

IFC Workshop on "Addressing climate change data needs: the global debate and central banks' contribution"

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Central banks and climate risk data initiatives¹

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¹ This contribution was prepared for the workshop. The views expressed are those of the authors and do not necessarily reflect the views of the Central Bank of the Republic of Türkiye, the BIS, the IFC or the other central banks and institutions represented at the event.



Central banks & climate risk data initiatives

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Central banks and climate change – why?

Impact on financial stability

What is the potential impact of climate change on the economy and the financial system?

How to ensure financial stability in the face of physical risks and transition risks?

Monetary policy

How should central banks adjust their monetary policy instruments to account for climate-related and environmental risks, including exposures of their own balance sheets?

Supporting Transition

What measures can central banks take to support an orderly transition to a carbon-neutral economy, and how can they balance short-term transition costs against long-term benefits

Economic analysis and policy advice

What are the economic implications of climate change and the transition to a carbon-neutral economy (incl mitigation policies, monetary policy transmission)

Supervision

What changes are needed in our regulatory frameworks to encourage financial institutions to adequately manage their climate-related risks

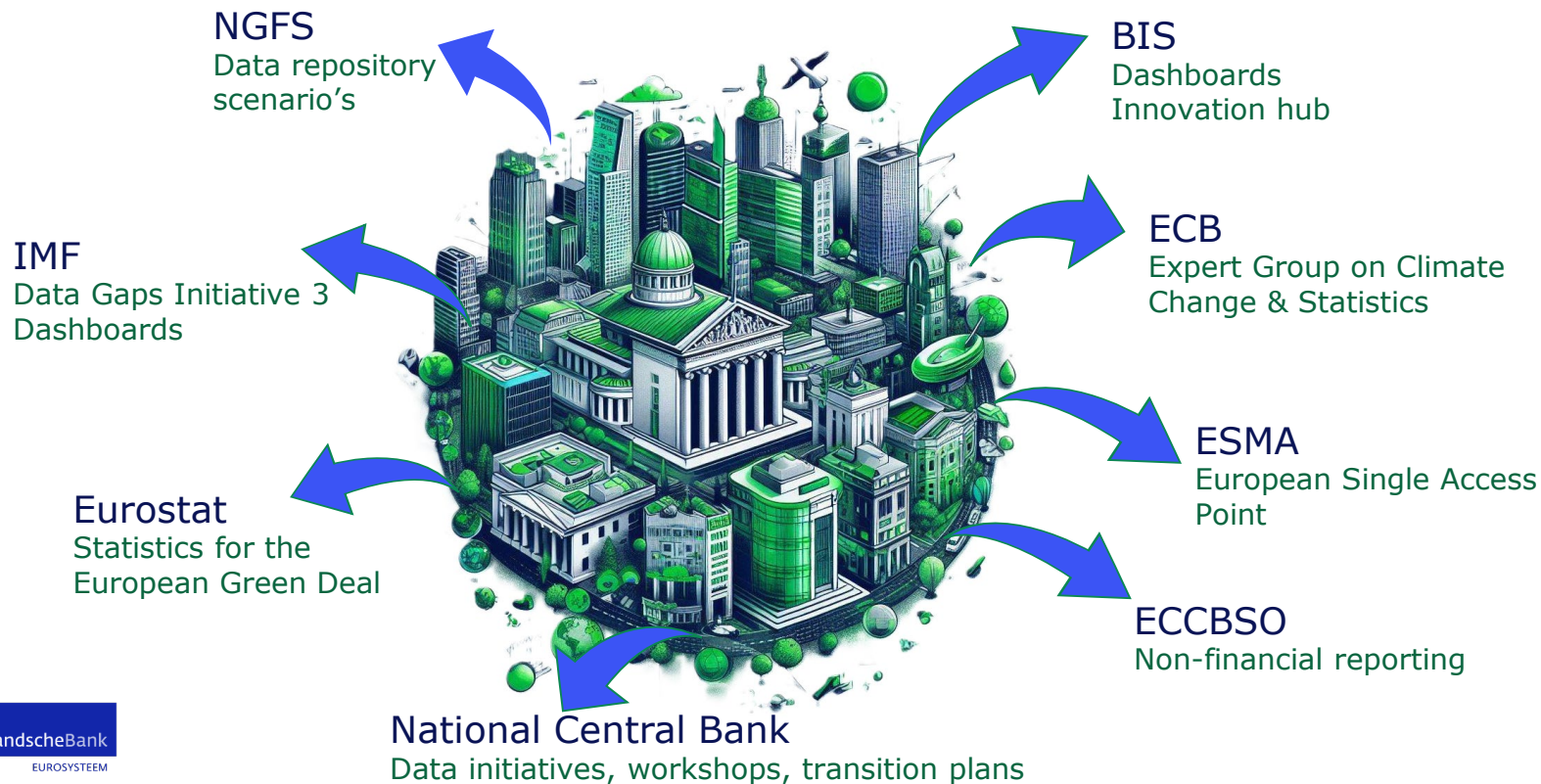
Green Finance

How can central banks promote green finance and the development of financial products that support sustainable economic activities

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Central Bank climate data initiatives (examples)....



... in a wider context (regulatory, private, non-profit - examples)

IFRS Sustainability Disclosure Standards

