Sustainable Development and Low Emissions Economies

Supporting and Financing Policies towards Net Zero

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- Reform of Financial Regulation
  $\rightarrow$ create ***incentives*** for Green Finance

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IPCC AR6 (2023)

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- Need to ↑ **Access to Finance** especially for vulnerable regions and communities

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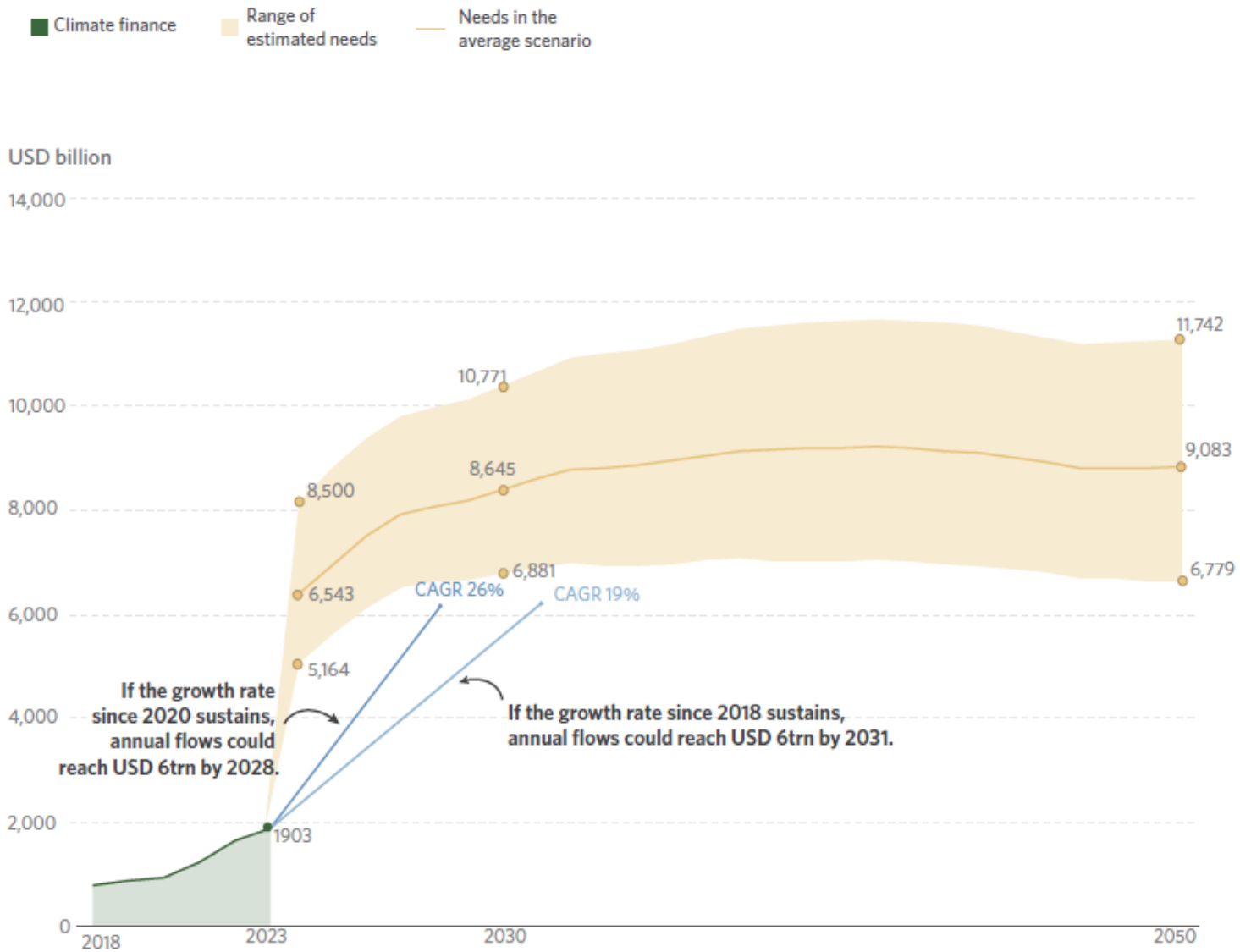
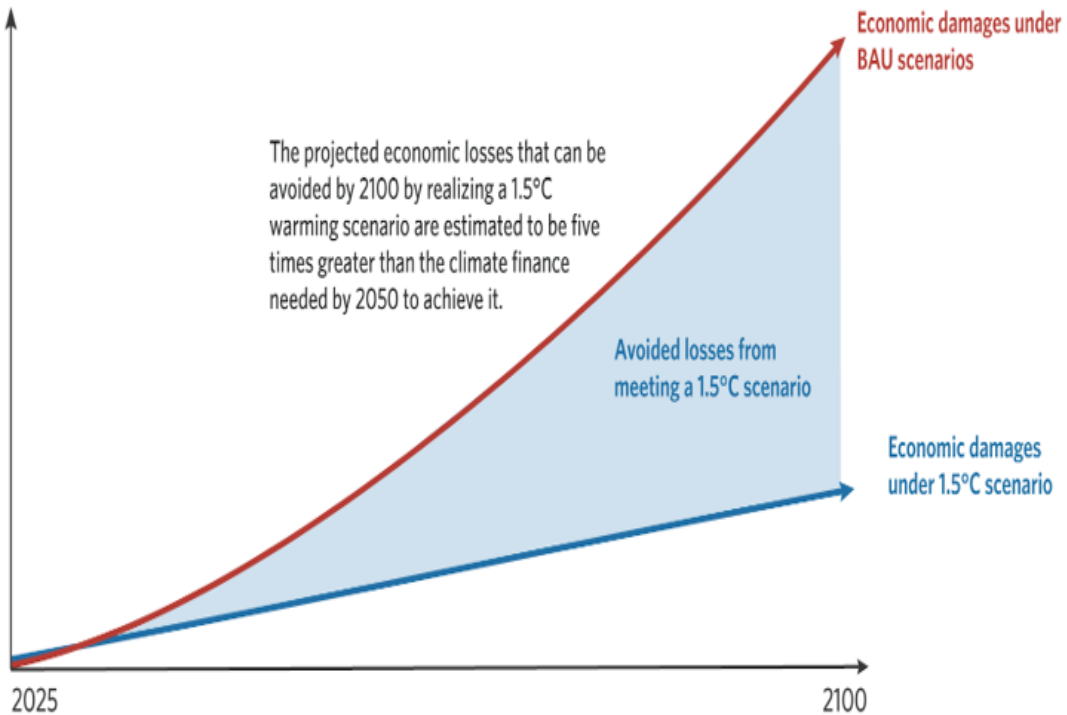
- Clean Energy Investment must rise from **1.8 tn in 2023 to 4.5 tn** each year by the early 2030s (IEA)
- Average annual mitigation investment requirements for 2020 to 2030 for 2°C or 1.5°C → **3 - 6 x Current Levels**

Climate Finance Needs for 1.5 C)



Cost of Inaction

Figure 1.3: Meeting climate investment needs will avoid exponential future costs



Source: CPI analysis of NGFS

Economic losses that can be avoided by 2100 by realizing a 1.5°C warming scenario are estimated to be five times greater than the climate finance needed by 2050 to achieve it.

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- The EUCRA predicts that economic losses from coastal floods alone could exceed **EUR 1 trillion per year** (EEA, 2024).

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- ¾ of the funds for EU decarbonization can be secured by reallocating current harmful or irrelevant expenditure

Challenges in Sustainable Finance (Mazzucato,2024)

Insufficient Funds	The current financial flows are not enough to meet the needs for achieving the SDGs. The SDG financing gap has widened to an estimated $3.9–7 trillion annually.
Misalignment with SDGs	Only partial alignment of public development bank strategies with the SDGs. A survey showed that only half of the public development banks fully incorporated the SDGs into their organizational strategy.
Short-Term Focus	Finance has been disconnected from the real economy, with a significant portion being short-term. In advanced economies, most bank lending is directed towards trading or lending against existing assets, rather than financing the creation of new productive assets
Lack of Coordination	• There is a need for enhanced coordination among global and regional MDBs and NDBs to prevent isolated planning and financing
Limited Access for Low-Income Countries	Low-income countries face stringent international credit conditions. 60% of low-income countries are at high risk of, or already in, a state of debt distress.

Bridging the Climate Finance Gap

National-Level Action

- Governments must implement carbon pricing and reduce fossil fuel subsidies (~$1.7 trillion in 2022).
- Public-private partnerships (PPPs) can help mobilize investment in renewables and climate adaptation.
- Policy incentives and risk-sharing mechanisms can improve private-sector engagement.

International-Level Action

- Just Energy Transition Partnerships (JETPs) (e.g., South Africa, Indonesia) show promise but require scaling up with greater grants and conditional funding.
- Stronger multilateral cooperation through G7, G20, and multilateral development banks (MDBs) to pool resources and coordinate financing efforts.
- Carbon border adjustment mechanisms (CBAMs) could create global incentives for cleaner production while raising revenue for climate finance

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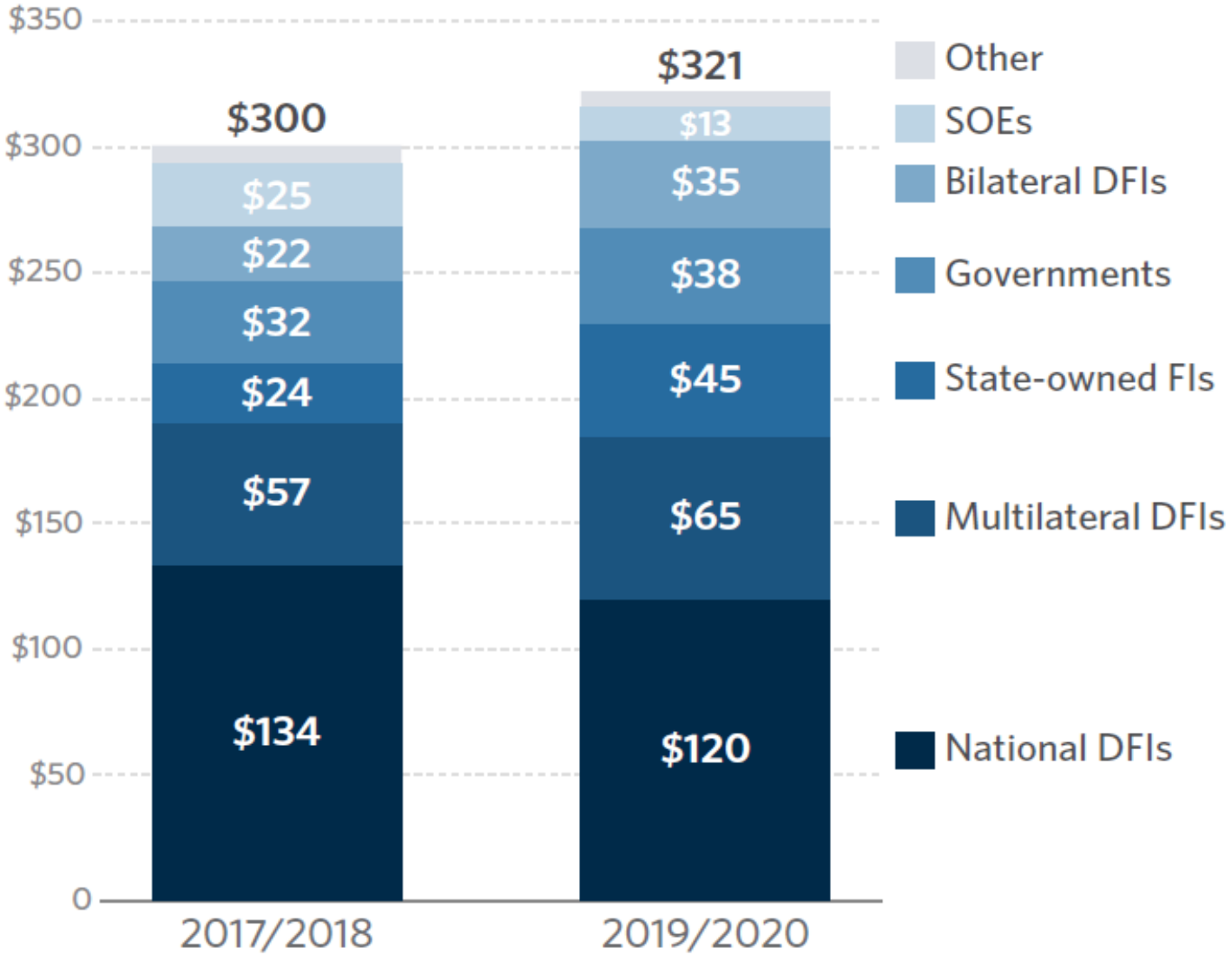
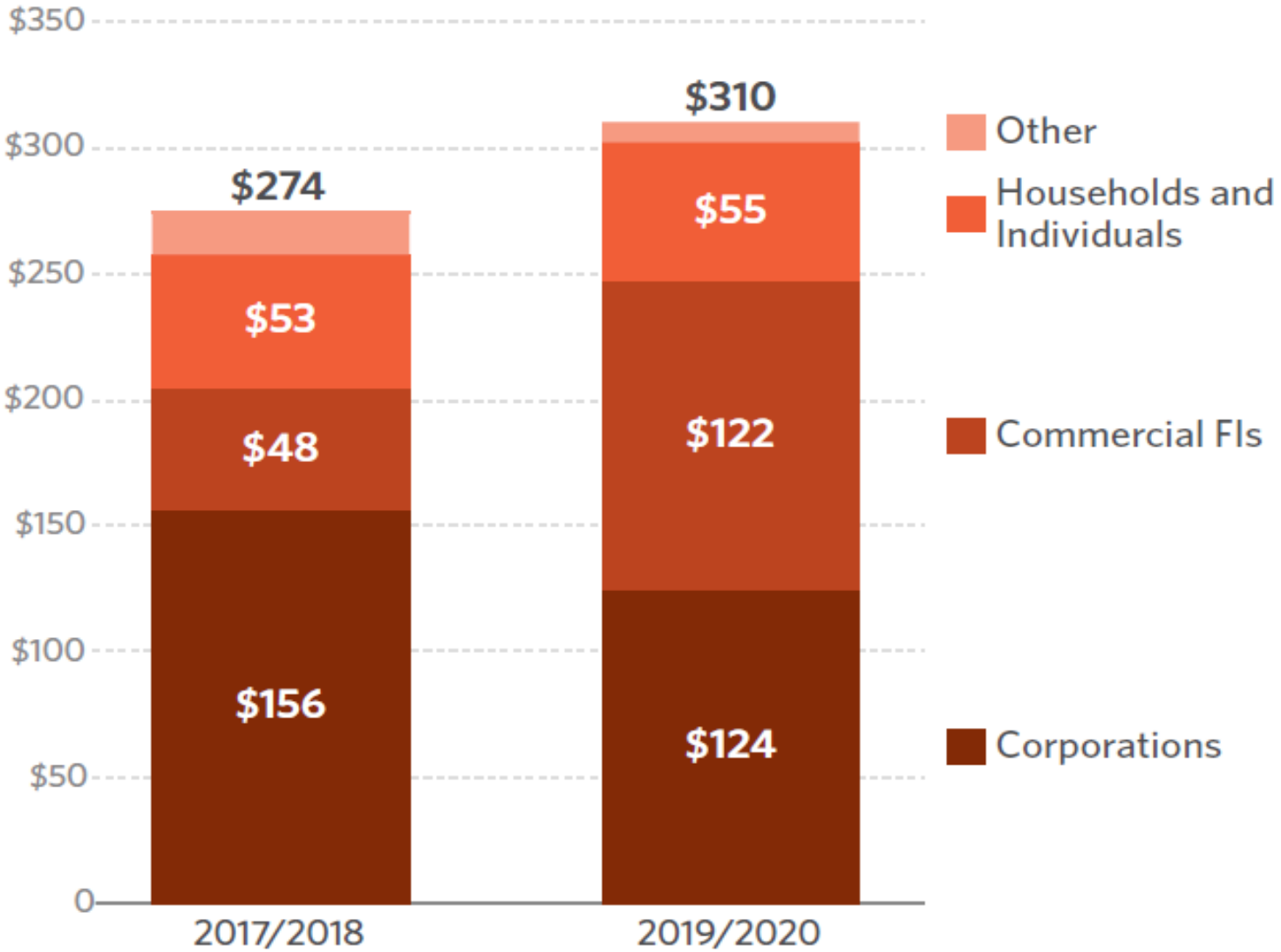
  - **Corporations**
  - **Commercial Financial Institutions**
  - **Households & Individuals**

