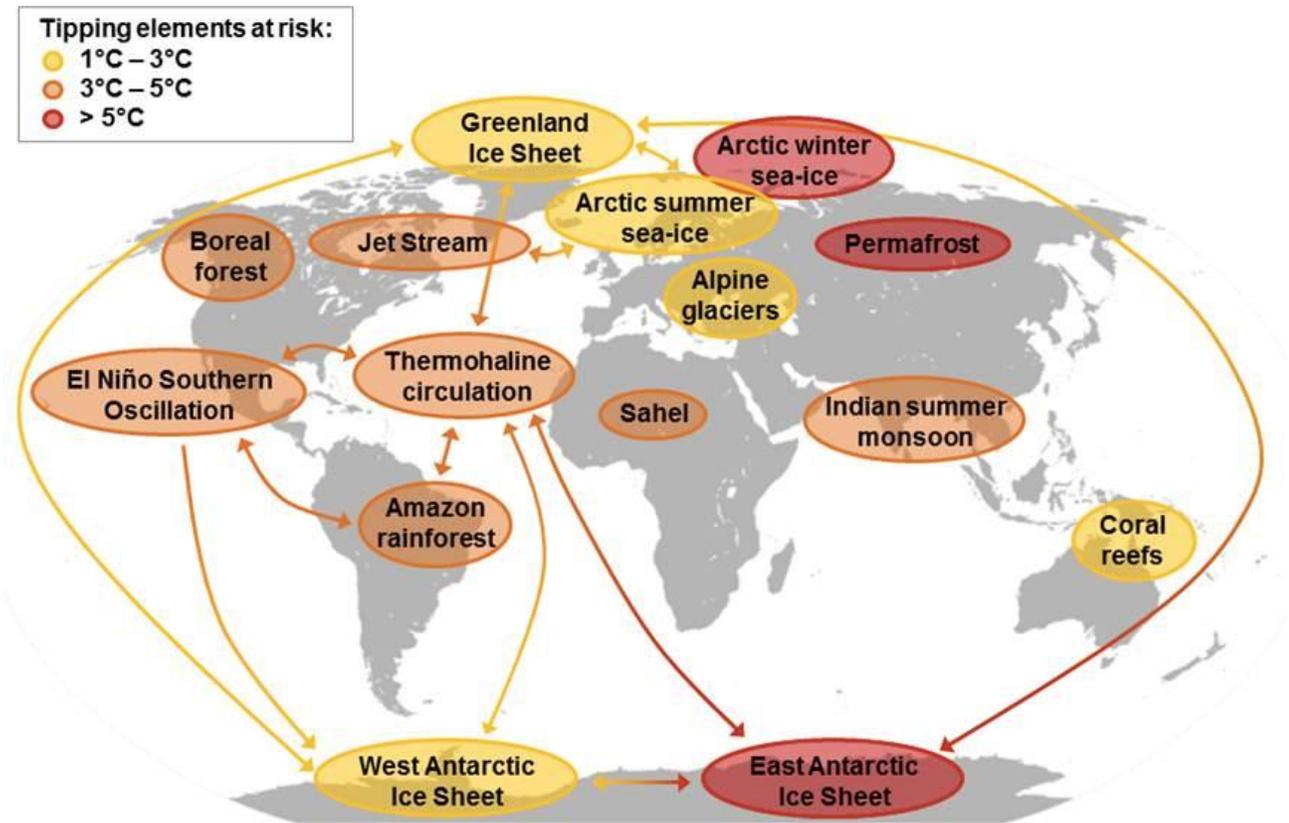
- + The latest IPCC report predicts that on our current trajectory we could reach 1.5°C of warming as early as 2030<sup>1</sup>
- + This gives us **just ten years to drastically reduce greenhouse gas (GHG) emissions**<sup>1</sup>

### Why is the 1.5°C target important?

- + The latest scientific studies shows **climate tipping points** could be triggered as early as 2°C<sup>2</sup>
- + Once tipping points are triggered they are irreversible.<sup>1</sup> Even if emissions decrease, other Earth system processes called **'feedbacks'** would be triggered, causing further warming<sup>2</sup>
- + A **'Hothouse Earth'** climate would stabilise in the long term at a global average of 4-5°C, with sea levels 10-60 m higher than today<sup>2</sup>
- + **Avoiding 'overshoot' of 1.5/2°C is essential** to reduce climate risks and minimise irreversible damage (such as loss of some ecosystems) and requires emissions declining well before 2030

1. Masson-Delmotte, V. et al. Summary for Policymakers. Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels. Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels (2018). doi:10.1017/CBO9781107415324  
2. Steffen, W. and et al. (2018) 'Trajectories of the Earth System in the Anthropocene', Proceedings of the National Academy of Sciences of the United States of America, in review, pp. 1-45. doi: 10.1073/pnas.1810141115.

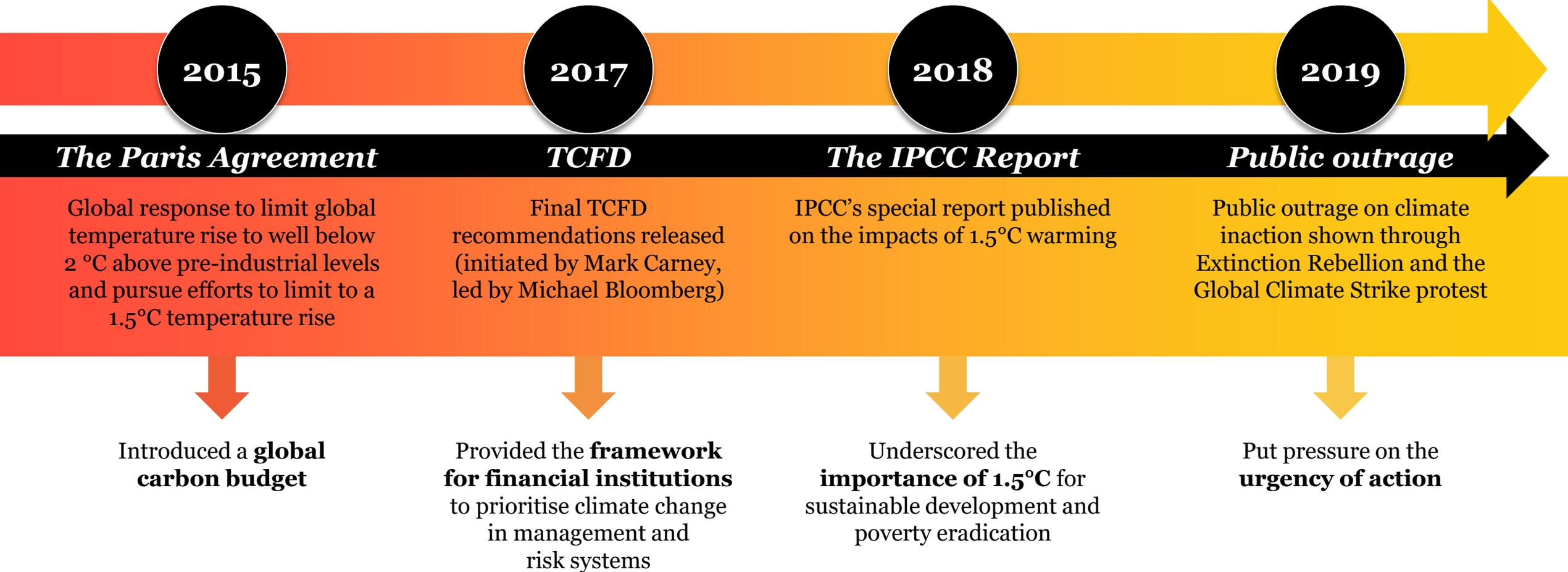
## Climate feedbacks



Taken from Steffan et al (2018). This shows climate feedbacks which, if triggered, may change from carbon store to carbon sink, causing an uncontrollably warmer world.<sup>2</sup>

# The practice: tipping points of action?

*The last few years have seen significant developments to seriously address the economic transformation required to address climate change*



# Role of CDC

## *The case for climate action*

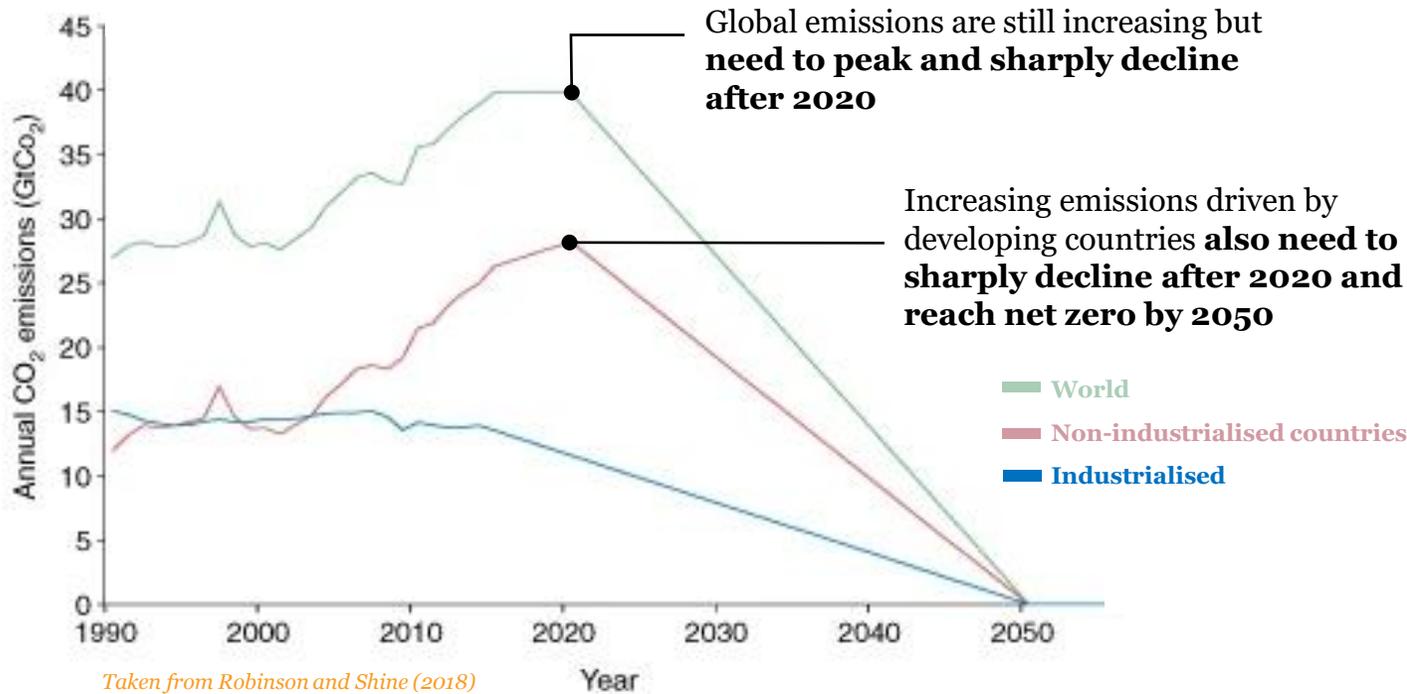
### **Mitigation in India**

Meenakshi Dewan, 20, is one of four women trained in solar power engineering in her village in Orissa, India.



