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Climate Finance Network Thailand

Thailand Climate Finance Landscape 2025

21 July 2025

Thailand Climate Finance Landscape 2025

- **Part 1: Setting the Scene**
  From climate change to climate crisis

- **Part 2: Climate Finance and Methodology**
  Key definitions, methodologies,
  What we include and exclude

- **Part 3: Key Results and Limitations**
  Key insights from the Tracker and limitations
  Let’s explore our data!

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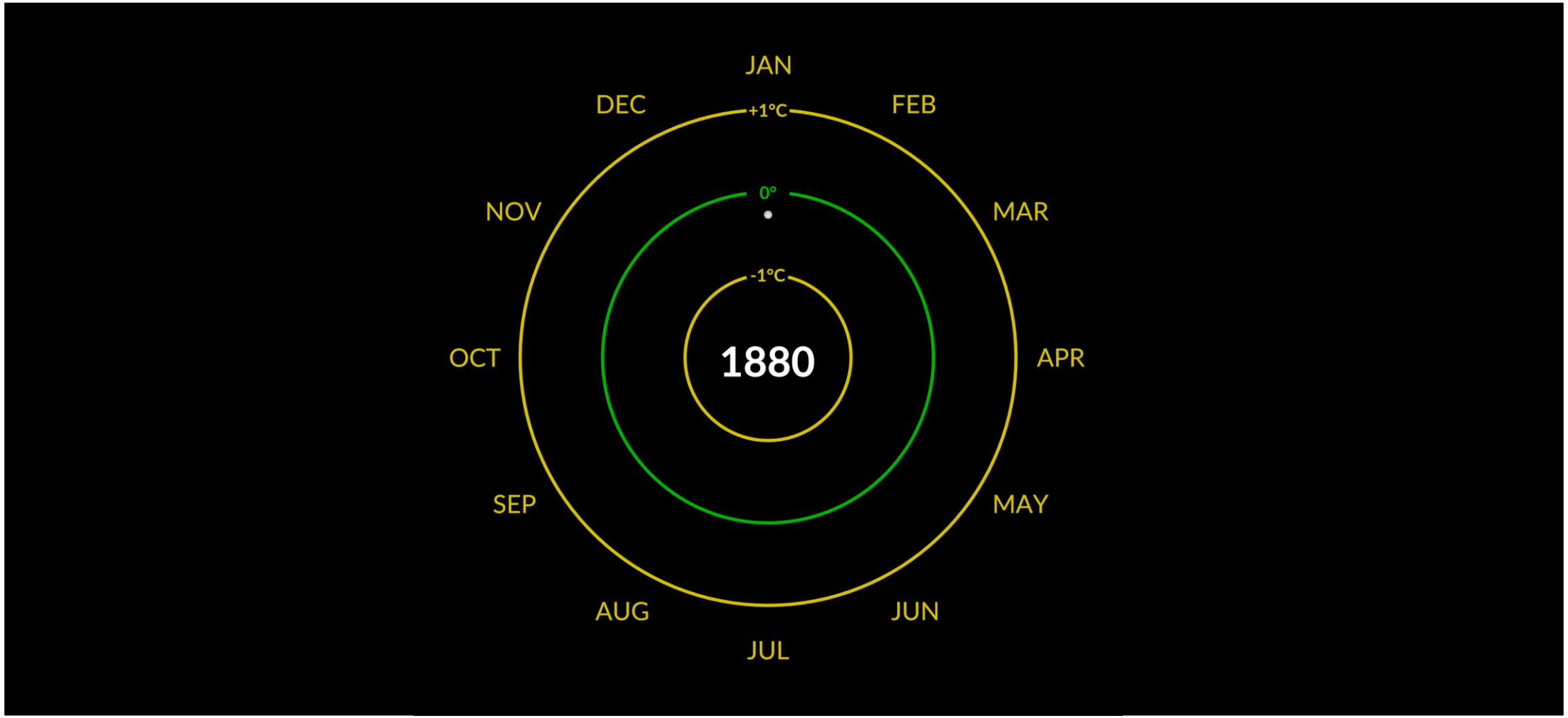
2024 was the warmest year on record.



Source: NASA (2025). NASA Climate Spiral 1880 - Present

The deadly effects of climate change.

Giraffes die of thirst in Kenya (2021)

Wildfires in Greece (2021)

A starving polar bear in Canada (2017)

From heatwave to dried-out lake in China (2022)

Melted ice in north-west Greenland (2019)

Flooding in Pakistan (2022)

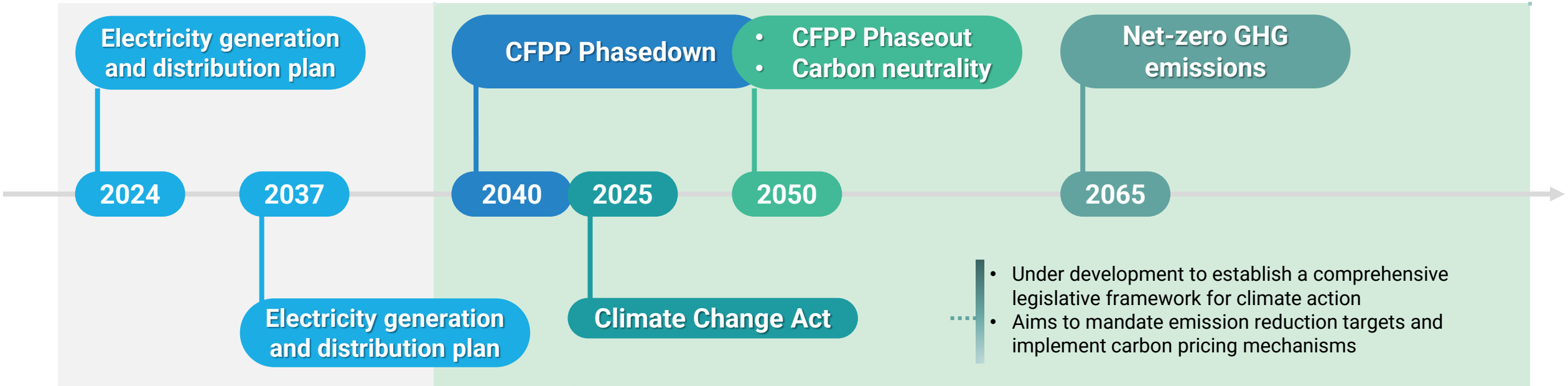
Coral bleaching in Great Barrier Reef (2017)

Source: The Guardian (2022). 20 climate photographs that changed the world.

Thailand places top priority on climate mitigation.

LT-LEDS (Long-Term Low Emission Development Strategy)

- **National roadmap under the Paris Agreement, aligned with Thailand's NDC**
- Targets: Carbon neutrality by 2050 and net-zero GHG emissions by 2065
- Coal-fired power plant (CFPP) objectives: Phasedown by 2040 and phaseout by 2050



Draft PDP2024

- Electricity generation and distribution plan for 2024–2037
- Sets renewable energy mix targets with no new coal power plants
- Does not provide a clear strategy for phasing out existing CFPPs

Source: Ministry of Energy (2024). Draft PDP 2024.. Creagy (2024). Boosting Energy to Tackle Climate Change: The New National Energy Plan and Climate Change Laws., ONEP (2022). Thailand's Long-Term Low Greenhouse Gas Emission Development Strategy (Revised Version)

Thailand plans NDC 3.0 to achieve Net Zero emissions by 2050.

By 2035
Target Reduction
(Exclude LULUCF)

109.2 $MtCO_2e$ (28.8%)
from 2019

Thailand aims to reduce its emissions to 270.0 $MtCO_2e$ by 2035, a decrease of 109.2 $MtCO_2e$ from 2019 levels. This target reflects Thailand's best efforts to align with the 1.5°C pathway. By 2035, net emissions are projected to reach 152 $MtCO_2e$, representing a net reduction of 135.2 $MtCO_2e$, or 47%, compared to 2019, in line with the global 1.5°C goal.