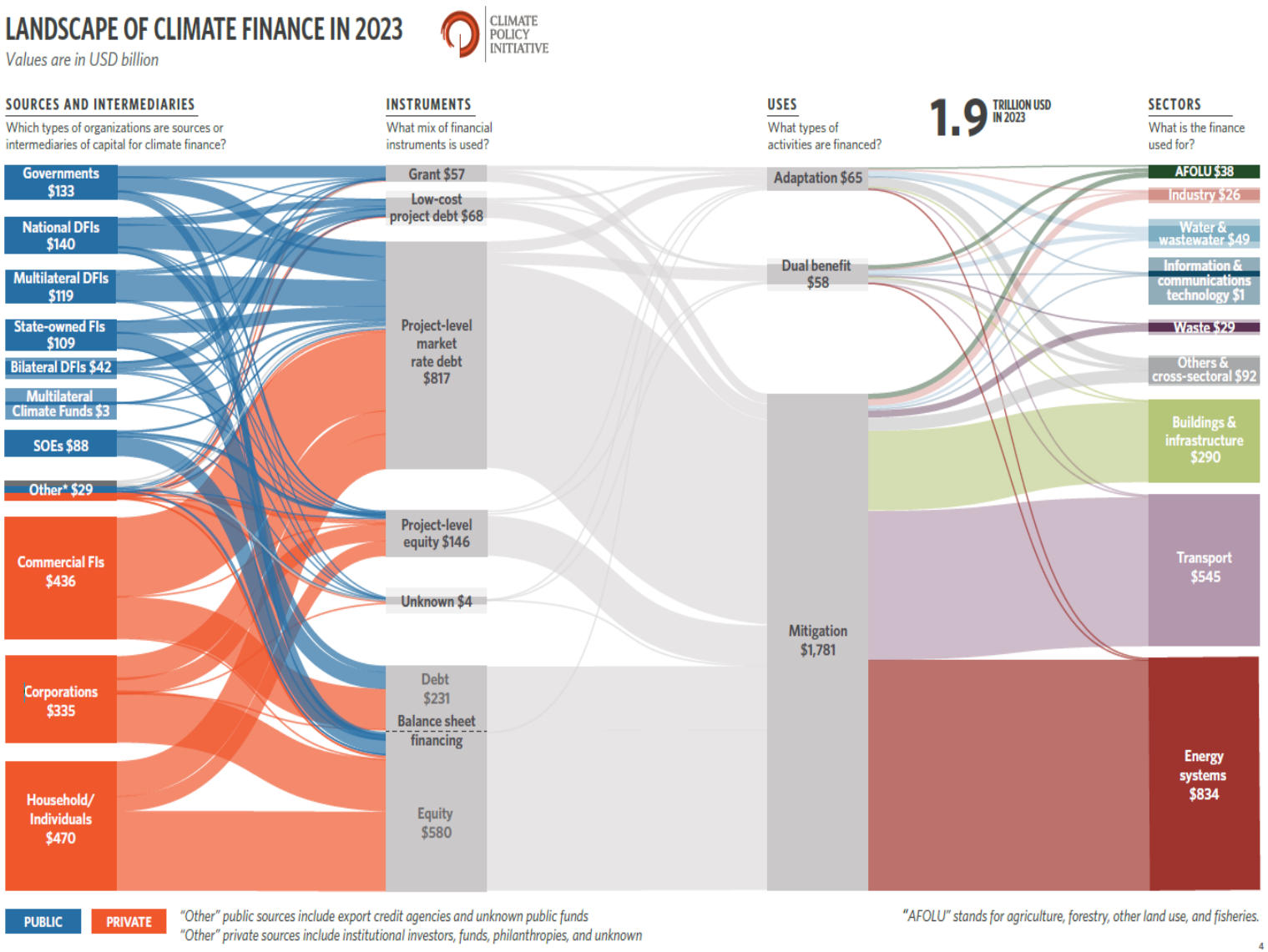
Public Climate Finance



Private Climate Finance



Sources and Destinations of Climate Finance



Climate Finance for Countries and Regions

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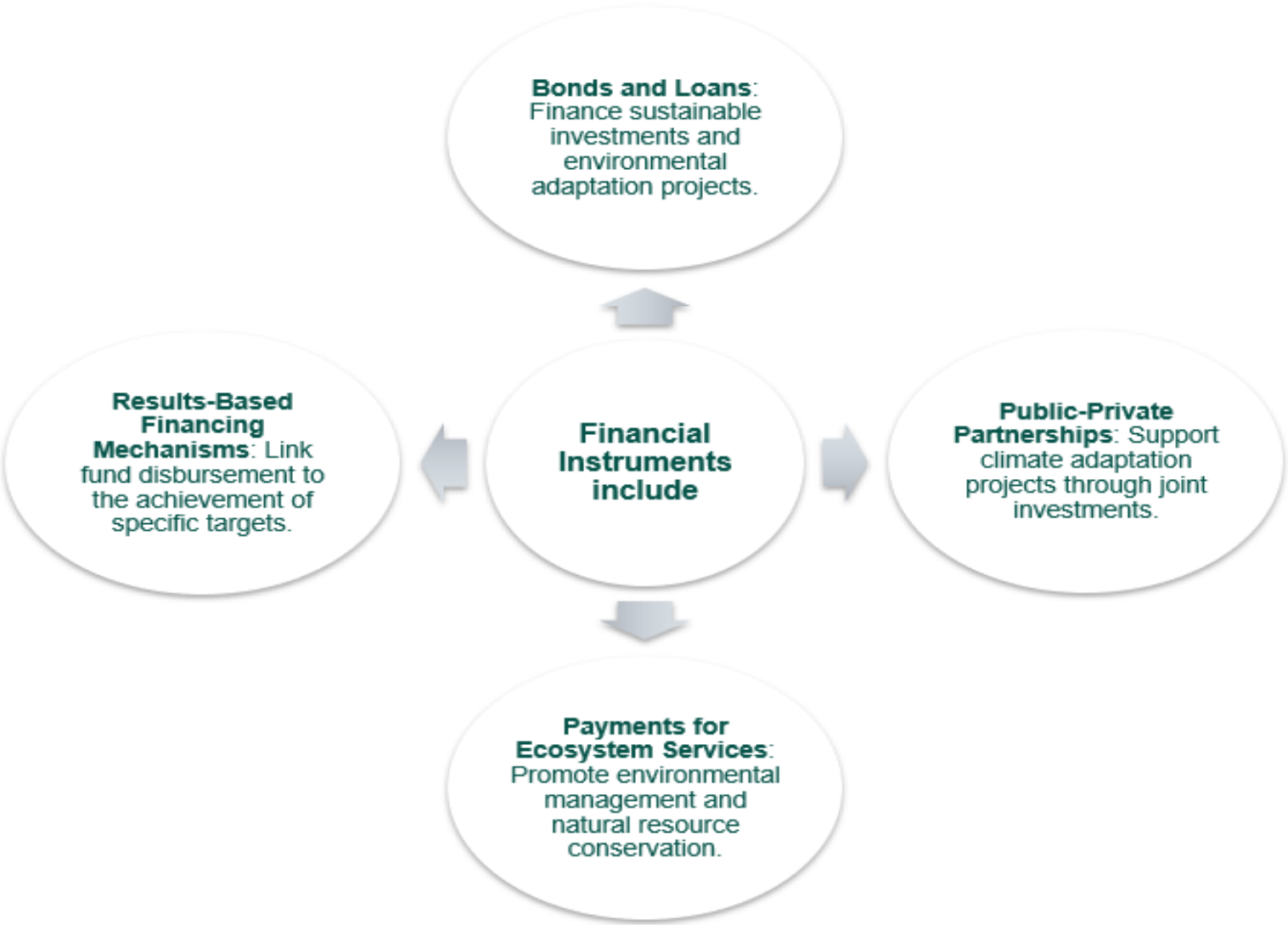
Private Sources

- Savings - Deposits
- Stocks and Shares
- Venture Capital
- Angel Investors
- Crowdfunding

Instruments for Climate Finance



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  - **Embedded Knowledge in Workers**
    Highly ***tacit***, affects company revenue streams through labor mobility
- Need for **Innovative Financial Mechanisms**

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- **Equity Financing** more suitable
  - Experience in financing ***Innovation & high-risk New Technology***
  - Stock Prices reflect **future Pollution Costs**
  - ↑ ESG portfolio of **Institutional Investors**

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- Need for ***transparency and a common Taxonomy*** on Use of Proceeds

