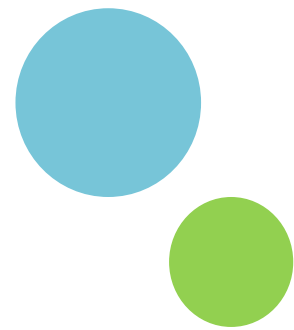


PFM4CA

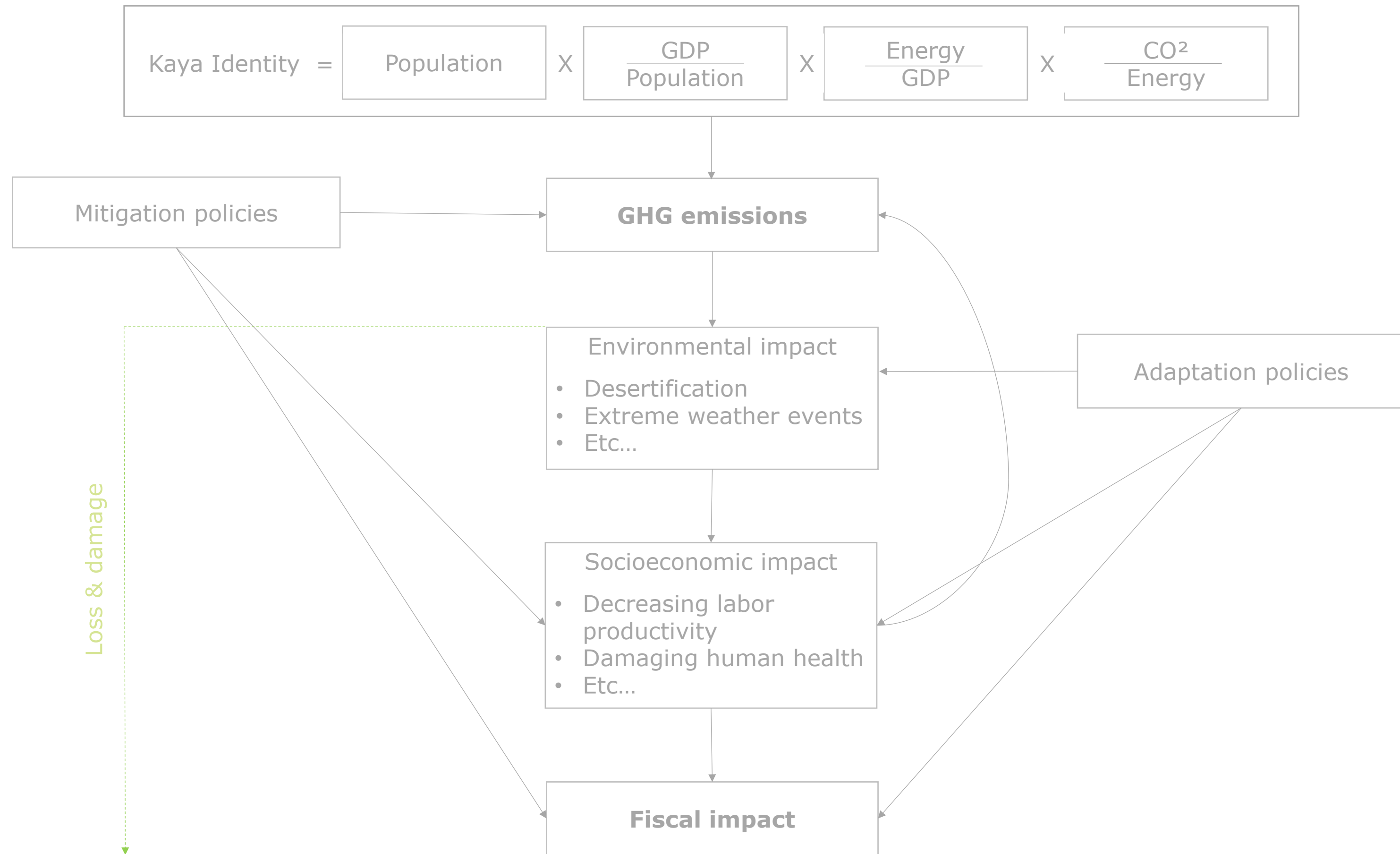
An Introduction

Antonia Ida Grafl
graflantonia@outlook.com



December 9, 2024

Fiscal Impact of Climate Change




Climate-Sensitive Public Financial Management I

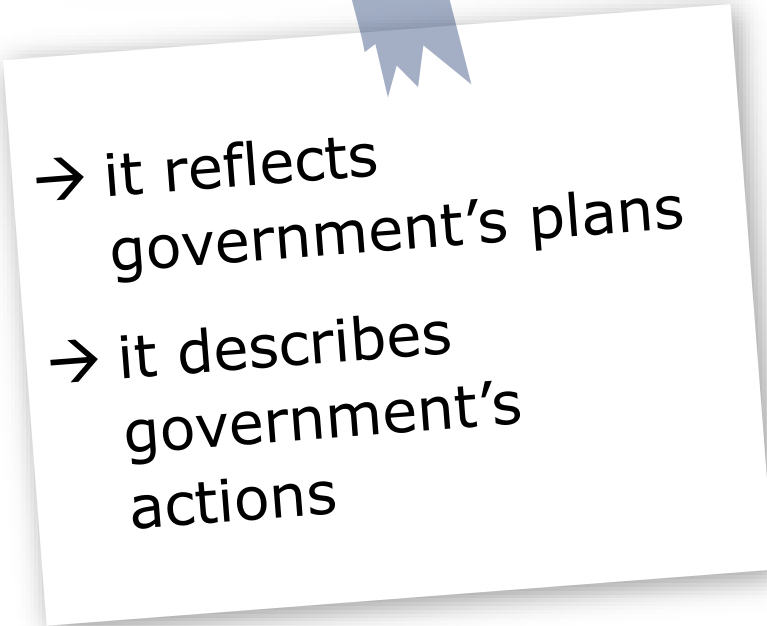
Tackling climate change through PFM: at the center of the PFM cycle is the budget/budgeting process

Some questions on climate-responsiveness of PFM systems

- Is there a risk of climate change impacting on public finances?
- What is the impact of cc on the public sector business model (public services, infrastructure...)?
- What impact does public sector activity have on cc?
- How big is the financing gap for implementing climate action?
- What are the potential funding sources (incl. revenues), that can be utilized for financing?
- Is there policy misalignment leading to incoherent spending (climate protection vs. necessity to grow/industrialize, consolidate,...)
- Is climate action being implemented effectively and in line with the intended purpose?
- Are government's plans to combat cc adequate?



The Budget
is not merely
raw data

- 
- it reflects government's plans
 - it describes government's actions

Climate-Sensitive Public Financial Management II

A well-performing PFM system should also be capable of pursuing horizontal policy goals, such as gender equality, or the fight against global warming.

The evolution of PFM

- Emergence of so called “Expenditure Management” in the 1990s
- Since the global financial crisis → public financial management **distinct academic discipline**
- For three decades, focus on system **improvements, standardization** and global **homogenization**
- Recently observable trend centered around the **actual** (societal) **impact** of PFM

The emergence of Green PFM

- Green PFM → **implement climate action and inform policy** & strategy to combat climate change
- Asia-pacific region forerunner, first concrete examples in late 2000s
- Since 2019 promoted by the “Coalition of Finance Ministers for Climate Action” (**Helsinki Principle 4**)
- Work on conceptualizing a reference framework, such as such as the IMF (Green PFM), the OECD (Green Budgeting), and the “Coalition” (Framework for Ministries of Finance)
- Green PFM practices remain **nascent**
- The interplay of climate change and PFM remains under-researched
- In practice, there exists a **diversity of approaches** and perceptions

Climate-Sensitive Public Financial Management III

” IMF: (...) integration of a climate-friendly perspective into PFM practices, systems, and frameworks (...)

i IMF: certain level of sophistication is required
UNDP: build on existing systems

Uniform terminology?