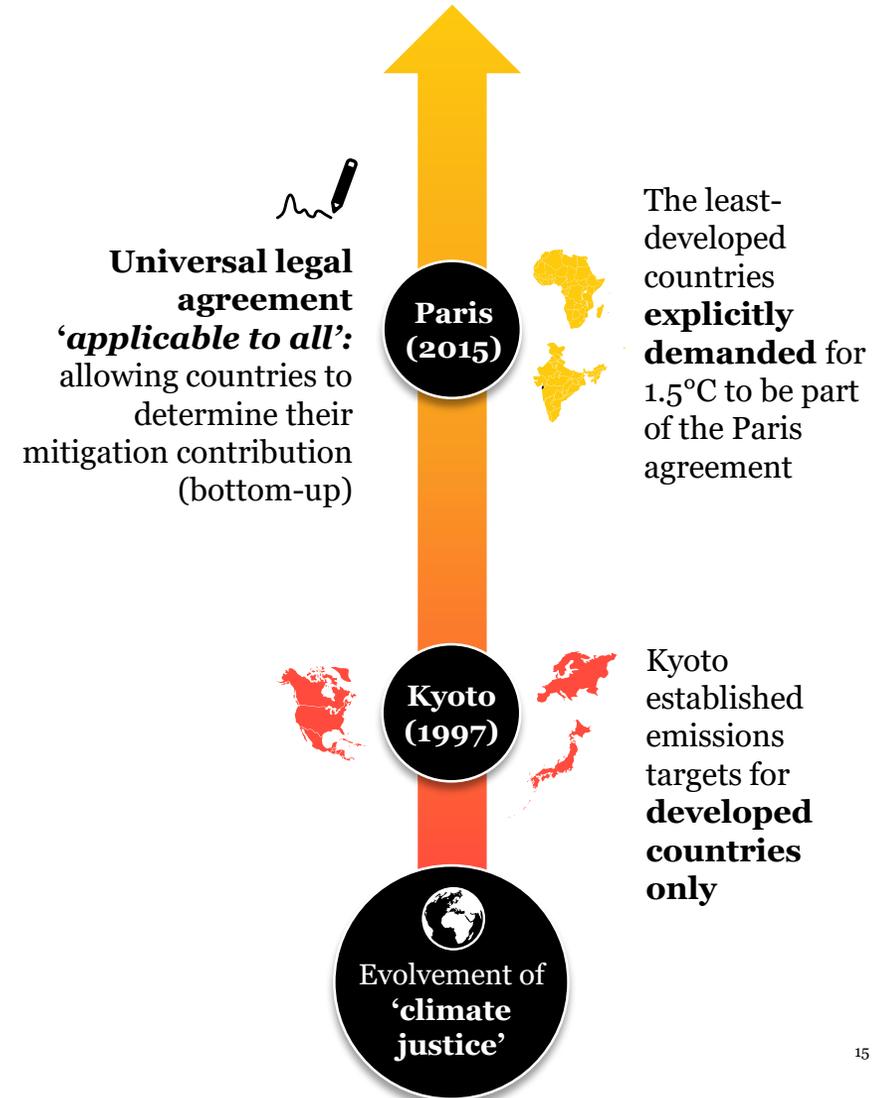
# The 1.5°C goal can only be reached by **common global action** as acknowledged in Paris

Developed and developing countries need to act to reach net zero emissions by 2050



Pathways for countries where we invest would mean **a later peak in emissions but also need to reach net zero by 2050**

**+** All sector investments need to be consistent with countries' low-carbon pathways



# Climate case and the role of CDC

*Moving from climate finance as an add-on to understanding climate change as integral to BOTH the development and finance mandates of a DFI*

## BUSINESS CASE

Climate-related risk and opportunities **affect income statement and balance sheet**



## ECONOMIC CASE

Shift to **clean growth** as one of the most foreseeable and significant global economic trends with significant economic opportunities

## DEVELOPMENT CASE

**Adaptation deficit** for poor countries as more vulnerable to current and future climate change

# Economic case

*Shift to clean growth as one of the most foreseeable and significant global economic trends*

## Overall economic impact

- + Scenarios suggest warming of **4°C would permanently lower global GDP by around 3.5 percent**. By 2100, business-as-usual temperature rises for a typical low-income country would **lower its GDP by 9 percent**<sup>1</sup>
- + In 2014, the Global Commission on the Economy and Climate concluded that **ambitious climate action does not need to cost much more than business-as-usual growth**<sup>2</sup>
- + Bold action on climate change could yield economic gains of **\$26 trillion, generate more than 65 million new low-carbon jobs by 2030, and avoid more than 700,000 premature deaths** from air pollution<sup>2</sup>



**Infrastructure:** \$90 trillion to be invested to 2030, more than the total current stock

**Cities:** More compact, connected, and coordinated cities could be worth up to \$17 trillion in economic savings by 2050

**Sustainable land use:** The shift to more sustainable forms could deliver more than \$2 trillion of economic benefits annually

**Reforestation:** The restoration of 160 million hectares of degraded land, could deliver \$84 billion of economic benefits annually

# Development case (1/2)

*Climate Justice: Achieving development goals is intrinsically linked to action on climate change*

## Synergies between climate action and development impact

### Inactivity on climate change will lead to increased poverty<sup>2</sup> and climate action is the basis for all Sustainable Development Goals

- + Developing countries least responsible for climate change are the **most vulnerable, both geographically and because they have a lower adaptive capacity**
- + The IPCC estimates that reducing warming from 2°C to 1.5°C will **reduce the number of people exposed to climate risks and poverty from 498 million to 286 million<sup>4</sup>**
- + **Investments to tackle climate change support and are the basis for wider sustainable development**– achievement of other SDGs is dependent on tackling climate change

### Adapting to climate change also leads to development gains and co-benefits

- + Investing in climate adaption in sectors such as healthcare, agriculture, buildings and infrastructure to ensure they are **resilient to future climate fluctuations can protect economic development**
- + Many decarbonisation options come with **quality of life and competitiveness co-benefits**

“

*The two defining challenges of this century are overcoming poverty and managing climate change. We can and must rise to them together: if we fail on one, we will fail on the other.<sup>1</sup>*

”

Lord Nicolas Stern



**Progress on climate change action is essential for development impact** – therefore while ‘**climate justice**’ recognises the historical responsibility of developed countries, it fundamentally is about increasing support for the poorest countries to deal with low-carbon transition and build resilience to the effects of climate change.



**The least developed countries explicitly demanded for 1.5°C to be part of the Paris Agreement for that very reason.** Limiting to 1.5°C translates into reaching net zero emissions by 2050. This can only be achieved by global action by both developed and developing countries.

1. Stern, N. (2015) 'Economic development, climate and values: making policy', Proceedings of Royal Society B, 282. doi: 10.1098/rspb.2015.0820.

2. IPCC (2014b) Summary for Policymakers, Climate Change 2014: Impacts, Adaptation and Vulnerability - Contributions of the Working Group II to the Fifth Assessment Report. Alistair Woodward. doi: 10.1016/j.renene.2009.11.012.

3. Fussler, H. M. (2010) 'How inequitable is the global distribution of responsibility, capability, and vulnerability to climate change: A comprehensive indicator-based assessment', Global Environmental Change, 20(4), pp. 597–611. doi: 10.1016/j.gloenvcha.2010.07.009.

4. Masson-Delmotte, V. et al. Summary for Policymakers. Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels. Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels (2018). doi:10.1017/CBO9781107415324

5. <https://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html>

# Development case (2/2)

*Inactivity on climate change will lead to increased poverty through a variety of channels*

## Significant challenges and opportunities

### Climate change is expected to have widespread impact on:<sup>1</sup>

- + **Supply chains and food security:** through linkages to crop yields and transport infrastructure. Disruptions to the production and delivery of goods and services due to environmental disasters are up by 29 percent since 2012<sup>2</sup>
- + **Nutritional composition:** impact on staples such as rice and wheat. By 2050, this could lead to zinc deficiencies for 175 million people, protein deficiencies for 122 million, and loss of dietary iron for 1 billion<sup>3</sup>
- + **Human migration:** in 2016, three times as many people were displaced by natural disasters than conflict<sup>5</sup>
- + **Livelihoods, life savings and creditworthiness:** through destruction of productive assets
- + **Reversal of gains in poverty reduction:** through pushing people permanently back into poverty

### Opportunities – shifting to clean growth

- + **The expected transition to a lower-carbon economy is estimated to require around \$1 trillion of investments per year<sup>6</sup>**
- + **Opportunities:** cost savings from resource efficiency, adoption of low-emission energy, development of new products and services, access to new markets, and building resilience along the supply chain<sup>3</sup>

## Cyclone Idai, 14 March 2019



### A recent investee, Merec Industries via Amethis Fund II

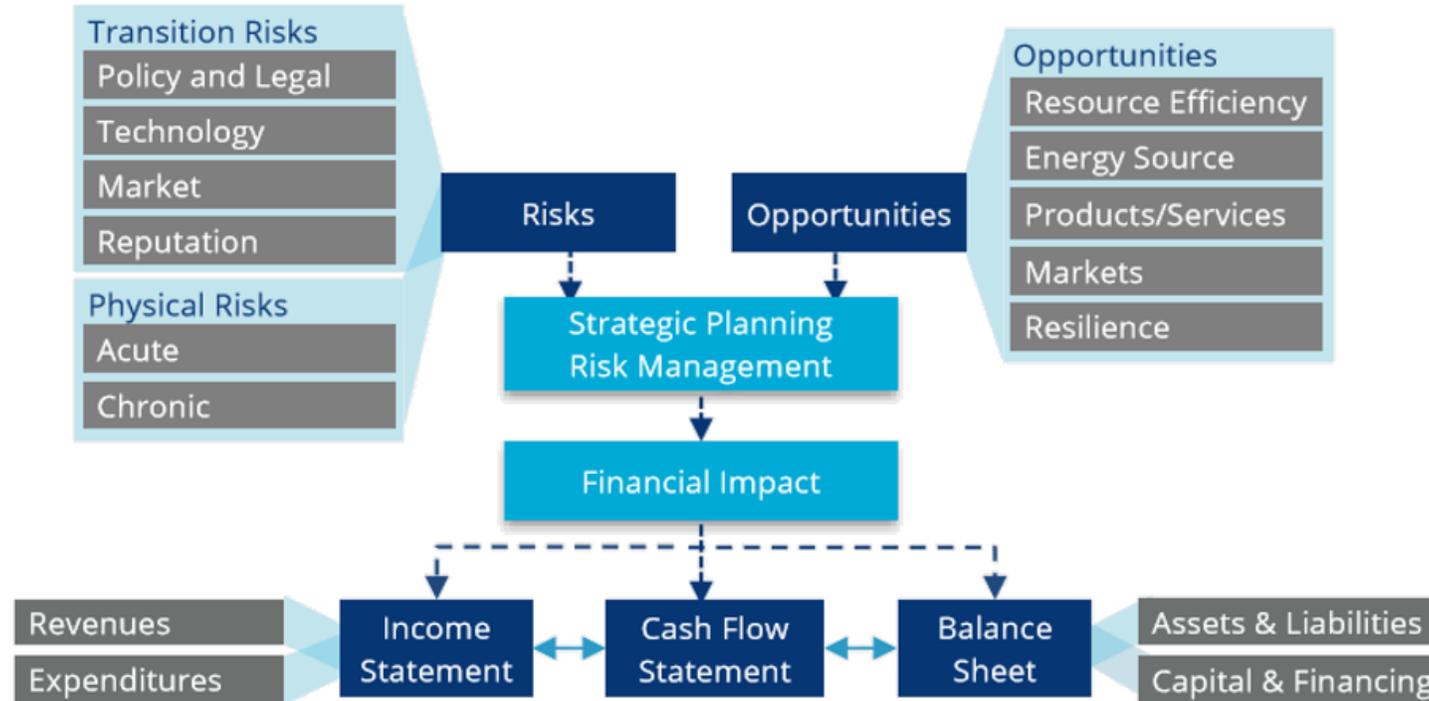
*While it is hard to attribute climate change as a cause of individual extreme weather events, this case study provides an illustrative example of future weather patterns:*

- + We recently made an investment in a wheat and maize distributor in Mozambique
- + There was major devastation from the cyclone in the area of Beira, where Merec has one of its operating sites
- + Substantial physical damage to the factory occurred, including to the inventory
- + Merec will now cater to the need of Beira through its other factories

1. Masson-Delmotte, V. et al. Summary for Policymakers. Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5 °C above pre-industrial levels. Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels (2018). doi:10.1017/CBO9781107415324  
2. Slubowski, C. 2017. "Weather-Related Supply Chain Risks Shouldn't Be Ignored". Zurich American Insurance Company. 3 October 2017.  
3. Harvard T. H. Chan School of Public Health. 2018. "As CO2 Levels Continue to Climb, Millions at Risk of Nutritional Deficiencies". Phys Org. 27 August 2018  
4. Spalding, M. D., R. D. Brumbaugh, and E. Landis. 2016. Atlas of Ocean Wealth. Arlington, VA: The Nature Conservancy.  
5. Internal Displacement Monitoring Centre (IDMC) and the Norwegian Refugee Council (NRC), 2017, Global Report .  
6. TCFD. Recommendations of the Task Force on Climate-related Financial Disclosures. Launch Tate Mod. 1–6 (2017). doi:10.1007/s00028-003-0117-8

# Business case (1/4)

*Climate-related risk and opportunities affect income statement and balance sheet*



- + **Revenues:** transition and physical risks affecting demand for products and services
- + **Expenditures:** cost structure and CapEx requirements impact ability to react to challenges

