

Annual Review

Title: Macroeconomics Research in Low-Income Countries (MRLIC)		
Programme Value £ (full life): £19,835,983		Review date: July 2022
Programme Code: 202960	AMP start date: Feb 2012	AMP end date: Mar 2025

Summary of Programme Performance (Phase 4)

Year	2020/21	2021/2022	2022/2023
Overall Output Score	A+	A+	A+
Risk Rating	Minor	Minor	Minor

DevTracker Link to Business Case:	https://devtracker.fcdo.gov.uk/projects/GB-1-202960/documents
DevTracker Link to results framework:	https://devtracker.fcdo.gov.uk/projects/GB-1-202960/documents

A. SUMMARY AND OVERVIEW

Description of programme

[Macroeconomic Research in Low Income Countries](#) (MRLIC) is a long-standing partnership between FCDO and the International Monetary Fund (IMF) aiming to promote macroeconomic stability and growth in LICs through improved IMF engagement in those countries. It seeks to achieve this by:

- (i) producing high quality, policy relevant research on macroeconomic issues affecting LICs.
- (ii) ensuring that research products are used by IMF country teams and partner governments.
- (iii) shaping high-level IMF policy positions and strengthening engagement by senior IMF policymakers on LIC issues.
- (iv) widening the field of academics and policymakers working on these issues¹.

Macroeconomic stability is critical for economic development. Low Income Countries (LICs) are particularly vulnerable to shocks leading to economic instability, such as rising debt or high inflation². Instability deters private investment³, reduces growth and can lead to deeper poverty and greater risks of conflict. Though macroeconomic stability is not sufficient to guarantee growth, it is a foundation on which growth is more likely to take off.

MRLIC's research is produced mostly by economists in the IMF Research Department, with some commissioned from external academics. It aims to push the frontier of the global public understanding on macroeconomics in LICs, a typically under-researched field. MRLIC research also aims generate policy and practice change. The partnership with the IMF is the main channel through this research uptake occurs. at the IMF through IMF country missions, training for IMF staff and government officials and engagement with the IMF Board. Linking the IMF Research Department (RES), the Strategy, Policy and Review (SPR) Department and the Institute for Capacity Development (ICD) helps ensure that the research agenda is relevant to the Fund's policy and is disseminated effectively.

Working with the IMF is an efficient route for supporting macroeconomic policy in the countries where FCDO works. It helps the FCDO achieve breadth and leverages the IMF's comparative advantage in providing macroeconomic policy advice and analysis. Figure 1 depicts the coverage of MRLIC and uptake of its flagship Debt-Investment-Growth tools by IMF country teams, showing good coverage across FCDO priority geographies in Sub-Saharan Africa and the Indo-Pacific.

MRLIC started in March 2012. A fourth phase (£5.1m) was approved in 2019. A no-cost programme extension was approved in 2021, reprofiling disbursements and extending the end date to March 2025⁴.

¹ In 2022, the logframe was revised and streamlined. Output 4 was removed, with some indicators subsumed under other Outputs.
² Macroeconomic instability refers to high inflation and large currency fluctuations, or important swings in growth rates. For a brief explainer see [how the IMF Promotes Global Economic Stability](#)
³ [Macroeconomic stability, investment and growth in developing countries - ScienceDirect](#)
⁴ The rephasing extends the end date by two years to 2025, while the total amount kept unchanged at £5.1m for Phase 4.

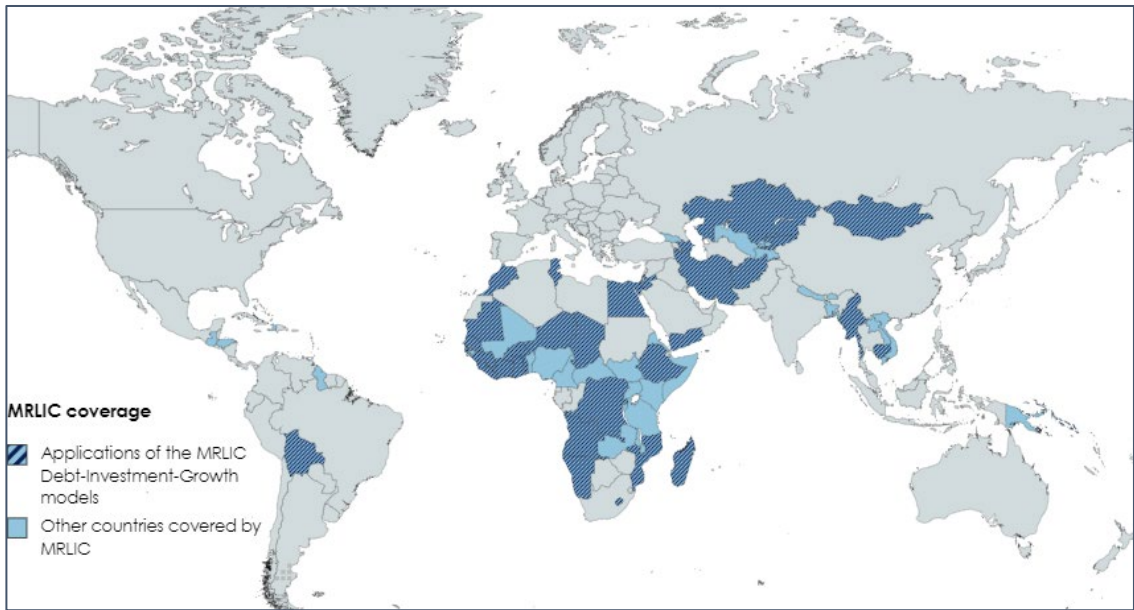
Summary supporting narrative for the overall score in this review

This Annual Review scores an A+. Two outputs score A+ and one scores A. The review covers April 2022 to March 2023. During the reporting period, LICs continued to face acute challenges around debt, inflation, climate shocks and food insecurity. MRLIC supported the IMF’s response to these challenges, as well as shaping IMF positions in new areas. Key achievements include the following:

MRLIC’s new toolkit, the Debt-Investment-Growth-Natural-Disasters (DIGNAD) model helped countries to quantify the impacts of climate shocks and the returns to investing in adaptation.

- The DIGNAD model is a recent, climate-focused, expansion of the MRLIC’s flagship Debt-Investment-Growth (DIG) model. These models help countries navigate difficult trade-offs between investing for growth and climate adaptation while keeping debt sustainable.
- In 22/23, DIGNAD was used by IMF teams in assessments in Madagascar, Rwanda, Bangladesh and Timor Leste. In addition to informing choices around investment and debt, DIGNAD also provides evidence for countries which they use in their requests for climate finance. For instance, DIGNAD modelling [supported the Rwandan government’s case](#) for financing under the IMF’s new [Resilience and Sustainability Trust](#).
- MRLIC provided several training courses to IMF staff and officials on the DIGNAD model and the wider macroeconomics of climate change.
- Over the years, there have been more than 75 applications of the various DIG models by IMF country teams in their macroeconomic assessments, such as [Article IV reports](#). These documents often form the basis for IMF lending support and advice to LIC governments. Figure 1 shows where the models have been used. See Output 2 for more.