- Not really a concise framework, but variety of guidance and handbooks
- To be reconciled with practice
- Climate – green – environmental – disaster

Any preconditions?

- Some functionality helpful, such as program structure, PBB or IFMIS
- Institutional setting highly relevant (e.g. CFA's role...)

Just priority-based budgeting?

IMF: Green PFM does not require a novel approach to PFM, but rather an adaptation of existing PFM processes and tools

Climate spending or mainstreaming?

- Does a climate budget constitute green PFM?
- Expenditure management versus PFM

Climate Finance – Revenue Mobilization

A climate budget does not yet constitute climate-sensitive PFM

Managing public finances differs from actual financing government activities, though the two are interconnected:

- PFM critical in determining the available resource envelope (domestic/external resources, debt based...)
- ...and in identifying and managing the financing gap;
- Certain PFM maturity precondition access to climate finance (e.g. Green Climate Fund),
- PFM facilitates climate finance by channeling it through established systems, while ensuring transparency and accountability in its management

Sources of climate finance:

Domestic revenue: carbon pricing, such as carbon taxation and carbon mechanisms,...

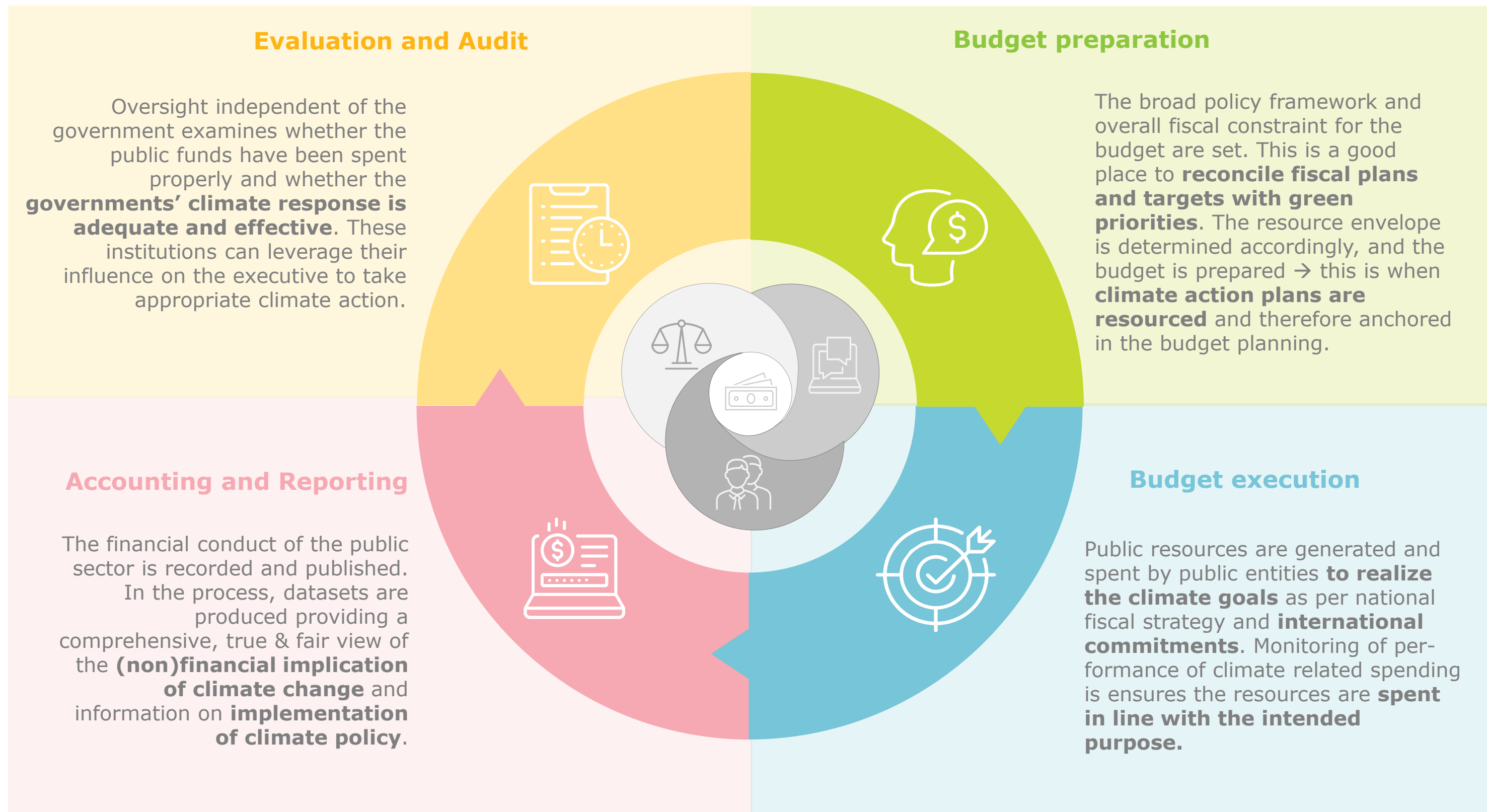
Quality of public finance: making good choices (brown expenditure), avoiding L&D,...

Financial instruments: sovereign/private green & blue bonds, cat bonds...

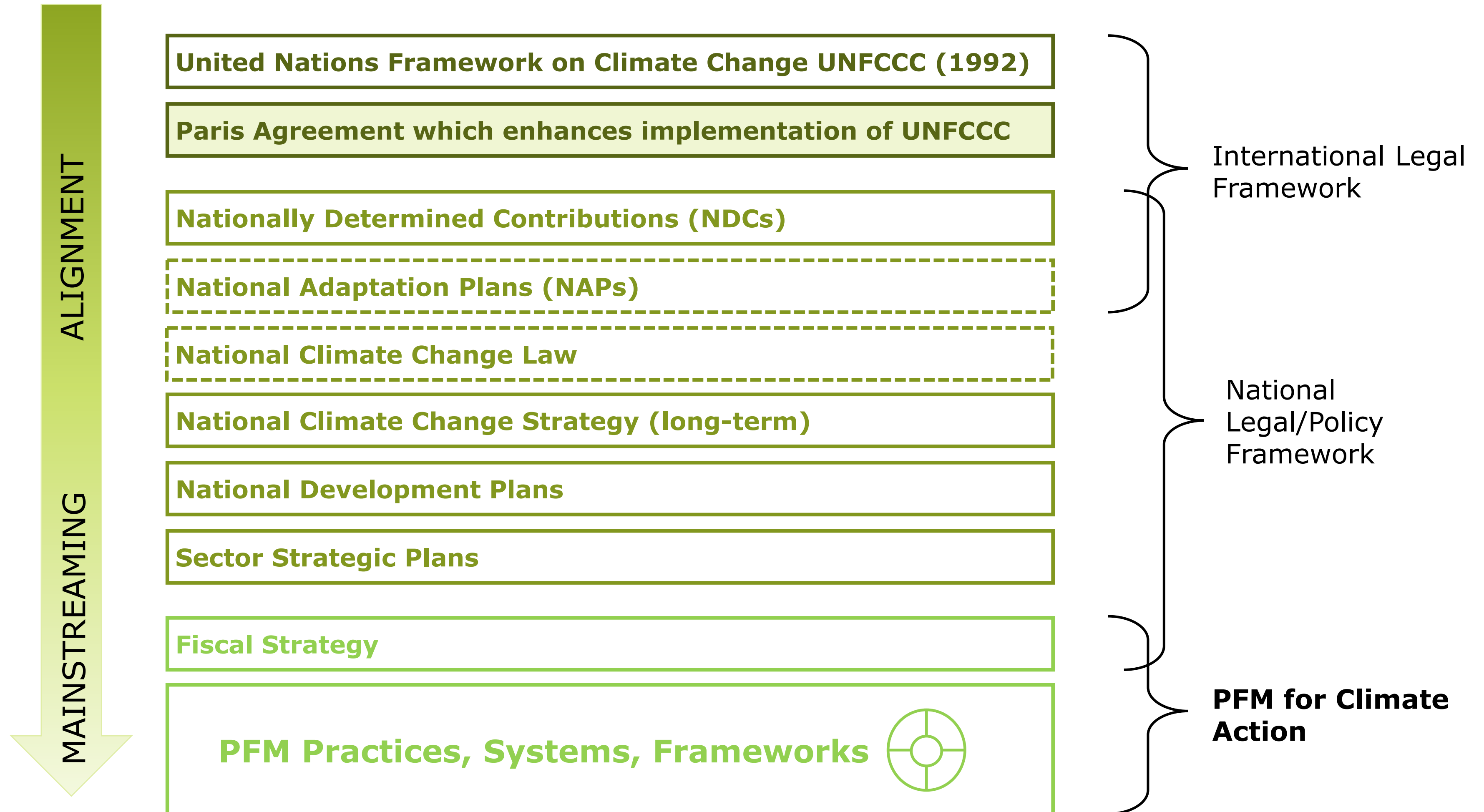
International climate finance: grants, loans through bilateral donors and multilateral development banks or through multilateral CFs