- + **Assets and liabilities:** valuation affected due to supply/demand changes from changes in policies, technology, and market dynamics
- + **Capital financing:** changing debt/equity profile (e.g. due to reduced operating cash flows)

# Business case – examples (2/4)

Asset managers, pension funds, insurers, and banks are already taking action



HSBC France compares sectoral emissions factors with 2°C scenarios and tested sectoral exposure to physical and transition risks



Six new sustainable equity ETFs which target a 30% carbon reduction compared with six parent MSCI indices



Developed medium-term transition index based on carbon intensity by corporate customer group, anticipated emissions reductions and climate responsiveness of customers



2020 target of €15bn in renewable energy, €100m to be invested in innovative start-ups, joint lead manager for €16.1bn of sustainable bonds



Weatherproofing programme to understand portfolio impacts of physical risks and portfolio review of stranded assets (dependent on fossil fuel, exposed to carbon pricing, tougher standards or new low-carbon technologies)



Targets reducing the carbon footprint of its entire fund by 50% and quadrupling its investments in sustainable development solutions to €20bn by 2020



Divested \$13bn as largest fossil-fuel selloff to date



Stopped coal although government set no phase-out date



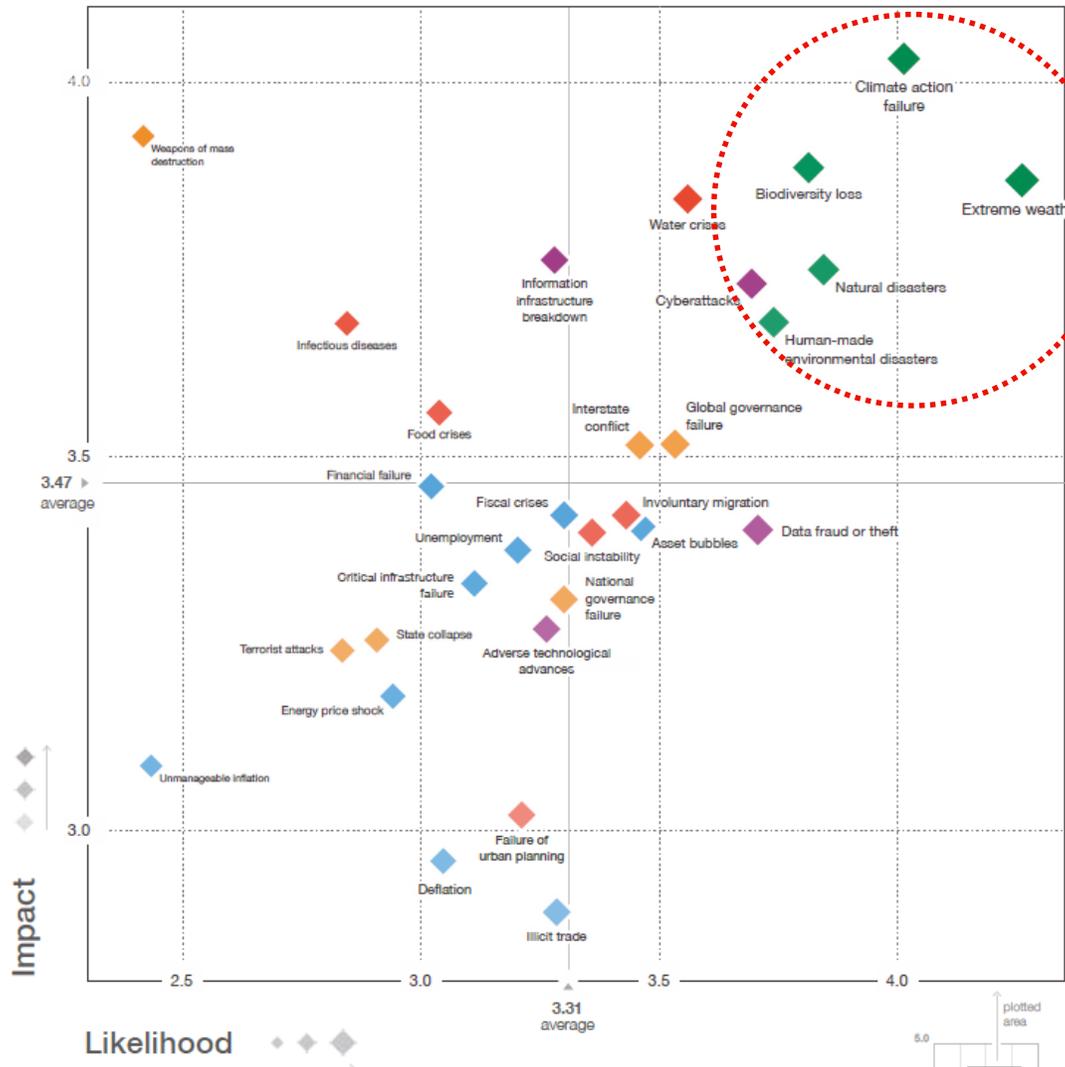
First major US insurer to announce a ban on coal coverage



Integration of systematic positive/negative screening and fund manager requirements to undergo six-monthly carbon audits and to provide case studies where ESG and carbon issues have influenced buy/hold/sell decisions

# Business case (3/4)

Climate-change and extreme weather events consistently rated as the top macroeconomic risks



## Environmental risks dominate the results of the World Economic Forum’s Risks Perception Survey (GRPS).

Over the past six years, corporate leaders have consistently rated climate change and extreme weather as the top macroeconomic risks – in terms of both impact and likelihood.

In 2020, and for the first time in the survey’s history that one category has occupied all five of the top spots, environmental risks accounted for five of the top five risks by likelihood and three of the top risks by impact.

‘Failure of climate change mitigation and adaptation’ is the number one risk by impact and number two by likelihood over the next 10 years.

### Top 10 risks in terms of Likelihood

- 1 Extreme weather
- 2 Climate action failure
- 3 Natural disasters
- 4 Biodiversity loss
- 5 Human-made environmental disasters
- 6 Data fraud or theft
- 7 Cyberattacks
- 8 Water crises
- 9 Global governance failure
- 10 Asset bubbles

### Top 10 risks in terms of Impact

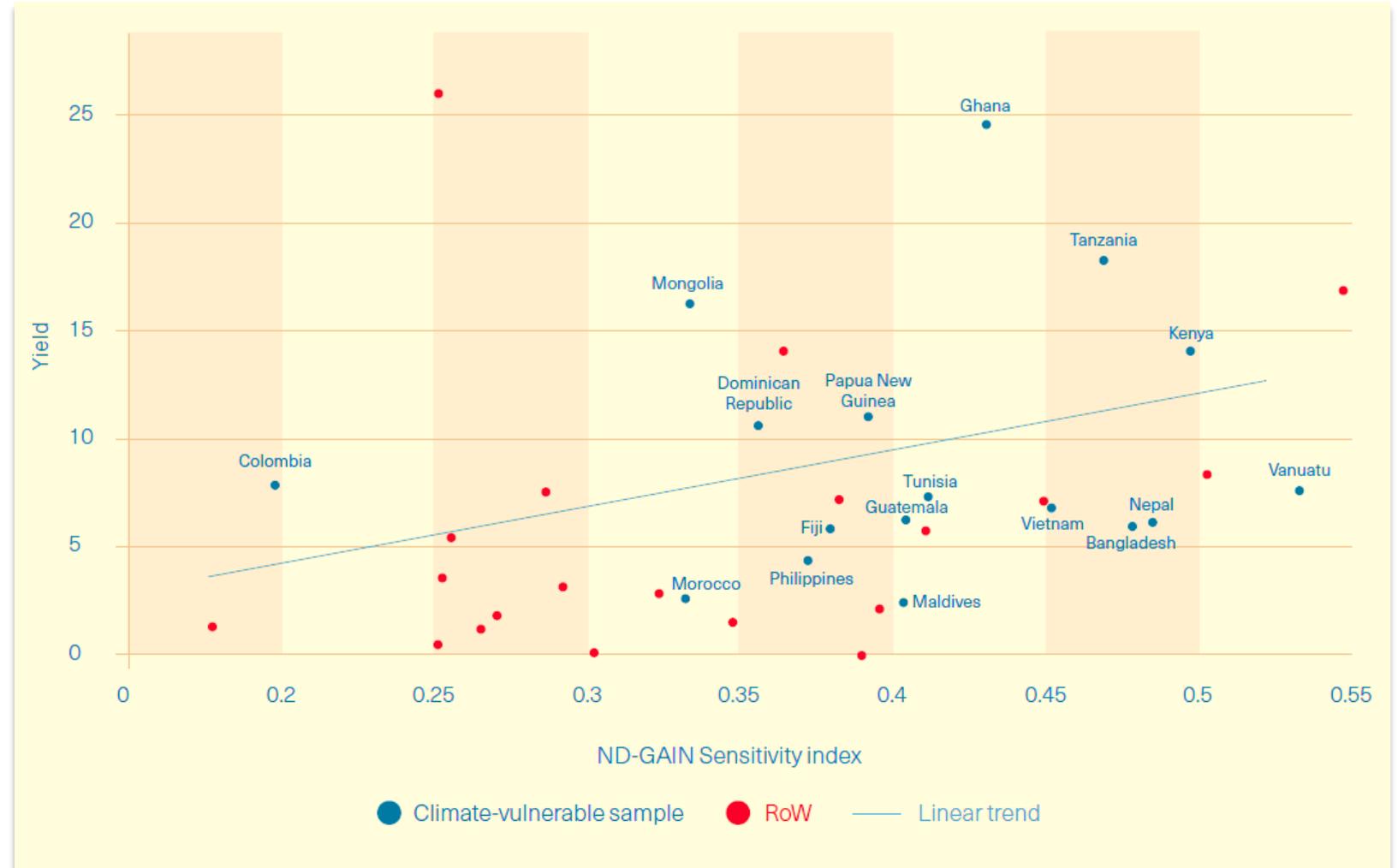
- 1 Climate action failure
- 2 Weapons of mass destruction
- 3 Biodiversity loss
- 4 Extreme weather
- 5 Water crises
- 6 Information infrastructure breakdown
- 7 Natural disasters
- 8 Cyberattacks
- 9 Human-made environmental disasters
- 10 Infectious diseases

Taken from World Economic Forum, ‘The Global Risks Report 2020’, p.3

# Business case (4/4)

*Climate vulnerability has raised the average cost of debt in our key markets*

- + Climate vulnerability has raised the average cost of debt in a sample of developing countries by 117 basis points. This translates into **\$40 billion in additional interest payments on government debt alone over the past ten years.**
- + Incorporating higher sovereign borrowing rates into the cost of private external debt, it is estimated that **climate vulnerability has cost these countries \$62 billion in higher interest payments across the public and private sectors**
- + The most affected countries include **Ghana, Tanzania, Kenya, Bangladesh and Vietnam**
- + It is expected that the additional interest payments attributable to climate vulnerability will increase to between **\$146 – 168 billion over the next decade**
- + S&P has indicated that **climate change could become a factor in credit profiles**, especially for emerging market countries



Taken from UN-commissioned research by Imperial College Business School and SOAS (based on 48 countries forming part of the Climate Vulnerable Forum and the Notre Dame Global Adaptation Index (ND-GAIN))

# The **role** of CDC

As a DFI, our role is not only to manage climate-related risks and pursue climate opportunities in an opportunistic manner, but to **support the poorest countries to deal with the economic transformation required to reach net zero in a socially just manner and build resilience to the effects of climate change.**



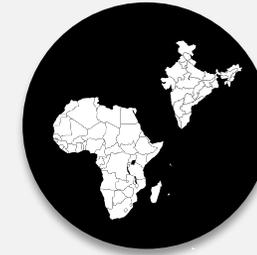
**Building the foundations**  
of a net zero,  
resilient world



Supporting a  
**just transition**  
(workers, women,  
communities)



Addressing  
**vulnerability**  
to climate  
shocks



## Implications for our markets

- 1** Scaling up mitigation opportunities in our (currently) highest emitting markets (e.g. India, South Africa)
- 2** Increased support for adaptation, particularly in Africa given the climate risk exposure of the continent
- 3** Playing a significant part in helping African countries with new net zero development pathways

# Climate impact: supporting the LDC 2050 Vision

The vision is to implement climate-resilient development pathways by 2030 and deliver net zero emissions by 2050 to ensure societies and ecosystems thrive

## Investment to support structural transformation to net zero, resilient and prosperous economies



### Our contribution

### How we achieve impact

### Ultimate impact

#### Allocating and managing capital

To support the transition to net zero, resilient and just economies, and avoid lock-in

#### Mobilising capital

To support the transition to net zero, resilient and just economies

#### Adding value beyond capital

To accelerate decarbonisation and resilience technologies, business models, and skills and leadership

#### Direct impact of businesses

Supporting growth in climate future-proofed businesses and sectors

#### Indirect impacts via economic outputs

Supporting structural transformation of economies towards a net zero and resilient future

#### Catalysing markets

Addressing the market failures which lead to climate change

#### What's the impact?

Economies that are net zero and prosperous with vibrant and sustainable growth within ecological limits

#### Who benefits?

People living in just, inclusive and poverty-free societies

Ecosystems that are sustainably managed, less vulnerable to climate shocks

#### By how much?

Over time decoupling emissions (reducing) from economic growth (increasing)

“  
Implementing climate-resilient development pathways by 2030 and deliver net-zero emissions by 2050 to ensure our societies and ecosystems thrive”

# Strategy

## **Adaptation in Kenya**

Testing soils as part of climate-smart agriculture practices to slow the decrease in crop yields caused by climate change.