Figure 1: Coverage of MRLIC research programme and uptake of DIG models⁵



MRLIC continued to shape the IMF’s analysis and response to food insecurity. MRLIC produced an [IMF Departmental Paper on Climate Change and Food Insecurity in Sub-Saharan Africa](#) which provides advice to SSA governments on appropriate macroeconomic policy response to food insecurity. The Departmental Paper builds on previous MRLIC research on food insecurity. This research workstream has proved highly relevant due to the food crisis. Food insecurity was the top issue raised by LIC governors during the IMF-WB Annual Meetings. MRLIC analysis was featured prominently at

⁵ MRLIC coverage includes countries eligible for the IMF concessional financing under the Poverty Reduction and Growth Trust (PRGT) as of 2013, includes the countries that had graduated since then (e.g., Mongolia) but continued to face similar policy challenges. The aim of MRLIC is to focus on the problems that are of particular relevance to LICs, once an analytic toolkit becomes operationalized or “mainstreamed”,

those meetings, including in the IMF [Managing Director's keynote speech](#) and an [analytical corner presentation](#) summarizing the research. See Output 1 for more.

The MRLIC contributed to two high-profile policy documents that were discussed at the IMF Executive Board: The IMF Strategy for Towards Mainstreaming Gender (see box below) and the 2022 [Macroeconomic Developments and Prospects in LICs](#) report. This focused on debt management and was disseminated widely, including with presentations at the FCDO chaired by the Director of International Finance. See Output 3 for more.

Long-run impacts of research: IMF's Gender Strategy

In June 2022, the IMF launched the [IMF Strategy Toward Mainstreaming Gender](#). The Strategy sets out how the IMF will integrate gender considerations in its surveillance, lending, and capacity development, improve the use of gender disaggregated data in its modelling, and contribute to the global evidence base on the macro-criticality of gender equality. The aim is to support countries foster inclusive economies by supporting them in addressing gender gaps.

This was the culmination of a decade of research on the links between macroeconomics and gender, largely initiated by activities funded by MRLIC. In 2015, the research programme funded a global survey on gender budgeting as well as economic models to assess the gender impacts of macroeconomic policies (with applications in Argentina, Iran, Nigeria, Senegal, and Sierra Leone). Thereafter, the IMF began delivering capacity development on gender budgeting with support from the UK.

MRLIC continues to support the implementation of the Strategy. During the reporting period, it delivered training on the Macroeconomics of Gender Equality, in line with the IMF Gender Mainstreaming Strategy, in particular focusing on fiscal policies to help address gender inequality with a tool designed for LICs.

This strong performance was achieved despite budget uncertainty. In 2021, annual funding from FCDO was reduced from £1.7m to £0.8m in light of the reduction in UK ODA spending. Following recommendations from previous Annual Reviews, the programme was able to secure complementary funding. This included funding from the [COVID-19 Crisis Capacity Development Initiative \(CCCDI\)](#)⁶ for 21/22, and funding from a bilateral donor in 22/23.

While these additional sources of support helped make up the shortfall in funding from FCDO, the uncertainty during the period negatively affected MRLIC's ability to recruit and retain research staff. This uncertain also made it harder to workstreams meant to operate over a long time-horizon, and which therefore require clarity. Finally, while the support from the other bilateral donor was critical in maintaining sufficient funding for some MRLIC activities, the thematic priorities do not fully align with FCDO's strong focus on LICs including those located in Sub-Saharan Africa. See Section F for more.

Major lessons and recommendations for the year ahead

MRLIC continues to produce highly relevant research and tools that help inform countries' policies and shape global understanding on how shocks affect LIC economies. This research has continued to prove its usefulness in the context of the severe macroeconomic shocks currently affecting LICs.

Major lessons:

- **Macroeconomic research for LICs requires championing by the UK.** The fact that the reduction in funding has not been fully compensated by the IMF or other donors suggests that without FCDO support, it is unlikely that this research area would be sufficiently funded. Where some donors have shown interest in the broad research agenda, this has been targeted at cross-cutting challenges such as climate change or Covid-19 or different geographies rather than focusing directly on the economic challenges of LIC governments which is the focus of FCDO.

⁶ CCCDI is a capacity development project to help fulfill the urgent need to support policymaking in low-income countries and low-end emerging market economies, focusing on climate change and inequality under the COVID-19 pandemic. The CCCDI is supported by the following partners: Belgium, Canada, China, Germany, Japan, Korea, Spain, Singapore, and Switzerland. The CCCDI funding for the fiscal year 2022 amounts to USD 1.2 million.

- **MRLIC has shown the advantages to partnering with the IMF.** These includes the clear pathways to shape policy, for instance IMF country assessments (Output 2) or through high-level IMF policy-setting (Output 3), and the reach of the IMF. Over the year, a major strength of the programme has been the strong uptake of the research and toolkits which have become fully embedded within the IMF's analytical practice. This has served to improve how the IMF engages in LICs as well as support macroeconomic analysis and policymaking of LIC government officials.
- **MRLIC has also faced challenges including the limited capacity for external commissioning, difficulty in building a community of researchers, and limited flexibility to scale up funding.** Previous Annual Reviews have documented efforts and difficulties in bringing new researchers. Another issue relates to the little flexibility around the amount of funding that can be provided to the IMF to manage this programme under its current set up. There is a relatively low ceiling on how much funding can be absorbed by the IMF's Research and Strategy departments. While this has not been an issue during a period of budget reduction, in future years this may be more constraining.

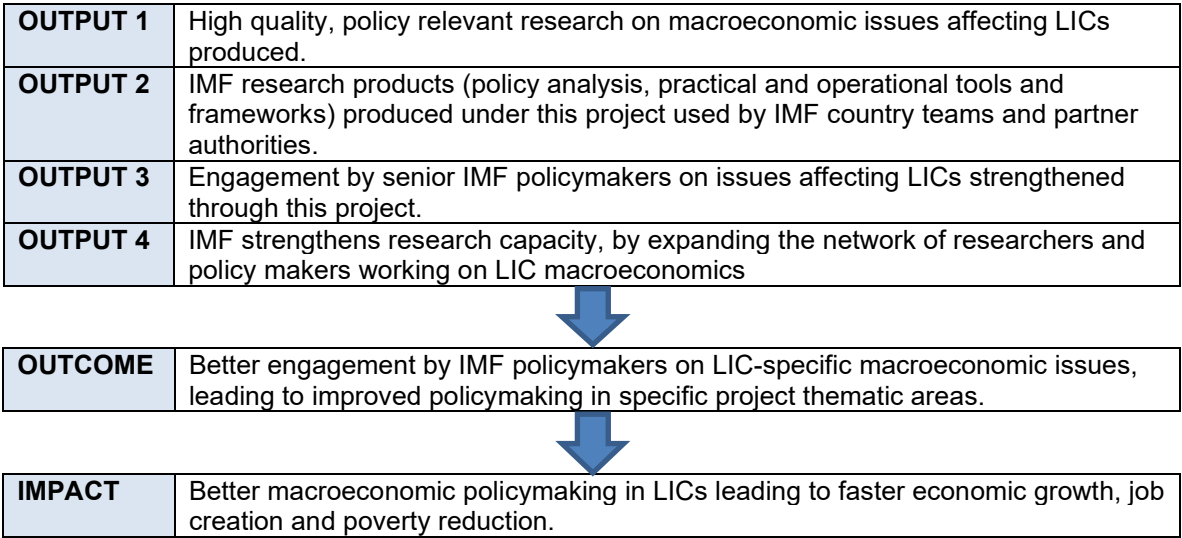
Recommendations:

- As the current phase of the programme ends in March 2025, the FCDO should assess options for delivery of research on macroeconomic issues affecting LICs – appraising wider delivery mechanisms including partners or platforms that could be complementary to the IMF.
- FCDO and MRLIC should convene a workshop of academics and policymakers to review thematic coverage of MRLIC, identifying the key research questions around macroeconomic challenges affecting LICs to shape the research agenda for Phase 5.
- The monitoring framework captures the policy impact of MRLIC research by tracking the inclusion of research and tools into influential policy documents and IMF practices. While these indicators demonstrate the uptake MRLIC research, further work could be done to better assess how this research ultimately support policy changes, including by building on other initiatives within FCDO's Research and Evidence Directorate aiming to measure the impact of research.
- The Theory of Change should be revised to better specify the different pathways of change and expected outcomes and impacts.

