



# IMF POLICY PAPER

## REVIEW OF THE CLIMATE MACROECONOMIC ASSESSMENT PROGRAM PILOTS

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## REVIEW OF THE CLIMATE MACROECONOMIC ASSESSMENT PROGRAM PILOTS

### EXECUTIVE SUMMARY

**This paper reviews the two Climate Macroeconomic Assessment Program (CMAP) pilots and proposes a way forward.** It builds on the experience of the previous six Climate Change Policy Assessment (CCPA) pilots, and the recent rollout of the World Bank's Country Climate and Development Report (CCDR). It also accounts for early experience with countries requesting support under the Fund's Resilience and Sustainability Trust (RST).

**The review's main findings are that:** (1) the pilot country authorities find the macro-fiscal section of the CMAP most valuable, but such a comprehensive assessment can be burdensome when there is limited capacity, (2) a CMAP involves a much higher resource cost than a typical CD mission and some of its tools can be further improved, and (3) the CMAP complements CCDRs in the areas of Fund's comparative advantage, while there are some overlaps.

**Staff proposes to:** (1) streamline the CMAP to focus on the Fund's comparative advantage in the areas of mitigation, PFM, and macro-fiscal impact of climate change policies; (2) provide a streamlined CMAP only in exceptional circumstances; and (3) expand more targeted CD in particular in support of RST countries. This focused and tailored approach would benefit members as it is more agile, allows the Fund to serve more members within the same resource envelope, and enhances synergies with other Fund products and the WB's CCDR.

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## Glossary

ADB	Asian Development Bank
AIV	Article IV
CCCDI	COVID-19 Crisis Capacity Development Initiative
CCDR	Country Climate and Development Report
CCIA	Climate Change Institutional Assessment
CCPA	Climate Change Policy Assessment
CD	Capacity Development
CMAP	Climate Macroeconomic Assessment Program
CPAT	Climate Policy Assessment Tool
CPF	Country Partnership Frameworks
CPIA	Country Policy and Institutional Assessment
C-PIMA	Climate-Public Investment Management Assessment
DIGNAD	Debt, Investment, Growth and Natural Disasters
DSA	Debt Sustainability Analysis
EDs	Executive Directors
ETS	Emissions Trading Scheme
FAD	Fiscal Affairs Department
FARI	Fiscal Analysis of Resource Industries
FSAP	Financial Stability Assessment Program
FTE	Full Time Equivalent
FY	fiscal year
GDP	Gross Domestic Product
IMF	International Monetary Fund
MCM	Monetary and Capital Markets Department
MDBs	Multilateral Development Banks
NAPs	National Adaptation Plans
NDCs	Nationally Determined Contributions
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PEFA	Public Expenditure and Financial Accountability
PFM	Public Financial Management
RES	Research Department
RSF	Resilience and Sustainability Facility
RST	Resilience and Sustainability Trust
SDGs	Sustainable Development Goals
SDS	Small Developing States
SPR	Strategy, Policy and Review Department
TA	Technical Assistance
UN	United Nations
WB	World Bank
WRI	World Resources Institute

## INTRODUCTION AND BACKGROUND

1. **The Climate Macroeconomic Assessment Program (CMAP) is a diagnostic climate assessment conducted by the IMF.** The CMAP is a successor to the Climate Change Policy Assessment (CCPA) (see below). It aims at assessing: a country's vulnerability to climate; its preparedness in terms of mitigation, adaptation, risk management, public financial management (PFM) and financing; and the macro-fiscal impacts of climate change.
2. **This CMAP review responds to a request of Executive Directors made at the time of the CCPA review.** Six CCPA pilots in small developing states (SDS) were conducted jointly with the World Bank between 2017-2020. The CCPA review drew lessons from these pilots and presented the results of a stakeholder survey. It also proposed to develop an IMF-only CD product, the "CMAP," because the World Bank had decided to launch its own climate assessment, the Country Climate and Development Report (CCDR). Directors asked that staff test-run two CMAP pilots and report back to the Board.
3. **The CMAP pilots evolved from the experience with the CCPA.** The two pilots applied to a broader set of countries as the CCPA stakeholder survey revealed potentially strong demand for the CCPA from low-income countries and emerging countries in addition to SDS. The CMAP template is similar in structure to that of the CCPA but with a greater focus on the Fund's comparative advantage. Climate-related analytical tools developed by the Fiscal Affairs Department (FAD) were used in the pilots as well as the Debt, Investment, Growth and Natural Disasters (DIGNAD) model developed by the Research Department (RES). Staff tested the CMAP template in collaboration with new partners (Box 1).

### Box 1. A Brief History of the CCPA and the CMAP

**Climate Change Policy Assessment (CCPA) pilots were conducted between 2017-20.** At end-2016, the Executive Board broadly supported the CCPA on a pilot basis for small developing states (SDS) vulnerable to the effects of climate change.<sup>1</sup> The CCPA was a joint IMF-WB climate diagnostic assessment covering seven areas, broadly drawing on the standard format of Nationally Determined Contributions (NDCs) under the Paris Agreement: climate risks, national strategy, mitigation, risk management, adaptation, national planning, and macro-economic implications of climate change.<sup>2</sup> CCPAs were done for six SDS ([Seychelles](#), [St. Lucia](#), [Belize](#), [Grenada](#), [the Federated States of Micronesia](#) and [Tonga](#)).

**Staff tested the CMAP template in two countries.** Reflecting the comparative advantage of the Fund and responding to country needs, the CMAP added analyses of the distributional impact of mitigation policies, augmented the macro-fiscal section by adding SDG-climate costing and the DIGNAD model, strengthened PFM by leveraging the C-PIMA and green PFM frameworks, and streamlined the adaptation section by focusing on an institutional assessment rather than sectoral policies. The pilots also tested collaboration with new partners such as the World Resource Institute (WRI) and other MDBs. The selection of pilot countries was guided by: (1) an outstanding request from authorities for a CCPA ([Samoa](#)), (2) interest in covering long-term climate change issues beyond natural disasters in a non-SDS ([Madagascar](#)), and (3) avoiding overlap with the [WB's CCDRs](#).

<sup>1</sup> [2016 Board paper](#) "Small States' Resilience Building to Natural Disasters and Climate Change—Role for the IMF".

<sup>2</sup> 2020 Board Paper "Review of the Climate Change Policy Assessment Pilots: Lessons and Next Steps".

**4. The CMAP review took place against the backdrop of rapidly increasing demand for climate-related CD in support of the Resilience and Sustainability Trust (RST)** (Box 2). The review thus considers how to best support countries with urgent needs for climate-related CD to design reform measures supported under the RST, while more broadly improving climate CD tools over the medium term.

**5. The remainder of this paper is structured as follows.** Section 2 reviews the CMAP pilots and presents lessons. Section 3 discusses coordination with the World Bank and others. Section 4 explains the three main areas of climate CD in the CMAP. Section 5 considers options for the way forward for the CMAP and lays out staff's proposals. Section 6 suggests issues for Board discussion.

### Box 2. Resilience and Sustainability Trust

The Resilience and Sustainability Trust (RST) was established in April 2022 to help low-income and vulnerable middle-income countries, including small states, build resilience to longer-term challenges, such as climate change and pandemic preparedness, contributing to prospective balance of payments stability. The RST complements the IMF's existing lending toolkit: it provides affordable financing with maturities (20-years, with 10½ -year grace period) aligned with the longer-term nature of the challenges it aims to address. A tiered interest rate structure allows more affordability for lower-income members. About three-quarters of the Fund membership (143 countries) are eligible to receive financing from the RST. Members with concurrent, on-track UCT-quality IMF-supported programs can access resources from the RST through the Resilience and Sustainability Facility (RSF).

Financing through the RSF is conditional on the completion of reviews that assess the implementation of reform measures (RMs). Each RM can be a single policy action or a set of closely related actions that constitute a single reform, relevant to the purpose of the RST. Reform measures are developed in coordination with Departments that provide capacity development to members (e.g., FAD and MCM) and, when appropriate, with expert agencies (e.g., the World Bank and other partners).

The Board has approved the first five pilot RSF-supported programs (Barbados, Costa Rica, Rwanda, Bangladesh and Jamaica). Demand for the RST is high and many of the prospective RSF recipients are expected to require extensive CD both in the diagnostic phase, which would provide the analytical underpinning of the RSF request, and in the reform implementation phase.

## REVIEW OF CMAP PILOTS

*The pilots have been useful in deriving lessons. The review's main takeaways are that the CMAP could usefully be streamlined around the Fund's comparative advantage, while some countries would benefit from more focused topical CD rather than a comprehensive CMAP. This would facilitate closer coordination with Bank CCDRs and enable the Fund to provide more support to countries that are interested in an RST-financed arrangement.*

### A. CMAP Template

**6. The CMAP template was developed reflecting the findings of the CCPA review.** At that time, Directors recommended to: (1) continue with SDS but also extend the tool to cover larger economies; (2) conduct the tool as a standalone CD product; (3) focus on macro issues; and (4) coordinate not only with the World Bank but also with other development partners. To indicate these changes, the CCPA was renamed to CMAP.