# Institutional commitment

## - *Paris alignment*

**The Paris Agreement** was negotiated and agreed to by 197 countries in 2015, with the goal of keeping global temperatures well below 2 degrees. This came into effect on 4 November 2016 and the Eiffel Tower was illuminated with green light in celebration.

# Our Paris alignment commitment

*Our Paris alignment is based on three building blocks of net zero by 2050, just transition, and adaptation and resilience*

## Paris alignment commitment

Without decisive action, the climate emergency will be devastating for those living in our markets in Africa and South Asia. From increased flooding and droughts to poor air quality, the effects are complex and severe. Climate change affects everything we are trying to accomplish. It is integral to our impact and financial return mandates given the economic, development and business cases for climate action are clear. Our markets are the most vulnerable and the least prepared for climate change, but also offer significant opportunities for economic transformation and new development pathways. There remains great need for economic growth, energy access and improved living standards to meet the SDGs. We want to play a meaningful role in tackling climate change and supporting countries in their transition to zero-carbon and resilient economies. So far, we have committed \$1 billion of climate finance.

We know that not exceeding the 1.5°C temperature goal of the Paris Agreement is particularly important for our markets. That is why we are committed to do more in our new strategy across all our investments.

Our response to aligning our investments with the goals of the Paris agreement is built on three building blocks. First, how to help build the foundations of a net zero world given investment decisions today affect emissions tomorrow. Second, how to support a 'just transition' to a zero carbon economy by keeping job creation and skills development at the forefront of that change. And third, how to strengthen the resilience of communities, businesses and people to the effects of climate change.

That is why we will use the latest available scientific and forward-looking evidence to consider how our investments align with different countries' net zero emission development pathways to limit global warming to 1.5°C and pursue our ambition to align our portfolio to net zero GHG emissions by 2050. As recognised in the Paris Agreement, emissions in our markets will increase before they peak. That's why we will ensure all our investments will be based on two core principles: supporting decarbonisation pathways in our priority sectors and countries, where feasible, and proactively investing in companies that can contribute to the structural changes and economic transformation needed to build net zero, inclusive and resilient economies.

## Building blocks

- How we constructed the statement

Climate and development synergies

Climate as a financial issue

Relevance to our markets

Importance of 1.5°C

Finance in line with 1.5 °C carbon budget

Just transition

Adaptation and resilience

Net zero by 2050 commitment

Later peaking in our markets

Decarbonisation + economic transformation

## Paris agreement

- How this is reflected in the actual Paris agreement text

Intrinsic relationship with sustainable development

Consistency of all financial flows

Specific vulnerability

Well below 2°C and efforts to limit to 1.5°C

Consistency of all financial flows

Just transition of the workforce (decent work and quality jobs)

On equal footing (country-driven, gender responsive, local)

Absolute net zero in the second half of this century in accordance with best available science

Global peaking asap, recognition that peaking will take longer for developing countries

Emphasis on long-term systemic change rather than incremental mitigation (finance alignment)

# Our Paris alignment approach

*Our Paris alignment is based on three building blocks of net zero by 2050, just transition, and adaptation and resilience*

As a DFI, how can we support the economic transformation in our markets to achieve net zero emissions by 2050 – in a socially just manner that delivers on people’s needs for prosperity and improved living standards?



The diagram features a central red banner with the text 'Paris alignment' topped by a small red Eiffel Tower icon. A horizontal red line extends from this banner across the width of the slide. Below this line are three rectangular boxes, each representing a 'Building Block'. Each box contains an icon (a square, two squares, or three squares), the text 'BUILDING BLOCK', a circled number (1, 2, or 3), and a specific focus area. A large yellow double-headed arrow at the bottom spans the width of the three boxes, with the text 'Across all sectors' centered within it. Below the arrow are five columns of text providing details for each building block.

## Paris alignment

■ BUILDING BLOCK **1**  
Net zero by 2050

■ ■ BUILDING BLOCK **2**  
Just transition

■ ■ ■ BUILDING BLOCK **3**  
Adaptation and resilience

Across all sectors

Portfolio with net zero emissions by 2050

Investments consistent with our countries' pathways to net zero by 2050

Focus on job creation, re-and upskilling in new low carbon/resilient sectors, aligned with approaches on skills and leadership, gender, and job quality

Increase resilience in our portfolio companies, including a gender lens

Invest in sectors targeted for resilience

■ Building block **1**

# Net zero emissions by 2050

*Financing in line with a 1.5 °C carbon budget*

## Renewable power

In 2019, global benchmark prices for onshore wind and batteries dropped 6% and 35% respectively. <sup>1</sup>

1. Bloomberg, New Energy Outlook, (2019)



# Net zero by 2050 – the case for this ambition

Net zero is what our markets demand and what investors and businesses increasingly drive globally

## The Least Developed Countries' (LDC) vision



For all LDCs to be on climate-resilient development pathways by 2030



To deliver net zero emissions by 2050

### What support are they asking for?

LDCs are asking [the international community](#) to:

- + Provide long-term finance
- + Invest in climate-resilient net zero economies and technology in LDCs
- + Align more developed country policy to 1.5°C resilient pathways by 2020

**Our role should be to support these efforts in our markets**



## Private sector commitments as of June 2020

### Asset owners

Responsible for more than **\$4.6 trillion in investments** have committed to net zero emissions investment portfolios by 2050<sup>1</sup>

This includes:



Caisse de dépôt et placement du Québec

### Banks

**130 banks with \$47 trillion in assets** have committed to Paris alignment<sup>2</sup>

### Companies

**87 major companies with a combined market capitalisation of over \$2.3 trillion** have committed to implement the 1.5°C target across their operations and value chains<sup>3</sup>

This includes:



Net zero by 2050

**We should play our part towards net zero in line with the leading private sector**

1. UNEPFI website (June, 2020) [here](#)  
2. EDIE.net news article (Sep, 2019) [here](#)  
3. Announcement at UN Climate Action Summit (Sep, 2019) [here](#)

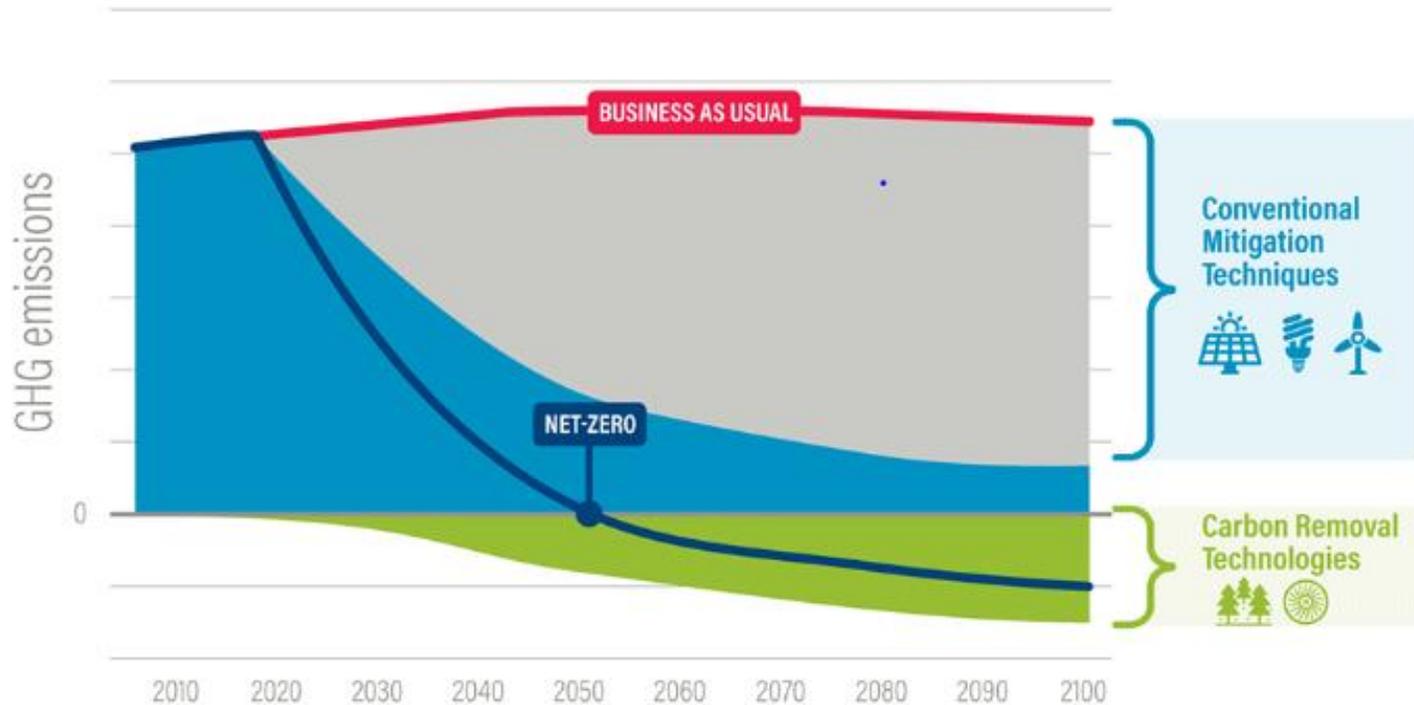
# Net zero by 2050 – what does it mean?

Reaching net zero emissions by 2050 is required to stop global temperature rise exceeding 1.5°C. This can only be achieved by substantial emissions reduction and carbon removal to balance any remaining emissions

■ Building block **1**

HOW TO GET  
TO NET-ZERO

Reach net-zero emissions



1

**Transition to a low-carbon economy:** through mitigation techniques

2

**Carbon removal:** any remaining emissions are balanced with an equivalent amount of carbon removed or 'sequestered', leading to 'negative emissions' (forests restoration or direct air capture and storage technology)

3

**Net zero emissions** (different to 'zero carbon' where no carbon was emitted from the outset)

4

**Timing of net zero matters:** The final amount of CO<sub>2</sub> in the atmosphere will depend on *when* net zero is achieved.

