SUSTAINABLE DEVELOPMENT GOALS

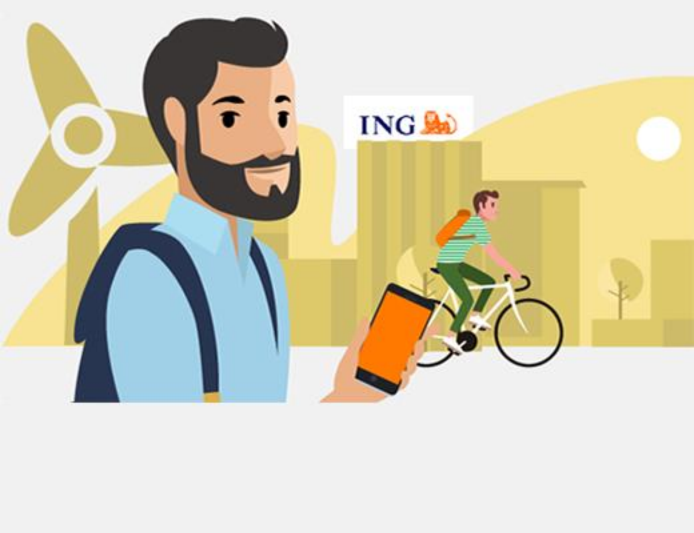
CLEAN THE WORLD

Climate Change

Risk for the Financial sector

PACTA

Paris Agreement Capital Transition Assessment



EQUATOR PRINCIPLES

Author: MoRM – Credit Risk Model Validation

Last Update: 2021

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Risks & Opportunities for the financial sector

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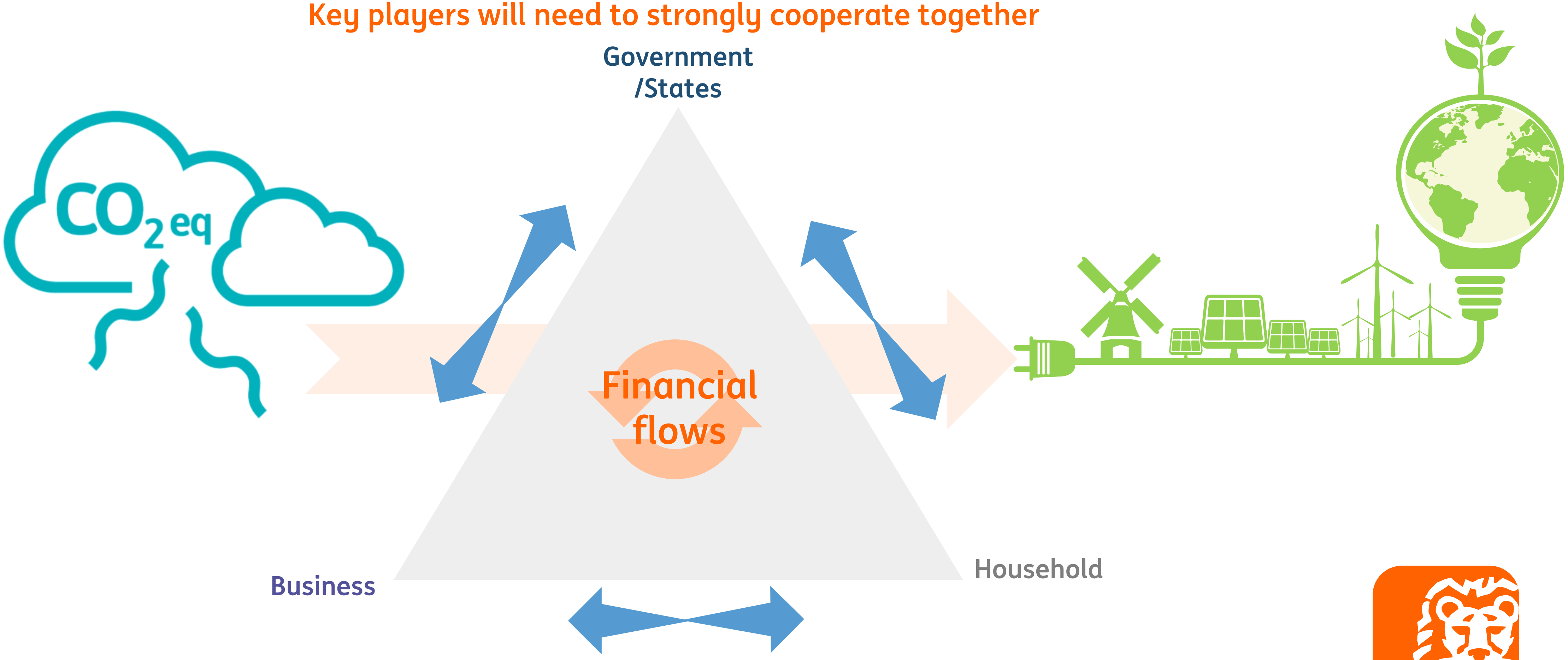
Key players will need to strongly cooperate together