B: THEORY OF CHANGE AND PROGRESS TOWARDS OUTCOMES

Summarise the programme’s [theory of change](#), including any changes to outcome and impact indicators from the original business case.

This programme was initiated in 2012. The Theory of Change⁷ is summarised below. Successive Annual Reviews have provided evidence from the output and, to some extent, the outcome stage. However, the Theory of Change assumption that the greater visibility of MRLIC among IMF seniors would increase the probability of IMF funding LIC research itself has not been fully validated. The Theory of Change should be revised.



Describe where the programme is on/off track to contribute to the expected outcomes and impact. What action is planned in the year ahead?

The programme is on track to meet its expected outcome: *Evidence of improved IMF policymaking and integration of LIC-specifics in project thematic areas*. The impact of MRLIC is to improve macroeconomic decision making and outcomes. MRLIC has already demonstrated it can improve decision-making in areas such as public investment and debt sustainability. As described in Section A, some of the thematic areas where the outcome was achieved in 2022/23 include informing and shaping the IMF’s response on debt (through applications of DIG models and the [Macroeconomic Developments and Prospects in LICs](#) report), food insecurity and gender.

Finally, while outcome of the programme is about policy, it is worth noting the growing academic impact of MRLIC’s publications. Citations of MRLIC research papers increased to 4,054 from 3,326 reported last year. This implies an average of 17 citations per article, with 40 articles cited more than 20 times, and shows that MRLIC research is effectively contributing to the global public knowledge of macroeconomic issues in LICs. The academic impact of the programme should be included as an outcome in future iterations of the Theory of Change.

Given that the current phase of MRLIC ends in March 2025, in the year ahead FCDO should launch consultations to review the needs and objectives of macroeconomic research in LICs and appraise options for delivery. This should build on lessons from the MRLIC programme.

Justify whether the programme should continue, based on its own merits and in the context of the wider portfolio.

The current phase of the programme is due to end in March 2025. The programme should continue under current arrangements until that time.

There continues to be clear need for macroeconomic research focused on Low-Income Countries. This is especially true in the current context, in which shocks have exacerbated macroeconomic vulnerabilities of LICs. MRLIC’s exclusive focus on macroeconomics makes it unique

⁷ The original Business Case did not specify a formal Theory of Change (ToC) however the implicit ToC for the program is summarised in its logical framework and subsequent Annual Reviews.

within the portfolio of the Economic Growth Research Team (EGRT) and FCDO's Research and Evidence Directorate. This adds value to the remainder of the portfolio which examines largely microeconomic issues. MRLIC continues to fill a clear gap in the academic world, where few economists produce good quality, policy-relevant macroeconomic research for LICs.

Macroeconomic research for LICs is an underfunded area that requires championing by the UK. Very little academic macroeconomic research focuses on LICs. The fact that the reduction in funding has not been fully compensated suggests that without FCDO support, it is unlikely that this research area would be sufficiently funded. Where a donor has shown interest in the broad research agenda, this has been targeted at cross-cutting challenges such as climate change or Covid-19, or different geographies (e.g., Asia) rather than focusing on the economic challenges most directly pertinent to LIC governments.

MRLIC supports the FCDO's International Development Strategy goal to boost investment. Low Income Countries (LICs) are particularly vulnerable to shocks leading to economic instability, such as high inflation or debt. Macroeconomic instability deters private investment⁸. As a result, efforts to strengthen macroeconomic stability are complementary to FCDO aims to promote investment for instance through British International Investment (BII).

Delivering research through the IMF provides an efficient channel for policy impact. MRLIC research supports evidence-based macroeconomic policymaking by shaping IMF country assessments and advice (Output 2) or through the IMF Board, which influences wider Fund policy (Output 3). Generally, there has been a strong uptake of MRLIC research and toolkits in the IMF. This has served to improve how the IMF engages in LICs.

The partnership with the IMF offers strategic value to the UK, with support from key stakeholders across HMG. In particular, the UK Delegation to the IMF (UKDEL), HM Treasury (HMT) and the FCDO's International Finance Institutions department (IFID) are supportive of the programme, which helps demonstrate the UK's leading role in supporting LICs. The MRLIC research programme helps deliver credibility and strengthened relationships within the IMF and Board, that UKDEL, HMT and IFID are able to use to help advance HMG goals at the Fund.

Finally, MRLIC continues to perform well, achieving output and outcome targets, and has continued to shape IMF policy. MRLIC also has a strong historic performance record, consistently scoring A++ or A+, and therefore consistently delivering value at a relatively low annual cost to the FCDO (£800,000 per year).

⁸ [Macroeconomic stability, investment and growth in developing countries - ScienceDirect](#)

C. DETAILED OUTPUT SCORING

Output Title	High quality, policy relevant research on macroeconomic issues affecting LICs produced.		
Output number:	1	Output Score:	A+
Impact weighting (%):	35%	Weighting revised since last AR?	Yes

Indicator(s)	Milestone(s) for this review	2023
1.1 Number of priority research papers or book chapters produced, on the following research topics: 1) Monetary and exchange rate policies, 2) Public investment, growth, and debt sustainability, 3) Macroeconomic management of natural resources, 4) Macroeconomic policies and income distribution, 5) Financial deepening for macroeconomic stability and sustained growth, 6) Growth through diversification, 7) Gender and macroeconomics, 8) Capital flows.	By March 2023 H (176 papers) M (172 papers) L (168 papers)	178 cumulative (13 in past year) Exceeded high target
1.2 Number of research papers accepted for publication in appropriate high-quality peer-reviewed journals	By March 2023: H (105 papers) M (103 papers) L (101 paper)	105 cumulative (7 in past year) Met high target

Briefly describe the output’s activities and provide supporting narrative for the score.

This output scores A+. Performance on the two indicators met or exceeded the high target. The target was revised downwards to account for the impacts of the budget reduction and uncertainty on hiring and retention of research staff. The MRLIC team was able to secure funding from another donor in 22/23 – security external funding was a recommendation in previous Annual Reviews. This helped mitigate the reduction in FCDO budget on the production of new research. As a result, the number of working papers has remained strong, in line with performance in previous years. The negative impact of budget uncertainty is likely to materialise further in the upcoming year, as the effect of higher staff turnover and difficulties in recruitment become more constraining. Therefore, we recommend maintaining targets on their current trajectory for the next assessment period. The publication of IMF papers into well-ranked academic journals, as well as strong record of citations, shows quality has been maintained.