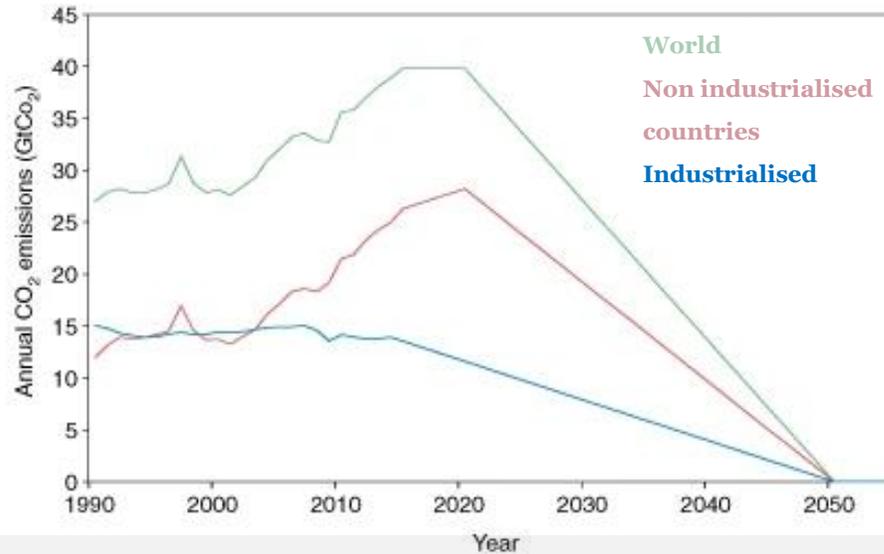
# Net zero by 2050: principles

Our approach should be underpinned by being comprehensive in investment coverage, a focus on long-term absolute emissions and actively driving the economic transformation required to achieve net zero by 2050



Pathways for our geographies would mean a later peak in emissions but also need to reach net zero by 2050

+ All sector investments need to be consistent with countries' low-carbon pathways



Taken from Robinson and Shine (2018)

Based on Institute for Climate Economics (I4CE): 'A Framework for Alignment with the Paris Agreement: Why, What and How for Financial Institutions', September 2019

## Pre-Paris: climate financing

1

### Climate financing

Focus on mitigation and adaptation finance

2

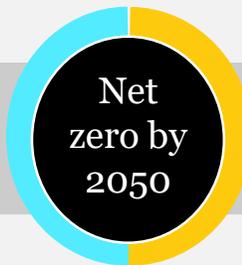
### Short-term horizon: relative emissions

Focus on financing lower-carbon alternatives

3

### Incremental:

Focus on differences in marginal costs of abatement



## Post Paris: alignment of all flows to net zero

### Comprehensive: all financial flows

Support low-carbon pathways across all business areas

### Long-term horizon: absolute emissions

Investments also have to be within the global carbon budget

**Transformation:** Do no harm to net zero pathways (e.g. lock-in) as a minimum and focus on investments that can actively support the structural economic changes required

For all financial institutions

Particular mandate for DFIs

DFIs need to ensure they support countries' pathways to net zero by 2050 – requiring going beyond investments that are relatively better than the counterfactual and take a long-term view on how to support the economic transformation required

# Net zero by 2050 – Taking a combined approach

*Our approach should reflect that economic development consistent with net zero by 2050 can only be achieved by a combined investment focus on decarbonisation and economic transformation*

**CDC will use two methodologies to align future investments to net zero by 2050**

## Aligning each investment



## Aligning our overall portfolio

Alignment of individual investments with respective national economy-wide/sectoral/regional low-carbon strategy compatible with Paris

GOAL

Alignment of portfolio with net zero by 2050 pathways for Africa and South Asia

Multicriteria assessment leading to aligned/non-aligned decision. Criteria include positive/negative lists, NDCs, national pathways, sector specific criteria, lock-in, stranded asset risk

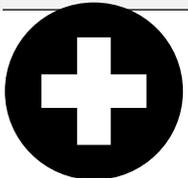
How the approach works

Calculating an institution's 'fair' share of the global carbon budget at portfolio level

Increased focus on aligned sectors/**30% climate finance target in 2021**  
Guidance on **conditional sectors** (starting with gas)  
Clearer **fossil fuel exclusions**

CDC implementation

**Short-term:** baseline our portfolio emissions  
**Medium-term:** develop a roadmap for next strategic period



Economic development consistent with net zero by 2050 can only be achieved by a combined focus on **decarbonisation** through phasing out highly emitting sub-sectors and reducing emissions intensities across sectors and proactive efforts to support new technologies and business models for **economic transformation**

# Net zero by 2050 – aligning each investment

(1) increasing investments in aligned sectors; (2) excluding new investments in misaligned sectors; and (3) taking a thoughtful approach to those investments that can play a role towards a net zero future

■ Building block **1**

## Misaligned

**We will not make any new commitments (equity and debt) deemed as misaligned directly or through funds and co-investments in the following sub-sectors:**

**Coal:** Coal-fired power plants (including dual-power plants), retrofitting and rehabilitation of existing coal power facilities, coal mining, processing and trading

**Oil:** upstream oil exploration and production, midstream oil (including refineries), HFO only-fired power plants and mini-grids

**Gas:** standalone upstream gas exploration and production

**Transport:** Transport infrastructure for exclusive crude oil or coal transportation for power generation.

## Conditional

**We are developing guidance on how to assess alignment with the Paris Agreement and country net zero pathways for sub-sectors that are ‘in between’ or ‘conditional’.** This will cover sub-sectors that can play a role towards net zero economies in certain, but not all, circumstances.

As we are committed to working towards Paris alignment, we recognise that this means shifting from a short-term horizon of relative emissions (i.e. a focus on financing lower-carbon alternatives) towards a long-term horizon (i.e. a focus on aligning investments with the remaining global carbon budget). This will establish new parameters for investment decision-making.

That is why we will only pursue investments in gas-fired power stations and gas midstream projects if they fulfil the requirements of our emerging guidance tool to demonstrate alignment with countries’ pathways to net zero emissions by 2050 and therefore can be considered transitional investments to net zero economies by 2050. This approach will allow us to deliver on our development and climate change objectives in a coherent way.

This position will be reviewed as the UK Government’s broader approach to ODA funding for fossil fuels is updated.

## Aligned

Increased focus on aligned sectors/climate finance by aiming for **30% of annual commitments in 2021** to be invested in **climate-related projects and businesses**

■ ■ Building block **2**

# Just transition

*Delivering a net zero future in a socially inclusive manner*

We worked with **Ayana Renewable Power**, an Indian solar and wind generation company, launched by CDC in 2018, on a pilot skills development to help trainees gain jobs in the renewable sector.

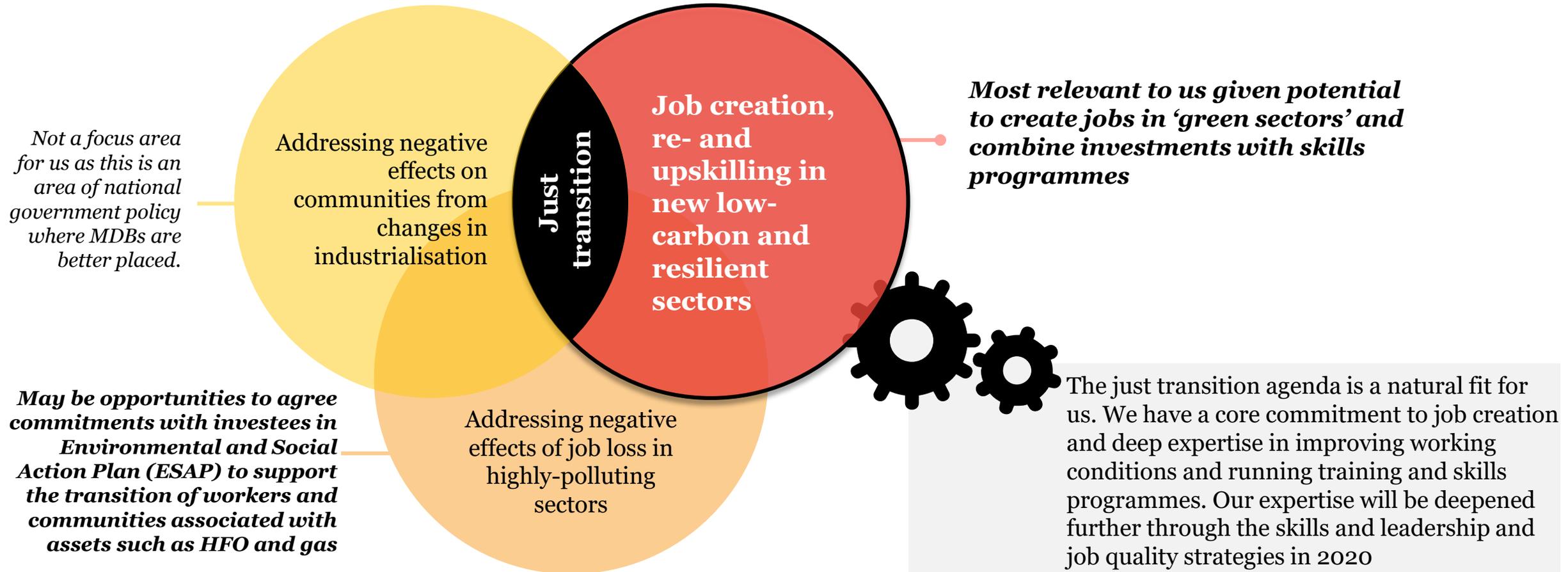


# Just transition – our proposed approach

*A just transition focus presents a natural fit for CDC and is crucial to ensure economic transformation is delivered in a socially inclusive manner*

■ ■ Building block **2**

The just transition agenda champions a transition to a low-carbon and resilient economy which is socially inclusive of workers rights, gender and communities.<sup>1,2</sup>



1. What is a Just Transition?, [E3G](#)

2. Guidelines for a just transition, [International Labour Organisation \(2015\)](#)

3. Investing in a Just Transition, [LSE Grantham Institute \(2018\)](#)

# Just transition – skilling for new green jobs

We propose working across CDC to design skills interventions. Here's an example of what this might look like:

## Initial scoping: shifts in industry to enable low-carbon and resilient transition

We will apply a gender lens where applicable

	Infrastructure	Finance and funds	Manufacturing	Food and agriculture	Real estate
	<ul style="list-style-type: none"> <li>+ Clean technology</li> <li>+ Storage</li> <li>+ Electric transport</li> <li>+ New fuels types</li> <li>+ Smart grids</li> <li>+ Nature-based solutions</li> </ul>	<ul style="list-style-type: none"> <li>+ New approaches to climate risk and disclosure e.g. TCFD</li> <li>+ Evaluation of the opportunity in the new low-carbon sectors</li> <li>+ Organisations upskilled in risk modelling capability</li> </ul>	<ul style="list-style-type: none"> <li>+ Circular economy practices</li> <li>+ Recycled materials</li> <li>+ New business models to extend the lifespan of products</li> <li>+ Low-carbon technology</li> </ul>	<ul style="list-style-type: none"> <li>+ Reforestation</li> <li>+ Regenerative agriculture</li> <li>+ Resilient agricultural practices</li> <li>+ Nature-based solutions</li> </ul>	<ul style="list-style-type: none"> <li>+ Low-carbon buildings</li> <li>+ Training on adaptation</li> <li>+ Scenario planning to anticipate increased climatic shocks</li> <li>+ Nature-based solutions</li> </ul>
	Enabled by digital skills				
Board and governance	Potential integration of TCFD governance recommendations in potential governance training programme				
Senior leadership		Building out planned TCFD training for our Indian financial institutions' portfolio		Potential for management roles and responsibilities to include climate risk in vulnerable sectors	
Mid level					
Entry level (professional)	Building out skills training pilot in our renewable energy platform Ayana to skill people for new green jobs with the potential to scale on other investments		Potential skills programme to use new technologies		Potential skills programme to use new technologies
Manual					

Building block **3**

# Adaptation and resilience

*Addressing vulnerability to  
climate shocks*

**Building the resilience of female smallholders in Guinea**

A programme in the Tristao Islands in Guinea teaches women to make a livelihood from tropical staple trees and encourages their active participation in decision-making to strengthen resilience