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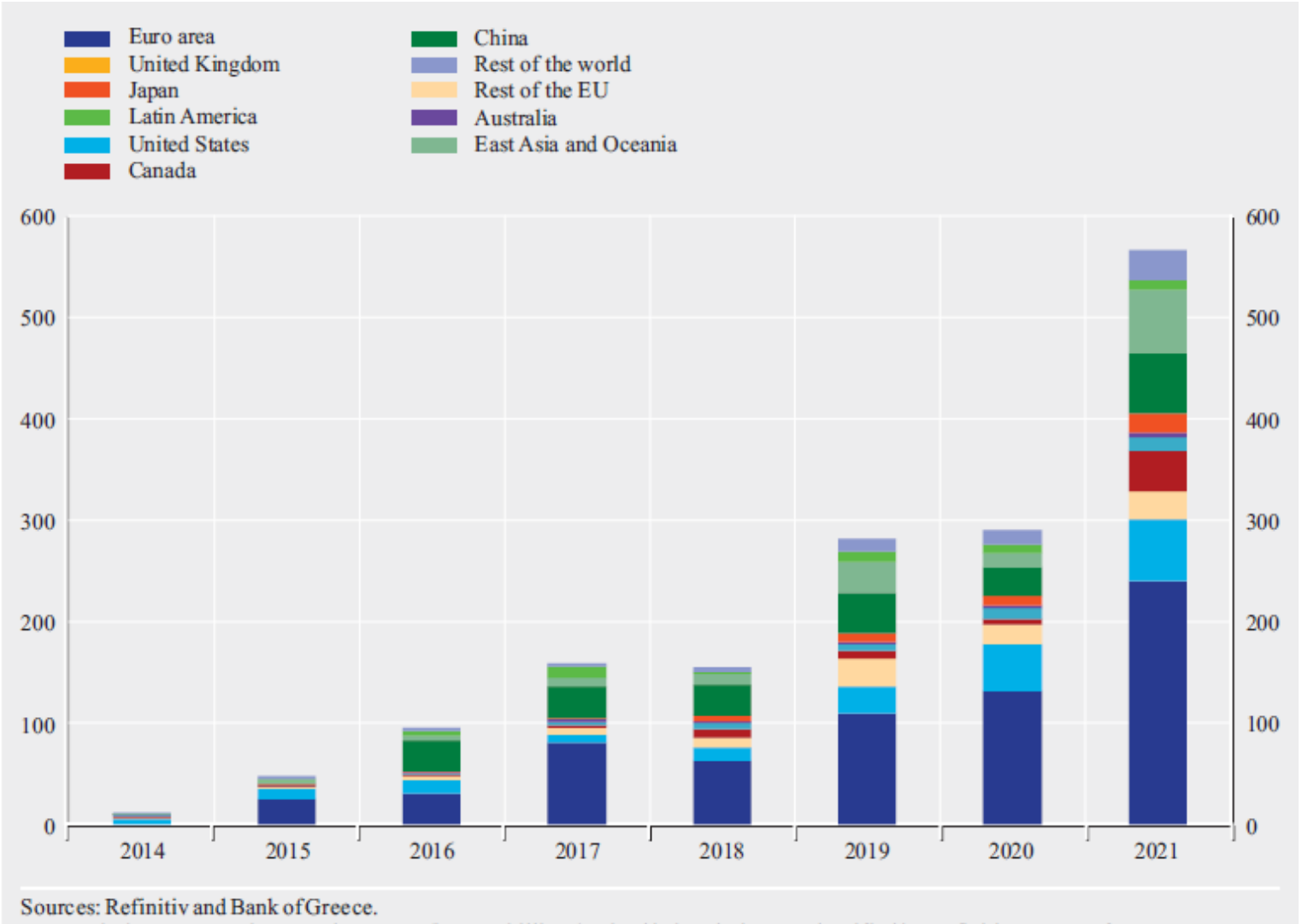
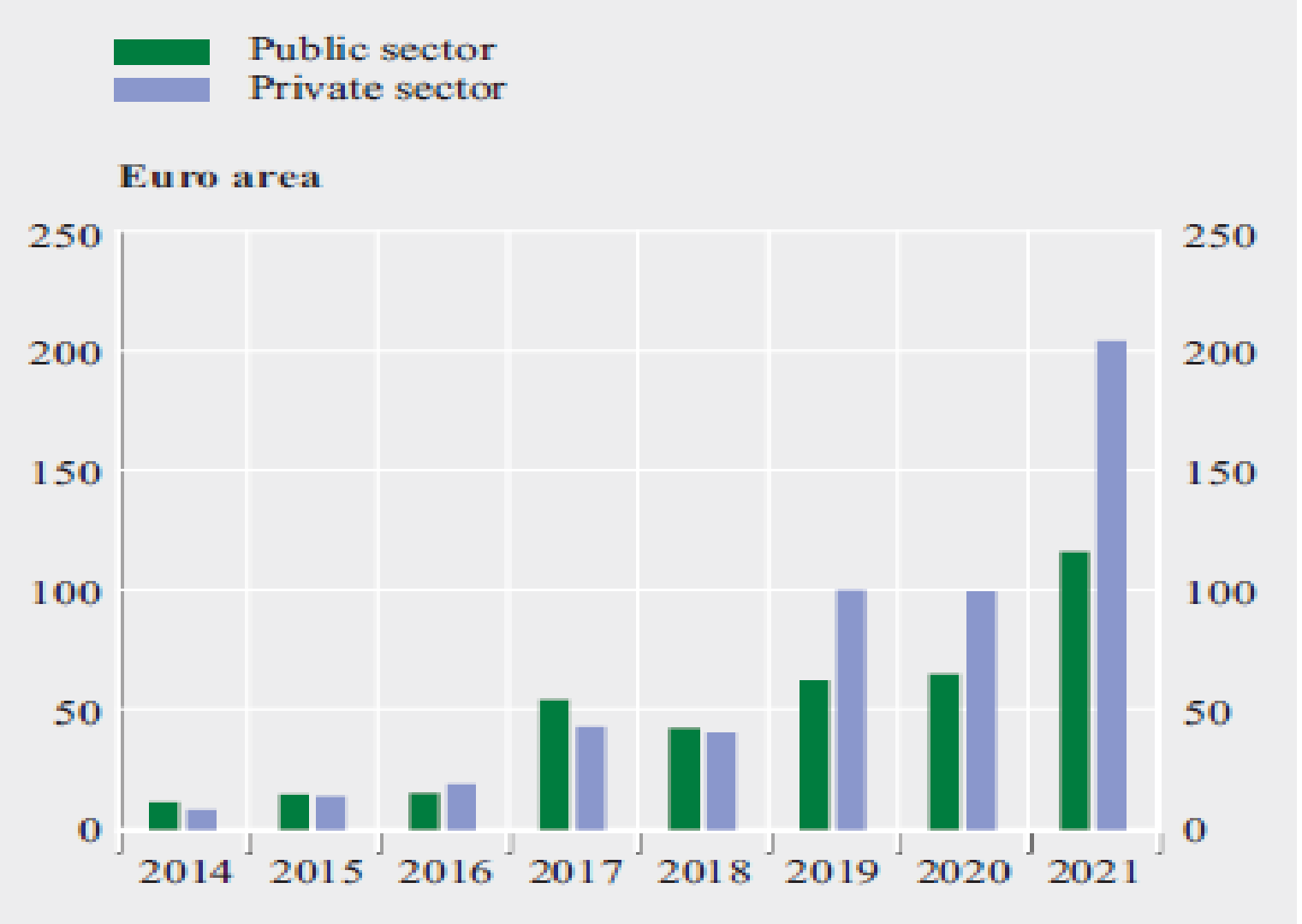
Green Bonds Market



Sources: Refinitiv and Bank of Greece.

EU Green Bonds by Sector



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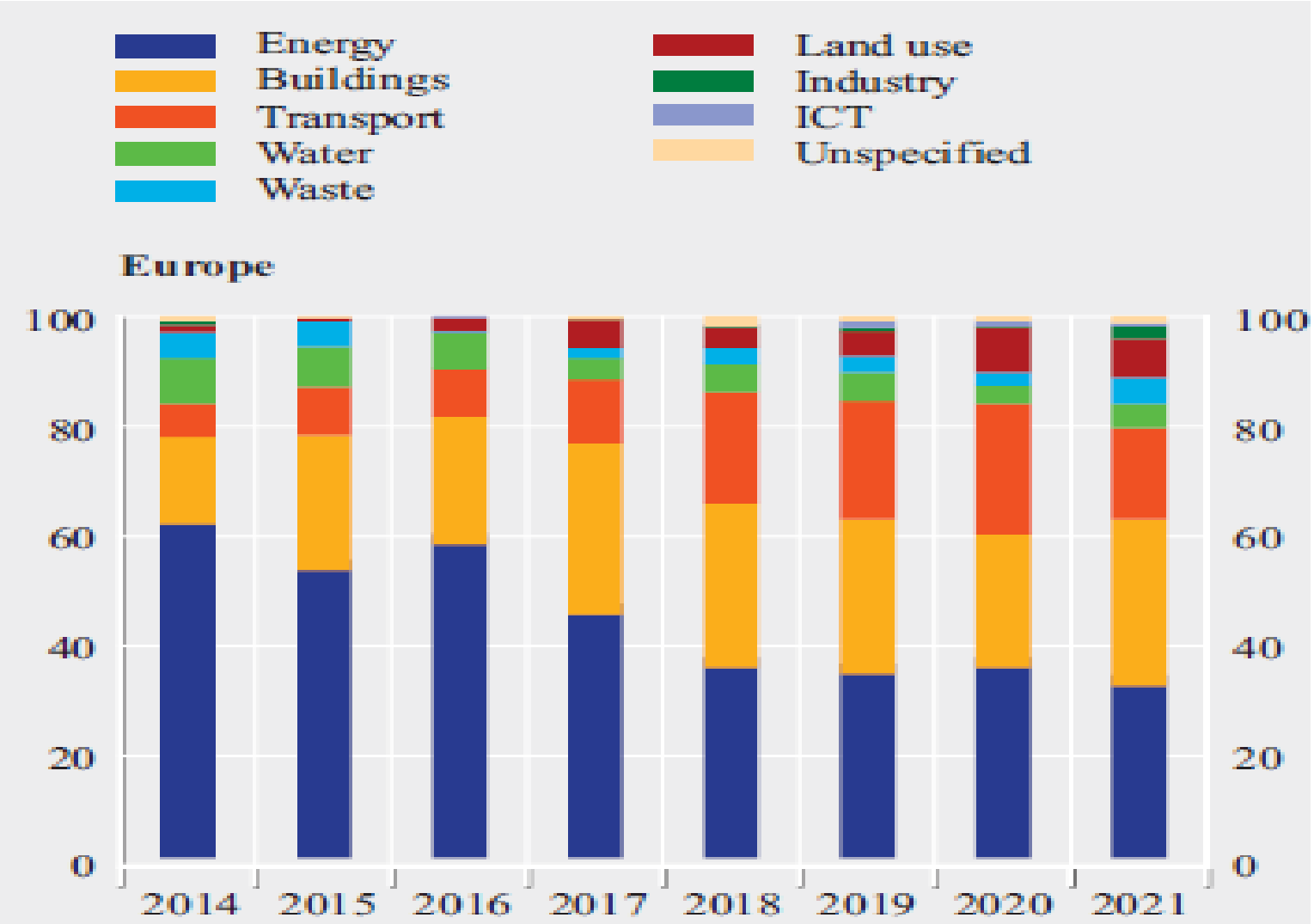

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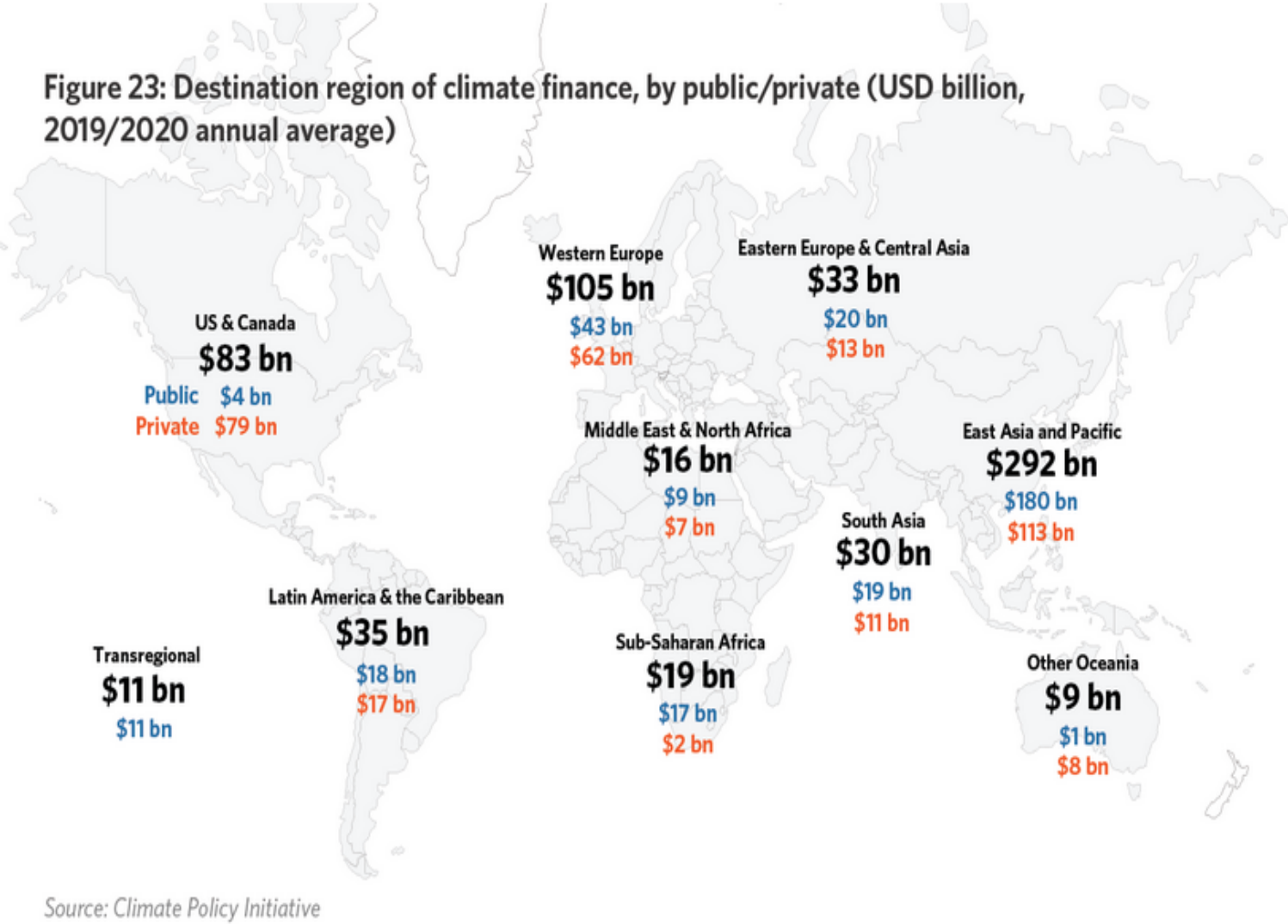
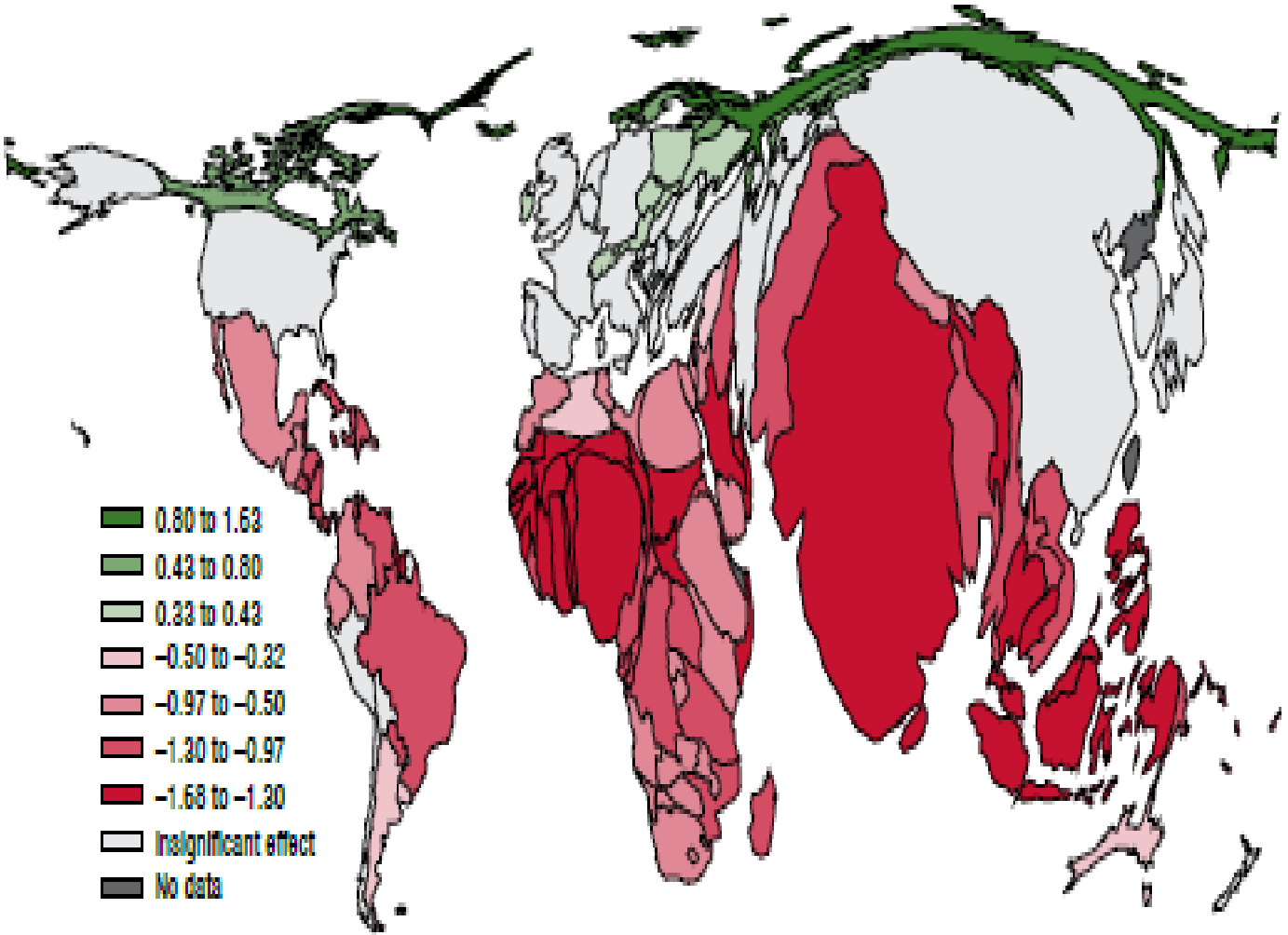
- Net Zero Policies at odds with Economic Development