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Global warming

- 2015 – UN 2030 Agenda for Sustainable Development – 17 SDGs + 169 associated targets to be reached by 2030
- 2015 - Paris agreement – 200 government commit to limit global warming well below 2°C and pursue effort to limit the temperature increase to 1,5°C
- Legislators in the EU and around the world are taking actions to change economic activities that have significant adverse impacts on ESG factors and to alleviate the worst consequences.

Presentation #1 – Climate Observed and projected impacts

Financial sector

- The financial sector is expected to play a key role in financing the transition of the economy to a more sustainable form.
- Mobilization of significant financial resources estimated USD2-3 trillion per year worldwide.
- This transformation will certainly spur new business opportunities, but the financial sector will also experience the financial risks stemming from the transformation of the economy and the worsening physical conditions

Financial Risk

- Increased focus & demand for transparency from organizations on their risks and risk management practices (in particular since 2008-2009 financial crises), including those related to climate change.
- Inadequate information about risks can lead to a mispricing of assets and misallocation of capital and can potentially give rise to concerns about financial stability since markets can be vulnerable to abrupt corrections

Organisation Financial Disclosure

- The growing demand for decision-useful, climate-related information has resulted in the development of several climate-related financial disclosure standards (e.g. TCFD Recommendation).
- Objective to inform investor, lender, decision-maker on climate-related risks and opportunities for financial sectors based on scenario analysis

Banking Regulator/Supervisor

- EBA consulting paper on ESG
- ECB guidelines & first stress-test exercise to be planned for 2022

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Background

Climate-related risk categories

Financial risks

Both Transition and Physical risks are linked to each others depending on scenarios. E.g. no implementation of new policies to lower the GHG emission will minimize the transition risk but maximize the physical risk.

Physical risk – related to physical impacts of climate change

*Refers to the financial impact of a changing climate, including **more frequent extreme weather events** and **gradual changes in climate**, as well as of environmental degradation, such as air, water and land pollution, water stress, biodiversity loss and deforestation. Physical risk is therefore categorized as "**acute**" when it arises from extreme events, such as droughts, floods and storms, and "**chronic**" when it arises from progressive shifts, such **as increasing temperatures, sea-level rises, water stress, biodiversity loss, land use change, habitat destruction and resource scarcity**.*

*This can directly result in, for example, **damage to property** or **reduced productivity**, or indirectly lead to subsequent events, such as the **disruption of supply chains**.*

Transition risk – related to the transition to a lower-carbon economy

*Refers to an institution's financial loss that can result, directly or indirectly, from the **process of adjustment towards a lower-carbon and more environmentally sustainable economy**. This could be triggered, for example, by a relatively **abrupt** adoption of climate and **environmental policies, technological progress or changes in market sentiment and preferences***

*This can directly result in **stranded assets** and **new capital expenditure** and **impact on the economy** (e.g. Shifts in prices, productivity changes, labour market frictions…).*

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Financial Impacts before Financial risks

Businesses / organisations:

- The **impact** of climate-related risks **differs** by sector, industry, geography, and organization.
- Property damage / business disruption.
- Stranded assets and new capital expenditures

=> Climate-related risks and opportunities are likely to impact an organization's future financial position as reflected in its **income statement, cash flow statement**, and **balance sheet**.