**7. The CMAP template consists of seven areas and focuses on core Fund competencies (Figure 1, Annex I).**

**Figure 1. The Structure of the CMAP**



- The macro-fiscal section was strengthened by leveraging the DIGNAD model.<sup>1</sup> The model accounts for the feedback from ex-ante investment in resilient capital to growth and debt dynamics under various climate shock and financing scenarios (e.g., grant- vs. loan-financing). It can be calibrated to country-specific circumstances.
- The macro-fiscal section of the CCPA was re-designed to use the Fund's Sustainable Development Goals (SDGs) costing methodology to provide an assessment of investment needs to strengthen climate resilience beyond the authorities' own plans.<sup>2</sup>
- The mitigation section was expanded to include the distributional impacts of mitigation policies, leveraging new capabilities of the Climate Policies Assessment Tool (CPAT).

<sup>1</sup> The DIGNAD model was developed by [Marto, Papageorgiou, and Klyuev \(2018\)](#) as part of a research project on macroeconomic policy in low-income countries supported by the U.K.'s Foreign, Commonwealth and Development Office (FCDO) and the partners in the IMF's COVID-19 Crisis Capacity Development Initiative (CCDI)—Belgium, Canada, China, Germany, Japan, Korea, Spain, Singapore, and Switzerland.

<sup>2</sup> The use of a "climate-augmented" SDG costing method was pioneered in the Tonga CCPA and applied to 25 SDS in [Tiedemann, Piatkov, Prihardini, Benitez, and Zdzienicka \(2021\)](#).



- The National Planning (or PFM) section was strengthened with the Climate-Public Investment Management Assessment (C-PIMA) and green PFM frameworks that were launched in 2022. These tools assess the adequacy of planning and PFM systems for implementing climate policies as well as examines whether the cost of climate-related expenditures is accurately reflected in the budget. As the WB pursued its own product, the CMAP streamlined the sectoral detail in the adaptation section, which had been covered by WB staff. It instead assessed climate change adaptation policies in terms of their overall alignment with major climate risks and consistency with the goals set out in Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs).

**8. This shift of focus into the areas of Fund strengths, and out of areas in which the WB has greater expertise, intended to enable a coordinated and complementary assessment.** Staff coordinated the selection of countries with the WB to prevent overlap with CCDRs. It also cooperated with other institutions, such as relevant regional multilateral development banks (MDBs), the United Nations (UN), and the World Resources Institute (WRI).

## B. CMAP Pilots

### Samoa CMAP

**9. Samoa was the first CMAP pilot country.** The mission was conducted virtually due to COVID-19 related travel restrictions. The team consisted of 12 staff from FAD, RES, and APD. Similar to the CCPA pilots, Samoa is a small island economy highly exposed to natural disasters including cyclones, earthquakes, droughts, and floods. Large damage to tourism infrastructure and livelihoods put economic growth and debt sustainability at risk, while fiscal space is limited. In this context, the authorities were particularly interested in mobilizing climate finance needed to build climate resilience.

**10. The authorities strongly appreciated the analysis of macro-fiscal impacts of adaptation investment.** Samoa is relatively advanced in its efforts to mainstream climate change in its policy planning and implementation and had received various CD in climate diagnostics and specific policy areas from other institutions. Thus, a more detailed analysis of macro-fiscal implications of climate policies was found most useful, as it supported discussion with international donors in mobilizing climate finance.

**11. Close collaboration between functional departments and the country team helped integrate CMAP into surveillance.** The country team's participation in CMAP delivery was instrumental in ensuring consistency with data and policy advice in surveillance. Some of the policy recommendations and findings from the CMAP informed the Article IV consultation, including policy options on revenue measures, estimates of the size of financing needs for climate-resilient infrastructure, and incorporating climate risks into the analysis of medium-term fiscal sustainability. The Executive Director's office also played a key role in facilitating communication with the authorities.

## Madagascar CMAP

**12. Madagascar is a relatively larger island economy that is highly exposed to the impacts of climate change.** It suffers from the negative impacts of both slow-moving climate change and natural disasters. The former puts pressure on labor productivity across sectors, including subsistence agriculture. More frequent and extreme events from changing climate also disrupt production and cause large output losses. The Madagascar CMAP team consisted of 12 Fund staff with inputs from three short-term experts from the WRI in the areas of ecosystems, agriculture, and water and sanitation.

**13. The authorities appreciated the comprehensiveness of the report covering a wide range of climate issues, including the PFM assessment and macro-modeling.** Madagascar is in an early stage of planning climate actions and has received limited CD in this area. A broad assessment in the context of the CMAP was a useful starting point, identifying options for moving from a largely reactive to a more proactive risk management of climate change implications.

**14. Support from the IMF resident representative as well as the country team helped strengthen integration between program-related work and CMAP.** In March 2021, Madagascar requested a 40-month ECF arrangement program to support the recovery from the pandemic and anchor reform implementation to catalyze aid commitments. Area Department participation helped inform how the CMAP could support the program objectives, especially on fossil fuel subsidy reform. In turn, the CMAP helped strengthen reform measures under the program through an analysis of mitigation measures using the CPAT. The resident representative helped facilitate communication with the authorities.

## Lessons Learned

**15. On substance, new features of the CMAP template (Annex I) generally worked well.** The macro-fiscal section customized the DIGNAD model, accounting for a feedback effect on growth from ex-ante adaptation investment. This yielded simulation results to support the case for greater climate finance. The analysis on the distributional impact of mitigation policies provided useful policy recommendations on how to recycle revenues raised by proposed mitigation measures. And climate-responsive PFM assessment provided actionable roadmaps to improve the institutional framework to integrate climate change in PFM practices.

**16. The sections on adaptation and risk management could be better integrated into the other sections.** These areas were covered by WB experts during the CCPA pilots, but different approaches were taken in the CMAP pilots. For Samoa, staff focused on assessing the public mechanisms that support adaptation planning, which overlapped with the PFM section. For Madagascar, staff discussed sectoral adaptation measures in more detail, relying on input from experts from the WRI as well as existing literature. The risk management section had much overlap with other sections and could have been combined into the PFM section.

**17. CMAP missions needed a large multi-disciplinary team.** The coverage of seven diverse areas requires different expertise, including tax policy, expenditure policy, PFM, and macro-fiscal and risk management. For the macro-fiscal section, RES and FAD worked together to apply the DIGNAD model. A close collaboration between FAD and Area Department country teams is particularly critical to the macro-fiscal section, also ensuring close CD integration with Fund surveillance. In turn, the macro-fiscal analysis in the CMAP can usefully incorporate climate change issues into the macro-framework, including into the debt sustainability analysis (DSA).

**18. The CMAP pilots are much more resource intensive than a typical CD mission.** With a team of twelve for each mission and missions taking place over four to five weeks with multiple months of preparatory work, each of the pilot missions was about three times more expensive than a typical CD mission in terms of FTE.<sup>3</sup> The mission also involved meetings with non-traditional counterparts, including Ministries of Environment, Transport, Health, Education, Disaster Management, which often required greater preparation and communication prior to meeting. In the absence of a resident representative (Samoa), coordination on the ground had to be supported by other IFIs. In addition, both pilots were impacted by the modality of virtual missions with large time differences as well as technological difficulties, which contributed to an extension of the duration of the missions.

**19. High resource intensity was also a challenge for the authorities.** Though the main in-country counterparts were in the Ministry of Finance, they also needed to coordinate mission meetings with other ministries and stakeholders including line ministries and the broader public sector as well as the financial sector. Pre-mission questionnaires had a low response rate in both countries, not least because they went well beyond the typical public finance areas.

**20. High resource intensity is particularly difficult for SDS.** The Samoan authorities noted limited administrative capacity as a challenge to accommodate a large-size mission and to implement recommendations of the CD. With possible institutional capacity constraints in SDS, a CMAP may therefore not be an ideal CD tool for SDSs given the CMAP missions' large footprint and wide coverage of topics. Mindful of SDS' climate vulnerabilities and its attendant effects like sea-level rise and natural disaster frequency and/or intensification, a more tailored delivery approach (e.g., single-topic climate CD) may be best for supporting SDS' climate agenda.

**21. Follow-up CD can be useful when capacity is limited.** The Malagasy authorities appreciated the comprehensiveness of the CMAP report. But they also noted that they would benefit from follow-up CD in order to implement policy recommendations.