Geography of Climate Finance



Effect of 1°C rise on GDP per capita



History of Global Climate Finance

Copenhagen (COP15, 2009):

- Developed countries pledged to **mobilize $100 billion annually by 2020** to support developing nations.
- The goal was to **help with both mitigation and adaptation efforts**.
- Funding was expected to come from **both public and private sources**.

Paris Agreement (COP21, 2015):

- Reaffirmed the **$100 billion commitment** and extended it until **2025**.
- Introduced the goal of achieving **a balance between adaptation and mitigation finance**.
- Recognized the need for **increased finance post-2025** but did not specify amounts.

Glasgow Climate Pact (COP26, 2021):

- Developed countries **apologized for missing the $100 billion target** and pledged to **double adaptation finance** by 2025.
- Announced a **$40 billion adaptation finance target**—which **has not yet materialized**.

COP27 (2022) & COP28 (2023):

- Established a **Loss and Damage Fund** to compensate vulnerable countries.
- Recognized that climate finance must **increase beyond $100 billion post-2025** but did not finalize a specific number.

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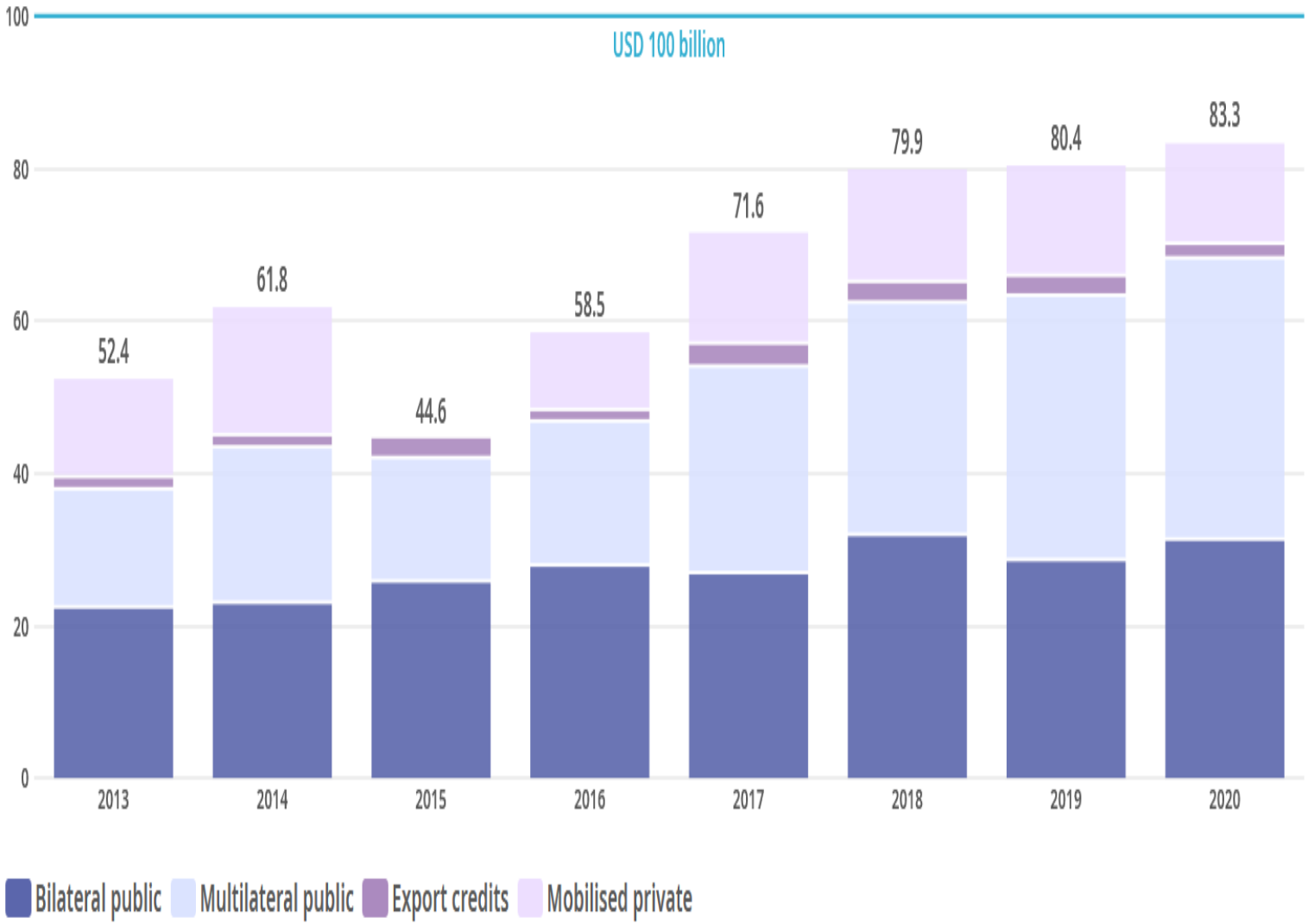
- lower than anticipated mobilisation of ***Private Finance***

Missing the 100 bn Target



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- Mobilize International Finance & Invest on ***Innovative Financial Solutions***

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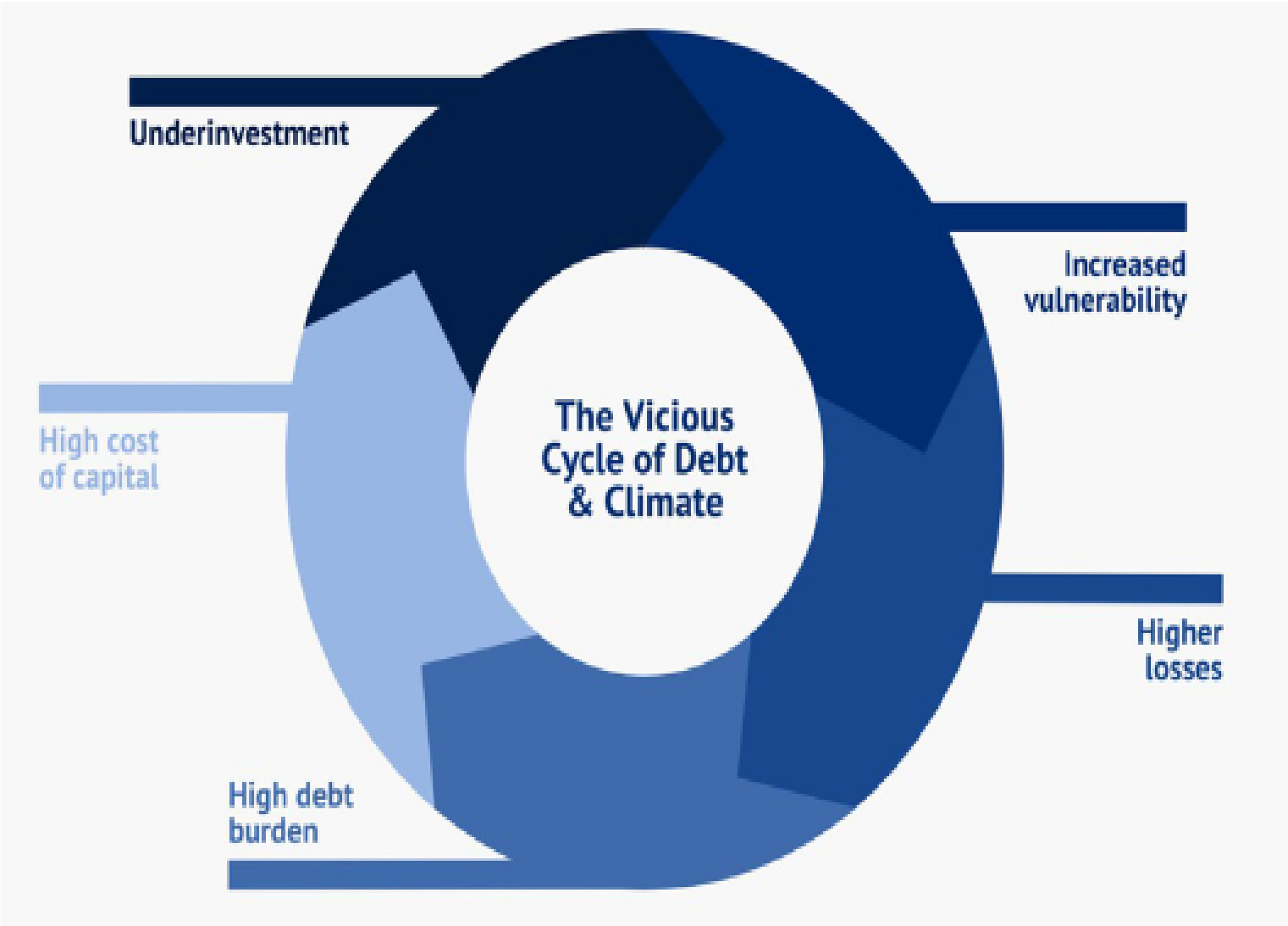
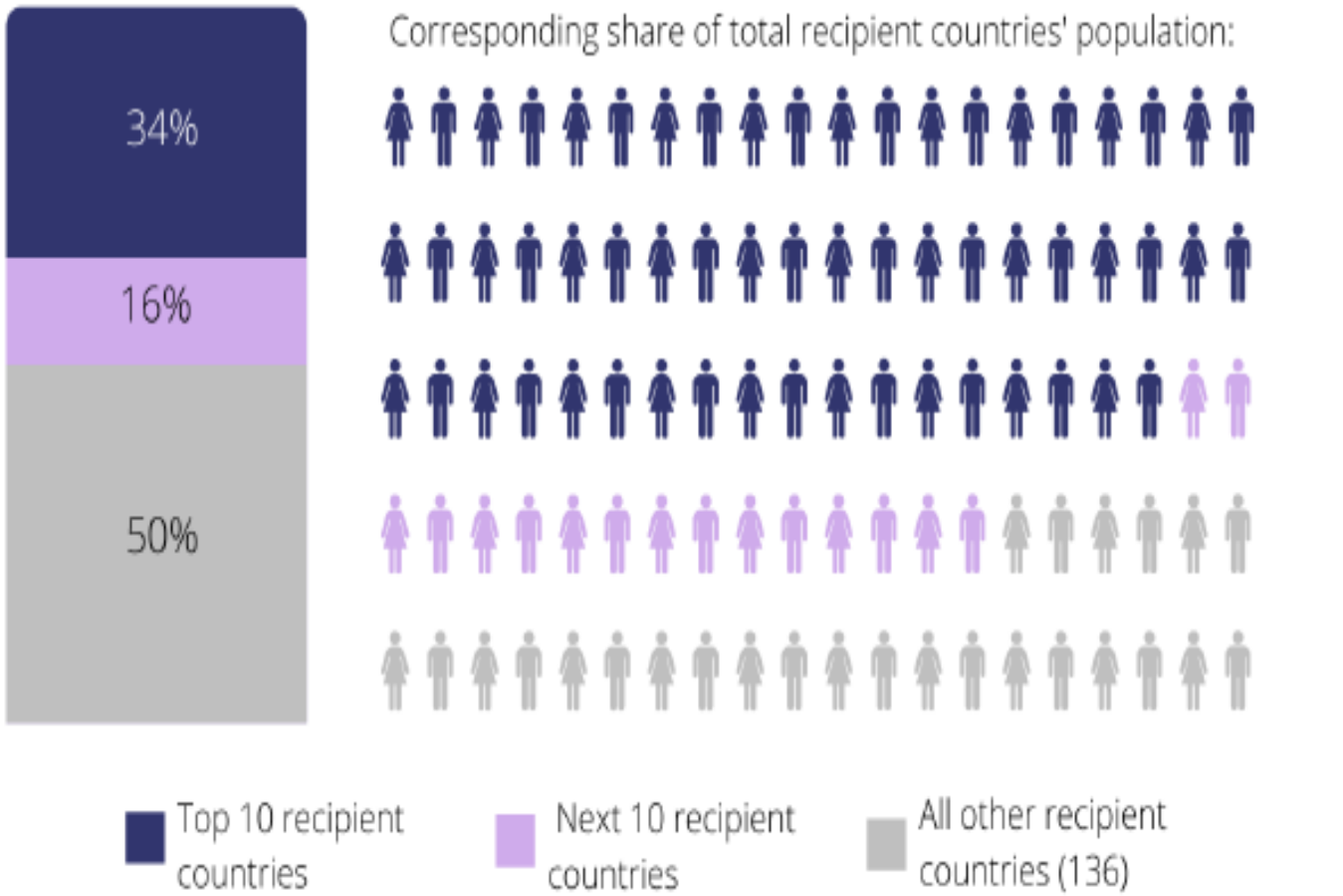
- Future negotiations will need to define mechanisms for disbursing the funds effectively and ensure that financial flows reach the ***most vulnerable***

Vicious Cycle of Climate & Debt



Climate Finance Concentration



Note: This figure does not fully reflect developing countries' differences in terms of size, population, and other socio-economic conditions.
Source: Based on Biennial Reports to the UNFCCC, OECD DAC and Export Credit Group statistics, complementary reporting to the OECD.