Debt engineering: debt for nature swaps (e.g. when a country has no access to bond markets or unsustainable debt levels)

Integrating climate considerations into the PFM cycle



What does CC mainstreaming refer to?



Adaptation as a Neglected Priority

There is no international legislative framework specifically dedicated adaptation.

The Paris Agreement includes a provision on adaptation (global goal)...

...but the primary focus remains on mitigation



It is easier to establish a concrete, measurable goal for mitigation efforts compared to adaptation.

Adaptation Is highly context-specific, requiring localized strategies.

When discussing mainstreaming, this is crucial to be aware of → NDCs also focused on mitigation.

Also consider National Adaptation Plans (NAPs), where available, which complement the NDCs.

Addressing the Adaptation Gap

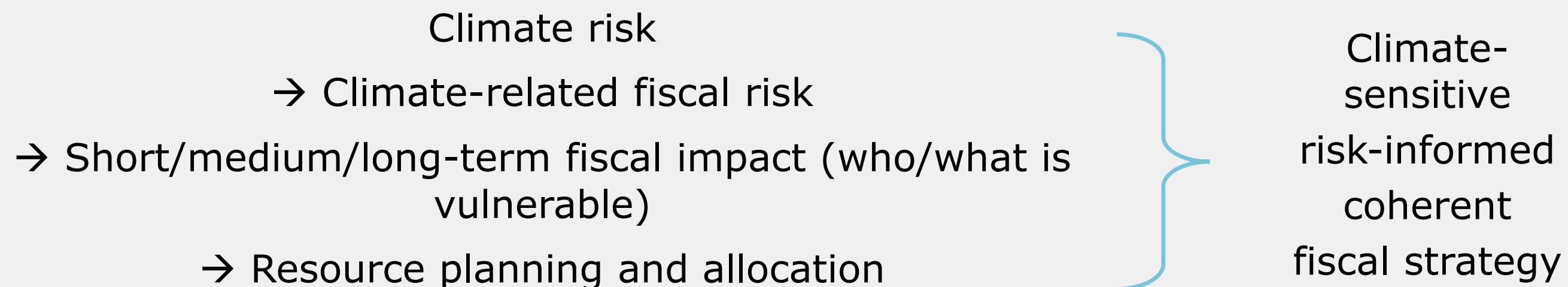
Adaptation is about **CLIMATE RISKS**

Characteristics of climate-related risks

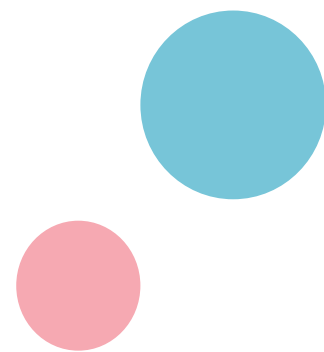
- Uncertainty, we don't know exactly what the consequences are
- Non-linearity, so the impact grows exponentially in relation to the size of the event
- Endogeneity, that they respond to action taken
- Feedback effects
- Country specificity

Adaptation planning is about reducing risk, building resilience and minimizing loss & damage

Role of PFM: fiscal decision-making under uncertainty



Subnational Governments & State Owned Enterprises



Subnational Governments I

Subnational governments are on the front lines of climate change impacts...

...due to their proximity to climate-related events (adaptation!) and

...due to their essential role in managing natural resources and critical infrastructure.

Subnational governments, for example, are

- responsible for urban planning and land-use decisions
- they exert direct influence over various sectors positions,
- they are big investors in infrastructure such as public transportation,
- they are also often responsible for natural resource management

However, the role of SNGs is often underappreciated in climate action:

- lack of a clear legal mandates for climate action
- insufficient integration into national climate strategies
- capacity constraints

Subnational Governments II

Financing climate action remains one of the biggest issues.

The ability of subnational governments to raise revenue through taxes and fees is limited.

High dependence on intergovernmental transfers → offers options to be greened.

General purpose grants

- budget support where sub-national governments have complete autonomy over the use of funds
- to compensate for bearing a disproportionate burden

Specific purpose grants

- with e.g. climate conditionality
- to incentive SNGs to deliver their share of the green strategy