Indicator 1.1: Working papers (WPs)

MRLIC produced 13 working papers in the past year, including two book chapters⁹, bringing the total to 178 over the programme to date. This exceeds the high target. IMF working papers are high quality¹⁰ and go through a strict quality assurance process within the Fund. Annex A summarises all publications in more detail, but the following illustrate the key themes of MRLIC research this year:

- **Food insecurity** – The MRLIC team led on an IMF Departmental Paper on [Climate Change and Chronic Food Insecurity in Sub-Saharan Africa](#) and a working paper on the [drivers of staple food prices in Sub-Saharan African countries](#) (Box next page)
- **Monetary policy** – including a working paper on the links between [Monetary Policy and Fragility](#), which finds that a combination of reduced inflation and lower unemployment helps promote peace, and another on [Monetary Policy Under Natural Disaster Shocks](#). The MRLIC team also produced a [model](#) supporting the Bank of Ghana’s operations.
- **Remittances** – [What Explains Remittance Fees](#), [How Transaction Costs Influence Remittances](#).
- MRLIC contributed two chapters for a new IMF book on **Promoting Inclusive Growth in the Middle East and North Africa**, one on [Inclusiveness, Growth, and Stability](#), showing how a lack of inclusion generates distortions that reduce overall output in the MENA region, and another chapter on [Addressing Gender Gaps in MENA Labor Markets](#), building on MRLIC’s leadership on the gender and macroeconomics.

⁹ Following the 2021 Annual Review, as an effort to streamline the logframe indicator 1.3 on book publication was removed. If chapters or working papers funded by MRLIC become freely available, they should be counted under output indicator 1.1.

¹⁰ The IMF WP series is ranked in the top 25 for economics. IDEAS/RePEc Aggregate Rankings for IMF Working Paper Series, accessed 19th June 2023. IMF Working Papers ranked number 25. <https://ideas.repec.org/top/top.wpseries.all.html>

MRLIC research workstream on food insecurity

In September 2022, MRLIC produced an [IMF Departmental Paper on Climate Change and Food Insecurity in Sub-Saharan Africa](#) and related [blog](#) that provide advice on what macroeconomic policies African governments could use to mitigate food insecurity, noting some of the trade-offs and complementarities across policies. Recommendations included focusing fiscal policies on social assistance, efficient public infrastructure investment, improving access to finance, and greater regional trade integration, complemented with resilient transport infrastructure.

This analysis complements a wider body of work by MRLIC on food issues including, for example, working paper on the external and domestic [drivers of staple food prices in Sub-Saharan African countries](#) (July 2022) which found SSA countries are highly vulnerable to global price shocks as the pass-through from global to local prices is close to one for many staples, and paper examining [the role of fiscal policy in mitigating the impacts of food price shocks](#) (Jan 2021).

This research has proved highly relevant for policy. Food insecurity was the top issue raised by LIC governors during the IMF-WB Annual Meetings. MRLIC analysis was featured prominently at those meetings, including in the IMF [Managing Director’s keynote speech](#) and an [analytical presentation](#) summarizing the research from the Departmental Paper. Representatives from several LICs (e.g., Burundi, South Sudan) were interested using MRLIC frameworks and the MRLIC researchers used this analysis to provide support on food security issues in Niger, including in a Selected Issues Paper on the [Economic Effects of Climate Change and Food Insecurity in Niger](#).

Indicator 1.2: Peer-reviewed published papers

This year MRLIC had seven papers accepted for publication in high-quality peer-reviewed journals, meeting the cumulative high target. There is a good variety of publications:

1. [How large and persistent is the response of inflation to changes in retail energy prices?](#) Chadi Abdallah and Kangni Kpodar, *Journal of International Money and Finance*
2. [Defying the Odds: Remittances during the COVID-19 Pandemic](#) Kangni Kpodar, Montfort Mlachila, Saad Quayyum and Vigninou Gammadigbe, *The Journal of Development Studies*
3. [Macroeconomic Outcomes in Disaster-Prone Countries](#) Alessandro Cantelmo, Giovanni Melina, and Chris Papageorgiou, *Journal of Development Economics*
4. [Do Monetary Policy Outcomes Promote Stability in Fragile Settings?](#) Oumar Diallo, Steve, Loris Gui-Diby and Patrick A. Imam, *Applied Economics*
5. [Public Investment and Human Capital with Segmented Labour Markets](#) Edward F Buffie, Christopher Adam, Luis-Felipe Zanna, Lacina Balma, Dawit Tessema and Kangni Kpodar *Oxford Economic Papers*
6. [Loss-of-learning and the Post-Covid Recovery in Low-income Countries](#) Edward F. Buffie, Christopher Adam, Luis-Felipe Zanna and Kangni Kpodar *Journal of Macroeconomics*
7. [Tax Revenues in Low-income Countries](#) Adrian Peralta-Alva, Xuan Tam, Xin Tang and Marina Tavares *The Economic Journal*

Progress on recommendations from the previous AR, lessons learned this year and recommendations for the year ahead

MRLIC continues to produce high-quality relevant research on issues affecting LICs, which in part contribute to addressing immediate challenges faced by LICs such as rising energy prices and inflation, rising debt, loss of human capital, and the challenges of achieving structural transformation. The uncertainty in funding from FCDO affected MRLIC’s ability to attract contractual researchers, which may reduce the pipeline of research going forward.

Recommendation: Amidst pressures to expand the breadth of MRLIC to other geographies, maintain a clear focus on low-income countries, including those in Sub-Saharan Africa.

Recommendation: Given clarity on 24/25 budget, FCDO and IMF to hold a workshop to discuss MRLIC lessons learnt and future avenues for macroeconomic research.

Progress on previous recommendations from previous AR:

Recommendation	Progress
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Given limited funds, ensure that the research produced by MRLIC remains tightly focused on macroeconomic issues affecting LICs, rather than spreading across other areas that might be of less relevance or already well covered by other funding for economic research. The FCDO and the advisory committee should be consulted to provide advice on this prioritisation.	The IMF MRLIC team and FCDO have confirmed the list of members for the advisory committee as well as the terms of reference. It was agreed to delay the date of the first meeting until after there was more clarity on the budget.
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Output Title	IMF research products (policy analysis, practical and operational tools and frameworks) produced under this project used by IMF country teams and partner authorities.		
Output number:	2	Output Score:	A
Impact weighting (%):	35%	Weighting revised since last AR?	Yes

Indicator(s)	Milestone(s) for this review	Progress 2022
2.1 Application and use of tools and frameworks by IMF country teams or country authorities.	By March 2023, evidence of number of country teams applying policy tools and frameworks: H (214) M (211) L (208)	213 cumulative (10 in 2022/23) Met medium target.
2.2 Courses offered to IMF staff and/or country authorities	By March 2023, evidence of courses offered to IMF staff and/or country authorities. H (44) M (42) L (40)	43. (5 in 2022/23). Met medium target. This comparable to number of courses offered in previous years.

Briefly describe the output’s activities and provide supporting narrative for the score.

This output scores an A. Both output indicators exceed the medium target¹¹. MRLIC tools and models have mainstreamed in IMF country team practice, with applications continuing at good pace this year. This includes applications of the recently developed Debt-Investment-Growth-Natural-Disasters (DIGNAD) model, which was used in six countries to assess policy options to deal with debt and climate adaptation as well as make help countries make the case for climate finance, as noted in Section A. Often conducted in the context of its lending programmes, IMF assessments in LICs are highly influential and often a form a pre-requisite for countries obtaining loans from the World Bank, regional development banks or bilateral partners. Investing a relatively small amount of FCDO research funding to improve the quality and tailoring of these assessments to LIC conditions is cost-effective. MRLIC also continued to provide a strong offering of courses for both IMF staff and country authorities, including on the climate and gender aspects of macroeconomic policy making.