  - **Revenues** (IS) – impact of carbon pricing
  - **Expenditures** (IS) – Due to property damage, nosiness model change
  - **Assets & liabilities** (BS) – long-lived assets may be more affected
  - **Capital & Financing** (BS) – increasing debt levels to compensate for reduced operating cash flows or for new capital expenditures or R&D, asset write-downs

Households:

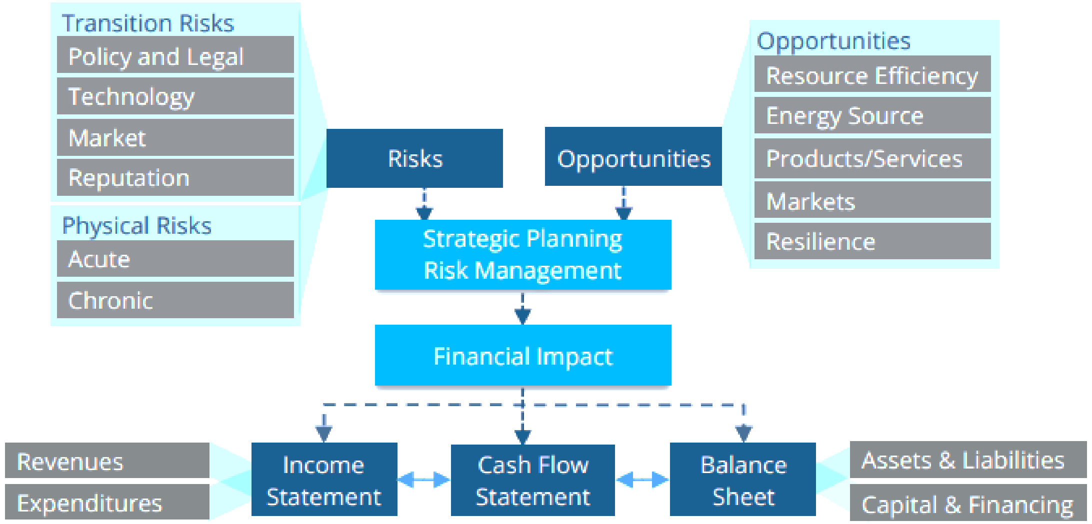
- Loss of Income
- Property damage

Macro-economy:

- Shifts in prices
- Productivity changes
- Labour market frictions

Figure 1

Climate-Related Risks, Opportunities, and Financial Impact



Sources: Recommendations of the Task Force on Climate-related Financial Disclosures

Financial risks

Table 1 An overview of examples of how climate change can be a driver of conventional risk types

Risk channel	Sub-type	Credit risk	Market risk	Operational risk	Other risk types
Physical	Chronic Acute	Severe weather events and long-term changing weather patterns may reduce collateral values which increases credit risk via a higher loss given default	Severe weather events may result in loss of asset values and increase volatility on e.g. commodity and/or forex markets	Severe weather events may damage the bank's branches, data centres and operations	Severe weather events leading to macro-economic shocks may increase liquidity risks
Transition	Policy Technology Market sentiment	New climate policies, technologies and market sentiment may generate stranded assets for CO_2-intensive industries which increase probability of default (via lower debt-servicing capacity) and loss given default (via lower collateral values)	New climate policies, technologies and market sentiment may generate stranded assets for CO_2-intensive industries which trigger an abrupt repricing on e.g. equity and/or bond markets	New climate policies may lead to higher liability risks of operational activities, such as outsourcing	New climate policies, technologies and market sentiment may increase reputation risks related to greenwashing[3]

Sources: DNB Good Practice Integration of climate-related risk considerations into banks' risk management

Regulatory context

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Historical context

2014

IPCC AR5

Observed and projected climate change, **RCPs**, mitigation and adaptation patways

2015

Paris Agreements

Article 2 on **Holding the increase in the global average temperature to well below 2°C** above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels

2017

TCFD

Recommendations of the TCFD **The Use of Scenario Analysis in Disclosure of Climate-Related Risks and Opportunities**

2018

NGFS (Dec 2017)

Common **reference framework for central banks and supervisors** provided scenario and scenario analysis

2019

UNEP FI Phase I

UNEP FI with 16 of the world's leading banks, set out on a year-long project to pioneer and further develop transition and physical assessment models and metrics to enable scenario-based, forward-looking assessment and disclosure of climate-related risks and opportunities.