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<sup>3</sup> Samoa and Madagascar CMAP missions cost about 1.6 FTE (full-time equivalent) while a typical CD mission costs about 0.5 FTE. The Samoa CMAP was fully financed externally (IMF02). The Madagascar CMAP was financed by both internal and external resources with the latter covering the cost of WRI experts.

## C. CMAPs and CCDRs

**22. The World Bank has rolled out the first wave of CCDRs in 2022 and plans to provide a CCDR for all member countries every 4-5 years.** The CCDR is one of the pillars for the WBG Climate Change Action Plan to integrate climate and development considerations and to inform future Systematic Country Diagnostic (SCD) and the Country Partnership Framework (CPF). The CCDR is motivated by the need for government-wide approaches to link NDCs with national development policies and economic strategies and is built on its strengths on multi-sectoral issues. The first wave of CCDRs covered 28 countries—no SDS but several large emitters and emerging market countries.<sup>4</sup>

**23. There are overlaps between CMAPs and CCDRs, despite a different focus.** Climate risks and impact, the national strategy for climate change, and adaptation are topics that the CCDR covers more broadly than the CMAP (Figure 2). The CCDR also generally has a greater sectoral focus, while the CMAP links climate change policies more directly to the macro-fiscal framework.

**24. The structure of the CMAP is the same across reports, while the coverage and focus of CCDRs vary.** The CMAP has a uniform structure, consisting of seven sections, which facilitates cross-country comparison. CCDRs have different depth of coverage depending on a country's focus area (e.g., different sectors). They are comprehensive documents that pull together the wide range of sectoral expertise within the Bank.

**25. CMAPs and CCDRs complement each other in some areas (Figure 2).** The areas of complementarity include (1) mitigation, (2) PFM, and (3) macro-fiscal analysis of climate change policies. On mitigation, CMAPs and CCDRs are complementary in their coverage as CMAPs focus on carbon pricing and the distributional effects of mitigation measures while CCDRs focus more on sector-level regulations, urbanization- and employment-related issues.<sup>5</sup> CCDRs cover long-term issues including development and poverty as well as transition.<sup>6</sup> The PFM section in a CMAP provides detailed policy assessments and recommendations for the Ministry of Finance, while the coverage of climate PFM in CCDRs is less and uneven.

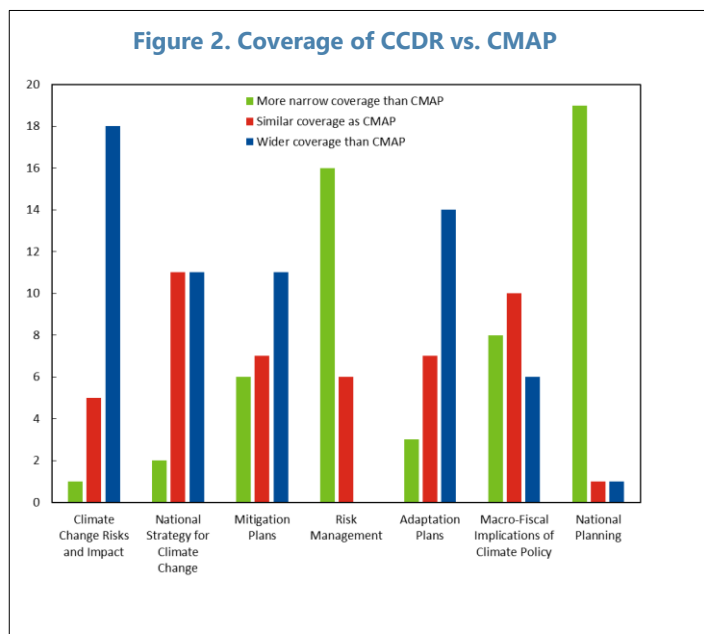
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<sup>4</sup> Angola, Argentina, Bangladesh, Brazil, Cameroon, China, Egypt, Ghana, Honduras, Indonesia, Iraq, Jordan, Kazakhstan, Malawi, Morocco, Mozambique, Nepal, Pakistan, Peru, Philippines, Rwanda, Sahel-5 (Burkina Faso, Chad, Mali, Mauritania, and Niger), Türkiye, and Vietnam were the 28 countries intended for the first wave. CCDRs for Brazil, Honduras, Indonesia, and Mozambique have not yet been published.

<sup>5</sup> Several CCDRs also utilize CPAT for mitigation policy analysis (e.g., Egypt).

<sup>6</sup> CCDRs emphasize that carbon pricing alone will not deliver decarbonization without complementary policies (e.g., non-price policies) and institutional reforms.

**26. The macro-fiscal policy section differs greatly between CMAPs and CCDRs.** While the macro-fiscal section in the CMAP integrates climate change related policies with analyses of macro-fiscal modeling, the CCDR analyzes various climate change related policy areas often in parallel with sectoral analyses and not always integrated into an analytical model. The CMAPs used the DIGNAD model, while the CCDRs use different models across countries, ranging from a Solow growth model to Climate Macro-Fiscal Model (CC-MFMOD) as well as CGE models (e.g., MANAGE, ENVISAGE). CMAPs explicitly discuss the impact on macroeconomic variables including growth, fiscal balances, and debt. CCDRs have varying degrees of coverage on these variables depending on the model they use.



**27. The CCDR's adaptation section is more comprehensive with detailed sectoral-level analysis.** They draw on more granular data and in-house sectoral expertise as well as regional/spatial perspectives, reflecting the WB's comparative advantage. The CMAP focuses on an assessment of a country's adaptation plans and policies at an institutional level.

## D. Takeaways

**28. Staff find that:** (1) the CMAP can usefully complement the CCDR in mitigation, PFM, and macro-fiscal analysis, (2) the CCDR better covers adaptation measures at a sectoral level, (3) the CMAP can be streamlined to avoid overlap between sections and reduce resource costs, and (4) CD can be better tailored to country specific circumstances while countries progress their climate change related work at a different pace.

**29. CMAP could usefully be streamlined around the Fund's comparative advantage.** These are: (1) mitigation and distributional impact analyses, (2) PFM to assess the institutional capacities and readiness for climate actions, and (3) the macro-fiscal implications of climate policies to build resilience. The topics would ideally be backed by dedicated analytical tools. Other sections that cover areas not backed by analytical tools or in which the Fund has limited expertise, can be shortened and absorbed into the main sections. Structuring the overall assessment based on three core areas and integrating other areas, including adaptation and risk management, offers an opportunity to reduce overlap and highlight interlinkages without losing substance.

**30. Some countries would benefit from more focused topical CD rather than a comprehensive CMAP.** Targeted support in key areas could be offered on a stand-alone basis. The support could be also delivered in a sequenced approach, from assessing the situation, developing a reform program, and guiding throughout its implementation. Depending on country-specific needs,

various climate change related topics could be covered in consecutive missions, in line with the recipient country's priorities and capacity, as in the case with other CD products. For instance, RST pilot countries generally were interested mostly in CD in PFM (e.g., C-PIMA) rather than a comprehensive CMAP to inform climate-related reform measures.

**31. A combination of a streamlined CMAP and offering targeted CD would enable a more agile and flexible delivery of climate CD.** A streamlined CMAP would require less internal coordination and could be delivered with a smaller team and more quickly, making it more efficient and less resource intensive. Given that targeted CD requires less resources than comprehensive diagnostics like the CMAP, more countries could benefit from focused CD activities within the same resource envelope.

## COORDINATION WITH PARTNERS AND ACROSS THE FUND

*Collaboration with the World Bank and other institutions as well as across the Fund has been at the heart of CMAP. Efforts are underway to further improve this collaboration, which will also facilitate more broadly the provision of Fund CD.*

### A. Coordination with the World Bank

**32. Coordination between the WB and the Fund is essential to design a useful climate CD product for our membership.** Close collaboration between two institutions was a fixture in the CCPA. This needs to continue, as information sharing and country selection for each institution's product are critical to maximize synergies and ensure consistent advice between CMAP and CCDR. To this end, Bank and Fund staffs have agreed:

- **Country selection.** Each institution will keep the other updated on its planned country coverage and timelines, coordinated via point persons. To minimize overlap, CCDRs and CMAPs aim not to cover the same countries at the same time (e.g., within 2 years). The allocation of countries between products is discussed on a case-by-case basis, accounting for factors such as the comparative advantage of each institution, ability to deliver promptly, preferences of the country, and, if there has been a previous CMAP/CCDR, length of time elapsed.
- **Information sharing and review.** CCDR teams are expected to engage with the respective Fund country teams, especially on macro-fiscal discussions and DSA projections. CMAP teams are expected to engage with the respective WB country teams and WB global practices/themes, especially on sectoral studies and estimates of expenditure needs. Other relevant data and information would be shared as requested (with due respect for confidentiality). Drafts of preparatory notes (e.g., pre-mission briefs for CMAPs, scoping notes for CCDRs) and near-final reports should be shared, at the earliest stage possible, with at least one week provided for comments, and best efforts made to address the comments. Opportunities for WB staff to

participate in CMAPs, and IMF staff to participate in CCDRs, could be agreed upon at the country-level as appropriate.