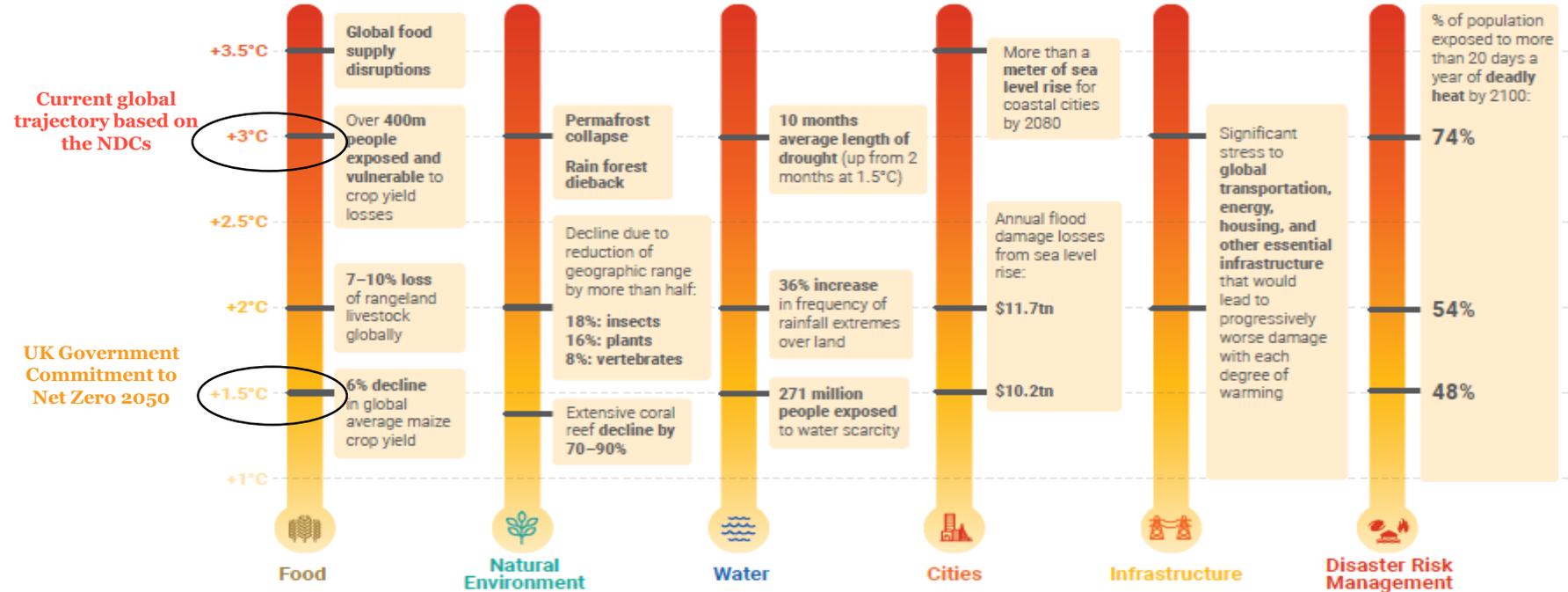


# Adaptation is core to responsible investing

Adaptation measures across the portfolio could protect the financial and impact value of our investments

## Physical risk – the risks of catastrophic events increase with temperatures

- + Every sector is vulnerable to the affects of global heating, which becomes very severe and extremely disruptive above 1.5°C of global warming
- + Adaptation will help the most vulnerable sectors become more resilient to the inevitable disruption. It should be noted that adapting to the sea level rise and extreme temperature rise of a 3°C or 4°C + scenario would be almost impossible<sup>1</sup>
- + By 2030, an increase of 1.5°C above the pre-industrial levels of climate change is expected to **push 100 million people below the poverty line**. Rising poverty will only increase with increasing temperatures eroding much of the development gains made in the last 50 years<sup>2</sup>



Taken from 'Adapt Now: a Global call for leadership on climate resilience' 2019, P10 based on IPCC and WRI research

1. We're on pace for 4°C of global warming. Here's why that terrifies the World Bank.' Washington Post, (2012) [here](#)  
2. Global Adaptation Commission, 'Adapt now: a global call for leadership on climate resilience', (2019) [here](#)

# Our proposed approach to **adaptation**

*Increasing resilience by investing in particularly exposed sectors and targeting value-add projects to improve resilience of our portfolio companies combined with improved data monitoring*

## 1. Increase resilience of our portfolio companies

e.g. further develop a **climate risk assessment tool and plan adaptation projects**

## 2. Target specific sectors to increase resilience

Further develop our strategy to invest in **water infrastructure** as a key sector exposed to climate change

## 3. Measure our capital allocation to 'adaptation finance'

Confirm our methodology for calculating adaptation finance and measure the capital we deploy and mobilise

### Sectors exposed to highest levels of physical risk



#### Food and agriculture

#### Vulnerability:

Risk of reduced water availability, decreased crop yields, and extreme heat

#### Interventions:

- + Develop a climate risk assessment tool at the due diligence stage
- + Identify deal-by-deal projects to introduce climate-smart agriculture practices and nature-based solutions
- + Explore potential for CDC Plus funding



#### Construction and real estate

- + Risk of sea level rise, flooding, drought, storms, and extreme heat

- + Develop a climate risk assessment tool at the due diligence stage
- + Explore opportunities for nature-based solutions (e.g. natural vegetation to manage flood risk)



#### Resilient infrastructure

- + Risk of sea level rise, flooding, drought, storms, and extreme heat

- + Develop a climate risk assessment tool at the due diligence stage
- + Factoring in resilience to infrastructure design and planning (e.g. heat-related efficiency standards, cooling standards, heat proofing, geographical siting of plants)

### Sector highly impactful for increasing resilience



#### Water infrastructure

#### Vulnerability:

- + Key exposure to floods and droughts

#### Interventions:

- + Develop approach to investments in water infrastructure

# Adaption interventions **will consider gender**

*Women commonly face higher risks and suffer disproportionately more from the impacts of climate change compared to men*

## Why are women more vulnerable to climate change?

### Women are more adversely affected by extreme weather than men



- + Globally, natural disasters, like droughts, floods and storms, kill more women than men, and at a younger age<sup>1,2</sup>
- + Compared to men, women have lower rates of access to credit and emergency savings, so are less able to rebuild post-disaster

### The education of girls is affected to a greater extent after an extreme weather event



- + Girls are at higher risk of being pulled out of school, to support their families in rebuilding homes or caring for sick or injured family members<sup>1</sup>

### Women work in the most vulnerable sectors



- + Women are more likely to be responsible for water and fuel collection, which becomes more difficult and dangerous during a drought
- + Women make up almost 50% of smallholder farmers, so are vulnerable to crop failure<sup>1</sup>

## Adaptation with a gender lens

### Women's economic empowerment through our investments builds resilience

- + Increasing women's access to financial products will help to build resilience<sup>3</sup>
- + Investing in the education of girls is a powerful lever for breaking the cycle of intergenerational poverty, thereby increasing resilience. In addition, tools like mobile education can increase accessibility
- + Women are critical decision-makers, consumers and beneficiaries of off-grid energy solutions

### Design adaptation interventions with women in mind and there are many ways to do this

- + For example, agri-insurance products targeting women, or projects to increase women's access to land rights, will build resilience in the agriculture supply chain<sup>3</sup>
- + For example, setting up early warning systems for natural disasters is proven to be more effective when girls and women are involved and wield decision-making power in projects<sup>11</sup>

1. Gender, Climate Change and Health, WHO

2. Engendering adaptation to climate variability in Gujarat, India', Ahmed, S. and Fajber, E. (2009) Gender & Development

3 [Women Deliver](#): Policy Brief: 'Invest in Girls and Women to Tackle Climate Change and Conserve the Environment'

# Climate approaches by sector

## *Supporting the LDC 2050 Vision*

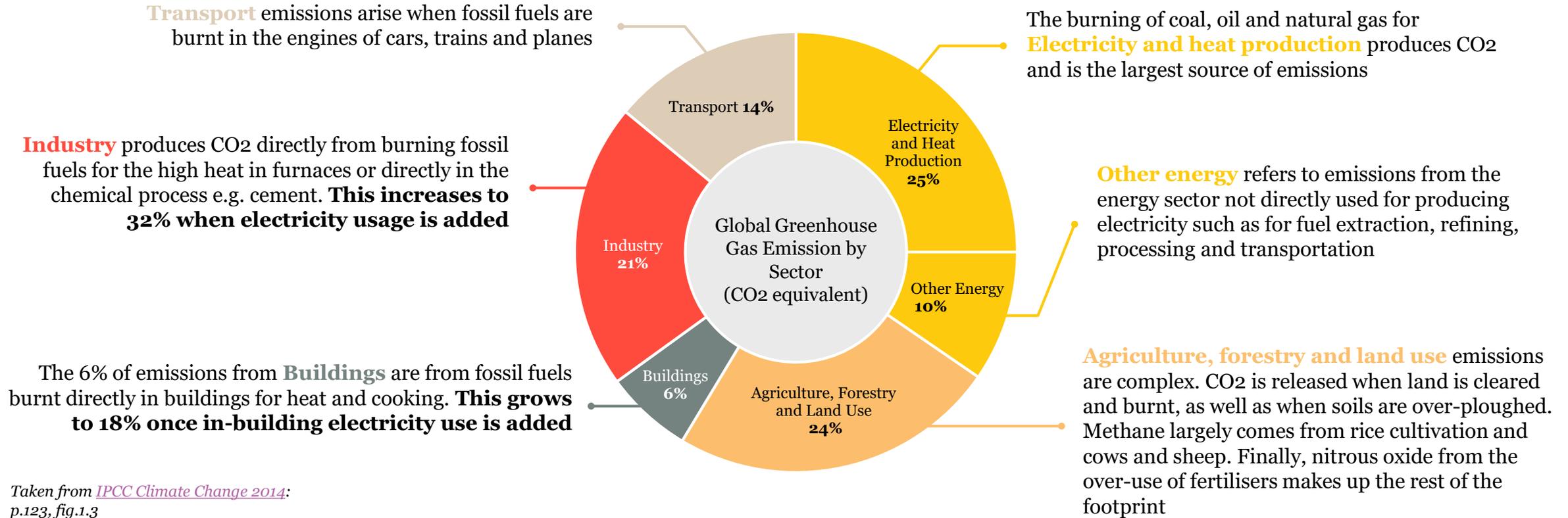
### **Biogas construction in Zambia**

Methane is 28 times as warming as CO<sub>2</sub>, therefore methane emissions from rotting organic matter make a large contribution to global warming. When complete, this anaerobic digester will use organic matter to supply methane gas for energy and heat production.



# Global emissions profile by sector

*New technologies and approaches must be found to reduce or offset emissions rather than constraining emerging markets' growth*



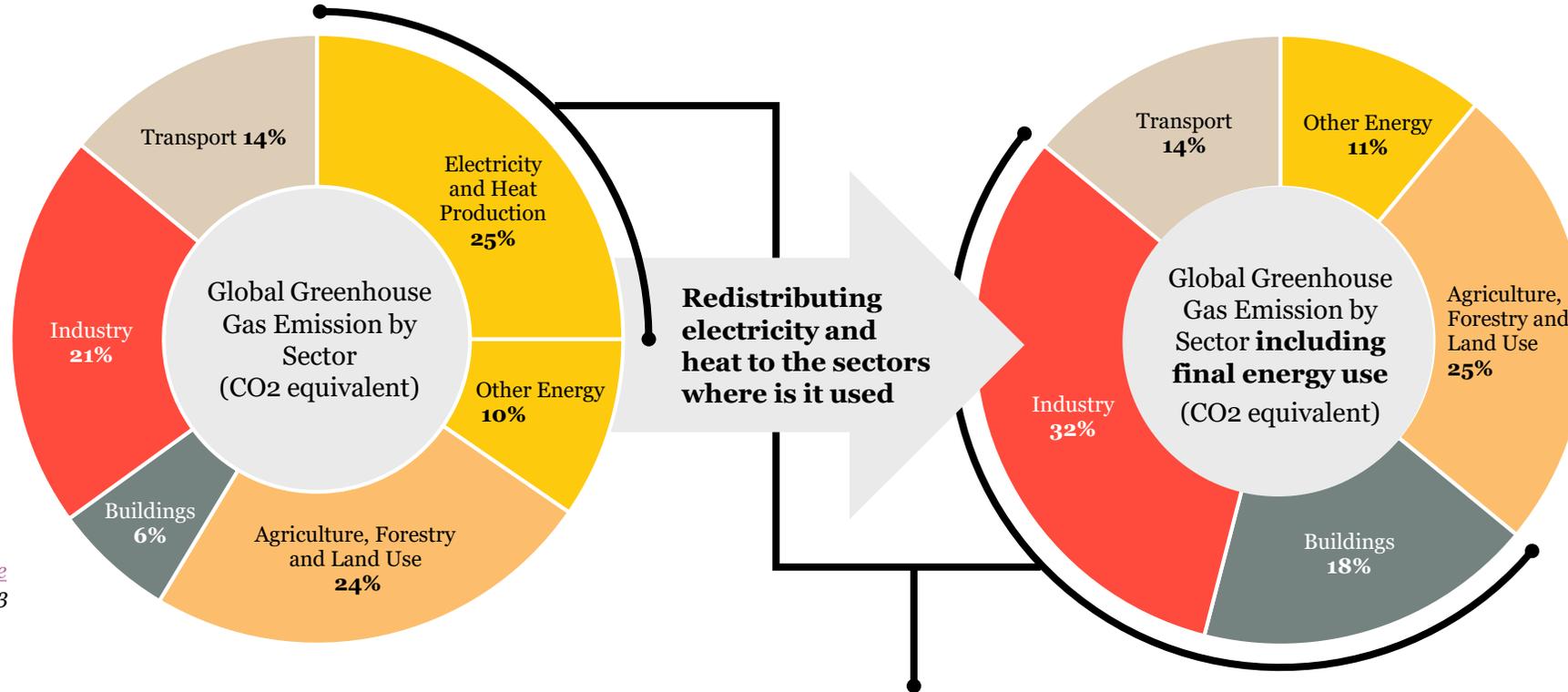
Taken from [IPCC Climate Change 2014](#):  
p.123, fig.1.3