	Energy	Transport	IPPU	Agriculture	Waste
Domestic Implementation **76.4 $MtCO_2e$ (70%)** *Unconditional Target*	**48.1** $MtCO_2e$ (63.0%)	**16.6** $MtCO_2e$ (21.7%)	**1.5** $MtCO_2e$ (2.0%)	**5.1** $MtCO_2e$ (6.7%)	**5.1** $MtCO_2e$ (6.7%)
International Support **32.8 $MtCO_2e$ (30%)** Conditional Target	**20.0** $MtCO_2e$ (61.0%)	**6.0** $MtCO_2e$ (18.3%)	**2.7** $MtCO_2e$ (8.2%)	**2.5** $MtCO_2e$ (7.6%)	**1.6** $MtCO_2e$ (4.9%)

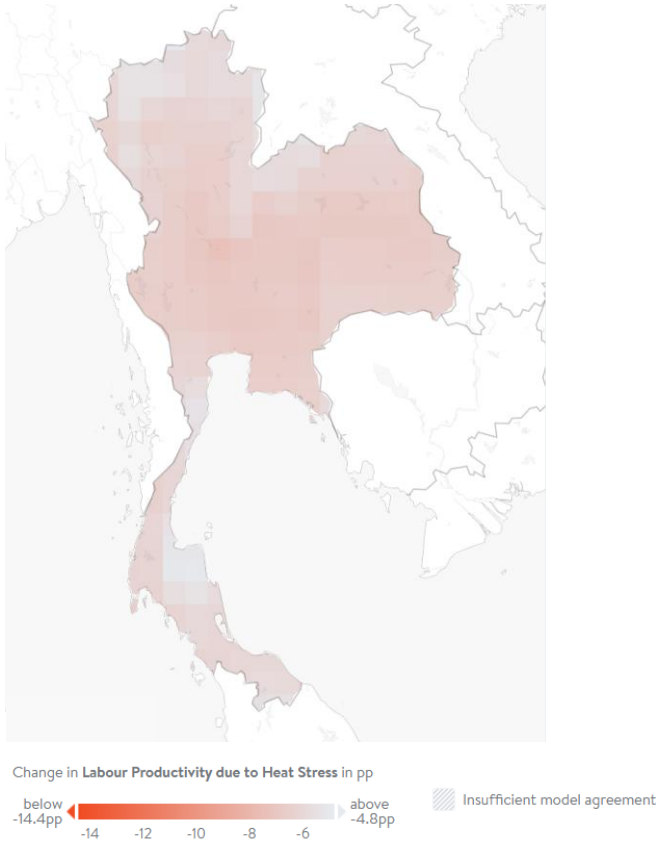
Source: DCCE (2024). Presentation of NDC 3.0 Public Consultation.

Thailand faced and will face significant costs from climate-related disasters.

Labor Productivity due to Heat Stress in Thailand in 2050

RCP 2.6 scenario

RCP 8.5 scenario



USD 30,312 million or 6.6% of GDP

*Thailand's **expected average annual loss** under 2-degree climate change scenario*

USD 5,088 million or 1.2% of GDP

*Thailand's **cost of adapting** to related to climate hazards such as floods, tropical cyclones and droughts*

(Based on RCP 8.5 scenario calculated by UNESCAP, 2024)

THB 17,912 - 83,826 million /year

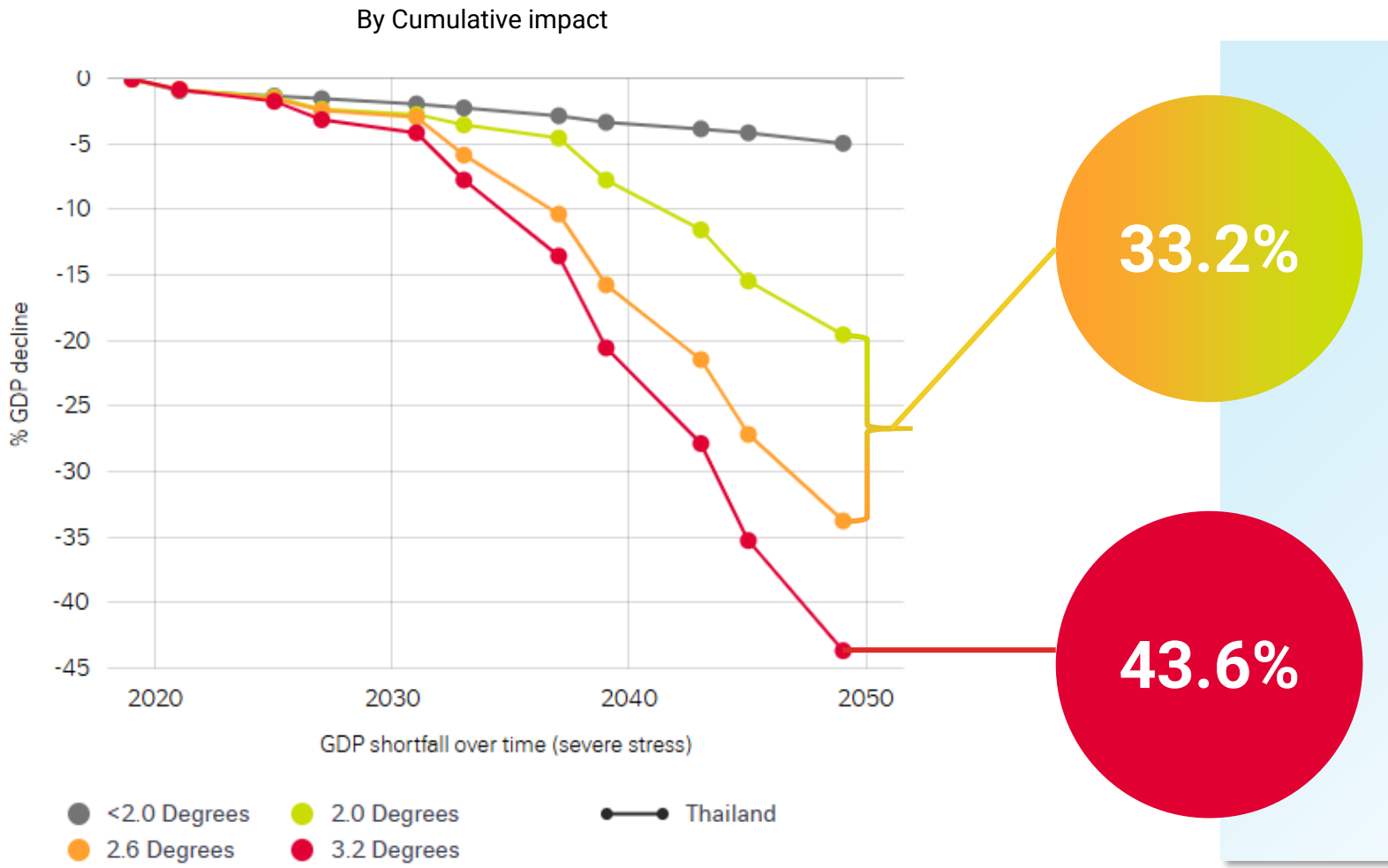
***Cumulative damages** of climate change on Thailand's **agriculture** between 2021-2045*

(Attavanich, 2017)

Source: PIER (2024). Landscape of Adaptation Finance in Thailand. , UNESCAP (2025). Risk and Resilience Portal., Climate Analytics (2025). Climate Impact Explorer.

GDP could decline by as much as 33% – 44% from climate crisis.

% GDP loss by 2048 for key climate scenarios



33.2%

43.6%

According to Swiss Re's 2021 projections, Thailand could lose **33.2% of GDP by 2048** under a 2–2.6◦C scenario.

GDP loss could increase to 43.6% under a 3.2◦C severe scenario by 2048.

Source: Swiss Re Institute (2021). The economics of climate change.

Despite huge costs, Thailand lacks quantified targets on climate adaptation.