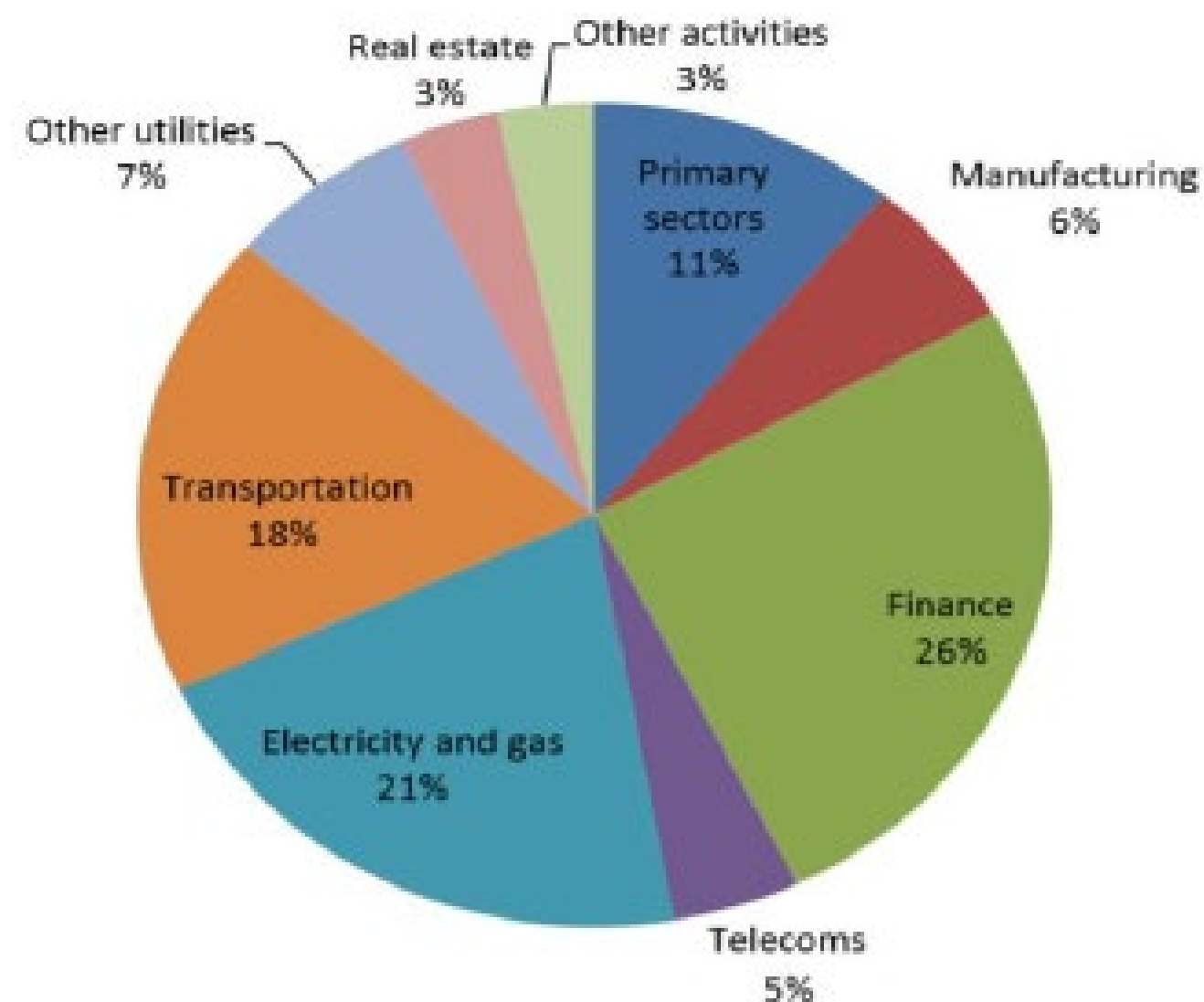
SNGs also have their own budget cycles

- can also be designed to be climate-responsive
- most of the entry points are also applicable to SNG budgets

” Climate finance has been failing to get money where it matters.

UNDP (2022), p.73

State Owned Enterprises I



[OECD \(2017\). The size and sectoral distribution of state-owned enterprises](#)

State-owned enterprises can be among the largest companies...

... and often dominate operations in climate-relevant sectors such as energy, transport, and agriculture

SOEs are major sources of CO₂ emissions globally, and they are vulnerable to climate change impacts and low-carbon transition risks

→ SOEs are therefore highly relevant when it comes to achieving green objectives.

→ To date limited attention has been given to their in addressing climate change

A 'whole-of government' approach to climate action calls for inclusion of SOEs—particularly in the context of SOE public service delivery (PSD) mandates.

State Owned Enterprises II

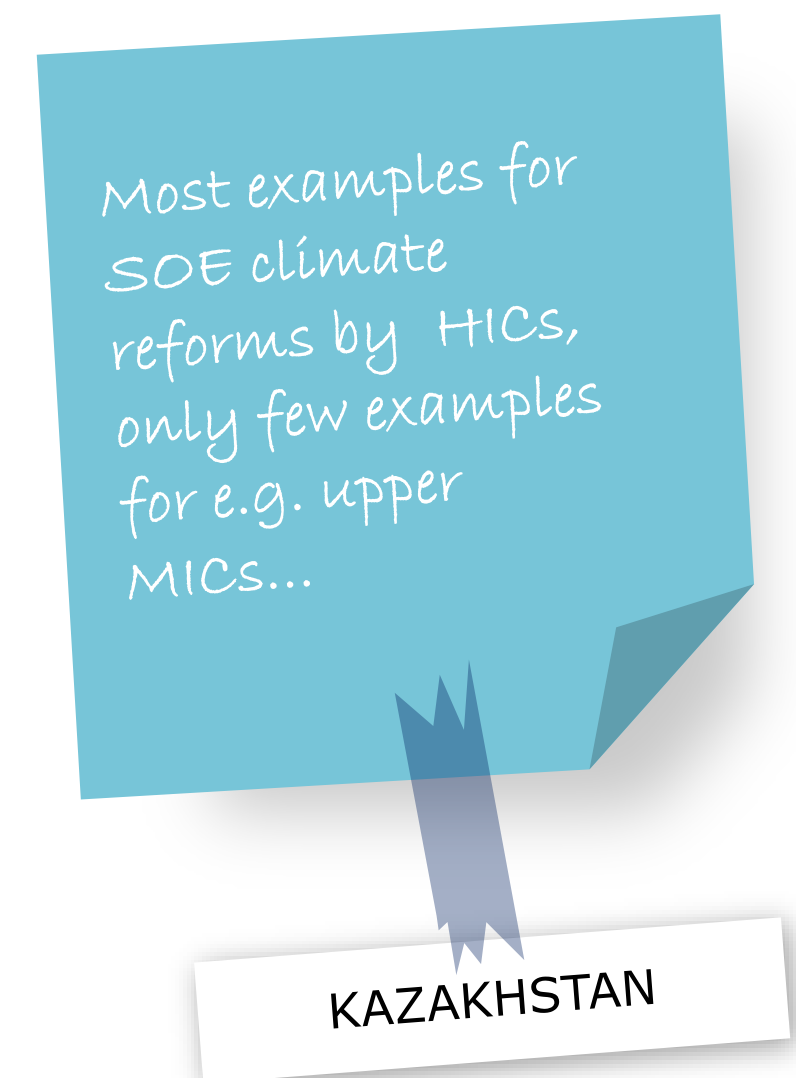
Variety of options to address the issue

Governments have regulatory powers over SOEs as their shareholders:

- Integrating sustainability-related values into government SOE ownership policies (e.g. Climate strategies, investment policies)
- ESG Reporting to evaluate and monitor implementation of their strategies
- Introduction of Emission Trading Systems

Governments can be provider of transfers and subsidies of SOEs:

- including a climate conditionality, can incentivize sustainable business models
- Tax incentives to enable the necessary investments in decarbonization
- extending climate budget tagging systems to include SOEs



EXERCISE

Climate Risk Workshop

Building Resilience: Identifying Climate Risks and Crafting
Adaptation Strategies for Public Entities and Operations

CASE I

Ministry of Finance

Physical risks for a 3.0°C+ scenario: Current Policies

Current Policies assumes that only currently implemented policies are preserved, leading to high physical risks. Emissions grow until 2080 leading to about 3 °C of warming and severe physical risks. This includes irreversible changes like higher sea level rise.

Please CHOOSE A COUNTRY.

You are a team of advisors to the MOF who have been tasked to:

- (i) identify the climate-related PHYSICAL risks of the country under the given scenario;
- (ii) undertake a preliminary analysis of transmission of these risks into fiscal risks;
- (iii) try to “qualify” the magnitude of these potential fiscal impacts, e.g. low, medium, or high; and
- (iv) formulate some recommendations about how the MOF’s operations and strategy might change to address potential climate-related fiscal risks. You should provide a rationale for these recommendations.

Climate Risks

Transition Risks

- Policy and regulation
- Technology development
- Consumer preferences

Physical Risks

- Chronic
 - Temperature
 - Percipitation
 - Ägricultural
 - Productivity
 - Sea levels
 - Etc.
- Acute
 - Heatwaves
 - Floods
 - Cyclones
 - Wiildfires
 - Etc.