Indicator 2.1: Applications by IMF country teams and country authorities

This indicator includes (i) applications of MRLIC tools by IMF country teams in macroeconomic assessment reports which impact government policies through IMF engagement in country; or (ii) direct applications by government officials. In practice, the route of country-level impacts for MRLIC rests mostly with IMF country teams, except for one long-standing collaboration with the Bank of Ghana.

On the former pathway, there were nine instances of applications of MRLIC work by IMF country teams during the reporting period, compared to ten in the previous year. These country applications usually consist of instances of MRLIC research and tools (in particular, the DIG models) being used in analysis to support policy papers in country such as Article IV reports¹², selected issues papers or other macroeconomic assessments. These are listed here, with further details contained in the Annex:

¹¹ The logframe indicators for this output was revised last year and streamlined to simply separately count applications (either by IMF country teams or government authorities) and courses – as courses were double counted in the previous version of the logframe.

¹² These are the written output of the IMF's regular monitoring of its members' economies and associated provision of policy advice. The Article IV reports are usually released annually for most countries.

1. [Madagascar: Technical Assistance Report—Climate Macroeconomic Assessment Program \(CMAP\)](#)
2. [Application of DIGNAD model to Madagascar \(Article IV\)](#)
3. [Policy Lessons from DIGNAD Simulations in Rwanda](#) - evidence supporting Rwanda's request for support under the IMF's Resilience and Sustainability Trust.
4. [Macro-Fiscal Implications of Climate Change Policies in Bangladesh](#)
5. [Application of DIGNAD model to Timor-Leste \(Selected Issues\)](#)
6. [Selected Issues Paper: Macroeconomic Gains from Closing Gender Educational Gaps in Niger](#)
7. [Mining Revenues to Strengthen Guinea's Development](#)
8. [Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes \(Article IV\)](#)
9. [Economic Effects of Climate Change and Food Insecurity in Niger: Niger \(Selected Issues Paper\)](#)

During the reporting period, the MRLIC team continued to provide technical assistance support to the Bank of Ghana Forecasting and Policy Analysis System (FPAS), allowing a deeper analysis of the drivers of price dynamics. This is critical in the context of entrenched inflationary pressures in the Ghanaian economy, with inflation rates close to 30%.

Indicator 2.2: Courses for IMF country teams and country authorities¹³

MRLIC research continued to become operationalised through training courses provided by the IMF's Institute for Capacity Development (ICD). This ensures that toolkits developed by MRLIC are gradually incorporated in analysis conducted by IMF or government officials. During the reporting period, MRLIC delivered five courses to a mix of IMF staff and/or government officials, meeting the medium target.

1. **Course on Macroeconomics of Gender Equality.** In line with the new IMF Gender Mainstreaming Strategy, MRLIC delivered a course on how to design fiscal policies to help address gender inequality.
2. **Course on Distributional Impact of Policies and Reforms.** MRLIC presented a newly developed toolkit, the Multi-sector Incomplete Markets Macro Inequality (MIMMI), which is designed to simulate the long-run macro and distributional impacts of different economic policies and shocks.
3. **Online Course Delivery: Training Course on Macroeconomics of Climate.** MRLIC offered an overview of the DIGNAD model of resilience to natural disasters, including an application to a disaster-prone country with discussion of policy trade-offs. The course was well attended by officials from Sub-Saharan African countries, including 20 LICs.
4. **Africa Training Institute/AFE Workshop on Climate Change and Macro-Financial Policies.** Building on the aforementioned online course, MRLIC offered another course at Kenya School of Monetary Studies (KSMS), after officials from Central Banks and Finance Ministries of Ethiopia, Kenya, Rwanda, Tanzania, and Uganda requested additional practical sessions on the Macroeconomics of Climate change.
5. **Helsinki Principle 4 Workshop:** MRLIC presented the DIGNAD model to many Ministries of Finance officials during the Coalition of Finance Ministers for Climate Action HP4 Workshop. The course explained the benefits on including climate change and associated risks into macro-fiscal decision-making.

Progress on recommendations from the previous AR (if completed), lessons learned this year and recommendations for the year ahead

Following recommendations in previous Annual reviews, the MRLIC team has made progress in explain how MRLIC research is used by government officials to help inform their policy choice, including around investment and debt, or on the response to food insecurity. There is still scope to make progress in their area, drawing from wider experience in FCDO and elsewhere on measuring the policy impact of research.

¹³ Previously courses to IMF staff and authorities were counted under two separate outputs but as most are open to both IMF staff and officials this has been merged under a single target for courses.

Output Title	Engagement by senior IMF policymakers on issues affecting LICs strengthened through this project.		
Output number:	3	Output Score:	A+
Impact weighting (%):	30%	Weighting revised since last AR?	Yes

Indicator(s)	Milestone(s) for this review	Progress
3.1 High level policy conferences attended by senior IMF staff reflect findings of research papers funded under this project.	By March 2023, number of policy conferences drawing on outputs from the project: H (54) M (53) L (52)	53 cumulative (3 in 22/23) met medium target
3.2. Results of research papers produced reflected in IMF policy papers such as Staff Discussion Notes, policy memos to management etc.	By March 2023: H (59) M (57) L (55)	59 cumulative (5 in 22/23) met high target.

Briefly describe the output’s activities and provide supporting narrative for the score.

This output scores an A+. Indicator 3.1 met the medium target and indicator 3.2 met the high target. IMF MRLIC research continued to be influential at the highest levels in shaping policy at the IMF, including gender (see Box p.3), food security (Box below) and by contributing to the Macroeconomic Prospects and Developments in Low-Income and Developing Countries.

Indicator 3.1: High level conferences

MRLIC research was featured at three high profile conferences in the past year attended by senior IMF staff – the first two below were organised by MRLIC:

1. [Conference on Fragile States](#). In June 2022 the IMF hosted a high-profile conference on fragility, launching the new [IMF Fragile and Conflict Affected States Strategy](#) as well as launch the IMF’s book on [Macroeconomic Policy in Fragile States](#) (Oxford University Press, 2021). The strategy and book build on earlier MRLIC research and engagement on fragility. The conference explored the nexus between fragility, conflict, and macroeconomic policy, with talks by senior IMF officials (including the IMF’s Deputy Managing Director), government officials including FCDO’s then Director General for Development & Humanitarian, Nick Dyer.
2. [Conference on Monetary Policy Frameworks - An Index and New Evidence](#). This event aimed at launching and disseminating the use of MRLIC’s **Independence and Accountability, Policy and Operational Strategy, and Communications (IAPOC) toolkit**—which provides information on the key dimensions that monetary frameworks need to consider for more consistent and effective monetary policymaking. The IMF Chief Economist opened the hybrid conference.
3. MRLIC research on food insecurity was also featured prominently during the WB-IMF Annual Meetings, including in the [IMF Managing Director’s keynote speech](#) and an [analytical presentation](#) summarizing the research from the [IMF Departmental Paper on Climate Change and Food Insecurity in Sub-Saharan Africa](#).

While not attended by IMF Senior officials, MRLIC also organised and contributed research to the [2022 International Conference on Development Economics](#), hosted by the Centre d’Études et de Recherche sur le Développement International (CERDI), Clermont-Auvergne University in France. The objective of the event was to deepen the discussion on innovative research in development economics, including development financing, sustainable development paths and, the integration of developing economies into the global economy. MRLIC supported the attendance participation of government officials from LICs at this conference. This is an important channel of research uptake, but in future years should be captured under Output 2 as it is about country engagement rather than engagement from IMF leadership.