OVERALL GOALS

THAILAND'S
NATIONAL ADAPTATION PLAN (NAP)

Short-term goal (2023 – 2027)

- Raise awareness
- Develop policy tools
- Build data systems to support decision-making.

Medium-term goal (2028 – 2032)

- Strengthen policy and mainstreaming
- Enhance implementation capacity
- Improve data and knowledge for tracking progress and decision-making.

Long-term and continuous goal (2033 – 2037)

- Ensure climate resilience
- Sustain awareness and data capacities
- Regularly monitor progress to update policies and plans.

SECTOR SPECIFIC GOALS

Water

Strengthen water security and reduce losses from water-related disasters.

Agriculture

Safeguard agricultural productivity and food security from climate risks.

Tourism

Build tourism resilience for sustainable growth and climate risk management.

Health

Ensure an efficient and resilient health system to manage climate risks and impacts.

Natural resources

Promote sustainable resource and biodiversity management for climate resilience.

Human settlement

Strengthen local readiness (individuals, communities, and urban area) and adaptive capacity to climate risks.

Source: UNFCCC (2024). Thailand National Adaptation Plan 2024.

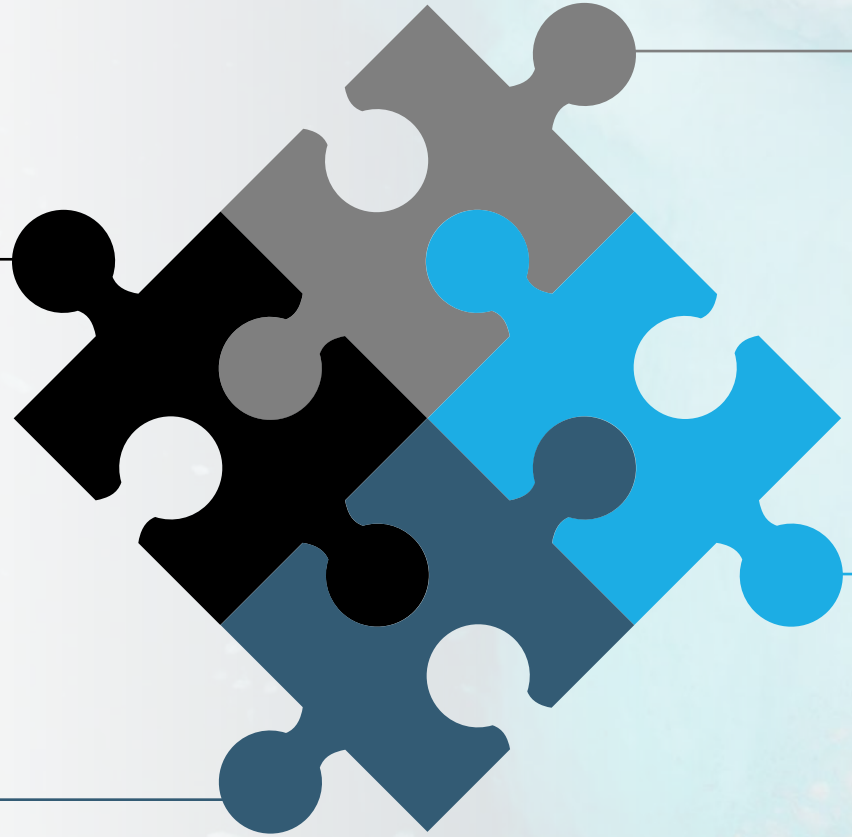
What's important to achieve both climate mitigation and adaptation?

Policy & Plan

Political will necessary in shaping policy and plan to achieve climate goals and reduce impacts from climate change.

Public Engagement

Citizen and community involvement in policymaking and planning is crucial for a just transition and resilience.



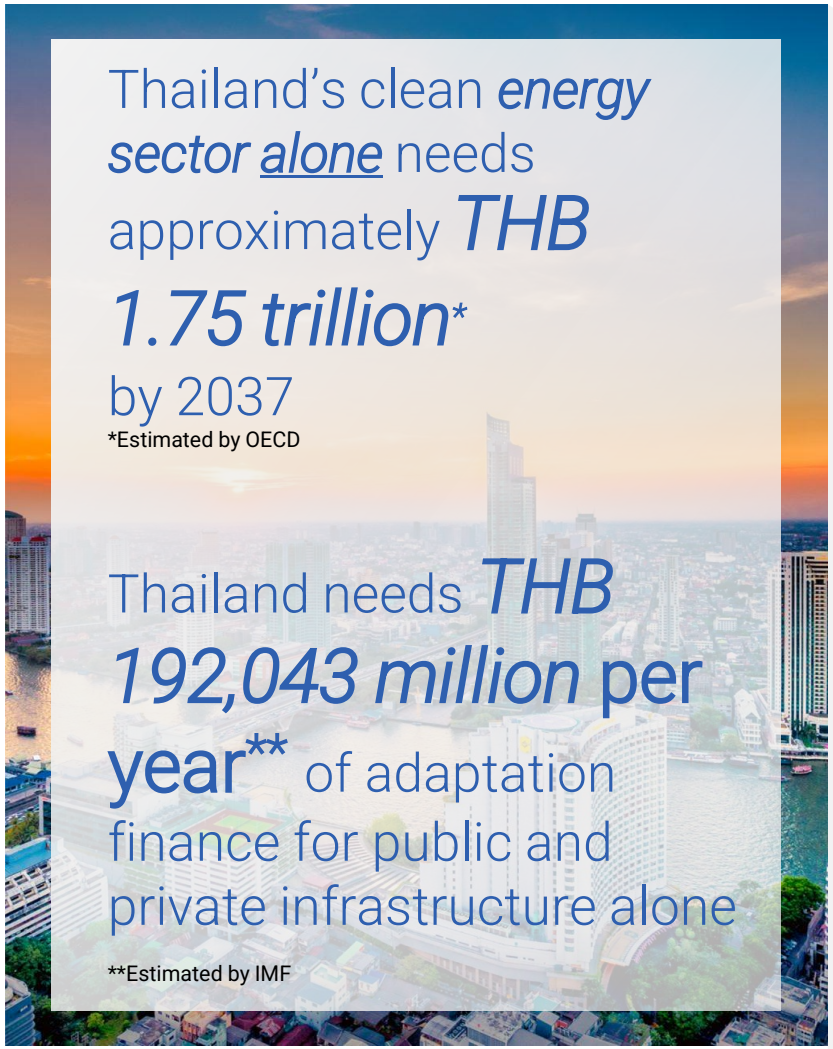
Technological Advancement

Commercially viable technologies to enhance transition to low-carbon and resilience economy.

Funding & Financing

Significant catalyzer of climate mitigation and adaptation efforts to create tangible climate actions.

How much climate finance is needed?



How close are we to hitting our targets?

Are we on track?

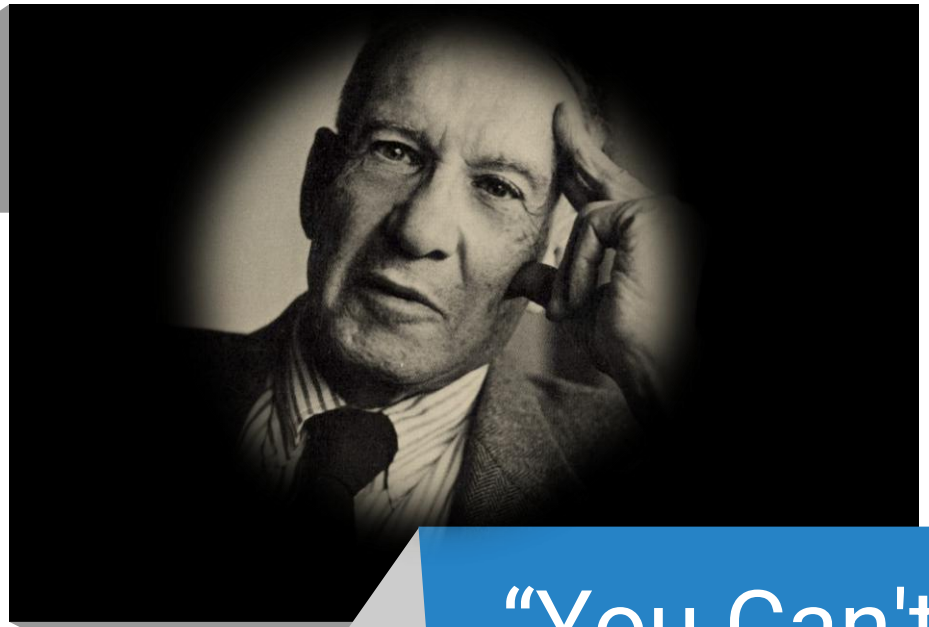
Where is the funding coming from?