CASE II

CITY of Vienna

Physical risks for a 3.0°C+ scenario: Current Policies

You are a team of advisory to the Mayor of the City of Vienna who have been tasked to:

- (i) identify the climate-related PHYSICAL risks of the city under the given scenario;
- (ii) try to “qualify” the magnitude of these potential fiscal impacts, e.g. low, medium, or high; and
- (iii) formulate recommendations for a 5-10 year public investment program aimed at enhancing the climate resilience of the City of Vienna while also optimizing opportunities arising from climate change.



CASE III

Samruk-Kazyna (Kazakh SOE)

Transition risks for a 1.5°C scenario: Net Zero by 2050

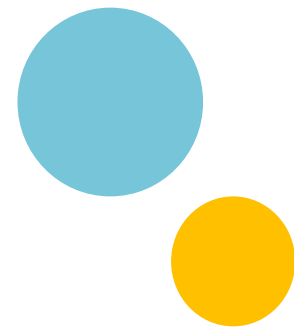
Samruk-Kazyna is the largest SOE in Kazakhstan. It is a holding company and includes enterprises of the oil and gas, transport and logistics sectors, chemical and nuclear industries, mining, energy and real estate. The Fund's assets amount to about USD 69 billion, which is around 26% of Kazakh GDP in 2023. This holding and its subsidiaries are also important employers and account for a significant share of employment.

You are a team of advisors to the Board of Directors who have been tasked to:

- (i) identify the transition risks of the holding under the given scenario;
- (ii) try to "qualify" the magnitude of these potential financial impacts, e.g. low, medium, or high; and
- (iii) develop a strategy to address these transition risks. This strategy must consider that the holding generates substantial revenue for its owner, the Republic of Kazakhstan, and thus represents a significant financial risk to the public budget.



Most Important Entry Points



Budget Preparation Phase



Objective

- Alignment at policy level and reconciliation with strategic fiscal planning
- Integrating strategic plans into medium-term and annual budget preparation and anchoring of NDCs/NAPs in the planning stage

Some greening options

- Climate risk-informed Medium-Term Fiscal Framework
- Budget tagging & tracking
- Performance budgeting

Relevance

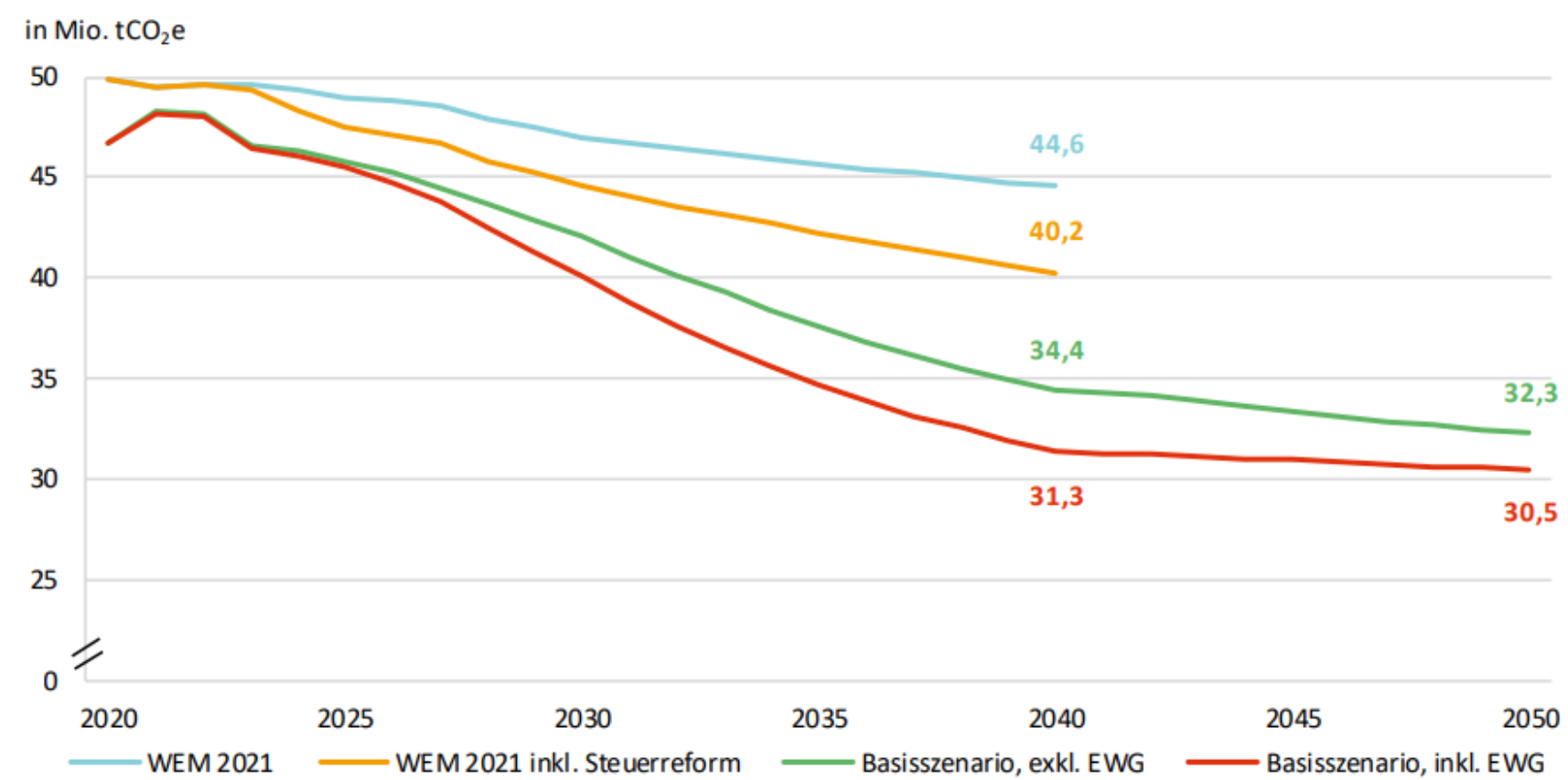
- Increased robustness and credibility of budget planning
- Facilitating evidence-based decision making
- Ensuring policy coherence