Ecological Debt

Concept

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- Industrialised countries have benefited from the ***overuse of the planet's resources*** $\rightarrow$ debt to less developed nations.
- Unfair (historical and current) **trade practices**, **pollution**, **and resource extraction** contribute to this debt
- Recognizing ecological debt highlights the **need for reparations and just climate action**

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  - **$1.6 billion debt swap** replacing existing bonds with low-interest climate bonds
  - $450 million over 18 years for marine conservation ***saving 1.1 billion*** in debt service repayments

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  - needs for EMDEs alone are USD 212 billion per year from 2024 to 2030
  - EU annual adaptation finance annual needs estimated at €70 billion (European Commission, 2026)

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- Adaptation finance is dominated by public finance (98%)

State of Adaptation Finance

- Adaptation finance **more than doubled** between 2018 and 2022, reaching USD 76 billion in 2022
- However, significant Adaptation Finance Gap persists
  - needs for EMDEs alone are USD 212 billion per year from 2024 to 2030
  - EU annual adaptation finance annual needs estimated at €70 billion (European Commission, 2026)
- Adaptation finance is dominated by public finance (98%)
- Mitigation projects continue to dominate global climate finance, accounting for 90% of the total

Financing Adaptation in the EU

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- Finance & Resources main element of **EU Mission Adaptation**

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- Adaptation requires **cross-sector collaboration**, which can face resistance due to silo thinking

Barriers to Adaptation Finance

- **Economic and Financial Barriers**
  - Uncertain revenue streams in non-market sectors; High Competition for regional funding

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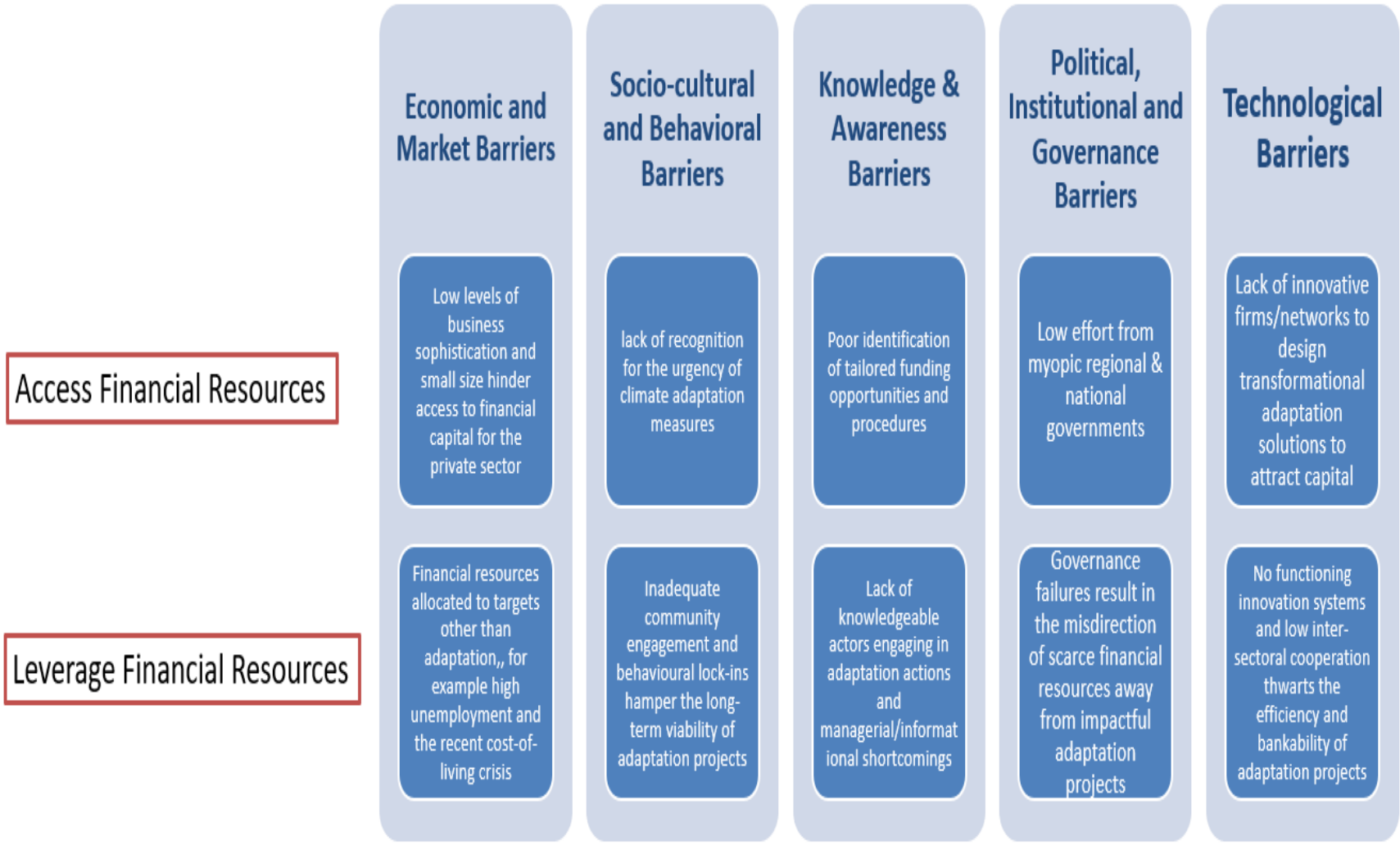
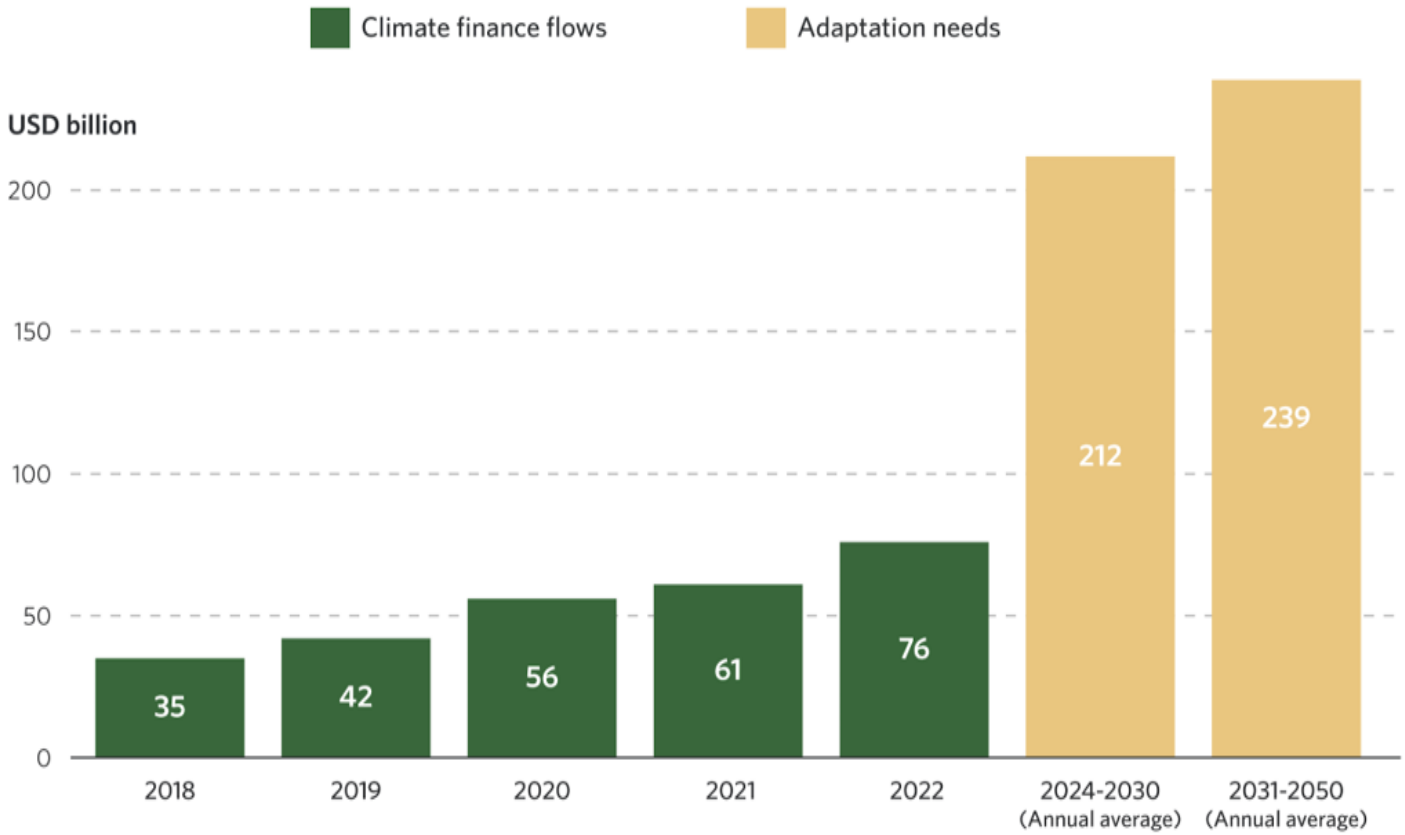
- **Technological Barriers**
  - Inefficient/Absent innovation systems; Data gaps

Manifestation of Barriers



EMDE Adaptation Finance Needs

Figure 2.3: Global adaptation finance flows vs. needs



Note: Measuring the adaptation gap is challenging both conceptually and quantitatively. These figures are likely underestimates as they only account for EMDE needs and many costs cannot be accurately measured. Over 2018 to 2022, EMDEs accounted for 92% of adaptation finance.

Source: Climate Policy Initiative

EU (non) Awareness

- More than 60% of Global Adaptation Finance comes from Public Sources
- There are **many different sources and instruments** that could theoretically be used for adaptation
- Cities and Regions require assistance to raise **Awareness**
- **Enabling Conditions** for different Sources of Finance need to be developed

Table 5 - Q. Which sources of adaptation financing have you used, do you intend to use, do you know or don't you know?

Sources of adaptation financing	I have used	I intend to use	I know	I don't know
Cohesion Policy Funds (ERDF, Interreg)	48%	26%	14%	11%
LIFE Programme	31%	31%	24%	14%
European Rural Development funds	22%	21%	30%	28%
Horizon Europe	25%	44%	20%	11%
Other EU funds	27%	26%	18%	29%
European Investment Bank financing	9%	12%	32%	47%
Private/commercial banking financing	8%	10%	31%	50%
National funds	62%	19%	11%	8%
Regional funds	52%	17%	12%	19%
Own local funds	56%	14%	10%	20%
Other	7%	12%	12%	69%

Source: European Commission, 2023.