2020

EBA & ECB

ECB Guide on climate-related and environmental risks
EBA Discussion paper On management and supervision of ESG risks for credit institutions and investment firms.

UNEP FI Phase II

UNEP FI's Phase II TCFD Banking program helped thirty-nine global banks on six continents to enhance their climate risk toolkits and improve their climate risk disclosures. Supported by a wide range of expert partners, participants explored both physical and transition risks and opportunities.

EU Taxonomy for sustainable activities

6 environmental objectives that should be considered for the purpose of the proposed regulation:
- climate change mitigation;
- climate change adaptation;
- sustainable use and protection of water and marine resources;
- transition to a circular economy;
- pollution prevention and control;
and protection and restoration of biodiversity and ecosystems.

IFRS Foundation

Consultation Paper on Sustainability Reporting

2021

UNEP FI Phase III

You can simply impress your audience and add a unique zing and appeal to your Presentations.

DNB (Dec 2020)

Decree on Prudential Rules for Financial Undertakings (Besluit prudentiële regels – Bpr)

2022

IPCC AR6

ECB

Plan Climate stress test for Banks

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Introduction Regulation for Climate-related and environmental risk

Risk Management Framework, ICAAP requirements CRD IV, CRR and ECB Guide to ICAAP

The level and quality of capital are crucial for the resilience of individual banks.

Thus, banks are expected to assess the risk they face, and in a **forward looking** manner ensure that all material risk are **identified**, **managed** and **covered** sufficiently **by loss absorbing capital** to ensue **continuity** in case of materialization of **unexpected** risk in **time of stress**.

ECB, EBA, Basel Committee, TCFD expectations for Climate-Related and environmental risk

What about integration of Climate Risk ?

WHERE ?

- Into **credit**, **operational**, **market** and **liquidity** risk management framework
- Into the **Risk Appetite Framework**
- Into the **Economic Capital Framework**
- Into **Business strategy**

HOW ?

Incorporate CRE risks **as drivers** of existing risk categories into their **risk management framework**

Identify, **manage**, **monitor**, **review** on regular basis the identified risk

Stress test and in more particular **scenario analysis** regarding ICAAP

On **short**, **medium** and **long term**

Climate Scenario Analysis

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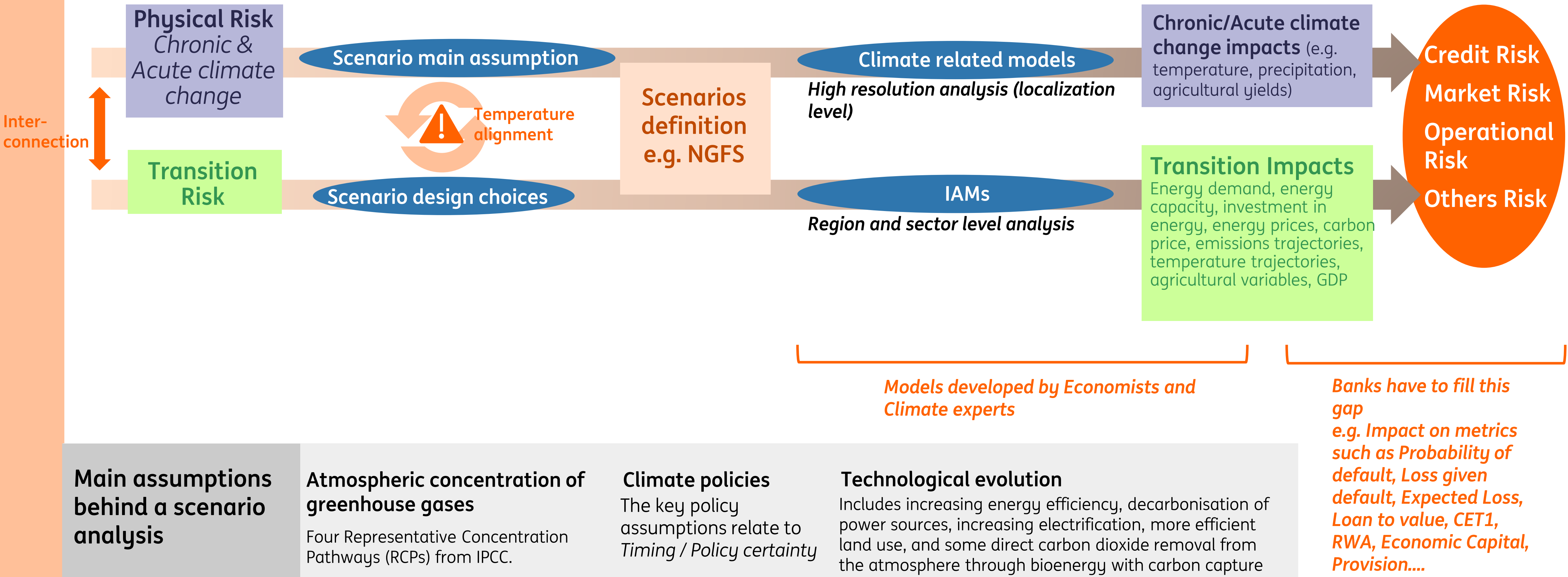
Physical and Transition Climate Scenarios