CSRD Corporate Sustainability Reporting Directive

SASB Sustainability Accounting Standards Board

Greening Government initiatives

Climate Action 100+

GHG Protocol

CDP Carbon Disclosure Project

IGCC Investor Group on Climate Change

GRI Global Reporting Initiative

ESRS European Sustainability Reporting Standards

PRI Principles for Responsible Investment



Data vs statistics: what about methodology?

WHAT TO DO IF...



... HUGE AMOUNTS OF DATA
ARE STILL MISSING?



... DATA SOURCES ARE
HIGHLY INCONSISTENT
BETWEEN THEMSELVES?



... DATA SOURCES ARE
COMMERCIAL - DIFFICULT
TO ACCESS OR SHARE?



... COMPARABILITY ACROSS
COUNTRIES, INSTITUTIONS
OR SECTORS IS LACKING?



... THERE IS LIMITED
TRANSPARENCY ABOUT
DATA COLLECTION?



... INDICATORS NEED TO
RELIABLY REFLECT TIME
TRENDS?

Example: ESCB Expert Group on Climate Change and Statistics

- Following the [Governing Council \(GC\) action plan](#), the ECB and national central banks have collaboratively developed **harmonised statistical indicators at the euro area level for climate-related analysis**
- First released in January 2023, updated [climate-related indicators](#) were released by **18 April** as outlined in the [Climate and nature plan 2024-2025](#), accommodated by a [statistical paper](#) that explains the methodology.

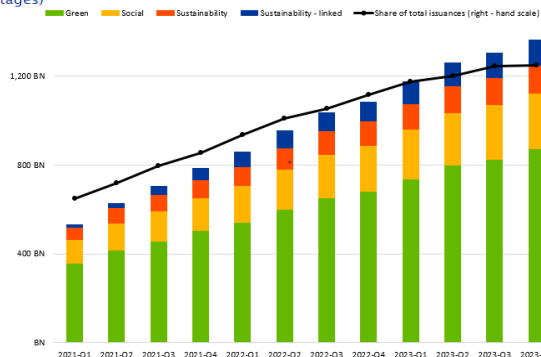
	Sustainable finance	Carbon emissions	Physical risk
Released as:	Experimental indicators	Analytical indicators	
Indicators cover:	issuances and holdings of sustainable debt securities	financial sector loan and securities portfolios	

- come with limitations and should be used and analysed with care
- project is work in progress (feedback is very welcome!)

Issuances of sustainable debt securities in the euro area: including second party opinions

Chart 1 – Euro area issuances of sustainable debt securities – all levels of assurance

(Left-hand scale: EUR, outstanding amounts at face value; right-hand scale: percentages)

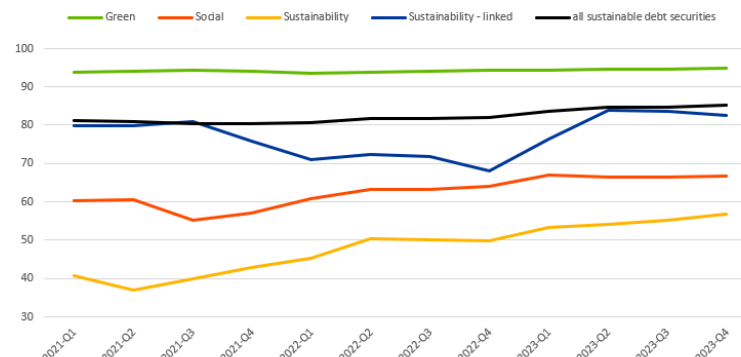


Source: Centralised Securities Database (CSDB).