**33. Staff are further improving information sharing.** Staff surveyed Fund mission chiefs for the FY22 CCDRs and CMAP pilots. Fund and WB teams received the CCDR and CMAP drafts from their counterparts at some stage for comments and some technical meetings were held. IMF Area Department teams were invited systematically to all review meetings at the WB, though the actual degree of engagement varied across country teams. Most of the surveyed Fund teams plan to use the respective CCDRs in their country work, especially if considering an RST-supported program. That said, macro-fiscal frameworks in CCDRs were mostly not shared between teams, and there has been no or very little direct Fund contributions to draft CCDR reports and invites to meetings with authorities. Greater proactive and early engagement at the country team level will be key for successful coordination and outcomes among the two products.

## B. Coordination with other Institutions

**34. The CMAP pilots also tested collaboration and coordination with other partners.** These institutions can help staff better understand country-specific circumstances and climate-related policy issues from their regional expertise and contacts.

**35. For Samoa, the team interacted with several IFIs including the Asian Development Bank (ADB).** The mission team had an introductory meeting and shared draft papers for comments with the regional office of the ADB, similar to its interaction with the World Bank regional office. CD experts from PFTAC also shed light on the regional perspective and country-specific issues, which was useful in the absence of a resident representative. The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) provided information on Samoa's disaster risk assessment and financing and insurance instruments (an area that had been covered by the Bank in the CCPA).

**36. For Madagascar, experts from the WRI contributed to the mission.** They provided sectoral inputs for the adaptation section. Some of the inputs, however, could not be fully integrated into the final report because of the structure of the CMAP and different analytical approaches between two institutions.

**37. Collaboration with other institutions was useful particularly to obtain data and understand context.** As macro-fiscal modeling, the core of the CMAP, relies on country-specific data on climate risks and adaptation priorities, local and regional knowledge was essential. However, collaboration came with challenges and costs as partners often had different expected timelines and analytical priorities.

**38. Staff will further strengthen collaboration with others as the CMAP matures.** CMAP teams, for example, could more clearly guide partners as to the issues and inputs that would best fit. And, as the CMAP becomes more standardized, we also expect to get more clarity on which institution could usefully complement in the respective area of expertise.



## C. Coordination Across Fund Departments

- 39. The CMAP is one of several climate CD products the Fund has been developing concurrently.** Functional departments have been scaling up CD to support climate actions in member countries in their respective areas, including in public finance, financial sector resilience, macro-climate modeling, legal systems and anti-corruption, and data collection and dissemination (Box 3). Some of these CD activities have synergies, requiring interdepartmental coordination.
- 40. Close collaboration with Area Departments is a centerpiece of the CMAP, which ensures strong integration between surveillance/programs and CD.** APD and AFR were both involved in the macro-fiscal section of the CMAP pilot missions, and the CMAP informed subsequent APD and AFR surveillance and program work.
- 41. Collaboration between FAD and RES enriched macro-fiscal analysis.** A dedicated economist specialized in modeling participated in the macro-fiscal modeling section by providing simulations for both pilots. The pilots also provided opportunities to operationalize the DIGNAD tool for a user-friendly platform.<sup>7</sup>
- 42. Coverage of climate finance and collaboration with MCM was not piloted.** Given the CMAP focus on macro-fiscal issues, climate finance issues were not extensively covered. The CMAP has some coverage of climate finance limited to disaster risk management and estimation of financing gaps in the macro-fiscal section. Fuller coverage of climate finance issues would require substantially broadening the CMAP and involving MCM, both of which would move away from the direction of streamlining the CMAP. That said, the inter-departmental Task Force on Catalyzing Private Financing through the RSF led by MCM could explore the merits of closer collaboration through the CMAP.
- 43. Coordination with other departments will continue on climate-related data work, analytical tools, and legal reform and anti-corruption measures.** These include collaboration to leverage STA's Climate Change Indicators Dashboard, ICD's ongoing modeling work and new climate related TA initiatives, as well as LEG work on climate-related financial and fiscal law reform measures and on assessing and mitigating corruption vulnerabilities relevant to effective implementation of adaptation and mitigation policies (see Box 3).

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<sup>7</sup> This version of the DIGNAD model uses an excel interface and was rolled out in December 2022 ([www.imf.org/en/Topics/sovereign-debt/dignar-19-toolkit](http://www.imf.org/en/Topics/sovereign-debt/dignar-19-toolkit)).



### Box 3. Fund Climate-Related Capacity Development

The Fund has been scaling up CD activities to assist its members in addressing economic challenges posed by climate change and natural disasters in macroeconomic policy frameworks.

*FAD* helps countries design and implement fiscal policies to support their climate mitigation and adaptation strategies in: (i) climate mitigation strategies related to carbon pricing and other instruments and energy pricing reform; (ii) climate-friendly institutional building in PFM as well as in public investment, (iii) analysis of the macro-fiscal impact of climate adaptation policies and the identification of fiscal risks from climate change.

*MCM* has provided CD on the impact of climate change on the financial sector, as well as developing tools for the analysis of climate risk data. To integrate in-depth climate-related risk assessments into the Fund's work, the Financial Sector Assessment Program (FSAP) has incorporated climate risk analysis on a pilot basis by including stress testing to climate change]. Overall, the FSAP is expected to strengthen the Fund's CD offering on managing climate risks in the financial sector and support vulnerable low- and middle-income countries to access private and public funds to finance climate-related adaptation and transition. In addition to the FSAP, *MCM* has been providing analysis on the design of innovative ways for the government to attract private capital, including on sovereign climate finance instruments (e.g., sustainability-linked bonds), to help formulate RSF reform measures on climate finance.

*RES* developed the Debt, Investment, Growth and Natural Disaster (DIGNAD) model, which they piloted in the CMAP missions with *FAD* and recently launched the user-friendly template for general use. *RES* has assisted two RST pilots (Rwanda and Bangladesh). *RES* also contributes to climate CD by providing modeling support to pilot climate FSAPs, using the global CGE model IMF-ENV.

The *Statistics Department (STA)* outlined its strategy to assist countries with developing and disseminating environmental and climate change statistics in an *Environment and Climate Change Statistics Capacity Development Program* in September 2022. Under the sponsorship of Swiss State Secretariat for Economic Affairs (SECO), *STA* developed a proposal to assist several countries to develop a range of statistical products including estimates of GHG emissions by sector, environmental expenditure accounts, and physical and transition risk indicators.

The *Institute for Capacity Development (ICD)* provides training on Macroeconomics of Climate Change to country authorities through the IMF Regional Capacity Development Center (RCDCs). In collaboration with other departments, *ICD* offers training to IMF staff and has produced online modules using edX (a massive open online course provider created by Harvard and MIT). *ICD* is incorporating climate into its macroeconomic frameworks TA practice as well as drawing on existing IMF models (e.g., DIGNAD). *ICD* will continue to draw on its CD practice to help Area Departments in applying the macro model jointly developed by *ICD* and *WHD* that takes explicit account of the stochastic nature of natural disasters.

The *Legal Department (LEG)* provides climate CD to inform financial and fiscal law reform measures, including by underpinning lending from the RST and training on climate issues in the context of broader programs on financial law and PFM law. *LEG* also provides CD in the areas of governance and anti-corruption that overlap with environmental issues, and is strengthening work on: (1) confronting corruption in the enforcement of existing regulations and standards relating to environmental protection and natural resource management, where macro-relevant; (2) identifying and mitigating corruption vulnerabilities associated with policies to mitigate climate change and increase resilience to the impact of climate change; and (3) supporting private sector investment in climate change by mitigating concerns relating to corruption and rule of law.

## THREE MAIN AREAS OF FISCAL CLIMATE CD

*The CMAP includes three main areas of climate CD products developed over the past few years: mitigation policy analysis, climate-focused PFM, and the macro-fiscal impacts. These tools have been developed and piloted in a number of countries, with varying degrees of product maturity. These CD products can be provided as a part of the CMAP and/or individually as stand-alone CD.*

### A. Climate Mitigation

**44. Fiscal policy to mitigate climate change has been a main pillar of the Fund’s climate policy advice.** The Fiscal Monitor (October 2019) discussed that carbon taxes are one of the most powerful and efficient mitigation measures to reduce fossil fuel CO<sub>2</sub> emissions, using CPAT. The CPAT can also analyze other mitigation measures such as emission trading systems (ETS), feebates and regulations.<sup>8</sup> The CPAT has been developed jointly with the World Bank and refined over time.<sup>9</sup>

**45. The CPAT assesses the distributional impact of mitigation policies, in addition to evaluating economy-wide impacts.** It estimates the effects of proposed mitigation policies on the purchasing power of households at each income decile and the increase in costs for firms at the sectoral level. Revenue recycling to contribute to equity and competitiveness objectives can be simulated and analyzed to inform complementary policies to carbon pricing.