Consider how climate-related risks may evolve and their potential business implications under a **variety of alternative plausible future states** based on a given **set of assumptions and constraints.**



Main assumptions behind a scenario analysis	**Atmospheric concentration of greenhouse gases** Four Representative Concentration Pathways (RCPs) from IPCC.	**Climate policies** The key policy assumptions relate to *Timing / Policy certainty*	**Technological evolution** Includes increasing energy efficiency, decarbonisation of power sources, increasing electrification, more efficient land use, and some direct carbon dioxide removal from the atmosphere through bioenergy with carbon capture and storage and/or land-related sequestration
Design choices	**Number of scenarios**	**Time horizon**	**Scenario granularity**
			Frequency

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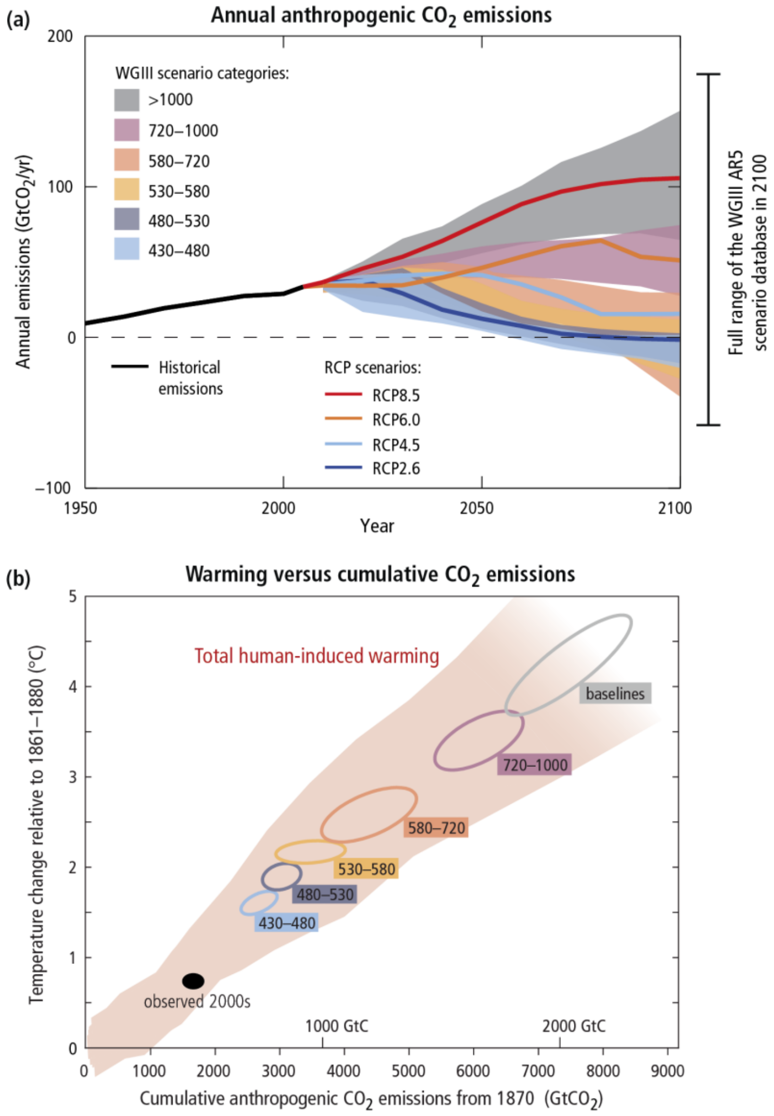
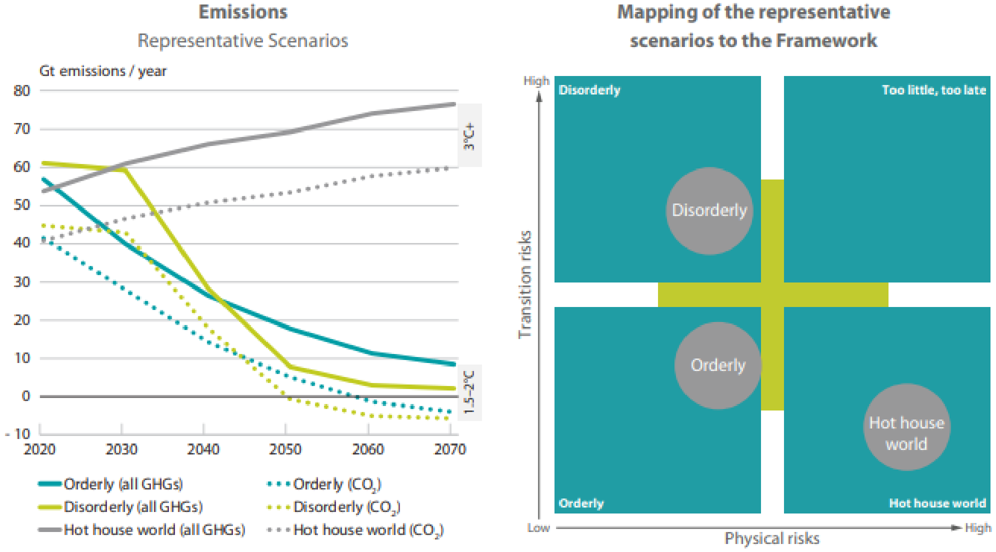
Scenario example:

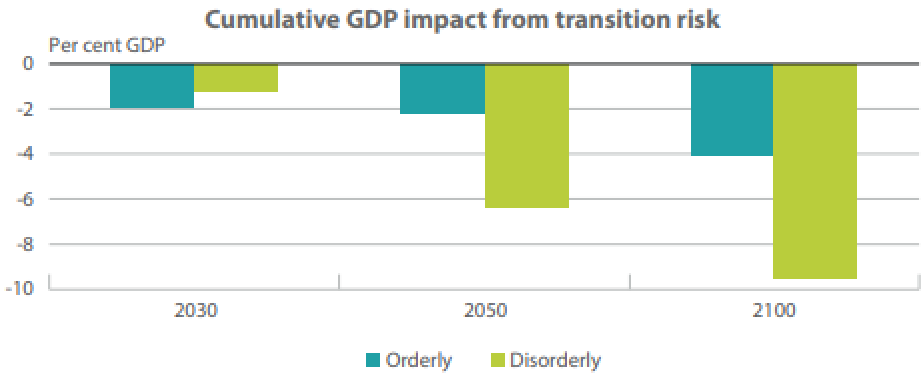
RCPs pathway from IPCC



NGFS scenario analysis



Source: IIASA NGFS Climate Scenarios Database, using marker models.



Source: IIASA NGFS Climate Scenarios Portal, marker models.

The End

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