Financing the Green Transition in the EU

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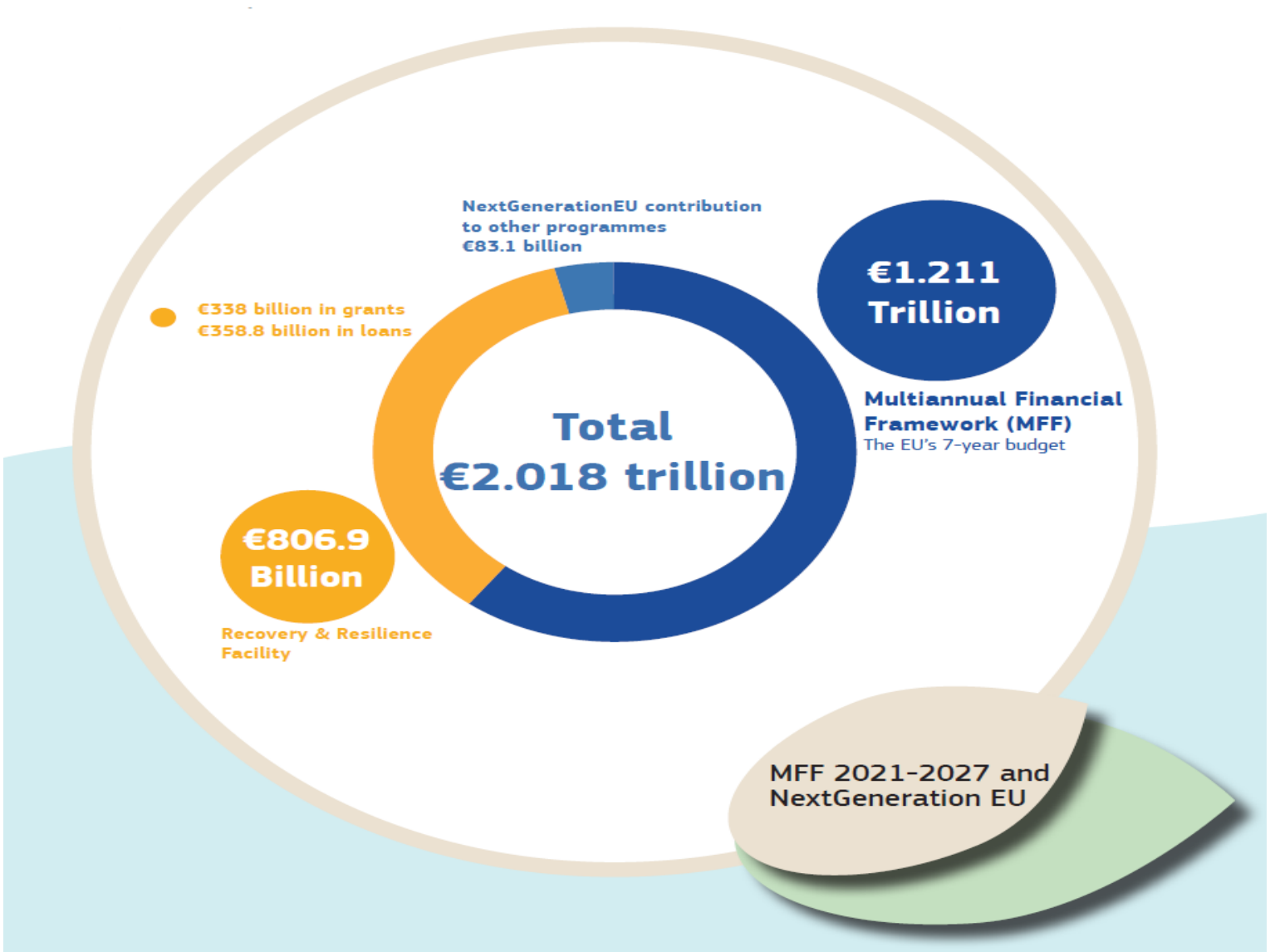
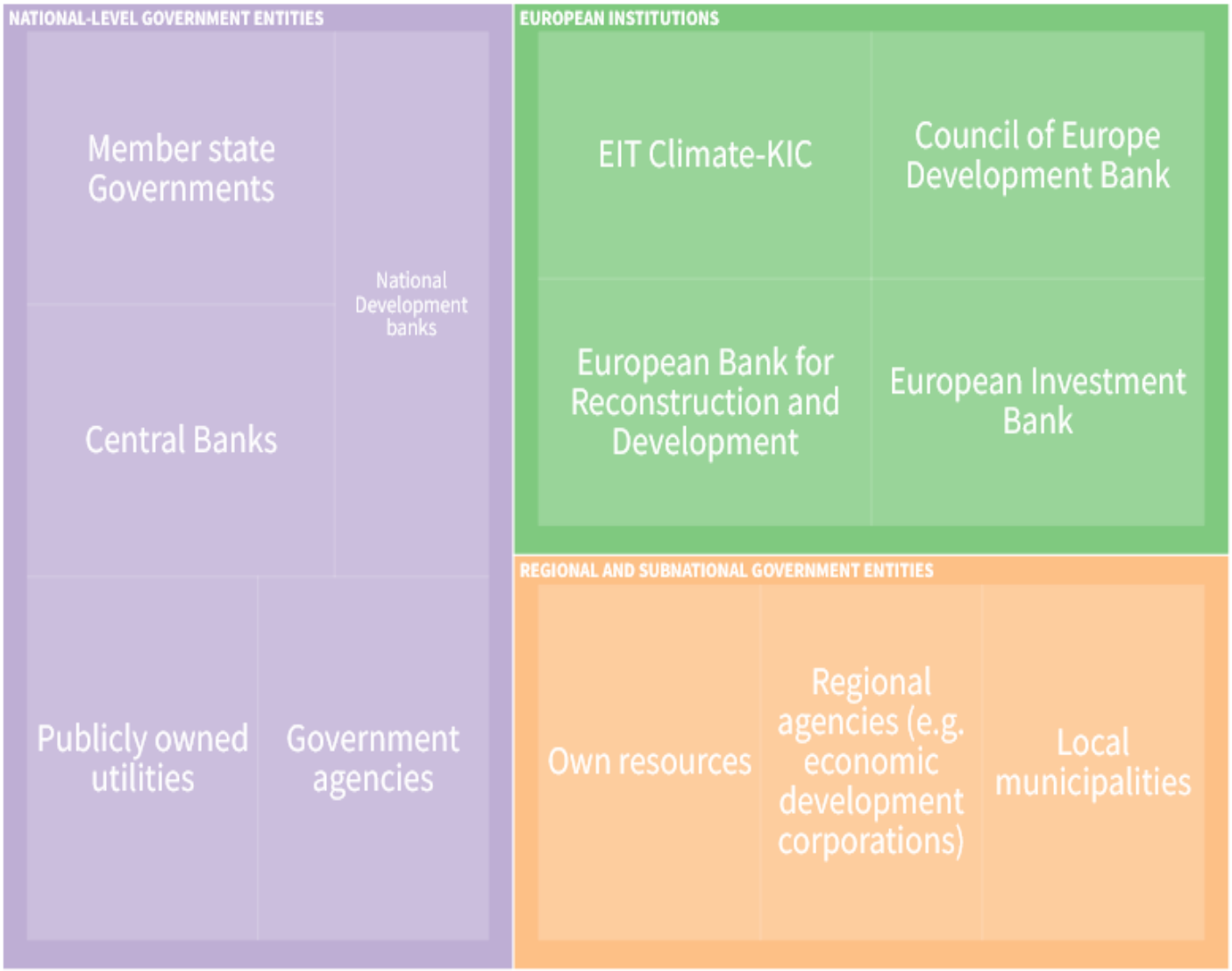
- Contribution to ***International Climate Finance***

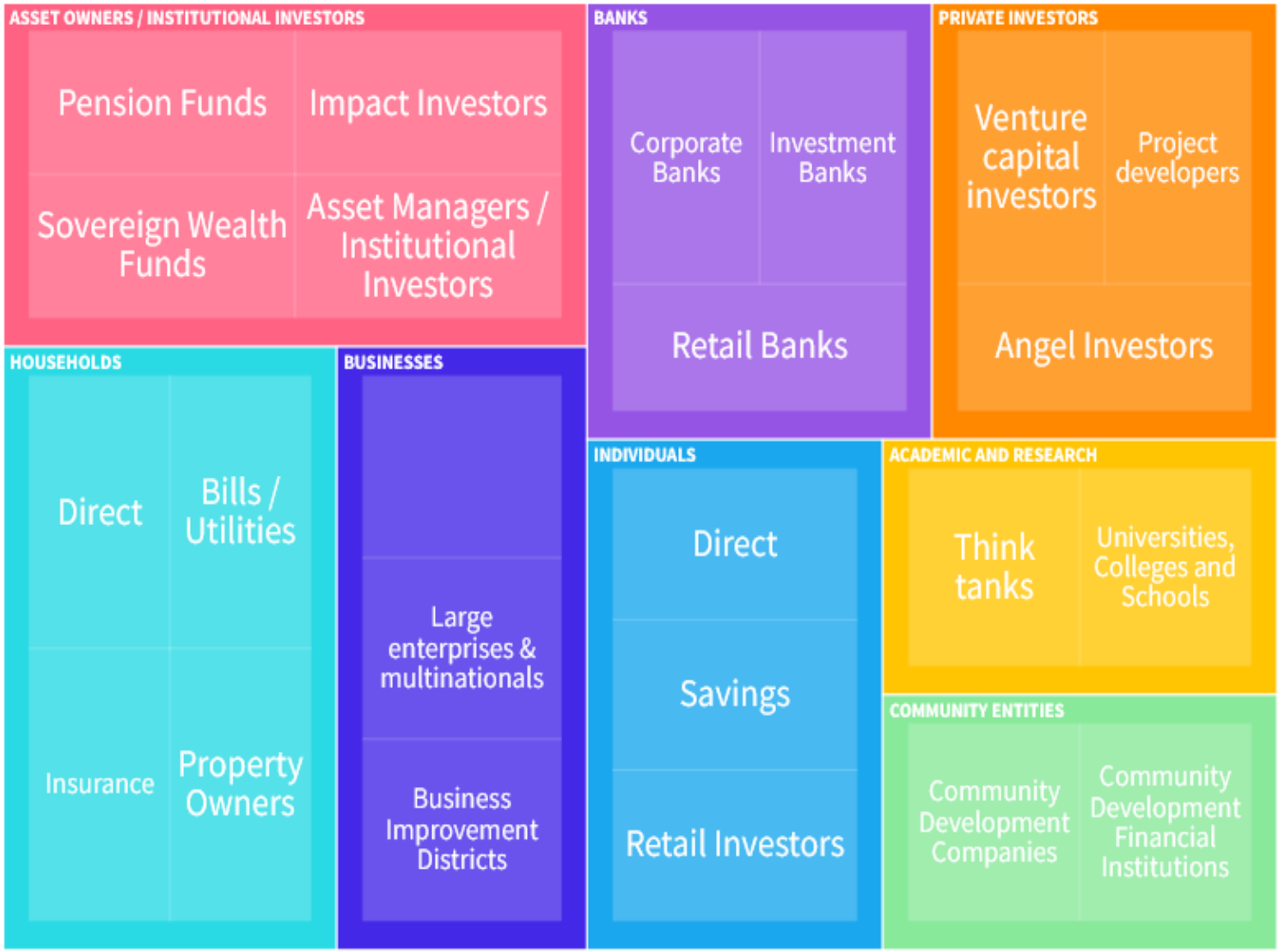
Multiannual Financial Framework



Public Climate Finance EU



Private Climate Finance EU



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- Financing Public & Private Sector
  - ***Direct Loans*** for large companies and public entities
  - ***Framework Loans*** for Climate Investment Portfolios
- ***Technical Assistance***
  - Study the **needs** of Industries & Regions
  - Guide projects → access to financing
  - Mobilize ***innovative*** financial solutions

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- At least 30% dedicated to Climate Objectives

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- Specific set of outputs and results that have to be met as part of the programme

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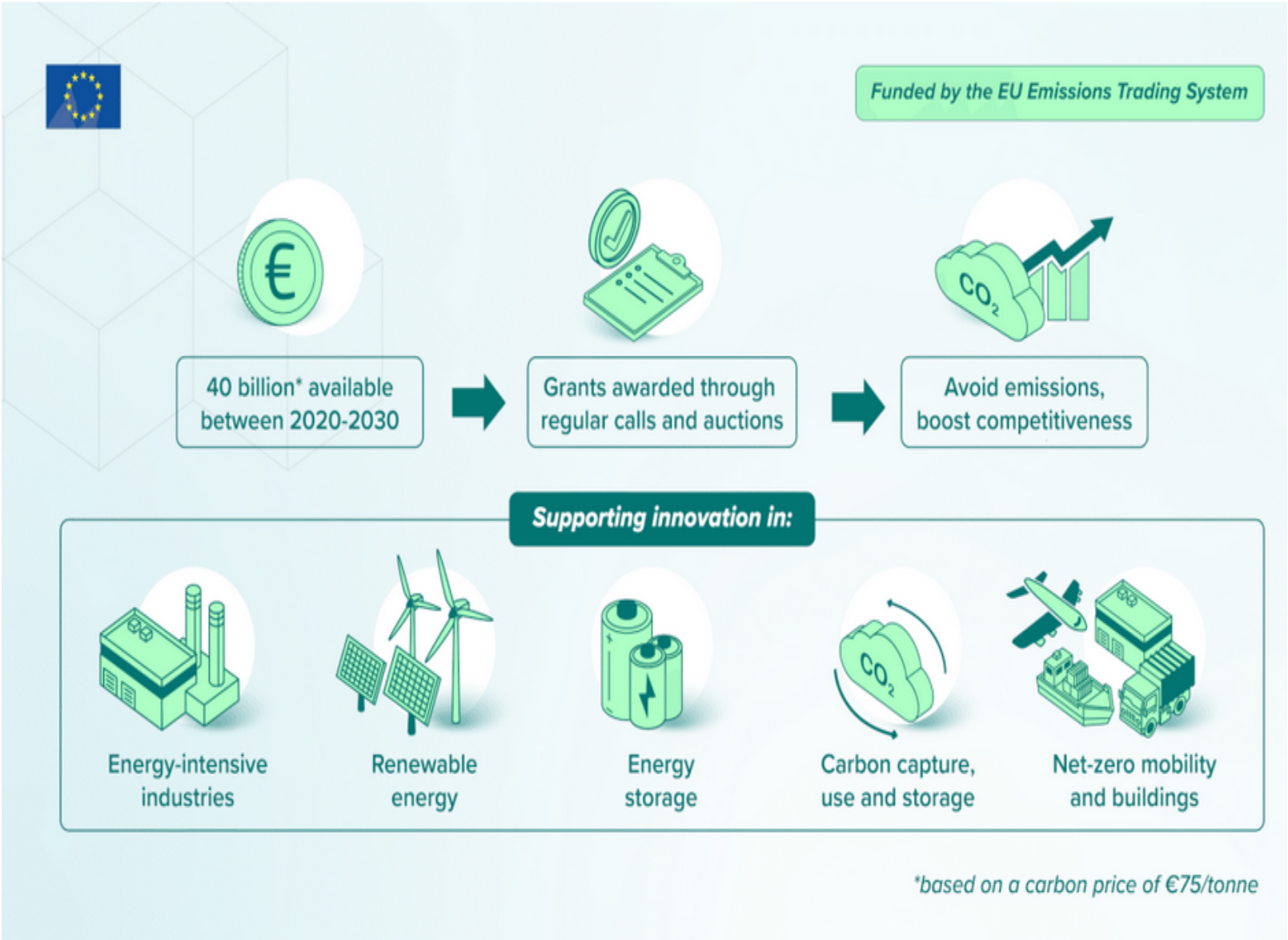
- 6 Projects in Greece → 542 mil. grants (CAPEX 1.2 bil.)