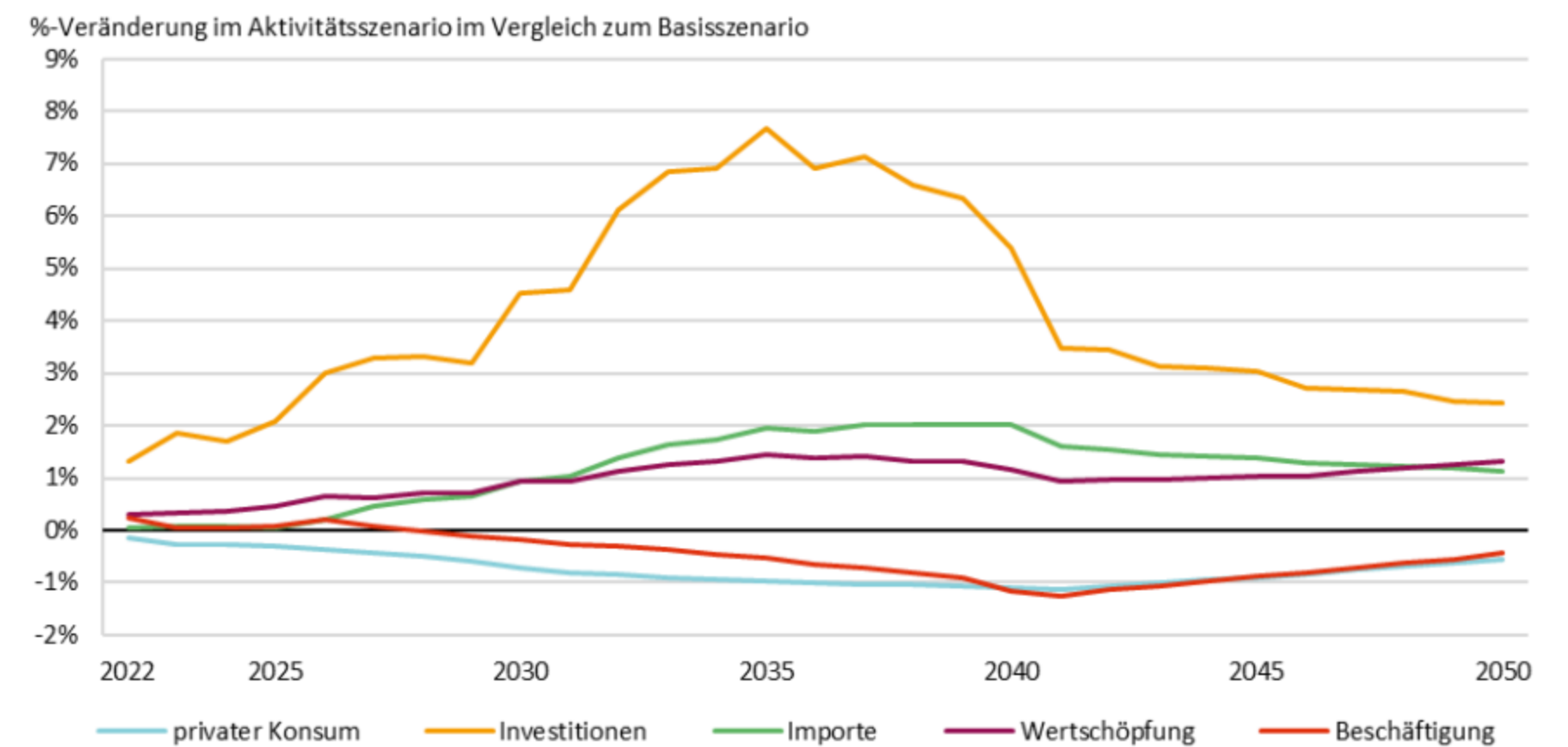
LEARNING FROM PEERS I

AUSRTIA'S climate-sensitive forecast of public finances

CO2-Emission forecast



Macroeconomic impacts of policy measures

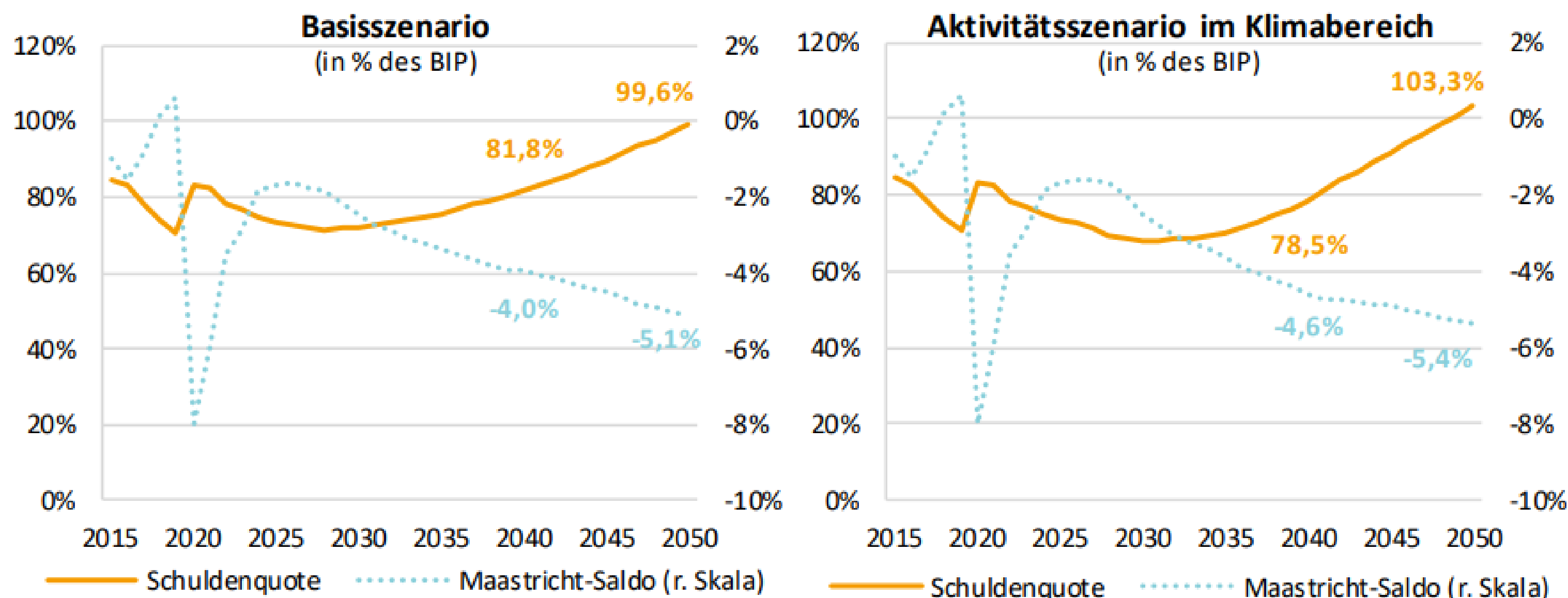


Austrian MOF 2022. Langfristprognose der öffentlichen Finanzen, pp. 53 & 60

LEARNING FROM PEERS II

AUSRTIA'S climate-sensitive forecast of public finances

Forecast of impacts on debt and fiscal balance



Austrian MOF 2022. Langfristprognose der öffentlichen Finanzen, p. 62

LEARNING FROM PEERS III

SCHWITZERLAND'S qualitative fiscal risk assessment

Data inputs from

- ETH: Swiss-specific risk channels and economic impact
- Swiss Economics: significance of climate change for Switzerland's infrastructure

Explains thoroughly the **interplay** of climate change and PF

Identifies **budget items** likely to be affected

Succeeded in **raising awareness**: Federal Council to discuss the topic



Budget Execution Phase



Objective

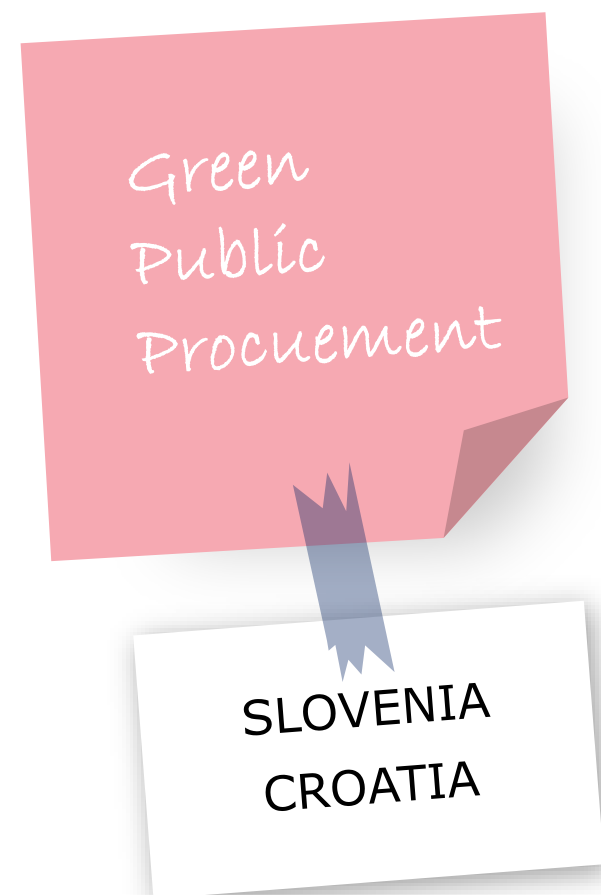
- Actual spending in line with intended purpose and contributes to reaching international commitments

Some greening options

- Green Public Procurement
- Climate-sensitive Public Investment Management
- Climate sensitive asset management

Relevance

- Improving the carbon footprint of government activity
- Climate resilient assets and preservation of economic value



LEARNING FROM PEERS IV

LONDON'S green procurement of Tube lighting

Fluorescent lighting technologies traditionally used → significant **maintenance cost**

Transport for London (TfL) aimed to **reduce life-cycle costs** of lighting

Market engagement helped TfL acquire information on almost 300 different innovative lighting technologies from 75 suppliers

Resulted in **25% saving** on whole life-cycle costs, and reductions in energy consumption

Procura+ Case Study (2017). Innovative lighting procurement for London's Underground network.