Indicator 3.2. Research reflected in IMF Board discussion and other IMF policy papers.

MRLIC research was reflected in total in five high profile policy papers, such as Board Papers, Staff Discussion Notes and policy memos to management.

1. In July 2022 the IMF launched its first gender strategy: [IMF Strategy Toward Mainstreaming Gender](#), which builds on MRLIC research on the links between macroeconomics and gender. This is discussed on page 3 of this report.
2. [Macroeconomic Developments and Prospects in Low-income Countries \(2022\)](#). MRLIC contributed to the preparation of this Report, which is the IMF's key policy paper focusing on Low-Income Countries. The report was discussed and approved by the IMF Executive Board in December 2022 and was widely disseminated, including at an in-person seminar at FCDO chaired by the FCDO's Director for International Financial Institutions. The report documents the macroeconomic challenges of LICs, with a heavy focus on debt management given the critical debt situation many countries find themselves in. This report also serves as an anchor for the Poverty Reduction and Growth Trust (PRGT) fundraising efforts.
3. [G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity](#) . MRLIC contributed to the G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity, which emphasized the rising food and energy insecurity, related geopolitical and structural challenges and the range of policy response.
4. [April 2022 Fiscal Monitor Box 1.1: Social Protection and Poverty during the Pandemic](#). This analysis highlighted that 70 million more people fell into extreme poverty in 2021, relative to pre-pandemic trends and explored the extent to which policy and structural factors have contributed to the projected rise in poverty.
5. [2022 External Sector Report – Box 1.3: External Sector Impact of Disaster Shocks](#). This analysis quantified the impact of natural disasters on the external sector for shock-prone economies, emphasizing that the adverse effects of natural disasters can be mitigated through investment in adaptation.

Progress on recommendations from the previous AR (if completed), lessons learned this year and recommendations for the year ahead.

The indicators should be revised to focus more clearly on what matters for this output, which is exposure and engagement of senior IMF officials to MRLIC research and capturing how much the research influences IMF policy. This should build on existing efforts in FCDO's Research & Evidence Directorate to better monitor the policy influence of research.

D: Value for Money

The MRLIC programme offers good value for money. Use of IMF processes and infrastructure helps ensure that high-quality research outputs are produced at reasonable cost, provides efficient routes for research uptake and effectively supports macroeconomic policy decision-making.

Economy: Delivery through the IMF means that MRLIC benefits from solid governance on the procurement process. MRLIC follows IMF guidelines for hiring, travel, and conferences. Contractual employees undergo a competitive process before being hired. Outputs must meet Fund requirements for publication. The quality of papers is further evaluated when they are submitted to peer-reviewed publications.

Efficiency: The table below shows the unit costs of working papers and unit cost of publications. The cost per working paper is also approximately \$72,000. The average cost per published paper is approximately \$124,000. This is lower than the FCDO benchmark of \$215,000 (£156,000) per paper. The quality of research outputs is also high, as noted under Output 1. Working with IMF also delivers efficiency gains in terms of research uptake, as MRLIC frameworks and toolkits can easily be operationalised across various areas of IMF practice through training courses or by supporting wider IMF analysis, ultimately feeding into influential policy documents at the country level (e.g. macroeconomic assessments) or at the IMF Board.

Cost per Working Paper and Publication over the duration of MRLIC

Total Staff/Contractual/Visiting Scholars	\$17,468,382
Research Paper Costs	\$13,101,287
Country Applications Costs	\$4,367,096
Working Papers	180
Cost Per Working Paper	\$72,785
Published Papers ²	105
Cost per Published Paper	\$124,774

Effectiveness: The IMF has a major influence on macroeconomic policymaking in Low-Income Countries through its lending programmes, surveillance and capacity building activities. MRLIC’s effectiveness in terms of affecting macroeconomic policy rests on its ability to successfully influence policy and practice of the IMF (through Board papers, policy papers, etc.). Moreover, publishing research papers through the IMF’s well-regarded IMF Working Paper series helps increase the reach of the research, contributing to the global public good.

Equity: MRLIC research workstreams on gender inequality, income inequality and distributional analysis of policy changes have had particular traction and are enhancing the IMF’s ability to assess the differential impact of policy recommendations on different groups. Recent examples include MRLIC providing the analytical underpinning of the IMF Gender Mainstreaming Strategy, and launching a new toolkit, the Multi-sector Incomplete Markets Macro Inequality (MIMMI), which is designed to simulate the long-run macro and distributional impacts of different economic policies and shocks.

E: RISK

Overview of risk management

The overall risk remains minor. The risk register is updated regularly and was last updated in April 2023. Demand for research products and expertise on LICs is high, and MRLIC has continued to effectively deliver outputs. The reduction and uncertainty in FCDO's budget were the main risk discussed in the previous Annual Reviews, and, while there was some negative effect on MRLIC's ability to recruit and retain staff, and on the volume of activities, this was partly mitigated by funding provided by another donor. With FCDO budget confirmed till the end of this Phase, the residual risk for the end of this Phase is minor. The main outstanding risk concerns the design of a potential future Phase.

- **External context:** Most research is carried out at IMF headquarters using secondary datasets, so has limited exposure to context in LICs.
- **Delivery:** Established delivery systems are in place and have demonstrated high delivery over an extended period. Demand for MRLIC outputs remains high.
- **Operational:** Experienced management teams are in place at both FCDO and IMF.
- **Fiduciary:** All funds are spent directly by the IMF and are subject to extensive IMF financial management controls.
- **Reputational:** Research activities and topics pose little or no reputational risk.
- **Innovation:** Research activities and topics are not subject to substantial innovation risks.
- **Safeguarding:** Programme activities rarely, if ever, involve contact with vulnerable persons, and external researchers are managed in accordance with IMF procedures.

A Central Assurance Assessment (CAA) of the IMF as a whole was conducted by FCDO in December 2021 which confirmed the IMF's position as a low-risk partner. This CAA covered enhanced areas of due diligence including safeguarding procedures. A light touch due diligence was conducted in July 2023. This was largely drawn from the CAA, and it was only necessary to assess any programme-specific differences to the IMF's standard operating procedures. The MRLIC programme and IMF as a whole operate in similar ways. Hence the CAA findings also hold true for the MRLIC programme.

Partnership principles are not applicable. MRLIC is a research programme managed by the IMF. No funding is passed to country governments or similar bodies. All funds are held and managed by the IMF and are subject to strict financial controls under IMF policies and in accordance with the rules applied to donor sub-accounts, in this case the United Kingdom Selected Fund Activities (SFA) sub-account. These rules are set at Board level and are not subject to negotiation by the team.

F: PROGRAMME MANAGEMENT: DELIVERY, COMMERCIAL & FINANCIAL PERFORMANCE

Summarise the performance of partners and FCDO, notably on commercial and financial issues, and including consideration of VFM measures of economy and efficiency.

In 2021, annual funding from FCDO was reduced from £1.7m to £0.8m in light of the reduction in UK ODA spending. This reduction funding presented a risk to reduce the effectiveness of MRLIC as lower funding means it is harder to cover the fixed costs of running a research programme (mainly staff) as well as additional costs for research uptake.