+ All of these sectors are impactful, important and necessary for economic development and prosperity

+ Net zero and climate-resilient development pathways deploy new technologies and business models to grow the sectors in a low carbon, energy-efficient and resilient way

# Global emissions profile by sector

The emission profile by sector changes if the location of electricity and heat use is taken into account



Taken from [IPCC Climate Change 2014: P123 Fig1.3](#)

- + This shows the majority of electricity and heat is used by either industry or residential and commercial buildings
- + Therefore, there are two routes to decarbonise electricity and heat production (the sector with the largest footprint) which should be deployed simultaneously:
  - 1. Generate energy from renewables**, where possible, to reduce the supply of high carbon energy
  - 2. Introduce energy efficiency measures** to reduce the demand for heat and energy, and save costs

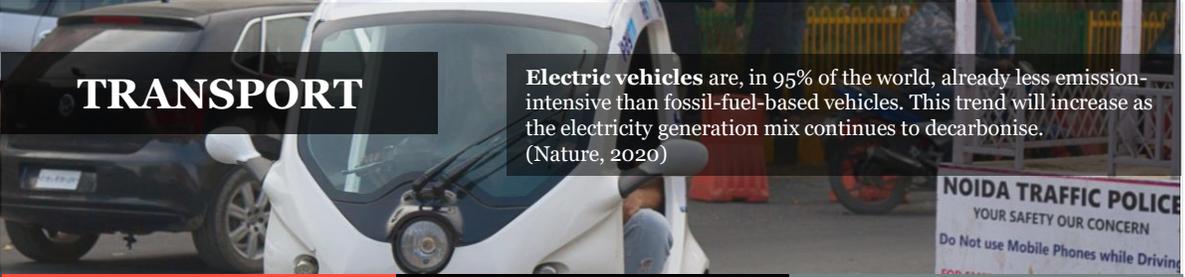
# Summary – initial sector assessment (1/5)



! Physical risk	>> Transition risk	↑ Development impact objectives
Lost revenue from equipment damage, unstable output and reduced plant efficiencies	Mainly from technical and economic advances in renewables, energy efficiency and new technologies, carbon pricing and job retraining	<ul style="list-style-type: none"> <li>+ Increased access</li> <li>+ Improved affordability</li> <li>+ Improved quality and reliability</li> <li>+ Reduced greenhouse gas emissions</li> </ul>

⚡ Future investment opportunities	🔍 Future value-add focus areas
<ul style="list-style-type: none"> <li>+ Utility-scale renewables generation</li> <li>+ Improvements to grid networks through GridWorks</li> <li>+ Decentralised energy solutions (solar home systems, C&amp;I, mini-grids)</li> <li>+ Technology solutions (exploring storage solutions)</li> <li>+ Energy efficiency as a cross-cutting theme for all relevant sectors</li> </ul>	<ul style="list-style-type: none"> <li>+ Fuel displacement</li> <li>+ Reduction of transmission losses</li> <li>+ Flare reduction programmes, reduction of methane leakage</li> <li>+ Climate-proofing diagnostic of existing and new assets in portfolio</li> <li>+ Capacity building on climate risks</li> </ul>

*Addressing the dual challenge of energy access and net zero and resilient pathways*



! Physical risk	>> Transition risk	↑ Development impact objectives
Supply chain disruption, asset and infrastructure damage and changes to underlying markets	From advances in electric mobility, efficiency standards and mass transit	<ul style="list-style-type: none"> <li>+ Increased access</li> <li>+ Improved affordability</li> <li>+ Improved quality and reliability</li> <li>+ Improved air quality</li> </ul>

⚡ Future investment opportunities	🔍 Future value-add focus areas
<ul style="list-style-type: none"> <li>+ Ports &amp; logistics</li> <li>+ Toll roads</li> <li>+ Urban mobility</li> <li>+ Electric transport infrastructure</li> <li>+ Fuel efficiency and other efficiency improvements</li> </ul>	<ul style="list-style-type: none"> <li>+ Supporting the transition to electric vehicles</li> <li>+ Supporting demand management and logistics efficiency</li> <li>+ Climate resilience planning</li> </ul>

*Improving efficiency, resilience and technology transfer*

# Summary – initial sector assessment (2/5)



## WATER & WASTE MANAGEMENT

**Flooding management in India**  
Increased frequency of floods and drought will adversely affect freshwater supply across our markets.

! Physical risk	>> Transition risk	↑ Development impact objectives
Reduced water availability from droughts, and damage to water infrastructure	Minimal (regulatory risks, increased water cost)	<ul style="list-style-type: none"> <li>+ Increased access</li> <li>+ Improved affordability</li> <li>+ Improved quality and reliability</li> <li>+ Reduced water consumption and environmental impact</li> </ul>

⚡ Future investment opportunities	🔍 Future value-add focus areas
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<ul style="list-style-type: none"> <li>+ Utility scale projects</li> <li>+ Captive water and waste water for industrial offtakers</li> <li>+ Water efficiency (including wastewater and sewage treatment)</li> <li>+ Solid waste collection</li> <li>+ Biowaste</li> </ul>	<ul style="list-style-type: none"> <li>+ Water audits</li> <li>+ Support water and waste business management processes</li> </ul>
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*Promoting adaptation and resilience in one of the most climate-exposed sectors*



## FOOD & AGRICULTURE

**High value crops**  
The rate of sequestration for tree crops such as citrus is as high as 1.9 tons of carbon per acre per year. (Drawdown Book, 2018)

! Physical risk	>> Transition risk	↑ Development impact objectives
Decreased water availability, increased variability in rainfall, decreased yields, increased/different pests, changes in nutritional composition	Minimal (land use change)	<ul style="list-style-type: none"> <li>+ Economic opportunities</li> <li>+ Nutrition and food security</li> <li>+ Environmental sustainability</li> </ul>

⚡ Future investment opportunities	🔍 Future value-add focus areas
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<ul style="list-style-type: none"> <li>+ Agroforestry (silvopasture, tropical tree crops, intercropping)</li> <li>+ F&amp;A infrastructure (anaerobic digesters creating biogas, composting better storage, processing and transport)</li> <li>+ Agri inputs (natural pesticides and herbicides, bio-fertiliser)</li> </ul>	<ul style="list-style-type: none"> <li>+ Regenerative agriculture</li> <li>+ Managed grazing</li> <li>+ Farmland restoration</li> <li>+ Nutrient management</li> <li>+ Resource efficiency (irrigation)</li> <li>+ Organic waste and composting</li> <li>+ Climate risk assessment tool</li> </ul>
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*Transforming agriculture from an emissions source to a carbon sink providing food security and resilience*

# Summary – initial sector assessment (3/5)



## FORESTRY

**Miro Forestry**  
 Many regions across Africa consume more wood than they grow, driving the price of wood higher and leading to deforestation. Creating a sustainable supply will combat deforestation and expand the global carbon sink.

! Physical risk	>> Transition risk	↑ Development impact objectives
Extreme weather events, tree pests, droughts, risk of fire, agroclimatic suitability of species (ability of trees to adapt to changing climate)	Potential transition winner	<ul style="list-style-type: none"> <li>+ Economic opportunities</li> <li>+ Environmental sustainability</li> <li>+ Sustainable supply of wood products</li> </ul>
📈 Future investment opportunities	🔍 Future value-add focus areas	
<ul style="list-style-type: none"> <li>+ Exploring strategy on FSC-certified plantations</li> <li>+ Outgrower schemes around plantations</li> <li>+ Natural forest concessions</li> </ul>	<ul style="list-style-type: none"> <li>+ Carbon finance</li> <li>+ Outgrower models</li> <li>+ Biomass to energy</li> </ul>	



## MANUFACTURING

**Plastic manufacturing and recycling**  
 The lifecycle emissions of materials such as steel, cement, aluminum, and plastics make up almost 20% of carbon emissions. Incorporating recycled feedstock into plastic manufacture is an opportunity to provide much needed products with a lower footprint. (Ellen MacArthur Foundation, 2019)

! Physical risk	>> Transition risk	↑ Development impact objectives
Water availability, capital/labour productivity losses from heat, reduced availability of agricultural inputs	Reduced availability of virgin inputs, changes to supply and demand dynamics for products with higher carbon footprints, increased compliance standards	<ul style="list-style-type: none"> <li>+ Improved availability of manufactured goods</li> <li>+ Accelerated development of sector and ecosystem</li> <li>+ Responsible production and consumption</li> </ul>
📈 Future investment opportunities	🔍 Future value-add focus areas	
<ul style="list-style-type: none"> <li>+ Investment into clean-tech</li> <li>+ Greener production of building materials and alternatives</li> <li>+ Circular economy</li> <li>+ Distributed manufacturing</li> <li>+ Resource-efficient production processes</li> </ul>	<ul style="list-style-type: none"> <li>+ Resource efficiency</li> <li>+ Decarbonisation technologies</li> </ul>	

*Increasing forest cover as the single greatest solution for removing carbon from the atmosphere*

*Improving efficiency and clean technology use in one of the hardest to decarbonise sectors*

# Summary – initial sector assessment (4/5)



## CONSTRUCTION & REAL ESTATE

A significant proportion of energy demand is generated from within buildings. Therefore designing for efficiency from the outset is essential.

! Physical risk	>> Transition risk	↑ Development impact objectives
Coastal flooding, increased storms, heat and water stress	Building and energy efficiency regulations	<ul style="list-style-type: none"> <li>+ Business enabling infrastructure</li> <li>+ Safe and resilient cities</li> <li>+ Economic and social inclusion</li> <li>+ Resource efficiency and reduced environmental impact</li> </ul>

↗ Future investment opportunities	🔍 Future value-add focus areas
<ul style="list-style-type: none"> <li>+ Designing for resilience and high energy and water efficiency in greenfield investments</li> <li>+ Retrofitting for energy and water efficiency in existing developments</li> </ul>	<ul style="list-style-type: none"> <li>+ Energy and water efficiency</li> <li>+ EDGE certification</li> <li>+ Low carbon construction materials and technologies</li> <li>+ Climate risk assessment</li> </ul>

*Future-proofing through increased efficiency and resilience*



## FINANCIAL INSTITUTIONS

Climate change risk, both physical and transition, are now recognised as key financial risks within the TCFD framework

! Physical risk	>> Transition risk	↑ Development impact objectives
Uninsured damages raising credit risk of borrowers, climate events' impact on economy and market value of securities, weather events impact on business continuity	Credit exposure to unaligned businesses, effects from changes in energy and commodity prices, shifting sentiments among customers and stakeholders	<ul style="list-style-type: none"> <li>+ Improving cost structures</li> <li>+ Increasing volume of capital</li> <li>+ Designing relevant products</li> <li>+ Managing/taking new risk</li> </ul>

↗ Future investment opportunities	🔍 Future value-add focus areas
<ul style="list-style-type: none"> <li>+ Supporting local financial institutions in the financing of green projects (e.g. participation in green bond issuances)</li> </ul>	<ul style="list-style-type: none"> <li>+ Promotion of the TCFD framework</li> <li>+ Carbon metrics in customer data collection and systems upgrades</li> <li>+ Carbon metrics in underwriting of new customer segments</li> <li>+ Support for green products strategy</li> </ul>

*Enabling the systematic changes towards greening the real economy*

# Summary – initial sector assessment (5/5)



## TRADE FINANCE

International trade can facilitate the growth and distribution of clean technology.