Notes: "Share of total issuances" refers to the amount of all sustainable securities as a share of all debt securities issued in the euro area.

Chart 1b – Euro area issuances of sustainable debt securities – share of issuances with second party opinion

(Percentages)



Source: Centralised Securities Database (CSDB).

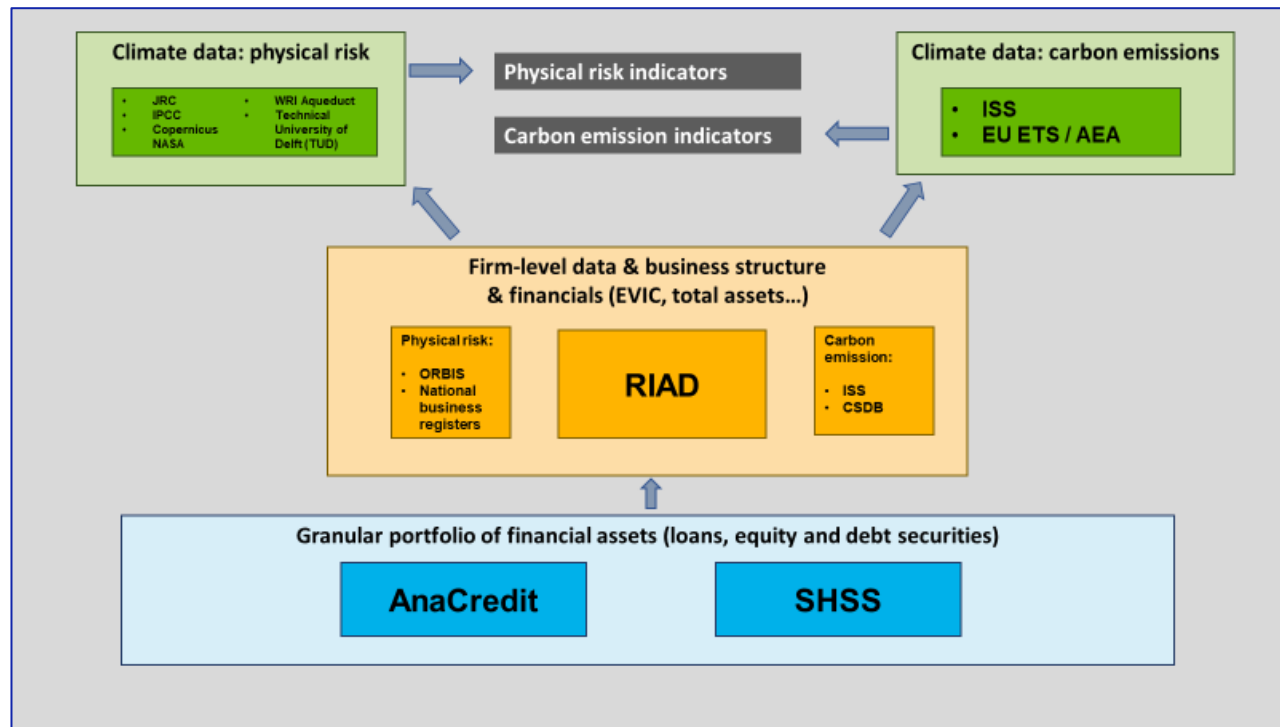
Notes: "Share of issuances with second party opinion" refers to sustainable debt securities with second party opinion as a share of all sustainable debt securities.

Key findings

- Outstanding amount of sustainable debt securities issued by EA has *almost tripled the last three years*
- Green and social bonds account for majority of the market
- Relevance of these instruments in the overall debt securities market remains minor, even when observing the looser level of assurance

- Overall, euro area issuers obtain external review of their sustainable bond issuances: around **85% of all sustainable debt in the EA has a SPO**
- Virtually all green debt securities issued in the euro area have obtained a second party opinion
- Social and sustainability instruments have slightly lower SPO assurance levels but in general above 55%