Is it being used effectively?

Any clear answers?

Not yet.

Source: OECD (2024). Clean Energy Finance and Investment Roadmap of Thailand., PIER (2024) Climate Adaptation Landscape in Thailand.

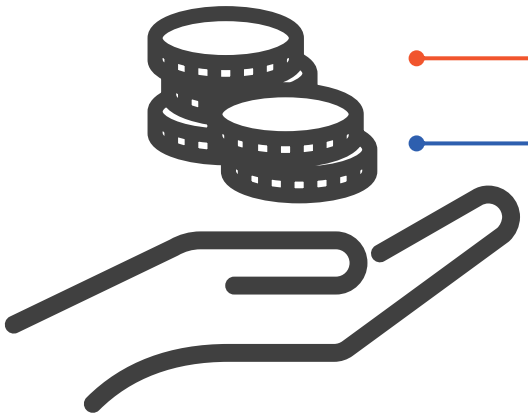


“You Can't Manage What You Don't Measure.”

Peter Drucker (1909 – 2005)

What is Climate Finance?

Climate finance is ***any*** funding — **public or private** — used to **support**



Mitigation Cutting GHG emission

Adaptation Reducing impact from climate change

IT CAN COME AS:

Government budgets

Federal and local government's allocated budgets

Bank loans

A sum of money borrowed from a bank

Green bonds

Debt instruments dedicated to financing environmentally sound and sustainable projects

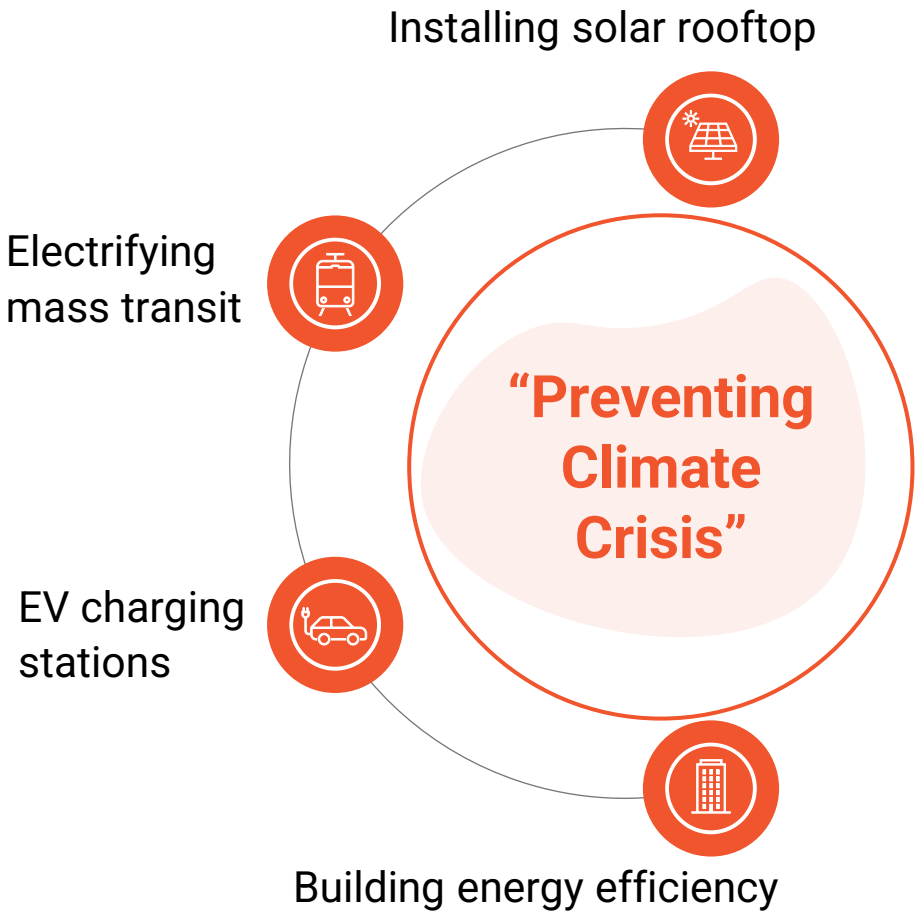
Grants / concessional finance

Below market rate finance provided by development financial institutions and impact investors

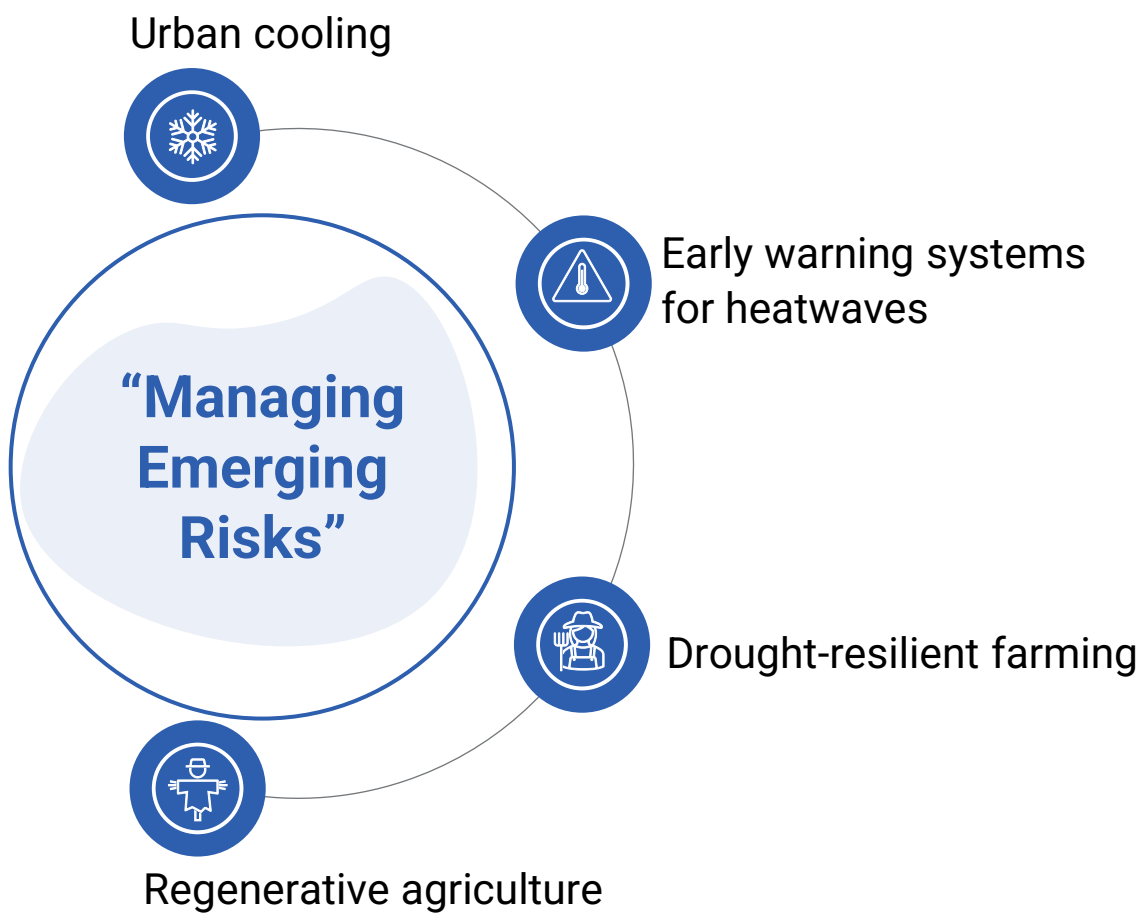
Source: Climate Policy Initiative (2023). Global Landscape of Climate Finance 2023 Methodology., World Bank (2021). What do you need to know about concessional finance., ICMA (2025). Green Bond Principles.