  Ambitious OLYMPUS project on CCS

Innovation Fund Principles



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- European Commission ***directly managed fund*** through calls for proposals & tenders.

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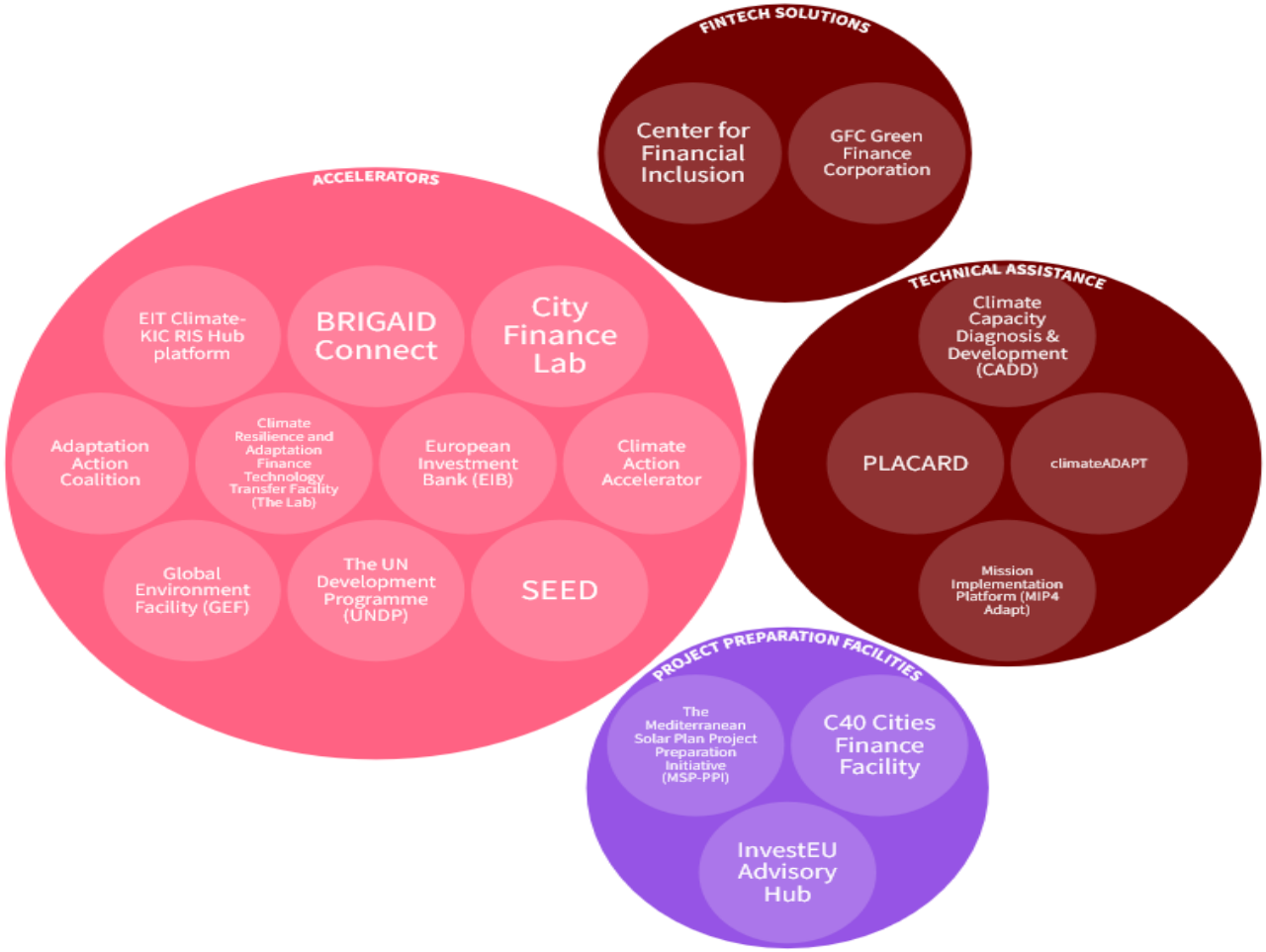
- Instruments: **Grants, Prizes & Procurement**

Climate Solutions Tools



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  - ***New Products and Services*** related to CCA & CCM
  - Identify & Leverage **public & private funds** → Green Innovation
  - **ClimAccelerator** : Start-ups → sustainable Solutions
  - Encouraging ***New Ideas*** through Climathons

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- Foster ***Innovative Solutions*** in
  - Low Carbon Energy – transition & efficiency
  - Low Carbon Logistics
  - Waste Management
  - Climate Adaptation
  - Alternative propulsion systems and new ship designs

Mitigation Case Study: Net Zero Cities

- Part of **EU Mission 100 Climate Neutral Cities by 2030**

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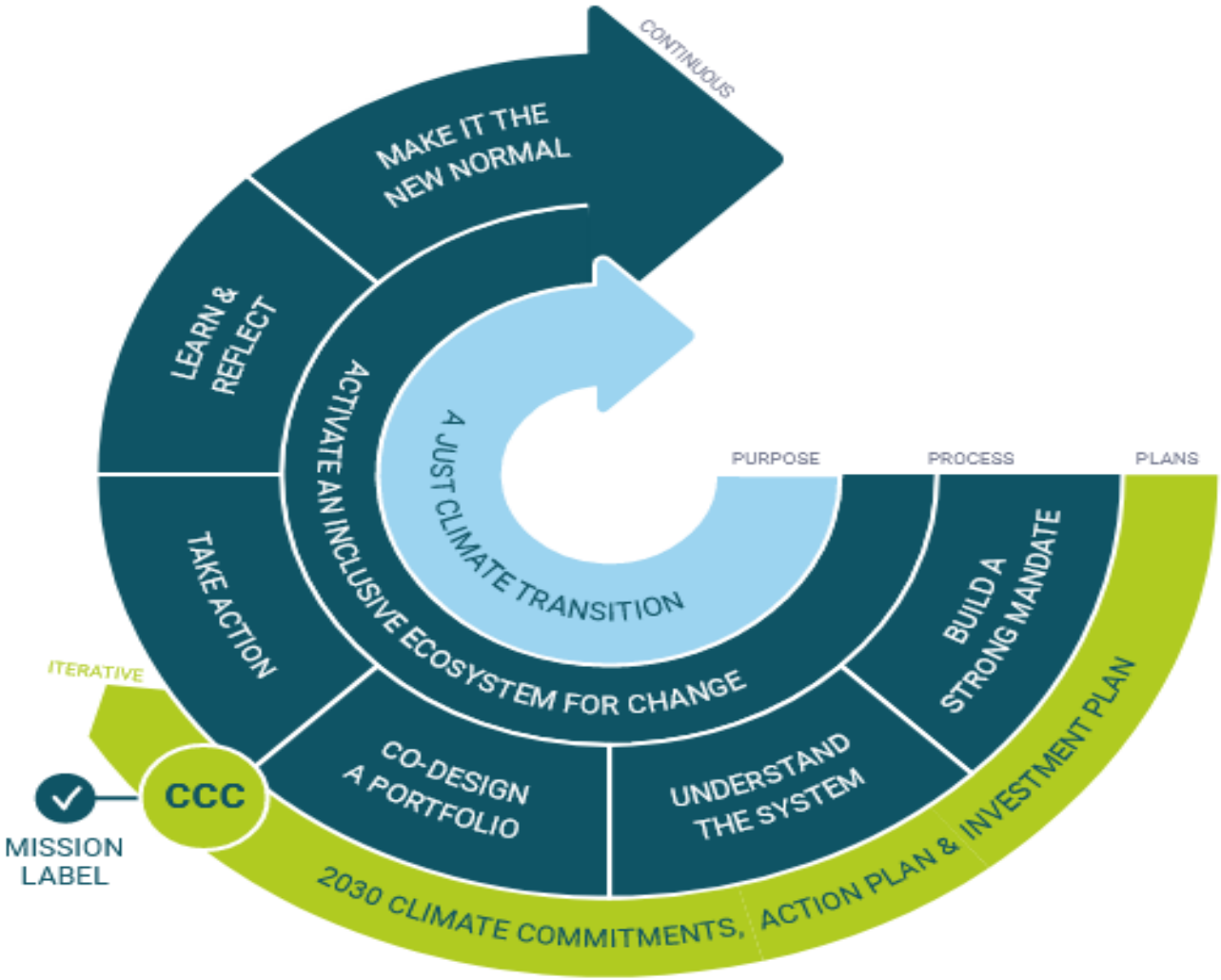
- ***Finance Guidance Tool***
  - Interactive Tool to **estimate costs and identify financing sources and mechanisms** for climate action in 5 key sectors

Climate Transition Journey - Climate neutral Cities



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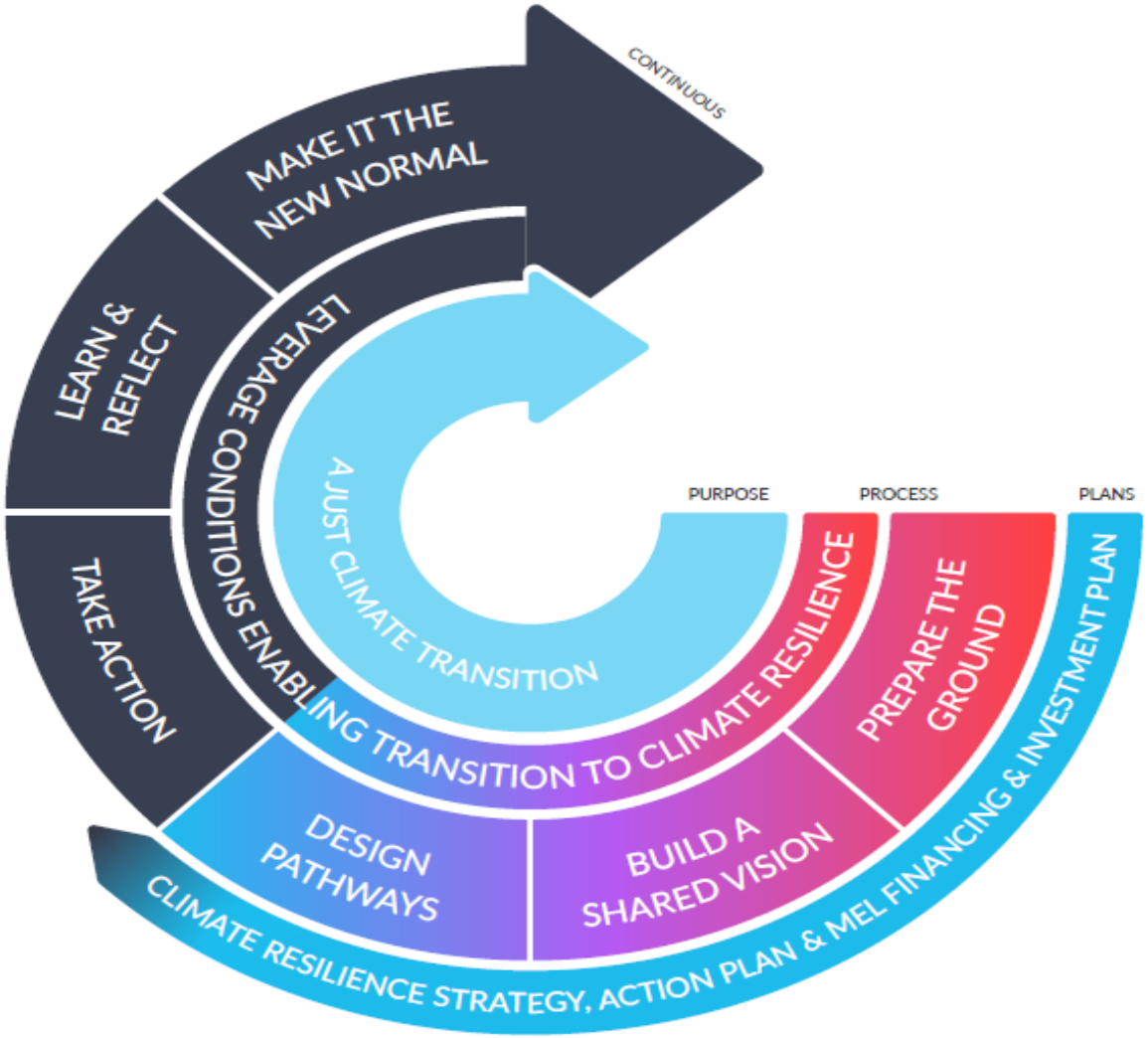
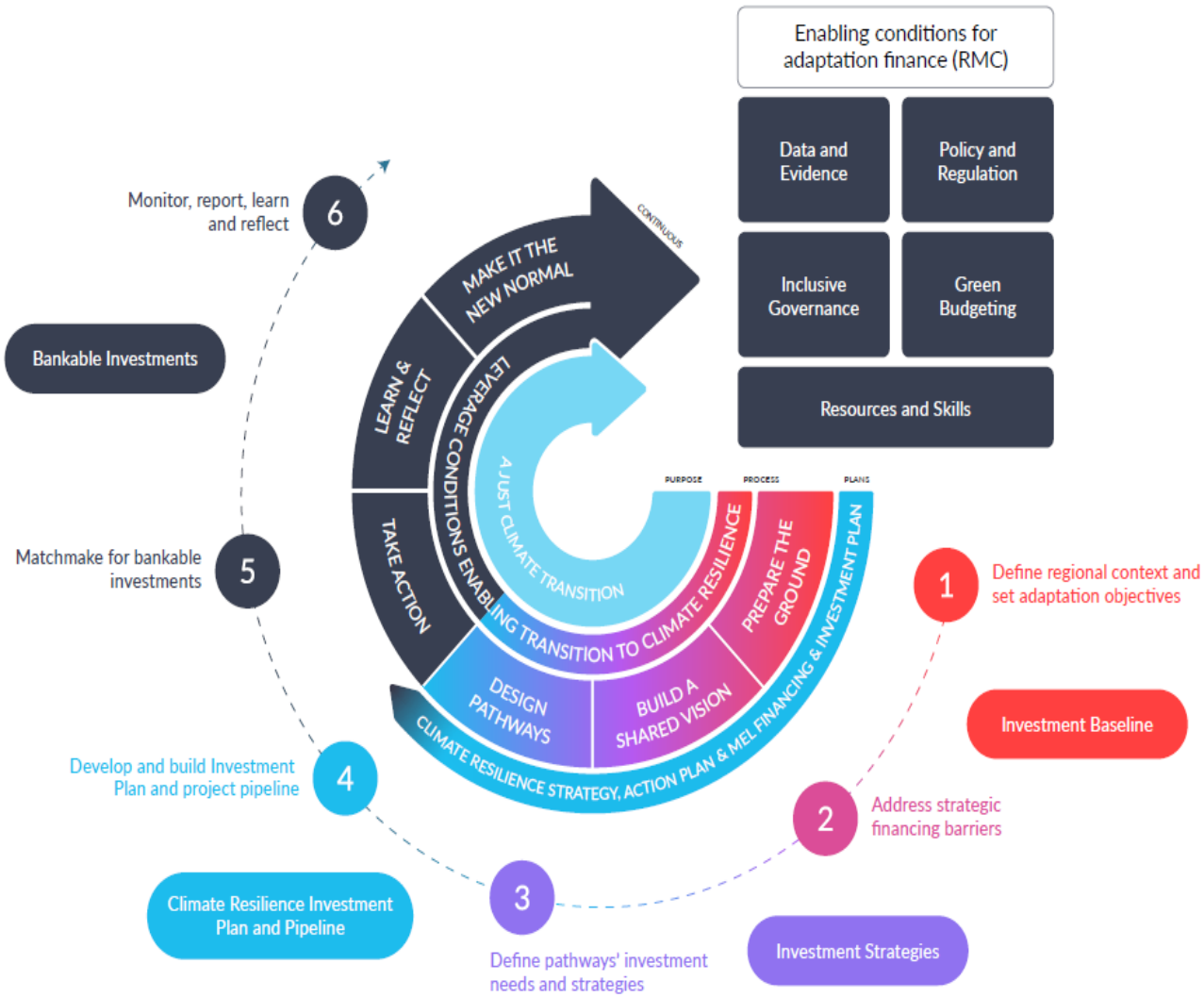
Regional Resilience Journey