Following recommendations from previous Annual Reviews, the programme was able to secure complementary funding to make up for the reduction in FCDO support, thereby avoiding some of the potential impacts listed above. Last year this included funding from the [COVID-19 Crisis Capacity Development Initiative \(CCCDI\)](#)¹⁴ for 21/22. During the reporting period of 22/23, MRLIC also managed to secure funding from a bilateral donor. This was critical in maintaining sufficient funding for some MRLIC activities, the thematic priorities of the other donor do not fully align with FCDO's focus on LICs (e.g., focus on Asia, whereas most LICs are in Sub-Saharan Africa). IMF institutional ceilings in how much external research funding can be managed by departments imply it might be harder to increase FCDO budget to build back up the research on LICs. The trade-offs around joint programming should be carefully considered in designing the next Phase of MRLIC.

The budget uncertainty itself also posed challenges, as research production is a long-term process that requires stability, and uncertainty makes it harder to attract and retain contractual research staff. The IMF reported important difficulties in retaining and recruiting competitive contractuels and visiting scholars. A third of the staff working the programme left in the last year, triggering a time-intensive hiring process.

FCDO and IMF work closely together to monitor delivery of the programme. There are regular check-in meetings to discuss progress and the IMF provides quarterly summaries of outputs produced and upcoming outputs and presentations. The programme has benefited from strong continuity in its management on the IMF side, enabling lessons to be learned over time. The MRLIC programme director has been involved with the project since its inception. He remains the main point of contact between the IMF and FCDO. During the reporting period there was greater turnover of IMF economists.

MRLIC also benefits from solid governance on the procurement process. It follows IMF guidelines for hiring, travel, and conferences. Contractual employees undergo a competitive process before being hired. Outputs must meet Fund requirements for publication. The quality of papers is further evaluated when they are submitted to peer-reviewed publications. Most of the funds available to this project have been spent on producing research by IMF staff and external researchers.

This Annual Review process was conducted by the FCDO programme team, Economic Advisor (PRO) and Deputy Programme Manager. Oversight was provided by the Senior Economist and Team Leader of the Growth Research Team.

Date of last narrative financial report	May 2021	Date of last audited annual statement	October 2019
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¹⁴ CCCDI is a capacity development project to help fulfill the urgent need to support policymaking in low-income countries and low-end emerging market economies, focusing on climate change and inequality under the COVID-19 pandemic. The CCCDI is supported by the following partners: Belgium, Canada, China, Germany, Japan, Korea, Spain, Singapore, and Switzerland. The CCCDI funding for the fiscal year 2022 amounts to USD 1.2 million.

Annex 1: summaries of working papers & publications under Output 1

Output 1.1 – Working Papers

Topic 1. Modelling and understanding policy choices

- 1. [Quarterly Projection Model for the Bank of Ghana](#)
Philip Abradu-Otoo, Ivy Acquaye, Abubakar Addy, Nana Kwame Akosah, James Attuquaye, Simon Harvey, Shalva Mkhatriashvili, Zakari Mumuni and Valeriu Nalban

Summary: The paper describes the Quarterly Projection Model (QPM) that underlies the Bank of Ghana Forecasting and Policy Analysis System (FPAS). The New Keynesian semi-structural model incorporates the main features of the Ghanaian economy, transmission channels and policy framework, including an inflation targeting central bank and aggregate demand effects of fiscal policy. The shock propagation mechanisms embedded in the calibrated QPM demonstrate its theoretical consistency, while out-of-sample forecasting accuracy validates its empirical robustness. Another important part of the QPM is endogenous policy credibility, which may aggravate policy trade-offs in the model and make it more realistic for developing economies. Historical track record of real time policy analysis and medium-term forecasting conducted with the QPM – as a component of the broader FPAS analytical organization – establishes its critical role in supporting the Bank’s forward-looking monetary policy framework.
- 2. [Staple Food Prices in Sub-Saharan Africa: An Empirical Assessment](#)
Cedric Okou, John A Spray and Filiz D Unsal

Summary: This paper analyzes the domestic and external drivers of local staple food prices in Sub-Saharan Africa. Using data on domestic market prices of the five most consumed staple foods from 15 countries, this paper finds that external factors drive food price inflation, but domestic factors can mitigate these vulnerabilities. On the external side, our estimations show that Sub-Saharan African countries are highly vulnerable to global food prices, with the pass-through from global to local food prices estimated close to unity for highly imported staples. On the domestic side, staple food price inflation is lower in countries with greater local production and among products with lower consumption shares. Additionally, adverse shocks such as natural disasters and wars bring 1.8 and 4 percent staple food price surges respectively beyond generalized price increases. Economic policy can lower food price inflation, as the strength of monetary policy and fiscal frameworks, the overall economic environment, and transport constraints in geographically challenged areas account for substantial cross-country differences in staple food prices.

Topic 2. Understanding macro-financial linkages

- 3. [What Explains Remittance Fees? Panel Evidence](#)
Thorsten Beck, Mathilde Janfils and Kangni R Kpodar

Summary: This paper uses data across 365 corridors to document time and country variation in remittance fees and explore factors predicting variation in remittance fees. We document a general reduction in such fees over the past decade although the goal of fees below 3 percent has not been met yet in many corridors. We identify both cost- and risk-based constraints and market structure as barriers to lower remittance fees. Higher transaction costs as result of a more rural population in the sending country and lower scale are associated with higher remittance fees. However, lower risks due to the stability of fixed exchange rates and Internet rather than cash payment are associated with lower remittance fees. Finally, remittance corridors dominated by banks and few players are characterized by higher fees.
- 4. [How Do Transaction Costs Influence Remittances](#)
Kangni R Kpodar and Patrick A. Imam

Summary: Using a new quarterly panel database on remittances (71 countries over the period 2011Q1-2020Q4), this paper investigates the elasticity of remittances to transaction costs in a high frequency and dynamic setting. It adds to the literature by systematically exploring the heterogeneity in the cost-elasticity of remittances along several country characteristics. The findings suggest that cost reductions have a short-term positive impact on remittances, that dissipates beyond one quarter. According to our estimates, reducing transaction costs to the Sustainable Development Goal target of 3 percent could generate an additional US\$32bn in remittances, higher than the direct cost savings from lower transaction costs, thus suggesting an absolute elasticity greater than one. Among remittance cost-mitigation factors, higher competition in the remittance market, a deeper financial sector, and adequate correspondent banking relationships are associated with a lower elasticity of remittance to transaction costs. Similarly, remittance cost-adaptation factors such as enhanced transparency in remittance costs, improved financial literacy and higher ICT development coincide with remittances being less sensitive to transaction costs. Supplementing the panel analysis, the use of micro data from the USA-Mexico corridor confirm that migrants facing higher

transaction costs tend to remit less, and that this effect is less pronounced for skilled migrants and those that have access to a bank account.

5. [Bank Ownership Around the World](#)
Ugo Panizza

Summary: This paper builds a dataset on bank ownership that covers more than 6,500 banks in 181 countries (including 59 low-income economies) over 1995-2020. It is found that until 2010, there was a reduction in state-ownership of banks and an increase foreign ownership. However, the Global Financial Crisis interrupted or reversed these trends. At the country level, the relationship between bank ownership and each of GDP growth and financial depth is mixed: results show that the presence of foreign owned banks is positively associated with future economic growth and state ownership is negatively but not robustly associated with future financial depth. Bank level regressions indicate that state-owned banks are less profitable and have a higher share of non-performing loans than their private (domestic or foreign) counterparts. State-owned and foreign-owned banks located in developing economies pay and charge lower interest rates than their domestic private counterparts. There is also evidence that state-owned banks stabilize credit in the presence of domestic shocks while foreign banks amplify external shocks. In terms of domestic shocks, foreign banks are not significantly different from their domestic private counterparts.