**46. The CPAT has been used to inform country teams and authorities on environmental taxation and fossil fuel subsidy removal as well as energy pricing and tax reform.** It has supported analyses of climate policies and informed tax policy CD. The CPAT is also being used to inform program conditionalities and assessing macroeconomic risks related to energy pricing, though to a lesser extent (Box 4). And it is used to inform policy advice on international coordination, including an international carbon price floor and carbon border adjustment.<sup>10</sup>

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<sup>8</sup> CPAT is a spreadsheet model that projects fossil and non-fossil energy use at the country and sector-level to evaluate climate, local environmental, macroeconomic, and distributional impacts of various carbon pricing scenarios. For example, the tool allows staff and government officials to assess the stringency and coverage of carbon pricing policies needed to achieve emissions reduction targets; the impact of these policies on GDP and government revenue, as well as on household consumption across the income distribution; and the extent to which various revenue recycling methods (e.g., reducing labor taxes, targeted transfers, public investment) can offset the impact of carbon pricing on vulnerable households and firms. In all, CPAT provides a comprehensive set of indicators to assess the effectiveness of fiscal policy-driven climate mitigation efforts.

<sup>9</sup> CPAT has been developed jointly by IMF and World Bank staff and evolved from an earlier IMF tool used, for example, in IMF (2019a and b). For descriptions of the model and its parameterization, see IMF (2019b) Appendix III, and the Appendix of Black and others (2021).

<sup>10</sup> For example, see Parry and others (2016), Parry and others (2021a), and Black and others (2021a, 2021b).

**Box 4. Illustration of CPAT use in CD, Surveillance, and Analytical work**

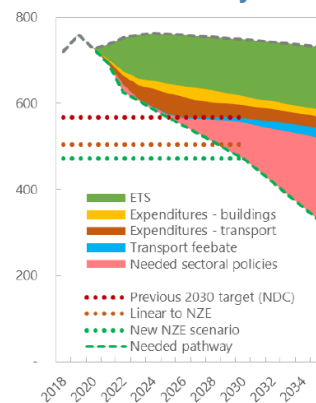
CPAT has been an integral part of FAD’s CD, surveillance, and analytical work on climate mitigation. Since the beginning of FY 2021, CPAT has been used to support work on five CD missions (including the Samoa and Madagascar CMAPs), 14 Article IVs, and over 10 analytical projects. CPAT has generally been used to assess the adequacy of existing mitigation policies and evaluate reform options so that countries achieve revenue and mitigation targets while protecting vulnerable households.

*CD, Korea:* In 2021, FAD provided CD to the Korean authorities on policy options to reduce emissions. As part of the advice, the mission evaluated three separate packages of economy-wide and sector-level policies. 3 illustrates the emissions trajectory under one of the evaluated packages, which included a more ambitious emissions trading scheme (ETS), expenditure-based building and transportation policies, and a transportation feebate—the pink section shows the gap between the emissions’ pathway under Korea’s net zero pledge and that of the policy option (i.e., the ‘policy gap’). The assessment also estimated the policy package’s expected impact on growth, fiscal balances, air pollution, and more.

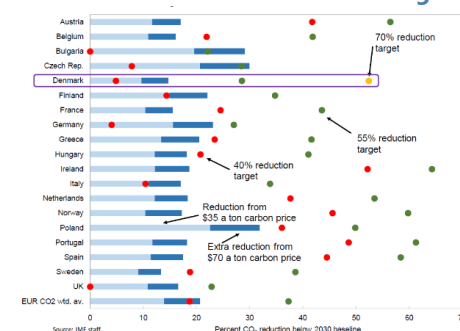
*Surveillance, Denmark:* In 2020, staff reviewed Denmark’s climate mitigation policies (Batini and others, 2020) as part of the AIV consultation. One conclusion from CPAT was that an economy-wide carbon tax of USD 70 per ton is not sufficient to meet Denmark’s emissions reduction target, with similar results shown for other European countries (Figure 4). A policy implication is that reinforcing sectoral policies is necessary, in addition to more ambitious uniform carbon pricing. Denmark has since extended its existing carbon tax to additional sectors and increased its rate.

*Analytical work, Getting on Track to Net Zero:* In 2022, IMF staff published a [Staff Climate Note](#) on the gap between current global pledges and policies and those needed to achieve mitigation targets (Black and others, 2022). CPAT was used throughout the analysis, with Figure 5 showing the emissions reductions under various global carbon pricing scenarios. The scenarios partly build off the IMF’s proposal for an international carbon price floor and differentiated pricing depending on a country’s level of development ([Parry and others, 2021](#)).

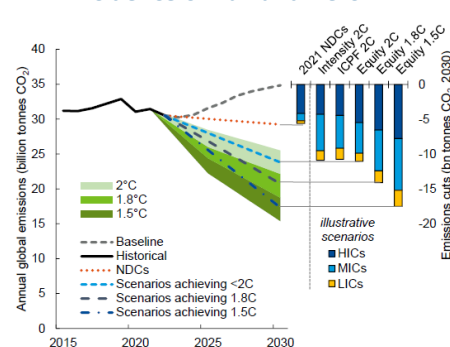
**Assessment of a Policy Package**



**Emissions Reduction relative to Targets**



**Incidence of Tax and Reform**



**47. There are also other CD tools and data informing the mitigation section of the CMAP.**

FAD’s long-standing work on fossil fuel subsidies serves both as a key input for CPAT and as a standalone tool to guide carbon pricing. The Fossil Fuel Subsidies dataset provides country, sector,

and fuel-level estimates of explicit (i.e., undercharging for supply costs, which results in direct fiscal transfers) and implicit subsidies (i.e., undercharging for environmental costs and general consumption taxes).<sup>11</sup> These estimates are used to calculate the economically efficient fuel prices (e.g., the price that considers both the direct financial cost and environmental externalities) to assess the adequacy of existing policies and guide granular energy price reform. This tool covers seven types of fuels at the sectoral level for over 180 countries, and is commonly cited by government officials, researchers, and news outlets.

**48. FAD’s expertise and work on fiscal issues for extractive industries also complement carbon pricing policy advice for resource-rich countries.** CCPA and CMAP pilots have been conducted in non-fossil fuel producers to date. If CMAPs are extended to cover fossil fuel countries, the Fiscal Analysis of Resource Industries (FARI) analytical tool could be used to inform the analysis of mitigation and transition-related policies as FARI provides fiscal regime design advice for extractive industries (i.e., oil, gas, and mining). FARI can also be used to model a per-unit charge on greenhouse gas emissions during the extraction process—such a tax could cost-effectively incentivize reductions in the emissions-intensity of petroleum and mineral production.

**49. Reflecting an increase in demand, provision of FAD’s climate mitigation-focused CD, analytical work and country team support is growing.** The tax, expenditure, and new climate policy divisions work together to help design comprehensive, evidence-based reform pathways that support authorities’ efforts to reduce emissions and mobilize domestic revenue, while supporting vulnerable households and addressing export competitiveness concerns. CD demand on the topic has grown as climate mitigation efforts and fiscal pressures increase, and as the RST programs come online. Similarly, FAD has increased the frequency, scope, and prominence of mitigation-focused analytical work.<sup>12</sup> Increased collaboration between country teams and FAD is part of the Fund’s efforts to mainstream climate change and has been operationalized through direct (e.g., participation of FAD fiscal economists in country teams) and indirect (e.g., through review of Policy Notes and Staff Reports) FAD support.

## B. Climate PFM

**50. CD support in PFM and public investment management (PIM) has been extended to include climate considerations.** Fiscal policy and national planning are key to achieving countries’ climate objectives and should be supported by sound PFM processes and frameworks to ensure their effective design and implementation. Climate change and natural disasters in turn have

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<sup>11</sup> The Fossil Fuel Subsidy methodology and analysis is described in Parry and others (2021a), and the spreadsheet can be found at <https://www.imf.org/-/media/Files/Topics/Environment/energy-subsidies/fuel-subsidies-template-2022.ashx>.