P2R Adaptation Investment Cycle



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- Catering to the common **Barriers to Adaptation Finance**

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- ***Searchable*** database of EU, national, and private funding programmes
  - Guidance on project development and innovative models (e.g., green bonds, ESCOs)
  - Linked with technical assistance initiatives (e.g., ELENA, PDA, LIFE)

P2R Catalogue for Adaptation Finance

Excel tool of 57 sources. 78 instruments and 169 best practices.

Designed as a practical reference tool to support development of Investment Plan and bankable projects.

Provides detailed insights (e.g. what matters to particular sources, typical financing).

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- Establishment of **Climate Fund** fund mitigation and adaptation projects
- 50% from the **CO2 emissions tax on vehicles** with mechanical traction
  + 20% from **taxes on environmentally impactful facilities**

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- Common ***science-based*** classification of economic activities significantly contributing to environmental objectives

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- Criteria for labeling activities as ***Sustainable***
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- **Ongoing Procedure** described Here
- Necessary to scale-up Investment in Green & Sustainable Projects
  - Minimize the risk of ***greenwashing***

EU Taxonomy Guide

What the EU Taxonomy is	What the EU Taxonomy is not
A classification system to establish clear definitions of what is an environmentally sustainable economic activity	It's not a mandatory list to invest in
Tool to help investors and companies to make informed investment decisions on environmentally sustainable activities for the purpose of determining the degree of sustainability of an investment	It's not a rating of the "greenness" of companies
Reflecting technological and policy developments: The Taxonomy will be updated regularly	It does not make any judgement on the financial performance of an investment
Facilitating transition of polluting sectors	What's not green is not necessarily brown. Activities that are not on the list, are not necessarily polluting activities. The focus is simply on activities that contribute substantially to environmental objectives.
Technology neutral	
Fostering Transparency by disclosures for financial market participants and large companies related to the Taxonomy	

EU Taxonomy Eligible Activities

1

Climate change mitigation

2

Climate change adaptation

3

Sustainable use and protection of water and marine resources

4

Transition to a circular economy

5

Pollution prevention and control

6

Protection and restoration of biodiversity and ecosystems

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  - **External review**
  - **Supervision by the European Securities Markets Authority (ESMA)**
    Ensure quality of services and protect investors

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  - Leave no one behind

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  - 1% of Employment in Developed and 2.5% in Developing Economies (IMF)
- Imperative to complement Policies for Net Zero with Policies promoting **Social Justice and Social Cohesion**

Just Transition in the EU

- Integral Part of the EU Green Deal

Just Transition in the EU

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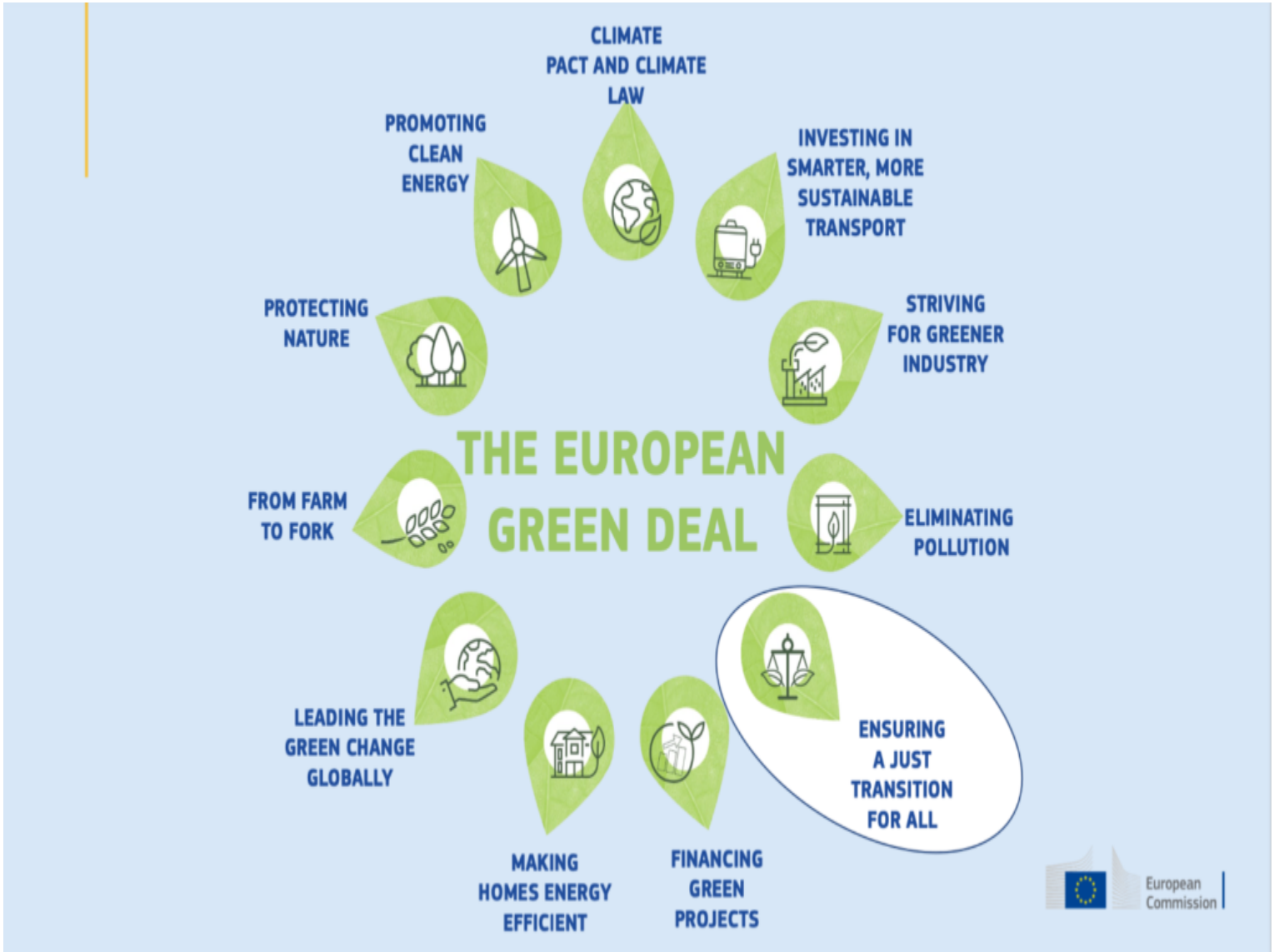
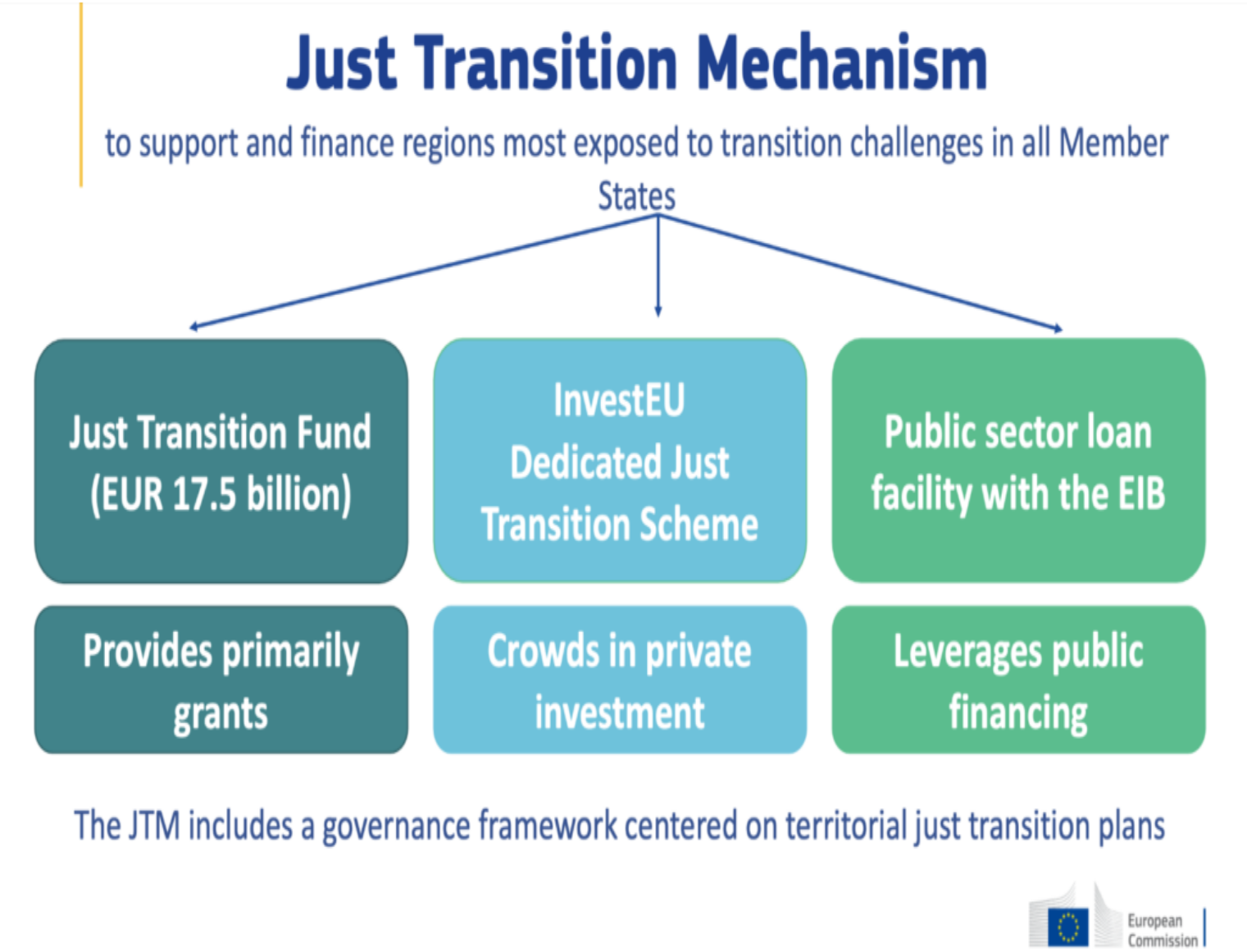
- EU Just Transition → **Just Transition Mechanism**
  - Mobilises around €55 billion over 2021-2027 in the ***most affected regions***
  - Alleviates the socio-economic impact of the Green Transition
  - Primarily aimed at ***Carbon Regions*** and workers in the Fossil Fuel Industry
  - ↑ Social Cohesion and ↓ Regional Disparities

Just Transition in the EGD



EU Just Transition Mechanism



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- Alleviate Costs of Green Transition through
  - up- and reskilling of workers
  - Job-search assistance
  - Investments in SMEs
  - Environmental rehabilitation & clean energy
  - Transformation of existing carbon-intensive installation

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   - Mobilize Local ***Stakeholders***
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4. **Regular assessments and modifications**
   - ***Evidence-based*** & aligned with well-defined targets