Mitigation vs Adaptation – What's the Difference?

Climate Mitigation



Climate Adaptation

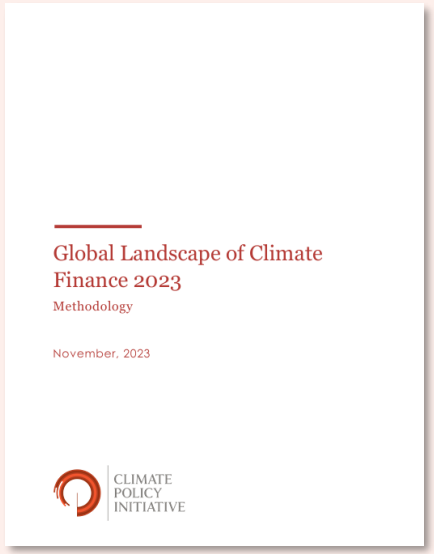


Two Lenses, One Picture

The Climate Finance Tracker captures available public data on primary financing that support GHG emissions reductions (mitigation) and climate adaptation. The Tracker consolidates data from wide range of primary and secondary sources of financing.

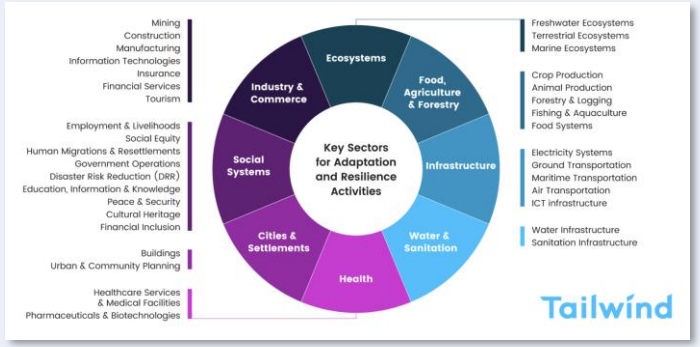
1 Mitigation

Mitigation tracker follows Climate Policy Initiative's methodology on climate finance landscape



2 Adaptation

Adaption tracker uses Tailwind Taxonomy for definition and sector classification



Source: Climate Policy Initiative (2023). Global Landscape of Climate Finance 2023 Methodology, Tailwind (2024). Tailwind Taxonomy.

What we count, and what we exclude.

What we count:

- Only new primary finance, 2018 – May 2025 (for mitigation) and 2020 – 2024 (for adaptation)
- Clear climate objective (GHG cut or climate adaptation)
- Both public and private flows
- Conservative estimates — (try to) no overclaiming

What we exclude:

- Refinancing, R&D subsidies, secondary markets
- Plug-in hybrids
- Fossil fuels-related investment e.g. clean coal upgrades
- Broad ESG or SDG finance with no climate target

Whose data we captured – illustrative examples

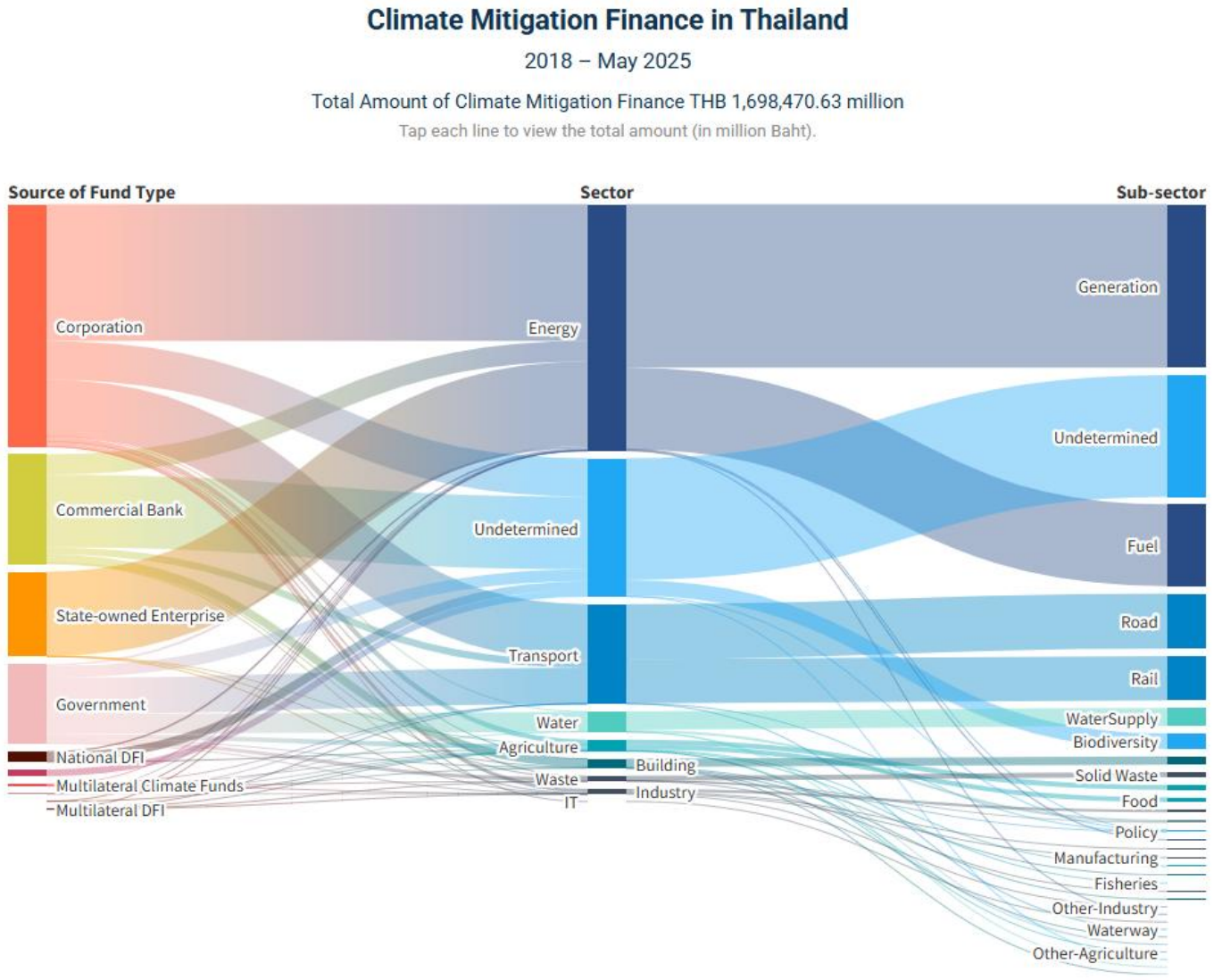
Public

Government ministries	
State-Owned Enterprises (SOEs)	EGAT, RATCH GROUP, IRPC, PTT Group, TOT, EXAT
State-owned banks (SOBs)	
Multilateral Development Finance Institution	ADB, FAO, gef
National Development Finance Institution	EXIM THAILAND, ออมสิน, SME Development Bank
Multilateral Climate Funds (Examples)	GREEN CLIMATE FUND, CIF CLIMATE INVESTMENT FUNDS, ADAPTATION FUND
Domestic Public Funds	ThaiCI BY ENVIRONMENTAL FUND