LEARNING FROM PEERS VI

Nepal: Green PIM principles for hydro-power facilities

Khimti 1 Hydro-Power Scheme: hydro-power facility → Public Private Partnership project

Post-construction study analyzing the potential risks from climate change for Khimti 1

Study revealed substantial risk of flooding and glacial lake outburst flood (**GLOF**)

Consequences for the GoN

- Loss of revenue
- Write-off or revaluation of public assets
- Increased capital expenditure
- Second round and indirect effects

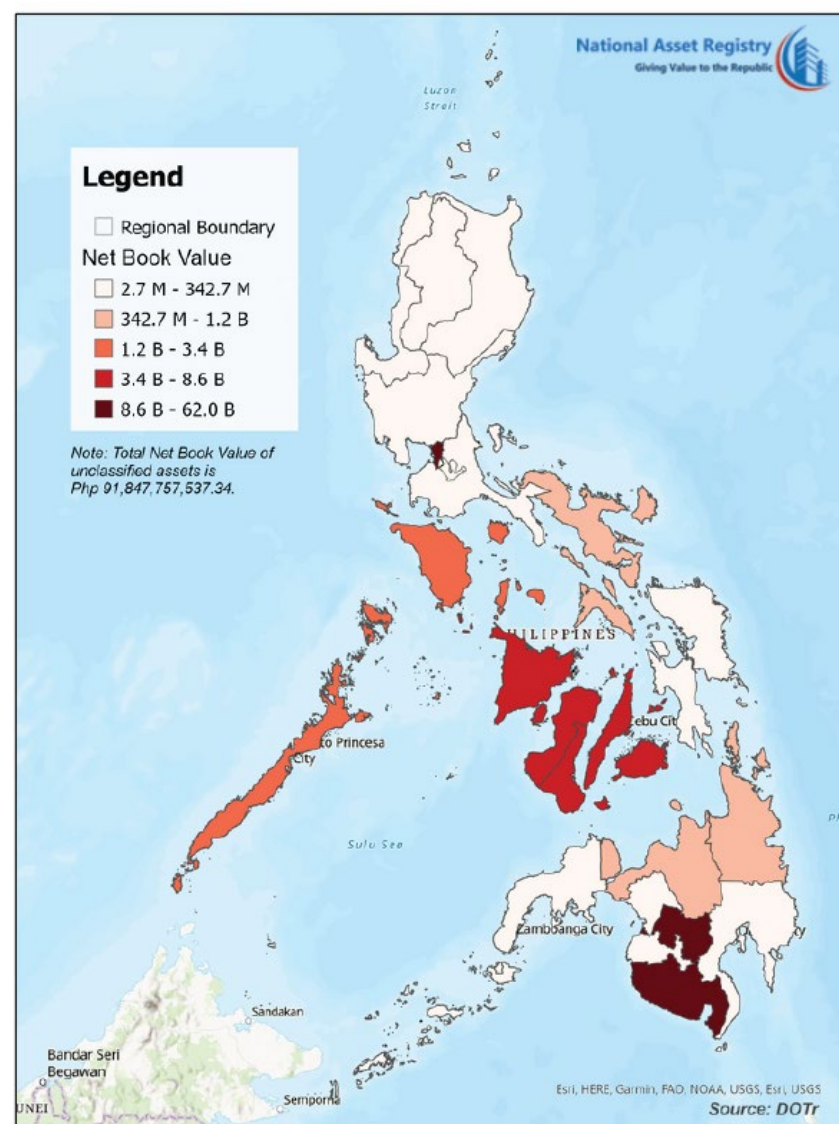
IFC (2011). Climate Risk Case Study Khimti 1 Hydropower Scheme Himal Power Limited – NEPAL



LEARNING FROM PEERS V

THE PHILIPPINE'S disaster-responsive fixed asset management system

Density map of NARS dataset aggregate asset value



Source: 2022 NARS portfolio Risk Report, pp. 6 & 25

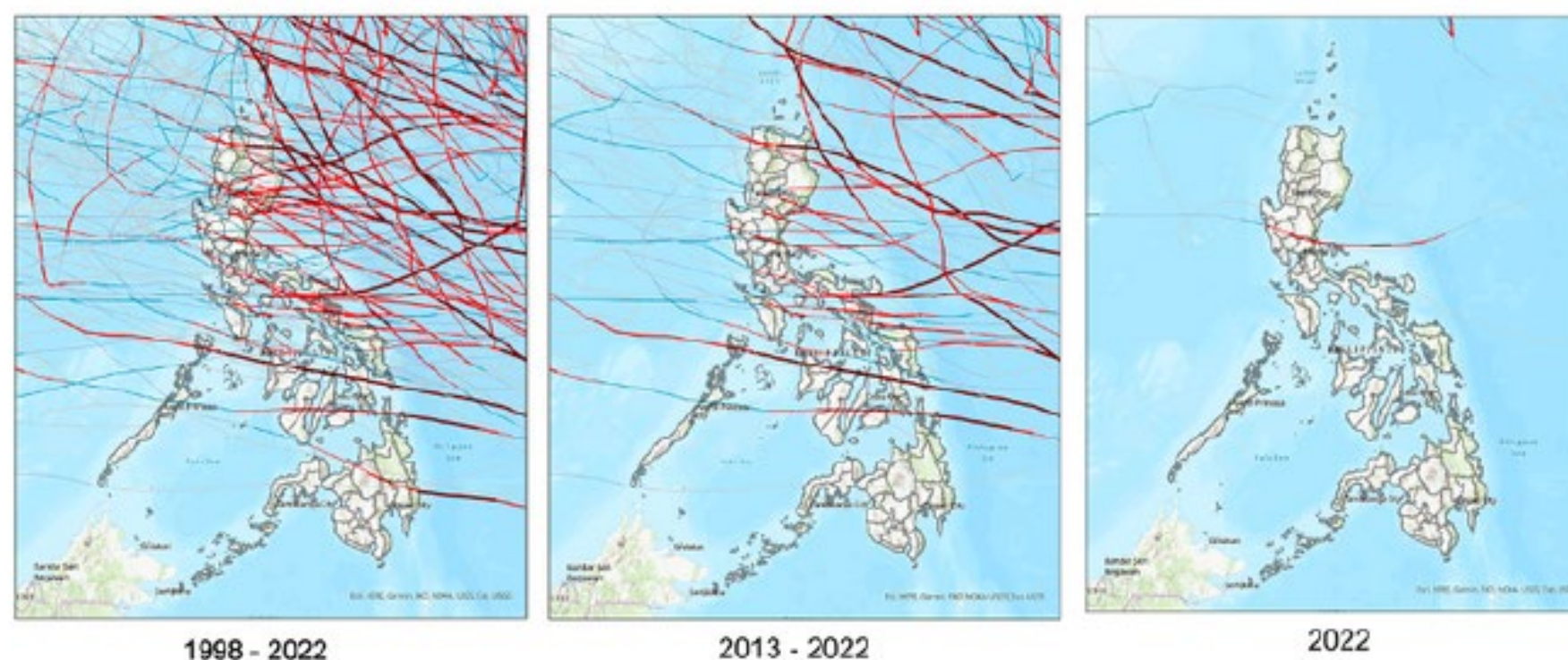
National Asset Registry System (**NARS**) holds records of 359,689 assets.