Emission and physical risk indicators are constructed bottom up using micro data



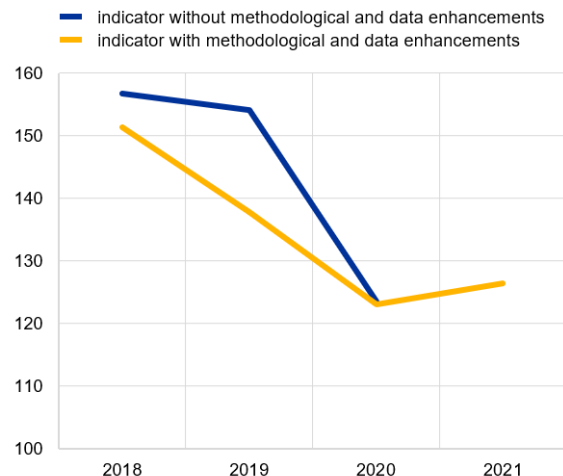
- **Carbon emission indicators** link financing and corporate emissions to describe the carbon emissions associated with the corporate securities and loan portfolios of financial institutions to assess the financial sector's transition risks
- **Physical risk indicators** capture financial system exposures to companies located in areas susceptible to natural disasters (such as flooding, windstorms, wildfires or droughts) and chronic physical risks (heat and water stress).

Notes: ISS is a commercial data provider offering carbon emission information at company level. EU ETS denotes the European Emission Trading System and AEA the Eurostat Air Emissions Accounts. JRC: Joint Research Centre. IPCC: Intergovernmental Panel on Climate Change. WRI: World Research Institute. RIAD: Register of Institutions and Affiliates Data.

Impact of methodological (e.g. outlier detection, price/volume change corrections) and data enhancements (imputations) on indicators

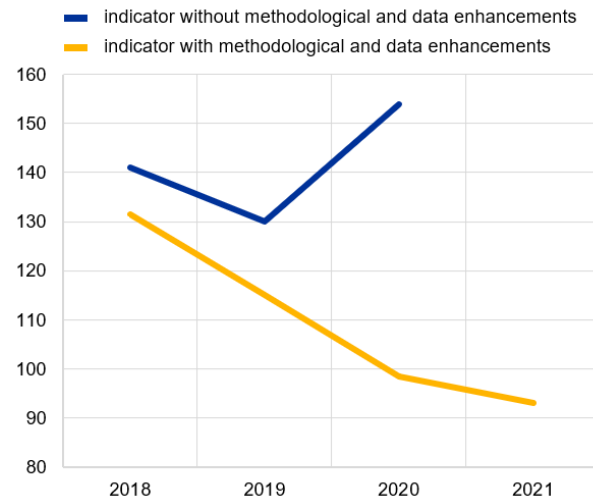
a) Financed emissions (FE), euro area aggregate, Scope 1, single entity-level loans

(y-axis: million tonnes of CO₂)



b) Weighted average carbon intensity (WACI), euro area aggregate, Scope 1, single entity-level loans

(y-axis: tonnes of CO₂ per million euro)



Financed emissions: Tons of GHG emissions financed by euro area financial institutions

Weighted average carbon intensity: tons of GHG emissions per million EUR of revenue
→ proxy for the exposure of a creditor to climate transition risks

Sources: ESCB calculations based on AnaCredit, Register of Institutions and Affiliates Database (RIAD), EU Emissions Trading System (EU ETS), and Eurostat Air Emissions Accounts (AEA).
Notes: The charts comprise only loans computed on single entity level for Scope 1 emissions. The WACI is adjusted for inflation and exchange rate effects.

Key findings

- **Downward trend** over the period → decarbonisation? Potentially reflecting diverse impacts of **COVID-19 pandemic**
- **Methodological and data enhancements** led to an overall **smoothing of the time series** (new imputation methods have largest impact) → statistically more robust time series analysis.