<sup>12</sup> Examples include the IMF’s proposal on an International Carbon Price Floor (see Parry and others, 2021c), assessments of climate mitigation ambition and policy gaps (see Black and others, 2021a), and advice on fossil fuel subsidies and other policies to reduce emissions (see Parry and others, 2021b and 2022). This work has been cited by prominent policymakers and researchers working on climate mitigation issues.

significant implications on PIM—a core element of the PFM system. FAD developed new CD products: Climate PIMA (C-PIMA) and Green PFM, which integrate climate change considerations into PIM and PFM practices, respectively. The CMAP incorporates elements of both products in the section of national planning (Figure 6).<sup>13</sup>

**51. The C-PIMA provides in-depth analysis of institutional changes to make infrastructure investment green and resilient.** It adds a climate lens to the PIMA framework and assesses countries' institutional readiness and gaps in PIM against the backdrop of climate change challenges. It also helps governments identify potential improvements in public investment institutions and processes to build low-carbon and climate-resilient infrastructure. The C-PIMA has been carried out in 16 member countries, with a rapidly growing pipeline. A simplified version of the C-PIMA was used as part of the Madagascar and Samoa CMAP pilots.<sup>14</sup>

**52. The Green PFM framework provides a holistic assessment of a country's climate-responsive PFM systems with a particular focus on the budget cycle.** It aims at adapting the broader PFM practices to support climate-sensitive policies in key stages of the budget cycle, as well as ensuring transparency of public finances and coordination with state-owned enterprises and subnational governments. A how-to note has been developed to provide detailed guidance on the design and implementation of Green PFM reforms, and stand-alone CD on the topic is expected to be rolled out starting in FY23.<sup>15</sup>

**53. Demand for climate PFM is rising rapidly with the operationalization of the RST.** Several RSF pilot countries (e.g., Bangladesh, Costa Rica, and Rwanda) had requested CD in climate PFM to inform climate-related program conditionalities prior to their formal program requests. On average, PFM-related reform measures constitute about half of the number of RSF reform measures across the above three RST pilots. Increasingly, potential RST countries are relying on the C-PIMA to support the design of RST reform measures. Targeted follow-up CD related to C-PIMA/Green PFM will also be essential for RST countries during the implementation phase of reform measures.<sup>16</sup>

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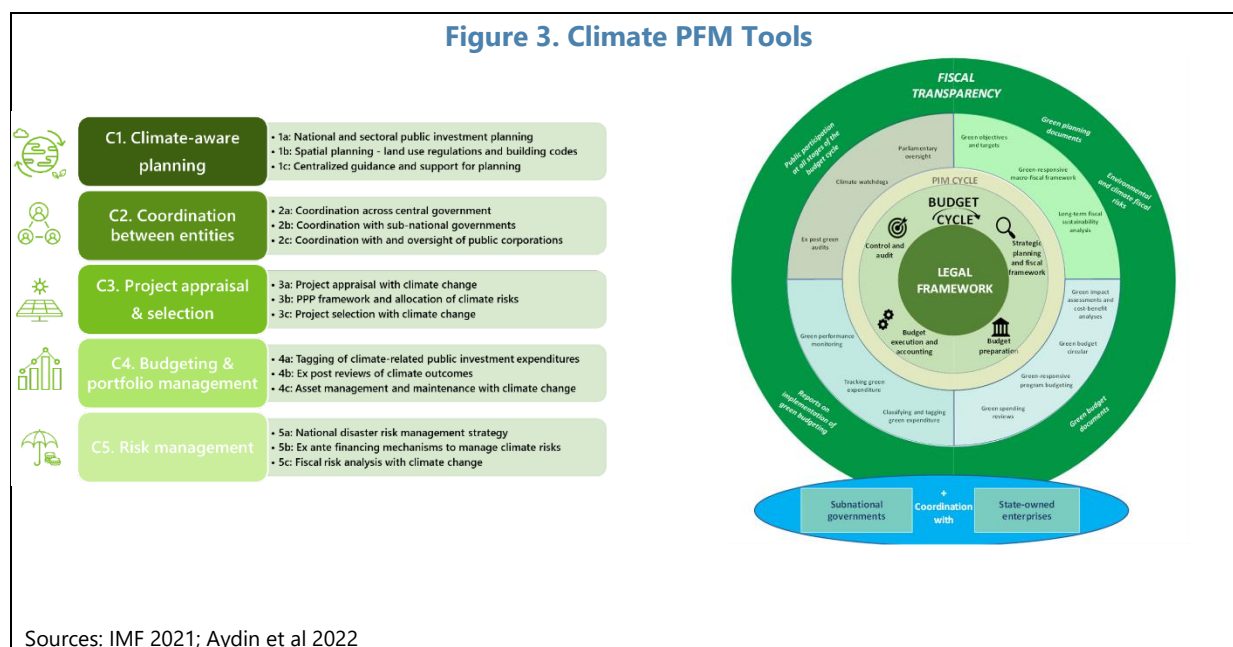
<sup>13</sup> IMF. 2021. "Strengthening Infrastructure Governance for Climate-Sensitive Public Investment." IMF Policy Paper, Washington, DC.; and Gonguet, F., C. Wendling, O. Aydin, and B. Battersby. 2021. "Climate-Sensitive Management of Public Finances—"Green PFM." IMF Staff Climate Note 2021/002, International Monetary Fund, Washington, DC.

<sup>14</sup> A simplified C-PIMA refers to a standalone C-PIMA assessment which is not as comprehensive as a full C-PIMA. A full C-PIMA is typically combined with a PIMA to leverage and draw synergies between the two components, and involves in-depth discussion and validation of the assessment with the authorities.

<sup>15</sup> Aydin O., B. Battersby, F. Gonguet, C. Wendling, J. Charaoui, M. Petrie, and S. Suphachalasai 2022. How-To Note: How to Make the Management of Public Finances Climate-Sensitive—Green PFM, IMF, Washington DC.

<sup>16</sup> Some examples of C-PIMA recommendations that have been formulated as RST reform measures include (i) integrating climate elements in project appraisal and selection processes, (ii) developing a climate budget tagging system, (iii) including climate-related risks in macroeconomic and/or fiscal risk analysis, (iv) incorporating climate-related risks in public-private partnership (PPP) framework, (v) establishing a public asset register and management practices that reflect climate risks, (vi) developing a disaster risk financing strategy, and (vii) ensuring that spatial planning and building codes integrate climate adaptation and mitigation concerns.

Figure 3. Climate PFM Tools



Sources: IMF 2021; Aydin et al 2022

## C. Macro-fiscal Impact and Adaptation

**54. The CMAP is distinct from other climate assessments in its focus on a macro-fiscal analysis of climate change policies.** The authorities in pilot countries considered the analysis of macro-fiscal implications of climate policy as one of the most valuable contributions of the CMAP. The analysis assesses whether the country has adequate climate financing, based on a rough costing of mitigation and adaptation plans drawn from existing project estimates and the SDG costing method, and whether financing plans are consistent with debt sustainability.

**55. Economic analysis on the macro-fiscal impacts of climate change and adaptation needs is still in an early stage, though it has become a priority for policy makers.** Uncertainty surrounding the path of climate change and the myriad ways in which climate change can affect economic activities make it challenging to design a standard and simple toolkit for CD and surveillance. Such analysis will remain an active workstream across the Fund for the foreseeable future.

**56. FAD is working to expand the toolkits for analyzing macro-fiscal impacts of climate change and adaptation policies.** The DIGNAD model is suitable to analyze the impact of acute natural disaster shocks. It is less equipped to analyze the impact of slow-moving climate change such as sea level rise and average temperature increase and does not, in and of itself, allow for a quantification of adaptation investments needs. FAD tools under development in this regard include: (1) the SDG-climate macro framework, which seeks to quantify the growth and fiscal impacts of weather shocks, slow-moving climate change, and investments in resilient capital infrastructure,



health, and education via different financing sources; and (2) the climate change fiscal risk assessment tool that examines mid- to long-term fiscal impacts of climate change as well as other discrete climate change-related fiscal risks (e.g., stemming from energy transitions). The climate change fiscal risk tool has been conducted in a few countries on a pilot basis,<sup>17</sup> while the SDG-climate macro framework is being developed.

**57. Streamlined CMAPs could draw more widely from the new tools under development.**

Since countries are faced with different climate hazards (e.g., natural disasters vs. slow moving climate change) and different policy questions, different analytical tools can be applied flexibly in the CMAP rather than locking it into using a single tool. As a standalone macro-fiscal CD product, a simple and easy-to-apply tool is preferred to more sophisticated methods.

**58. More generally, macro-fiscal analysis of climate change should follow some key principles discussed in a series of recent Staff Climate Notes:<sup>18</sup>**

- It should consider the effect of and adaptation to both *weather shocks and slow-moving climate change*. Weather shocks, including extreme events such as severe droughts or tropical cyclones, are part of the natural variability of climate in all countries. Global warming affects the intensity and distribution of these shocks, but change is slow over time. Separating impacts from present natural variability of weather and changes in the long-term expected frequency and intensity of weather shocks is important to provide a full picture of short- and long-term macro-fiscal impacts and challenges.
- Adaptation to climate change should be defined as the *autonomous or policy-driven response* intended to minimize climate change damages. The benefit of adaptation investments is equal to the avoided cost of climate damages including all externalities, secondary market effects, and investment multipliers. Although the optimal response depends on the policy maker's priorities, a well-founded cost-benefit analysis, complemented by the analysis of distributional effects, is an effective tool to prioritize adaptation programs alongside other development programs and promote an efficient and just transition to a changing climate. CMAP should continue to stress the importance of investing in cost-effective adaptation and assess adaptation investment as part of a holistic development strategy with the aim of maximizing long-term sustainable growth.