! Physical risk	>> Transition risk	↑ Development impact objectives
Exposure of supply / transport /distribution chains from extreme weather events, changes in production and relative specialisation through changes in natural endowments and efficiency of production factors	Subject to climate action of banks and financial institutions	<ul style="list-style-type: none"> <li>+ Supporting ability of trade to drive inclusive growth and reduce poverty</li> <li>+ Addressing the trade and SME finance gap</li> </ul>
⚡ Future investment opportunities	🔍 Future value-add focus areas	
<ul style="list-style-type: none"> <li>+ Engaging with current partners to enhance existing facilities and provide new support for green technology trades</li> <li>+ Explore incentives schemes under MRPA structures to support trade with a climate benefit</li> </ul>	<ul style="list-style-type: none"> <li>+ Reducing carbon footprints in supply chains</li> <li>+ Supporting sustainable letters of credit</li> <li>+ Capacity support for banks and corporates on low carbon commitments and demand patterns</li> </ul>	

*Facilitating green technology transfer*



## FUNDS AND CAPITAL PARTNERSHIPS

**Solar Now**  
We invested in Solar Now through Novastar Ventures Ltd. It sells modular household solar systems, along with appliances, to the off-grid market in Uganda.

! Physical risk	>> Transition risk	↑ Development impact objectives
Subject to the sector and geography of each underlying company within each fund (which are not known at time of commitment)	Subject to the sector and geography of each underlying company within each Fund (which are not known at time of commitment)	<ul style="list-style-type: none"> <li>+ Reaching smaller companies and backing specialist teams investing in innovative approaches or higher risk geographies than we could do directly</li> <li>+ Mobilise private capital at scale</li> </ul>
⚡ Future investment opportunities	🔍 Future value-add focus areas	
<ul style="list-style-type: none"> <li>+ Climate innovation: (e.g. water, climate technology, distributed renewable energy, aquaculture, biodiversity and ecosystem services)</li> <li>+ Scaling up solutions: (e.g. grid-scale renewable energy, resource efficiency and forestry)</li> </ul>	<ul style="list-style-type: none"> <li>+ GP-level: increased focus on climate according to TCFD in capacity building, disclosures and investment decision-making</li> <li>+ Company-level: focus on climate identification according to TCFD and mitigation options</li> </ul>	

*Mobilising finance into climate-impact sectors at scale*

# Governance

## **Cleaning concentrated solar, Nipton, California**

A worker cleans mirrors that concentrate sunlight to generate electricity at the Ivanpah Solar Project.



# Changes to our governance

Climate change to be integrated more coherently into our risk governance framework

		Identify and assess climate issues	Manage climate issues	Report in line with TCFD
<b>Current</b>	<b>Board oversight</b>	<b>Management accountability</b>		
	Climate change discussed by DevCo	Climate risk and opportunities identified and assessed at transaction level	Climate risk and opportunities managed at transaction level	No TCFD-aligned reporting, climate impacts reported as part of Annual Report but not in Annual Accounts
<b>Future</b>	Climate <b>impact</b> and <b>strategy</b> to be discussed by DevCo	Climate risk and opportunities assessed by at transaction level	<b>Climate strategy</b> implemented in portfolio construction and <b>financial risk</b> managed at transaction and portfolio level	<b>TCFD-aligned reporting</b> in the Annual Accounts
	<b>Portfolio-level financial climate risks</b> to be discussed as part of RiskCo  Climate discussed by <b>full Board</b>	<b>Portfolio financial climate risk assessed by IMA</b>	Climate change implication regularly discussed at the Executive Committee	

# Risk management

## **Flooding in Asia**

The world is already 1°C warmer than pre-industrial levels. It is now possible to attribute the influence of climate change on the increasing frequency and severity of storms across the globe.



# Financial climate risk concepts

Physical risks from increased weather-related risks and transition risks from changes on the way towards low-carbon economies

## ! Physical risks • Acute and chronic

**The risk of financial losses due to increased severity and frequency of extreme weather events, as well as long-term climate shifts**

Studies estimate that 17% of financial value is at risk from physical impacts<sup>1</sup>

### CDC vulnerability

- + Food and agriculture
- + Infrastructure (location-dependent)
- + Water-intensive industries
- + Adaptation in our markets is insufficient. Currently the gap in adaptation financing between what is pledged and what is needed is estimated at between \$10-100 billion



The recent severe two-year Kenyan drought was made **2 times more likely** by climate change<sup>2</sup>

We have 97 investee companies in Kenya

## >> Transition risks Policy and legal, technology, market, reputation

**The risk of financial losses through stranded assets if an abrupt transition to a low carbon economy entails dramatic policy, legal, technical shifts.**

If action on climate is delayed in 2019, a disorderly transition to a low carbon economy becomes more likely increasing this type of risk

### CDC vulnerability

- + Highly-polluting industries e.g. coal and oil
- + UK and international climate policies are changing rapidly



In India this July, the price of electricity from **Solar PV fell to 14% cheaper than from coal.** If large scale storage reaches viability in the near term, coal may become uncompetitive

1. A call for action – climate change as a source of financial risk, 2019, [Network for Greening the Financial System](#)

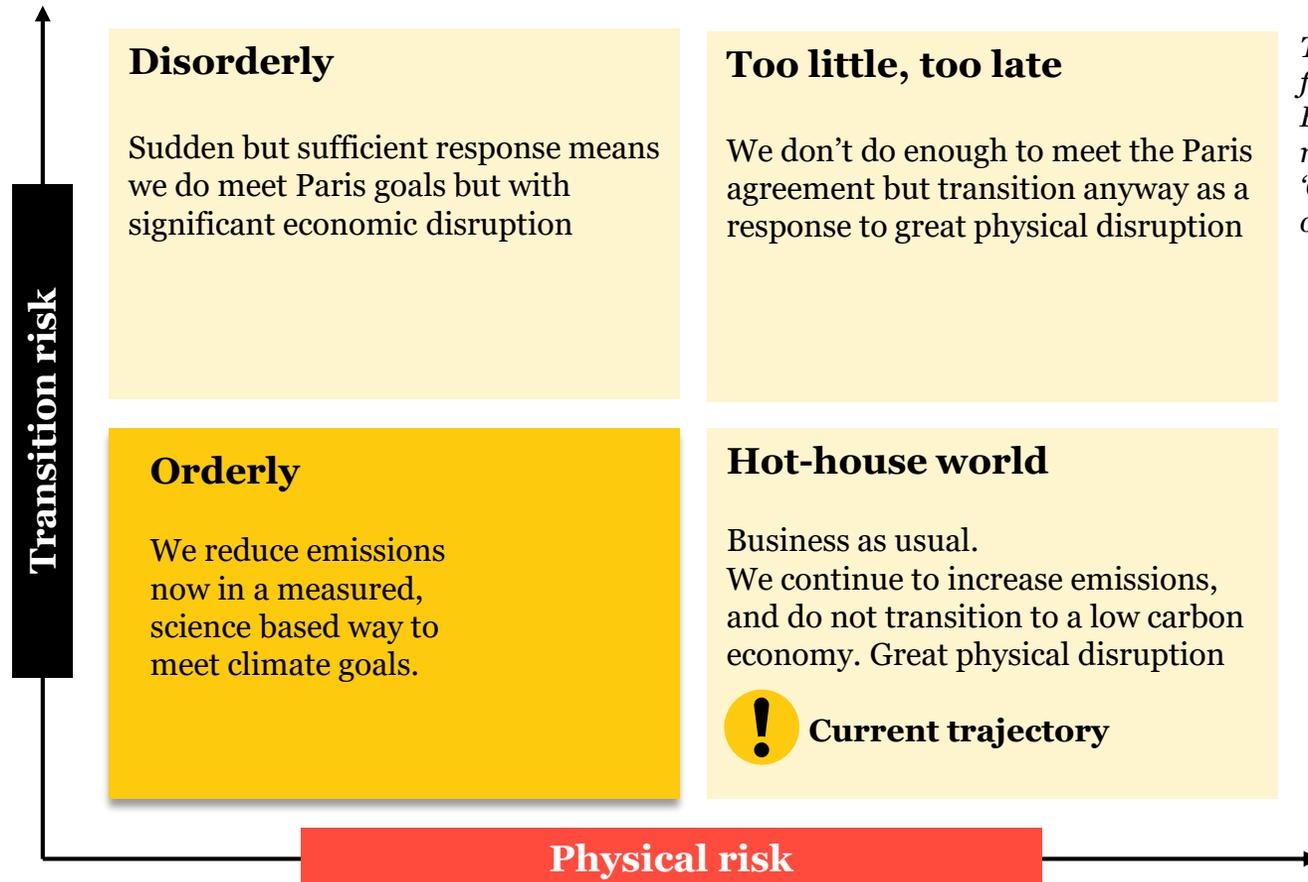
# Interaction of physical and transition risks

*Risk management structures are needed to ensure the two paradoxes in managing the financial risks from climate change are adequately managed*

2

## Second paradox: success is failure

A delayed move towards a low-carbon economy could materially damage financial stability. A wholesale reassessment of prospects could destabilise markets, spark a pro-cyclical crystallisation of losses and lead to a persistent tightening of financial conditions: a climate 'Minsky moment'.



*Taken from Network for Greening the Financial System report, 2019 'Climate as a source of financial risk'*

**Mark Carney:**  
the two paradoxes in managing climate-related financial risks

1

## First paradox: the future will be past

Climate change is a **tragedy of the horizon**, which will impose major costs on future generations that the current generation has no direct incentive to fix. Once climate change becomes a clear and present danger to financial stability, it may already be too late to stabilise the atmosphere.

# Proposed changes to our risk framework

Climate risks according to TCFD-aligned implementation to be integrated into our risk management framework to lay the foundation for assessing and managing financial risk at the portfolio level

## Types of risks

### Risk impact channels

Depth of assessment can include:

- exposure
- sensitivity
- adaptive capacity

## ! Physical risks Acute and chronic

- + **Macro environment:** extreme weather and changes in temperature events changing productivity and GDP, supply-side shocks leading to inflationary pressures, differential climate impacts affecting regional trade balances
- + **Supply chain:** availability and pricing of inputs for production processes
- + **Operations and assets:** long-term labour productivity from permanently higher temperatures, business interruptions and asset damage from weather, migration of labour force
- + **Market:** demand shocks if customers are affected by extreme weather events

## >> Transition risks Policy and legal, technology, market, reputation

- + **Macro environment:** technology and policy changes affecting output of goods and services, changes in sectoral composition and competitive positions of economies, unexpected price shocks from technological breakthroughs or sudden carbon pricing
- + **Supply chain:** high carbon suppliers passing through increased costs
- + **Operations and assets:** costs impacts from relative technology prices
- + **Market:** changes in consumer preferences

# Proposed changes to our risk framework

Climate risks according to TCFD-aligned implementation to be integrated into our risk management framework to lay the foundation for assessing and managing financial risk at the portfolio level

## Identify and assess climate risks

### Current

Climate risk identified and assessed at transaction level

### Future

Climate risk assessed at transaction level, according to TCFD-aligned framework  
Climate risk assessed at portfolio level, according to TCFD-aligned framework



## Manage climate risks

### Current

Climate risk managed at transaction level

### Future

Climate risk managed at transaction level  
Climate risk managed at portfolio level

In addition to climate being assessed as an E&S issue at *transaction level*, also to be considered as a **financial risk at portfolio level**

## Integration into risk framework

### Current

Climate risk embedded within E&S risk

### Future

Climate in our overall risk framework, including risk appetite, risk taxonomy and risk policy

# Metrics

## **Mitigation in India**

Meenakshi Dewan, 20, is one of four women trained in solar power engineering in her village in Orissa, India.



# Suggested Metrics – portfolio level

Portfolio metrics should capture progress alongside the three building blocks for Paris alignment

	Objective	Current metrics	Future metrics
Net zero 2050	1. Measure our financial contribution to mitigation investments	+ Climate finance metric (conservative estimate)	+ Climate finance (\$ committed per year): align with the MDB mitigation sectors to capture more sub-sectors + Amount mobilised into mitigation projects
	2. Measure the reduction of greenhouse gas emissions over time to align with net zero pathways	+ Power direct portfolio carbon footprint + Greenhouse gas emission avoided for some investments	+ Whole portfolio carbon footprint (N.b will be modelled for funds and FI) + Reduction of portfolio carbon footprint over time
Just transition	3. Understand and report our contribution to a 'just transition'	<i>None currently</i>	<b>2020:</b> + Pilot projects to report on an individual basis <b>2021 onwards:</b> + Jobs created in low-carbon sector + Number of skilling projects run
Adaptation and resilience	4. Measure our financial contribution to adaptation and resilience	<i>None currently</i>	+ Our approach to measuring adaptation finance is under development

# Investing for **clean** and **inclusive** growth

## **Climate change in India**

A villager waits on the side of the flooded Brahmaputra River in Assam, India.