Private

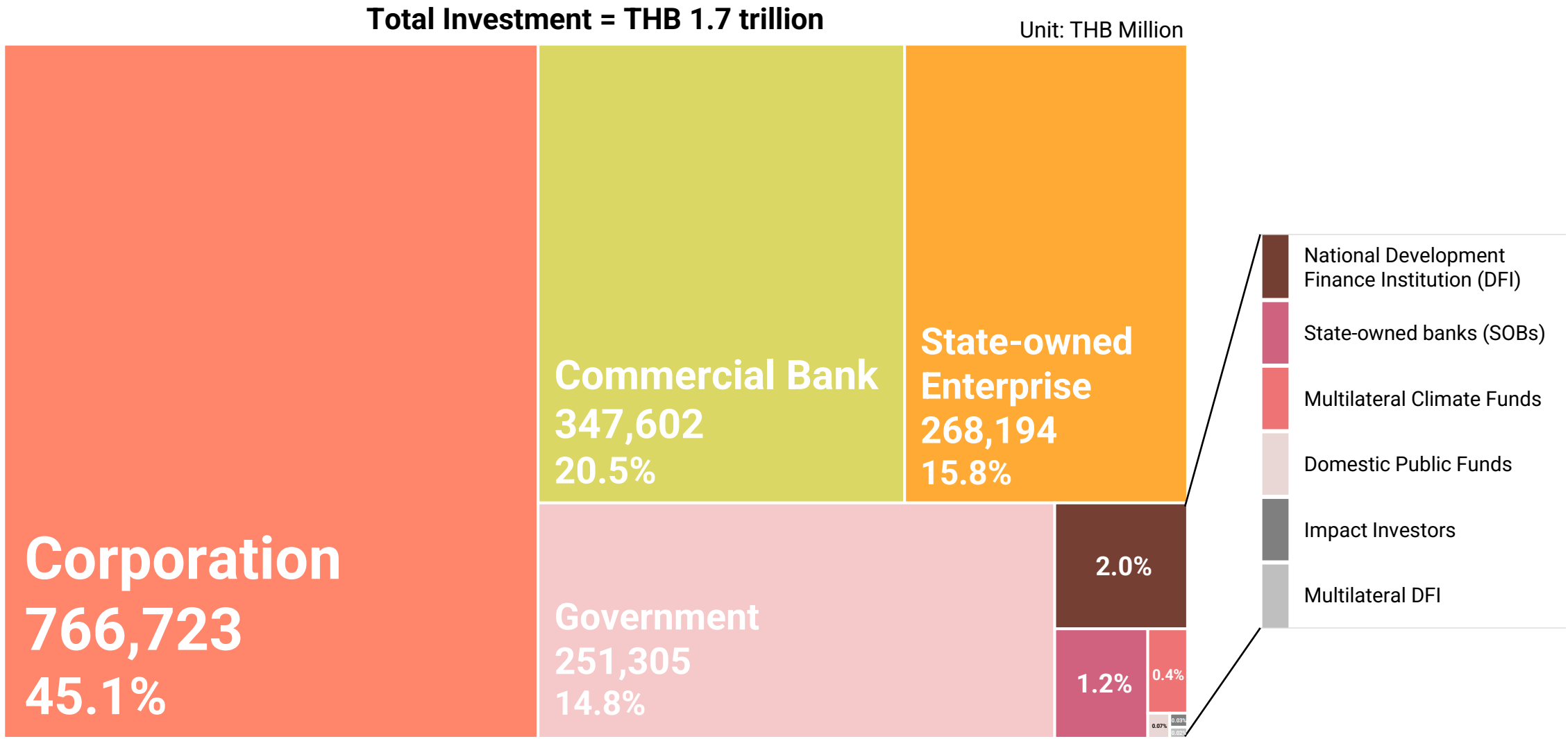
Corporations (Examples)	C.P. GROUP, BAFS, CARABAO GROUP, ThaiBev, GULF, BANPU, GPSC, Thaioil, bcpg, EA Energy Absolute, B.GRIMM SINCE 1878, SCG, CENTRAL PATTANA
Commercial Banks	SCB, ttb, TISCO, KIATNAKIN PHATRA, UOB
Impact Investors	มูลนิธิแม่ฟ้าหลวง ในพระบรมราชูปถัมภ์ Mae Fah Luang Foundation under Royal Patronage, CHAIPATTANA FOUNDATION, THAILAND SOLAR FUND กองทุนแสงอาทิตย์, AEON THAILAND FOUNDATION มูลนิธิอีออนประเทศไทย

Climate mitigation finance: THB 1.7 trillion between 2018 – May 2025.

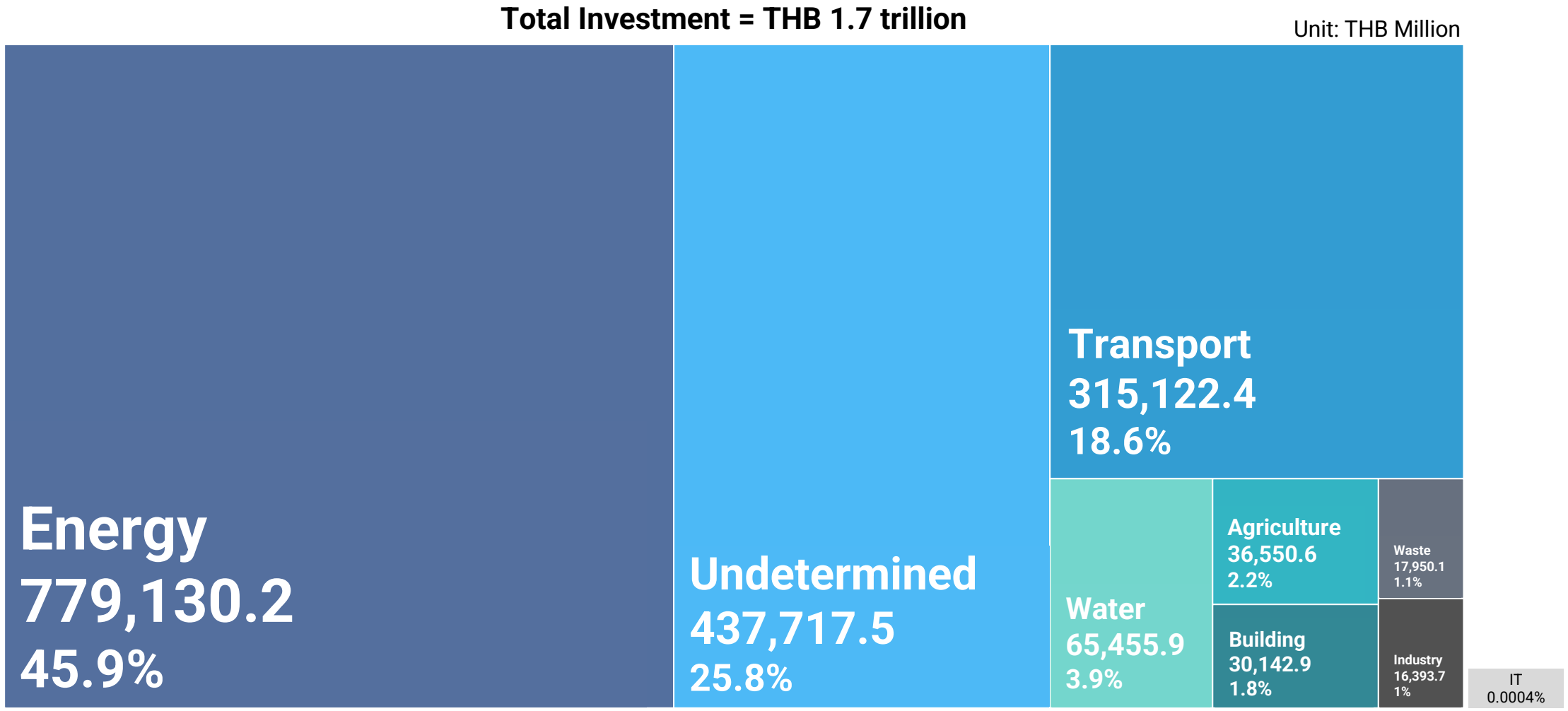


- Based on data from **2,800+ publicly available projects level and organizational level data**, we estimate that **climate mitigation finance in Thailand totaled approximately THB 1.7 trillion** between 2018 and May 2025.
- **Corporations, commercial banks, and SOEs** contribute the largest share of climate finance – 82% of total climate mitigation flows.
- Zooming into sectors, **energy and transport dominate mitigation funding** – 64% of total climate mitigation flows.