Strategically important or **critical assets**, such as school buildings, hospitals, roads and bridges.

Regular **geospatial analyses**, and disaster risk assessments for these assets.

Based on this information, the NARS **Portfolio Risk Report** is produced.

Tropical cyclone tracks against boundary map



Accounting & Reporting Phase



Objective

- Compile a dataset providing a comprehensive, true & fair view of the (non)financial implication of climate change
- Publish information on implementation of climate policy

Some greening options

- Budget documentation & budget implementation reports
- Sustainability reporting
- Accounting for climate change

Relevance

- What you can measure, you can manage → policy response adequate?
- Quantifying impact creates a tangible and concrete information base for citizens and governments

Helping Western
Balkan Countries
get ahead with ESG
Reporting

CFRR REPARIS

LEARNING FROM PEERS VII

SINGAPORE'S Green Government Report 2022



Snapshot of the Singapore public sector's FY2022 **environmental sustainability performance**

Net-Zero by 2050 → targets that can only be realized through a whole-of-nation effort

To **increase accountability**, reporting on

- Emissions profile: Scope 1 and 2 CO2 emissions
- Resource footprint: electricity and water consumption
- Key green strategies and initiatives

Based on international standards, such as Global Reporting Initiative standards...

...and recommendations by the **Taskforce on Climate-related Financial Disclosures**

[greengovsg-report-fy2022.pdf \(mse.gov.sg\)](#)

LEARNING FROM PEERS VIII

VIENNA'S "Vienna Public Utilities" ESG-reporting practice

Wiener Stadtwerke is a municipal company owned by the City of Vienna.

It is responsible for providing essential public services in Vienna, including energy, public transport, waste management...

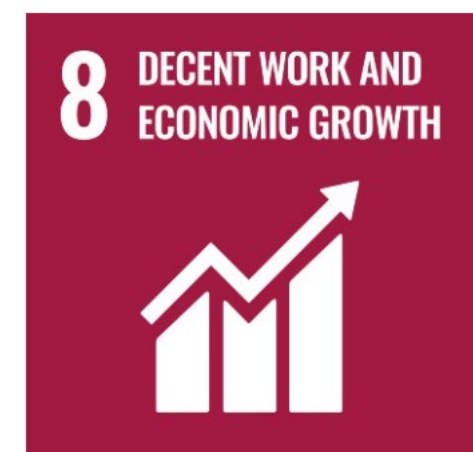
Wiener Stadtwerke actively contributes to the implementation of the Smart Climate City Strategy of the City of Vienna.

The company's focus on climate protection is reflected in its structure → there is a Chief Climate Officer who leads the Strategy and ESG Management team.

The company has a strong commitment to the Sustainable Development Goals (SDGs), especially five key SDGs.

Wiener Stadtwerke conducts ESG reporting based on GRI standards to ensure maximum accountability and transparency.

[Source: Wiener Stadtwerke Nachhaltigkeitsbericht 2023](#)



External Audit and Oversight Phase

Objective

- Effective mechanisms objectively evaluate and monitor the government response and leverage their influence on the executive to take action

Some greening options

- External audit & performance audits
- Oversight function of parliaments
- Role of civil society - public participation

Relevance

- Improved credibility and quality of policy advice
- Strengthened the link between budgets and outcomes for citizens
- Improved legitimacy & acceptance of climate related measures



LEARNING FROM PEERS X

BANGLADESH'S climate performance audits

The Office of the Comptroller and Auditor General (OCAG) is the SAI and mandated to implement climate related audits on:

- the government's response to climate change
- the utilization of climate finance by spending ministries and agencies
- the implementation of the objectives set out in climate policy documents

The audited accounts and audit reports are presented to Parliament, where they are scrutinized by the Public Accounts Committee (PAC).

Following the examination of reports, PAC gives directives and recommendations for corrective action if necessary.



UNDP (2022). Global Climate Public Finance Review.

LEARNING FROM PEERS XI

BRAZIL'S SAI audit of adaptation measures toward agriculture

Audit rationale:

- Activities in this sector is highly dependant on climate factors, which in turn means that climate change can have significant impact on the productivity of these sectors.
- Ultimately these impacts could have major affects on food safety, the Brazilian balance of trade, and could cause serious social problems.

Audit objective:

- to verify the extent to which the actions of the Federal Public Administration are promoting successfully the adaptation of the livestock and agriculture sector to possible climate change scenarios.

Main findings:

- Lack of data to identfy cc risks → low-resolution climate-change models have to be used.
- Lack of clear instructions to agencies to consider climate change scenarios when planning and implementing public policies for the agriculture and livestock sector
- No strategic planning for adaptation (e.g. no NAP)
- Unclear cc governance and institutional setting



INTERVIEW

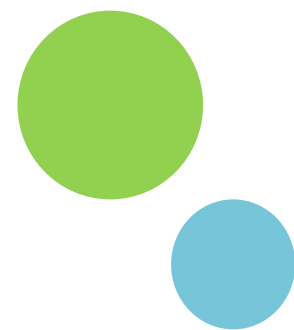
Climate Budget Tagging: A Catalyst for Green Bond Financing

Andreas RAJCHL

Head of Department for Green Finance and Sustainable Economy

Austrian Ministry for Climate Action

Diagnostic tools to assess climate-sensitivity of PFM systems



Top Five Climate Diagnostic Tools



PFM diagnostics enables a targeted, **problem-oriented** approach and an **evidence-based dialog**

Climate Change Development Report (CCDR)

→ World Bank core diagnostic that integrates climate change and development

Adaptation and Resilience (A&R) Readiness Assessment

→ provides a whole-of-government, whole-of economy approach to evaluate a country's A&R policy, institutional and capacity preparedness and implementation.

Climate Change Institutional Assessment (CCIA)

→ identifies the strengths and weaknesses of the institutional framework/ CC governance (WB)

Disaster Resilient and Responsive Public Financial Management (DRR-PFM) Assessment

→ assesses the capability of PFM systems to prepare for, respond to, and recover from disasters.

PEFA Climate Responsive Public Financial Management Framework (PEFA Climate)

→ Evaluates the climate-responsiveness of PFM systems

Climate Public Investment Manegment Assessment (C-PIMA)

→ Evaluates the climate-sensitivity of of the PIM function

Pitfalls of PFM Diagnostic

Climate mainstreaming is a **more holistic process** than «merely» greening certain functions

One of the main challenges, however, seems to be **how and where to begin**

- **Limited Guidance on Prioritization and Sequencing:** PFM diagnostics often lack mechanisms to help countries determine which reforms to implement first or how to sequence them effectively.
- **Limitations in Recommendations:** Recommendations derived from diagnostics may be too broad, unrealistic, or disconnected from practical implementation constraints.
- **Issues with Scoring Systems:** Scores provided in diagnostics may lead to reform efforts that focus on improving scores rather than the functionality.

**Diagnostic informs reform –it does not provide a
reform DESIGN;
That’s a separate workstream**

Antonia Ida Grafl

Independent Consultant
External Lecturer, HSLU Institute of Management & Economics IBR

graflantonia@outlook.com