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<sup>17</sup> See [“Georgia: Technical Assistance Report—Updating the Balance Sheet and Quantifying Fiscal Risks from Climate Change” \(May 2022\)](#) and [“Armenia: Technical Assistance Report—Quantifying Fiscal Risks from Climate Change” \(October 2022\)](#).”

<sup>18</sup> Bellon and Massetti, 2022a, 2022b and Aligishiev, Bellon and Massetti, 2022b.

## OPTIONS AND WAY FORWARD FOR CMAPS

*The way forward is to deliver a streamlined CMAP only in exceptional cases while expanding targeted climate CD in mitigation, PFM, and macro-fiscal areas. Climate-vulnerable members would be prioritized for the streamlined CMAP and targeted climate CD, guided by country demand. Countries would be considered for the streamlined CMAP when combined with an RST request but not eligible for a CCDR or other diagnostics, or such assessments are outdated. Close coordination with the World Bank remains key to avoid overlap and ensure consistency.*

### A. Options with Pros/Cons

***Option 1. Streamline CMAPs and deliver them only for exceptional cases (1-2 CMAPs a year) and expand targeted climate CD in the three areas of the Fund's comparative strength***

**59. While limiting a streamlined CMAP for exceptional cases, targeted CD would focus on the three main areas of climate fiscal CD.** With the widespread and fast rollout of the CCDRs, many countries have already received or will shortly receive a comprehensive assessment of their climate change related policies and reform options. At the same time, flexible climate change-related CD is required to support the Fund's RST promptly to provide country specific recommendations. Thus, it would be most efficient if the Fund's CD complements CCDRs and addresses the demand related to the RST. Complementing CCDRs would mean providing comprehensive assessments only for countries that have not (recently) received a CCDR. As shown by the CMAP pilots, country authorities and AD teams viewed climate CD in the macro-fiscal area most valuable. To address such needs, toolkits in macro-fiscal climate CD, including the SDG-climate financing framework, are being developed.

- *Pros:* This ensures complementarity with other CD providers, including the WB. The Fund can serve more member countries within the same resource envelope more efficiently and tailored to country specific circumstances, especially in the context of the RST. Also, lessons learned from such broader engagement could help refine faster our in-house climate expertise. The streamlined CMAP is available for countries that are considering a request for financing under the RST but do not have a recent comprehensive climate diagnostic (i.e., not eligible for a CCDR or a CCDR is outdated).
- *Cons:* The CMAP as a Fund diagnostic CD product covering a comprehensive range of climate change issues would be less prominent. Branding and marketing a product that is delivered on a small scale will be difficult.

***Option 2. Streamline CMAPs and scale up delivery (3-5 CMAPs a year)***

**60. The Fund's Climate Strategy envisaged, subject to this review, scaling up CMAPs to 3-5 a year over the medium run as expertise is being built and more resources become available.**



However, the cost for a CMAP pilot is significantly higher than that of traditional CD. At the same time, the RST has led to surging, and urgent, demand for targeted (especially PFM) climate CD.

- *Pros:* CMAP could be developed into and promoted as a Fund flagship comprehensive CD tool assisting countries with climate-change related issues. A streamlined CMAP version could serve more countries than the current CMAP template.
- *Cons:* In the context of the RST, countries and AD country teams are in need for focused policy recommendations to inform climate-related program reforms. CMAPs, even when streamlined, will require significantly more resources than focused CD, and take more time and resources to deliver. Within a given resource envelope, scaling up CMAPs rapidly would crowd out resources for more focused CD urgently needed for the RST-supported programs.

### **Option 3. Discontinue CMAPs and only provide targeted climate CD**

**61. The Fund could discontinue CMAPs, replacing them entirely with more targeted CD, relying on other institutions for climate diagnostics.** This could be done within the existing CD structure, including PFM, tax policy, and expenditure policy. Such an approach would not cater for a holistic view of looking at climate change policies as part of a comprehensive macroeconomic framework.

- *Pros:* With the same resources, we can serve more countries with targeted climate CD.<sup>19</sup> Climate CD would be mainstreamed into existing CD areas.
- *Cons:* No enhancement of integrating climate further in macroeconomic policy making nor to the existing structure of CD delivery in silos. The Fund would not be able to offer the climate diagnostic to those countries that are requesting an RST but have not received any broad climate policy assessment. This approach could also counter Fund-wide efforts to mainstream climate change holistically into the macro-economic framework.

## **B. Prioritization of Countries for CMAPs**

**62. Country ownership is critical to any further rollout of the CMAP.** As in other Fund's CD, the delivery of CMAP should be demand-driven. The authorities' engagement in the process is particularly important for the CMAP, due to the significant burden on its capacity. There is a vital need for coordination and data provision, in the context of an activity covering such a wide range of topics and working with such a broad group of government entities. In contrast to typical FAD-delivered CD, where the Ministry of Finance is the main counterpart, the CMAP engages several ministries, putting a considerable onus on the Ministry of Finance for its critical role in coordinating

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<sup>19</sup> The estimated resource cost for each area of CD is as follows: mitigation 0.2 FTE, PFM 0.45 FTE, and macro-fiscal 0.55 FTE, whereas a streamlined CMAP would cost 1.1 FTE per mission.

the flow of information and organizing meetings across several ministries. For future CMAPs, staff would ensure there is strong interest from the country authorities and that the authorities are appropriately sensitized of what is expected from their side.

**63. The criteria in selecting the CMAP pilots should apply beyond the pilot phase.** An overlap with CCDRs would be avoided by continuing coordination with the WB (see para 31). Low-income countries that are vulnerable to climate change should continue to be prioritized for receiving CMAPs as would be SDS (Box 5).

#### Box 5. CMAP in the Context of Small Developing States

**The predecessor to the CMAP, the CCPA, was originally developed as a diagnostic tool to help SDS analyze and develop policy responses to the economic impact of climate change.** The CCPA review surveyed country teams and EDs and found that 20 SDS mission chiefs and EDs representing 11 SDS indicated that a CCPA would be useful for their countries. The review thus recommended that CCPAs should continue to cover SDS.

**For Samoa, the main value-added of the CMAP came from the macro-fiscal analysis of climate policies and the advice on PFM issues.** When the CMAP mission took place in October 2021, the Samoan authorities had already received assistance from other donors to advance their work on climate change impact assessments, risk management, and planning for adaptation measures, mostly at the sectoral levels. Thus, the key interest in the CMAP was for the macro-fiscal analysis of climate change risks and policies. In this regard, adding the feedback from adaptation investment to growth and debt sustainability was an important output from the CMAP. The authorities were also interested in understanding how to address weaknesses in the PFM system highlighted in an earlier PEFA assessment and the CMAP responded to this need. While the authorities would have been interested in discussing how to facilitate access to climate funds, the CMAP mission was not well positioned to address this.

**64. CMAPs would be less appropriate for countries that have received CD that covers significant parts of what is also covered under CMAP.** The C-PIMA/PIMA covers, in more detail, issues addressed in the national planning section of the CMAP. Thus, the added value of a full CMAP might be limited for countries that have benefitted from a C-PIMA/PIMA. The same applies for countries that have received a climate fiscal risk assessment. However, additional focused climate CD could complement existing CD efforts and could also be driven by the need for support under an RST-supported program.

### C. Way Forward for CMAPS

**65. On balance, Option 1—providing a streamlined CMAP in exceptional cases while expanding targeted CD—appears the best way forward.** Keeping the option of providing a streamlined CMAP will be useful for those countries that are considering an RST but are not eligible

for CCDRs or other diagnostics, or whose climate assessments are out of date.<sup>20</sup> Also, limiting the use of the CMAP will allow expanding targeted CD for which there is much demand. In particular, such a focused approach will benefit a country when it has a specific issue to address and will provide agile and focused input for Area Department teams, including in their RST related work.

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<sup>20</sup> The exceptional circumstances assume that a country is considering an RSF and is not eligible for CCDRs or will not have one in the near term. For FY24, the estimated number of such countries is 2-3. These criteria will be reviewed and revisited in a few years as a part of the regular CD review (i.e., Quinquennial review of the Fund's capacity development strategy).

## Annex I. Climate Macroeconomic Assessment Program Template

### Climate Change Risks and Impact

1. Overview of climate vulnerability profile of the country. Identify the areas in which mitigation and adaptation efforts are called for. This section also summarizes the potential impact of climate hazards from existing studies.