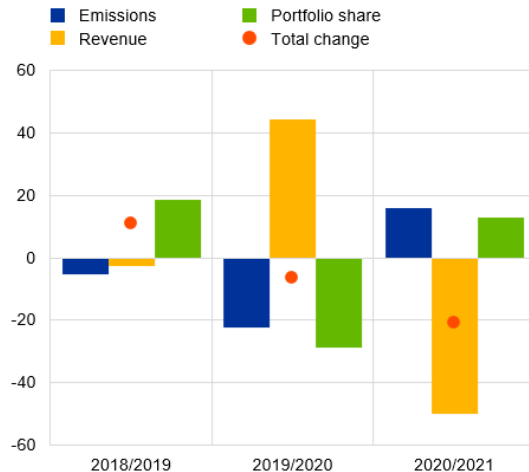
Towards actionable data: understanding WHY trends occur

Example: breaking down WACI-change over time

(a)

Decomposition of Weighted Average Carbon Intensity (WACI), corporate group level security portfolio, euro area aggregate

(y-axis: tonnes of CO2 per million euro)

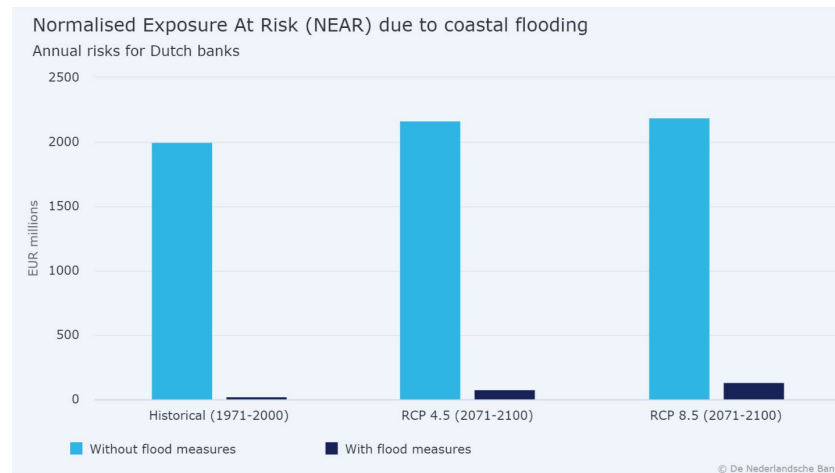
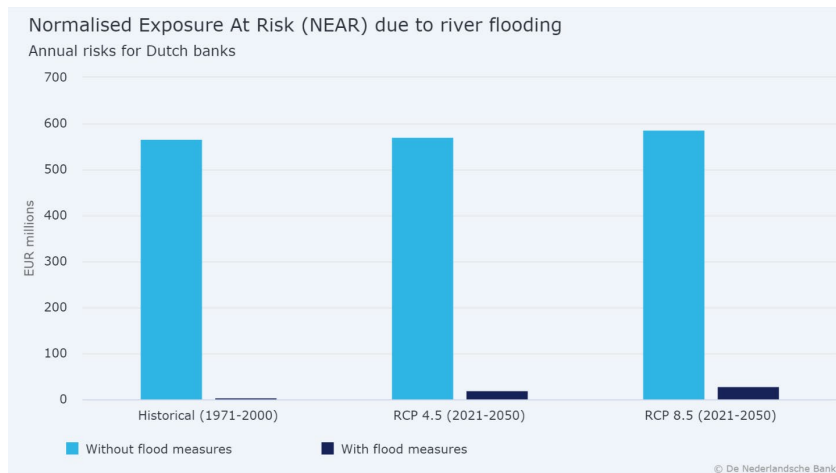


- **Decrease in emissions and revenue¹ from 2019 to 2020** (2019/2020) → could be due to disruptions of the economy from pandemic-related restrictions.
- **Emissions and revenue¹ increase from 2020 to 2021** (2020/2021) → could be due to economic recovery following pandemic-related restrictions.
- Time series breakdowns are also available for the **financed emissions** and **carbon footprint indicators**.
- The decomposition method underscores the **indicators' sensitivity** to changes in **financial components**.

¹ Notably, a reduction in revenue from one year to the next corresponds to a positive revenue component in the WACI breakdown and vice versa. In other words, when revenue decreases, carbon intensity increases.

Towards actionable data: interpreting the data

Flood risks (river and coastal) for Dutch banks: negligible (EUR 30 mln/year), *if the dykes hold...*



Conclusion and next steps

- On climate change and addressing data gaps, **central banks have come a long way**, together with other actors, in a very short time
- More work remains necessary: **data challenges go beyond availability** but include quality, reliability, shareability, comparability, granularity...
- And even then, **methodology** and **interpretation** matters
- And new questions are arising:
 - Forward looking indicators (Paris alignment)
 - Accounting for compounding (physical) risks
 - new/wider physical risk categories including nature-related risks (biodiversity loss)...

Good we have this workshop!





Thank you

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