Nearly half of Thailand's climate mitigation finance from 2018 to May 2025 has come from the corporate sector.



Almost two-thirds of climate mitigation finance in Thailand goes to energy and transportation sector.



Energy and transport sectors dominate the top 5 climate mitigation activities.

Energy sector Transport sector

1

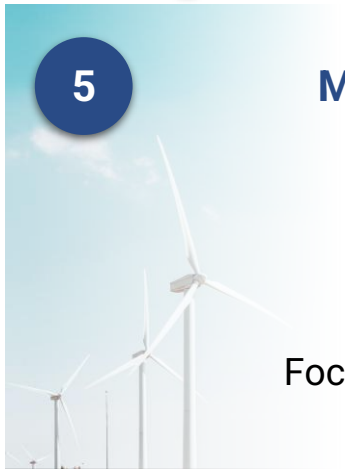
Solar photovoltaic for power generation

THB 286,524 million
16.9%
Focus: solar PV installation

3

Electric vehicles

THB 173,455 million
10.2%
Focus: EV and battery manufacturing



5

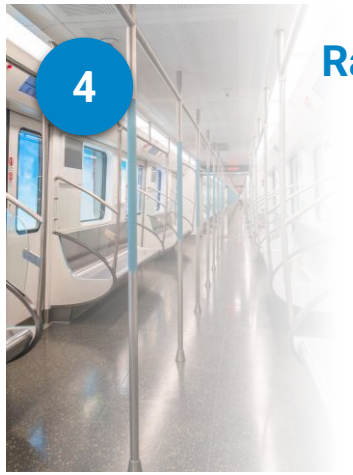
Multiple renewables

THB 113,043 million
6.7%
Focus: Mixed renewables for power generation

2

Hydrogen from renewables

THB 232,067 million
13.7%
Focus: Green hydrogen project announced by PTT in 2023



4

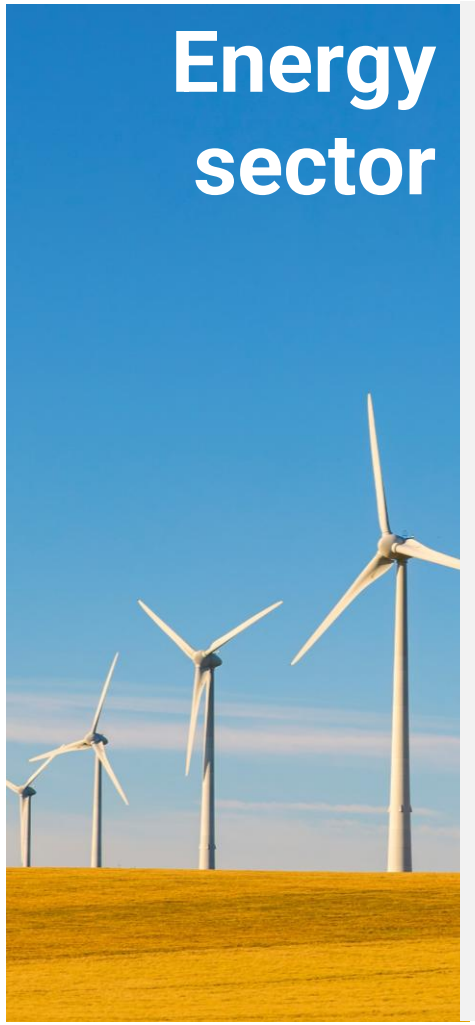
Railway and electric transport

THB 141,381 million
8.3%
Focus: High speed railway, MRTA, and BTS projects

Lack of granular data

Undetermined
THB 437,718 million
25.7%

Zooming in: major large-scale mitigation projects in Thailand.

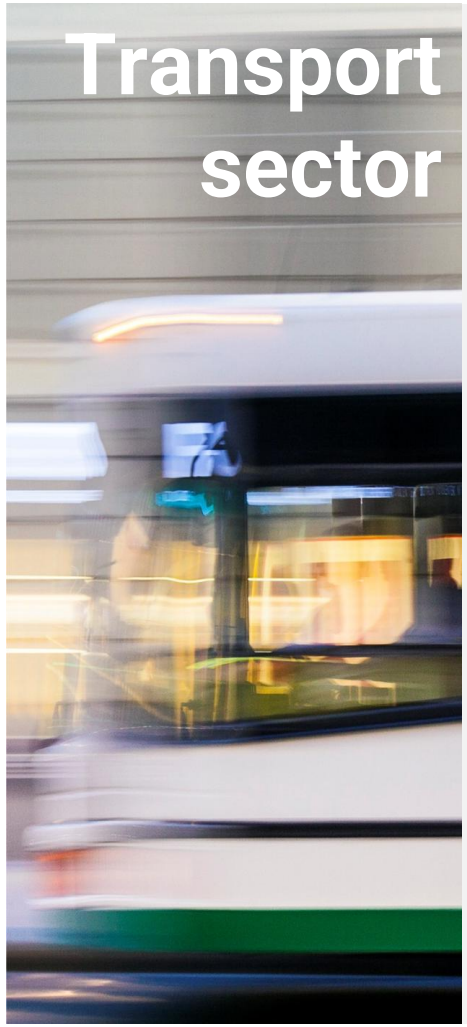


Floating Solar Farm PGI Plant

- BG Energy Solution Company Limited
- Project Value THB 66,447 million (8.5% of energy sector)

Renewable Energy Project

- Electricity Generating Public Company Limited
- Project Value THB 30,000 million (3.9% of energy sector)



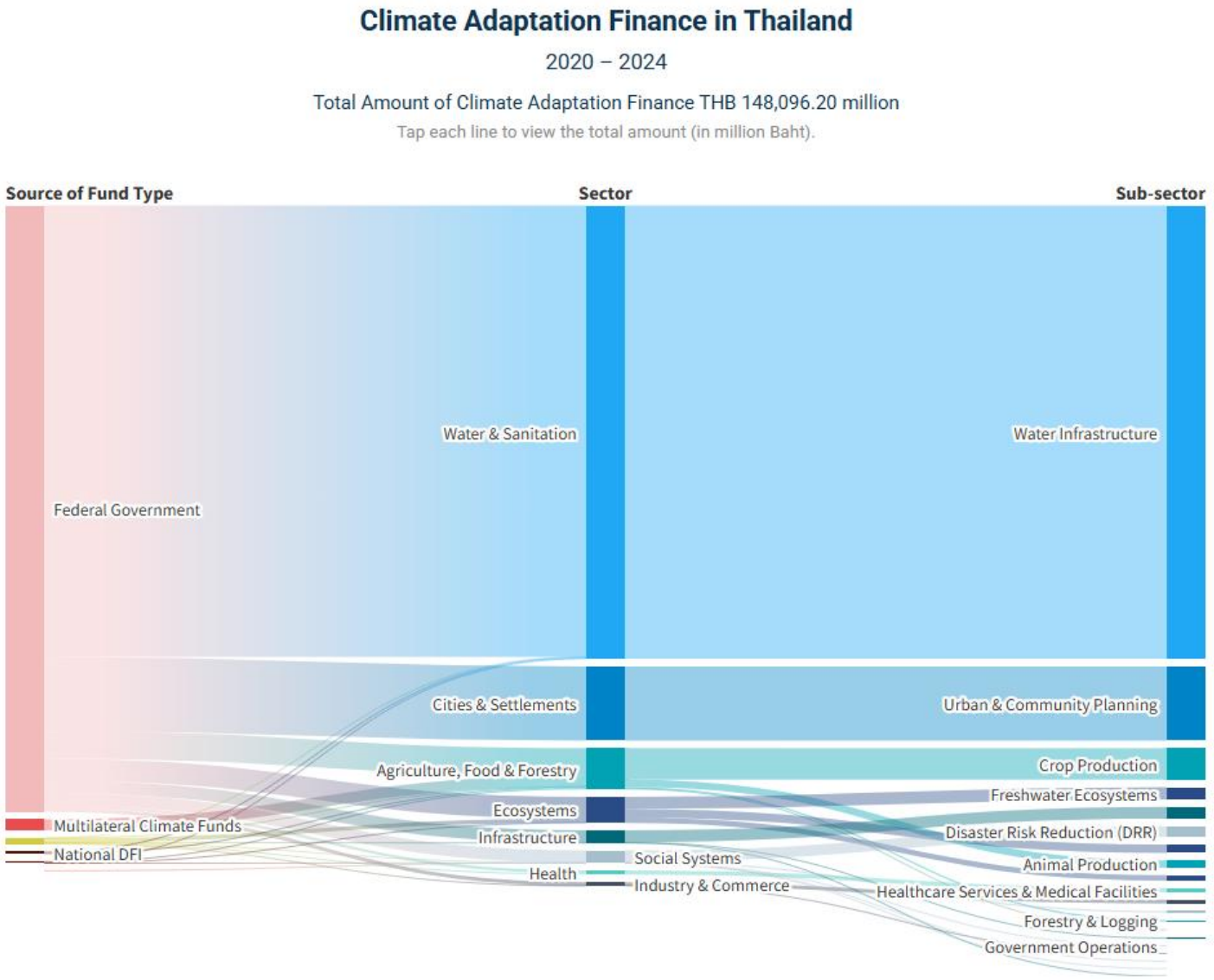
Mass Rapid Transit Authority of Thailand