#### *Impact of climate change risks on the macro framework and long-term outlook*

- 1a. What are the main climate risks faced by the country?
  - country risk profile with probability of occurrence, Table 'Expected climatic developments and consequences'
- 1b. What is the potential impact of climate change on the economy?

### National Strategy for Climate Change

2. Overview of the country's preparedness to adapt and mitigate climate change. Identify strategic gaps in climate change preparedness by comparing with the risk profile in Section 1. Examines if the climate change strategy is consistent with the NDC and if its decarbonization strategies are consistent with the long-term target (or 'net-zero' by mid-century).

#### *The NDC and other national mitigation and adaptation strategies*

- 2a. Does the NDC present a comprehensive and costed strategy for climate change response? – Chart 'Assessment of strategic gaps'
- 2b. Is the climate change strategy consistent with broader development goals (e.g., vs. SDGs)?
- 2c. Is the long-term decarbonization plan consistent with achieving the target of 'net-zero' by midcentury?

### Mitigation Plans

3. Assess the quality and adequacy of mitigation plan (carbon pricing and other) against the targets reflected in NDCs. The section also assesses the impact of mitigation plans.

#### *How does the country plan to meet the emission reduction target?*

- 3a. What are the country's clean energy plans?

#### *Carbon taxation and fuel subsidy policies*

- 3b. Does the country have a carbon pricing regime and is this aligned with its mitigation plans?
- 3c. What other carbon pricing strategies - including feebates and other regulations - can usefully contribute to mitigation?

#### *Expected impact of recommended carbon pricing strategies*

- 3d. What would the tax system look like with recommended carbon pricing?
- 3e. What would be the distributional impact of the recommended changes in mitigation policies? How can changes in taxes, expenditures, and complementary policies help the policy reform contribute to equity objectives?

3f. Are there any other issues to consider that supports the clean energy transition, such as compensation to affected firms and industries, employees, and geographical regions?

*Long-term sectoral decarbonization strategies* (modular—conditional on experts)

3g. Has the country developed long-term infrastructure development plans including infrastructure expansion as well as measures to reduce energy consumption?

3h. Does the country have policy and regulations to decarbonize the agriculture, building, electricity, heating and transport sectors?

3i. Are land use policies adequately aligned with mitigation goals?

## Risk Management

4. Assess if the government identifies and assesses risks and if risk reduction (pre-emptive) measures are in place, including financial buffers, insurance, and contingent plans.

*Risk assessment procedure*

4a. Does the government assess climate-related risks properly? – e.g., fiscal risk statement, identification/quantification of climate-related risks, climate hazard damage/loss reporting system.

*Risk reduction and transfer*

4b. To what extent is the government self-insured against climate risks? – financial buffers, contingency provisions.

4c. To what extent does the economy transfer risks? - other insurance, pooling arrangement

4d. To what extent does the government insure public assets?

*Financial sector preparedness and risks*

4e. How is the financial sector contributing to the climate adaptation effort? E.g., provision of insurance against natural disasters

4f. Does the transition to a low-carbon economy pose major macroeconomic and/or fiscal risks, e.g., fossil fuel dependent sectors and stranded assets?

## Adaptation Plans

5. Review existing policies and alignment with identified climate risks examined in Section 4 (risk management). This section also assesses the quality and adequacy of adaptation plan against the goals reflected in NDCs and NAPs (sectoral details —dependent on availability of expert)

5a. What policies has the country implement to adapt to climate change? – Assessment of policy framework

5b. Has adaptation strategy been adequate? – What is missing?

5c. What public programs (regulations, zoning..) should be strengthened other than investment?

## Macro-Fiscal Implications of Climate Policy

6. Assess mitigation and adaptation needs against available financing and consistency with fiscal and external debt sustainability.

### *Cost of climate-mitigation and adaptation investment*

- 6a. What is the cost of mitigation and adaptation investment? – Table ‘Public investment plans/cost’ (co-benefits of mitigation?)

### *Consistency with climate change policies and financing plans with fiscal and external debt sustainability*

- 6b. Does the country have adequate financing to meet the needs of its climate change strategy? Does this also include financing need to cope with risks from the transition to a low-carbon economy?
- 6c. How would the climate plans affect growth and debt? Are climate change plans consistent with fiscal and external debt sustainability? – Scenario analysis in DIG model
- 6d. How much access does the country have to climate financing?

## National Planning

7. Assesses whether or not there are adequate planning and PFM systems in place to support the implementation of climate policy and if the costing is reflected and translated in the budget accurately

### *Integration of climate change into national planning processes*

- 7a. Have climate-related projects been mainstreamed into national planning?

### *Adequacy of public investment management*

- 7b. Are adequate public investment management systems in place, to ensure climate-related investments will be well-spent? – planning, allocation, and implementation (ideally based on a prior PIMA)

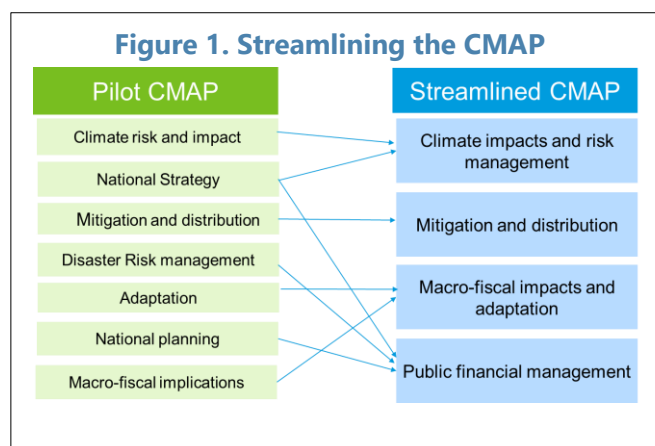
### *Adequacy of public financial management*

- 7c. Are climate change considerations effectively incorporated across all stages of the budget cycle?

## Annex II. Streamlined CMAP

**The revised CMAP template would streamline both its structure and content.** Compared to pilot CMAPs, the streamlined CMAP would be restructured and refocused on areas of the Fund’s expertise. Instead of 7 sections, the revised structure would have an introductory section on climate impacts and risk management, followed by the three broad areas of Fund CD in: mitigation and distributional impact, macro-fiscal and adaptation, and PFM. The content of each section would also be streamlined to complement the CCDD and support the RST operationalization. This will imply marginal cost saving. Specifically, the new template would cover the following:

- **Climate impacts and risk management.** This introductory section would form the basis of the ensuing thematic sections. It would present a profile of the country’s climate change risks and impacts using standardized indices and datasets, followed by a review of national strategy documents such as the country’s NDCs.
- **Mitigation and distribution.** This section would analyze the country’s decarbonization strategy focusing on carbon pricing (using the CPAT as the main tool) and distributional impacts. This would complement the WB CCDD sectoral focus.
- **Macro-fiscal impacts and adaptation.** This section would be an avenue to expand on the use of FAD’s tools on macro-fiscal implications of climate change policies, including on costing, financing, and growth-debt sustainability. Analysis of sector-specific adaptation projects could draw on the WB CCDDs.
- **Public financial management.** A traditional Fund CD area, this section would continue to use the C-PIMA and Green PFM frameworks. To reduce overlap observed under the CMAP pilots, the existing structure of the C-PIMA would subsume relevant parts of disaster risk management and financing, as well as fiscal risk analysis with climate change, and parts of the pilot sections on national strategy and adaptation that pertain to planning processes, resource allocation, and project selection.



## Annex III. Document Risk Self-Assessment

<b>Enterprise Risk Assessment</b>			
Top Risks to the Fund with scaled up CMAPs <b>(option 2)</b> or discontinuing CMAPs <b>(option 3)</b> .	<b>Rank</b>	<b>Risk Name</b>	<b>Risk Description</b>
	#1	Failure to adapt to changing needs of membership	Discontinuing CMAPs could counter Fund-wide climate mainstreaming efforts (Option 3).
	#2	Quality of policy and technical advice	Crowding out focused TA from meeting high demand for CMAPs undermines timely policy advice to inform reform measures in RSTs (Option 2) or lack of support RST requests (Option 3).
	#3	Reputational risks	Reputational risk from lacking a climate diagnostics tool for RSF when no other climate assessment such as CCDR is available (Option 3).
	#4	Reputational risks/ Resource constraint	Launching CMAPs on a full scale can out-pace limited staff capacity, causing staff burnout and/or lower quality of assessments (Option 2).
Top Risks to the Fund with streamlined CMAPs <b>(option 1)</b> .	<b>Rank</b>	<b>Risk Name</b>	<b>Risk Description</b>
	#1	Human capital resource constraints	Challenges coordinating with the World Bank on prioritizing countries could lead to create a large number of exceptional requests for CMAPs.
	#2	Quality of policy and technical advice	Reliance on other non-standard climate diagnostics can impact the quality of Fund policy advice and technical advice.



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