- Federal Government
- Project Value THB 46,784 million (14.9% of transportation sector)

Electric Vehicles (EV)

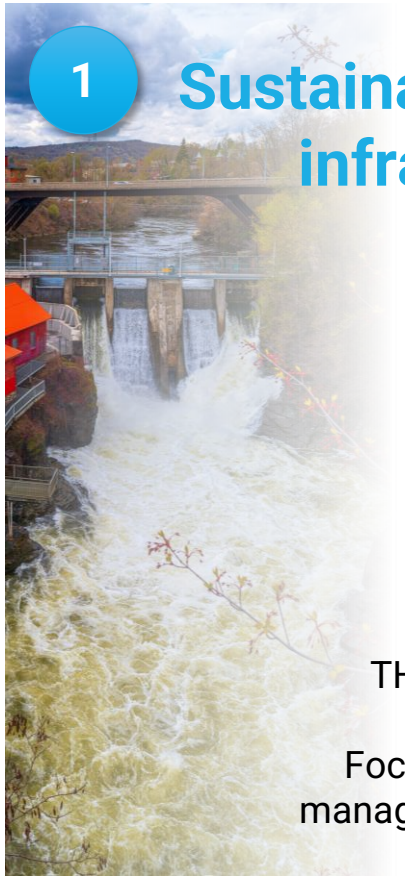
- Foreign Direct Investment (FDI)
- Project Value THB 43,059 million (13.7% of transportation sector)

Climate adaptation finance: THB 148 billion between 2020 – 2024.



- In collaboration with the Puey Ungphakorn Institute for Economic Research (PIER), drawing on data from over **670 publicly available project- and organization-level sources**, we estimate that climate adaptation finance in Thailand **totaled THB 148 billion between 2020 and 2024.**
- **Federal government** contributes the largest share of climate adaptation finance (96.8%), followed by multilateral climate funds (1.8%).
- Zooming into sector, **sustainable water management, urban resilience, and sustainable agriculture** are key focus in climate adaptation.

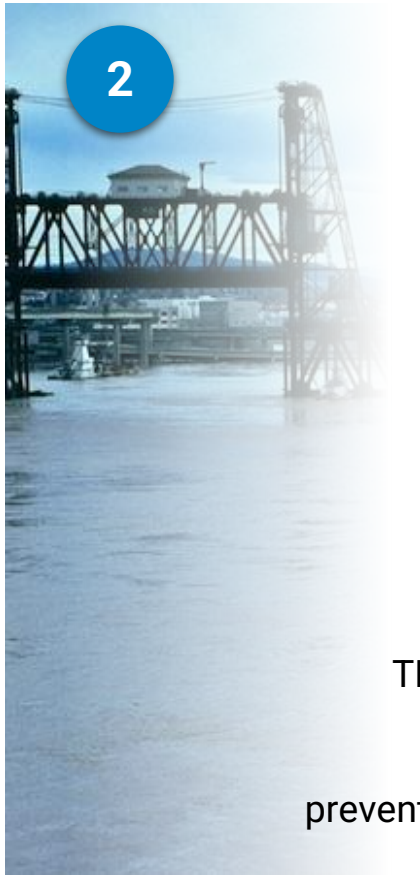
Top 3 climate adaptation activities focus on water and agriculture.



1

Sustainable water infrastructure

THB 106,969 million
72.2%
Focus: Irrigated water management to prevent drought and flood



2

Urban resilience

THB 17,534 million
11.8%
Focus: Flooding prevention in urban area

3

Sustainable agriculture

THB 5,815 million
3.9%
Focus: Integrated farming system

Zooming in: major large-scale adaptation projects in Thailand.

Project for Water Resource Development and Irrigation Area Expansion

- Ministry of Agriculture and Cooperatives
- Total Project Value **THB 29,677.5 million** (**20%** of total amount)

Project for Water-Related Disaster Prevention and Mitigation

- Ministry of Agriculture and Cooperatives
- Total Project Value **THB 41,379.90 million** (**28%** of total amount)

Project for Flood Prevention in Community Areas

- Ministry of Interior
- Total Project Value **THB 16,910.8 million** (**11.4%** of total amount)

Bang Ban–Bang Sai Flood Diversion Canal Project

- Ministry of Agriculture and Cooperatives
- Total Project Value **THB 13,055 million** (**8.8%** of total amount)

Adaptation finance is the missing piece.

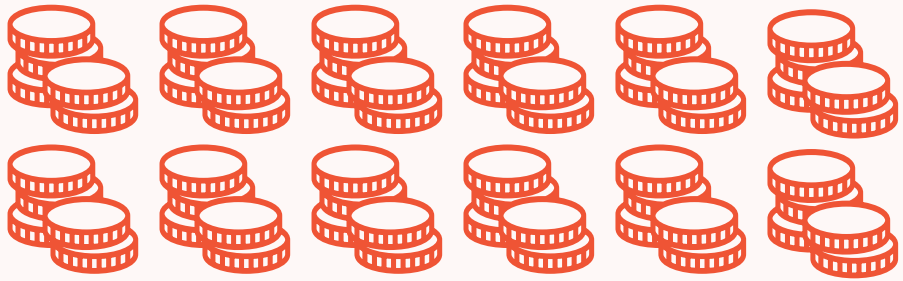
= THB 1 trillion

Mitigation Finance

Need

THB 12 trillion in total*

*Estimated by DCCE



2018 – May 2025
total flows

THB 1.7 trillion

Adaptation Finance

Expected Annual Loss

THB 0.9 – 1 trillion*

*Estimated by UNESCAP

2020 – 2024
total flows

THB 148,096 million

Source: DCCE (2024). Thailand's Climate Finance Strategy: Conceptual Framework 2030, UNESCAP (2025). Risk and Resilience Portal.

Limitations: what we know (and what we don't).

No data classification

No widely accepted standard and no mandate to flag the use of funds

Inconsistent level of disclosure

Insufficient detail on sources of fund and instruments

Example: insufficient sectoral detail in several sources of funds such as local governments and commercial banks

Lack of monitoring, reporting, and verification

Relies on **reported data**, no independent verification, and on **commitments,** not actual disbursements

Let’s explore our data!

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