Topic 3. Building resilience

6. [Monetary Policy Under Natural Disaster Shocks](#)
Alessandro Cantelmo, Nikos Fatouros, Giovanni Melina, and Chris Papageorgiou

Summary: With climate change increasing the frequency and intensity of natural disasters, what should central banks do in response to these catastrophic events? Looking at IMF reports for 34 disaster-years, which occurred in 16 disaster-prone countries from 1999 to 2017, reveals lack of any systematic approach to monetary authorities' response to climate shocks. Using a standard small-open-economy New-Keynesian model with disaster shocks, we show that consistent with textbook theory, inflation targeting remains the welfare-optimal regime. Therefore, the best strategy for monetary authorities is to resist the impulse of accommodating in the face of catastrophic natural disasters, and rather continue to focus on price stability.

7. [Do Monetary Policy Outcomes Promote Stability in Fragile Settings?](#)
Oumar Diallo, Steve Loris Gui-Diby and Patrick A. Imam

Summary: This paper assesses how monetary policy outcomes affect fragility. Diving into the universe of the most prominent combinations of pursued monetary policy objectives across fragile settings, we examine the relationships between monetary policy outcomes and fragility and find the combination of reduction of inflation and lower unemployment to be the one that delivers the highest payoff in terms of promoting peace and cohesion. Setting aside challenges of monetary policy transmission, results from our analysis broadly confirm the above "winning" combination, with low inflation as a primary desired outcome and low unemployment rate as a secondary one. We also carry out a series of robustness tests, which confirm our findings. Overall, our results lend credence to the importance of paying attention—in the context of reducing fragility—to monetary policy outcomes.

Topic 4. Promoting structural change and institutional development

8. [Political Institutions and Output Collapses](#)
Patrick A. Imam and Jonathan R. W. Temple
Summary: Major output collapses are costly and frequent in the developing world. Using cross-country data, we classify five-year periods using a two-dimensional state space based on growth regimes and political institutions. We then model the joint evolution of output growth and political institutions as a finite state Markov chain, and study how countries move between states. We find that growth is more likely to be sustained under democracy than under autocracy; output collapses are more persistent under autocracy; and stagnation under autocracy can give way to outright collapse. Democratic countries appear to be more resilient.

9. [Climate Change and Chronic Food Insecurity in Sub-Saharan Africa](#)
Diogo Baptista, Mai Farid, Dominique Fayad, Laurent Kemoe, Loic Lanci, Pritha Mitra, Tara Muehlschlegel, Cedric Okou, John Spray, Kevin Tuitoeck, and Filiz Unsal

Summary: Climate change is intensifying food insecurity across sub-Saharan Africa (SSA) with lasting adverse macroeconomic effects, especially on economic growth and poverty. Successive shocks from the war in Ukraine and COVID-19 pandemic have increased food prices and depressed incomes, raising the number of people suffering from high malnutrition and unable to meet basic food consumption needs by at least 30 percent to 123 million in 2022 or 12 percent of SSA's population. Addressing the lack of resilience to climate change—that critically underlies food insecurity in SSA—will require careful policy prioritization against a backdrop of financing and capacity constraints. This paper presents some key considerations and examples of tradeoffs and complementarities across policies to address food insecurity. Key findings include

(1) Fiscal policies focused on social assistance and efficient public infrastructure investment can improve poorer households' access to affordable food, facilitate expansion of climate-resilient and green agricultural production, and support quicker recovery from adverse climate events; (2) Improving access to finance is key to stepping up private investment in agricultural resilience and productivity as well as improving the earning capacity and food purchasing power of poorer rural and urban households; and (3) Greater regional trade integration, complemented with resilient transport infrastructure, enables sales of one country's bumper harvests to its neighbors' facing shortages. The international community can help with financial assistance—especially for the above-mentioned social assistance and key infrastructure areas—capacity development, and facilitating transfers of technology and know-how.

Topic 5. Enhancing inclusion

10. [Income Convergence or Divergence in the Aftermath of the COVID-19 Shock?](#)
Mariya Brussevich, Shihui Liu and Chris Papageorgiou

Summary: The paper extends the work of Deaton (2021) by exploring the period of post-crisis recovery in 2021-2024. The paper documents per-capita income divergence during the period of post-shock recovery, with countries at the bottom of the income distribution falling significantly behind. Findings suggest that higher COVID-19 vaccination rates and targeted virus containment measures are associated with faster recovery in per-capita incomes in the medium term. Evidence on the effectiveness of economic support policies for reducing cross-country income inequality, including fiscal and monetary policies, is mixed especially in the case of developing countries.

11. [Mining Revenues and Inclusive Development in Guinea](#)
Alejandro Badel, Rachel F. Lyngaas

Using a multi-sector macro-inequality model with heterogeneous agents applied to Guinea, this paper assesses the potential benefits of increasing the taxation of a foreign extractive sector. We quantify the long-run equilibrium impact of additional taxation when the proceeds are invested in human capital, inclusive infrastructure, and social transfers. The assessment focuses on the response of GDP, labor formalization, poverty rates, Gini coefficients, rural/urban inequality and sectoral reallocation, and finds that the three forms of investment are complementary. Infrastructure investments favor formal production in the urban area while growth and government transfers boost the demand for food. These effects help support the rate of return to education, protecting job formalization through higher wages and prices of informal goods, as the education policy boosts labor supply in rural and urban areas.

12. [Inclusiveness, Growth, and Stability](#) [Chapter 2 of Promoting Inclusive Growth in the Middle East and North Africa]
Chiara Maggi and Xin Tang

Summary: Chapter 2 of this book recently published by the IMF examines quantitatively how the lack of inclusiveness in an economy can cause lower economic growth. The chapter uses a general equilibrium model in which individuals are different in their income, wealth, skill level, and occupations. The presence of barriers and financial frictions creates misallocation by preventing skilled entrepreneurs from entering a business. Calibrated to an average MENA economy, simulations show that a reform package that simultaneously reduces market distortions and improves access to credit could lead to a more efficient allocation of resources and significantly boost output, wages, and jobs. Importantly for the MENA region, the simulations show that an increase in public investment that achieves the same increase in output would not be able to generate the same improvement in welfare compared with reforms that remove market distortions and support a more dynamic economy with an expanded role for the private sector. The book was published during the IMF-World Bank 2022 Annual Meetings in October.

13. [Addressing Gender Gaps in MENA Labor Markets](#): [Chapter 5 of Promoting Inclusive Growth in the Middle East and North Africa]
Hippolyte Balima and Diego Gomes

Summary: Chapter 5 of this book focuses on the reasons why female labor force participation is much lower in the MENA region than in the rest of the world. Its main finding is that gender disparities in basic and financial legal rights are likely to be the most powerful barriers to women's participation in economic life in the MENA region, followed by restrictions in labor market codes and regulation. While to a certain extent those factors reflect well-established social norms that may prove difficult to change, removing barriers that prevent women's participation in the labor force and entrepreneurship promises to have a substantial impact on output and welfare.

Output 1.2 – Published Papers

Topic 1. Modelling and understanding policy choices.

1. [How large and persistent is the response of inflation to changes in retail energy prices?](#)

Chadi Abdallah and Kangni Kpodar
Journal of International Money and Finance

Summary: We estimate the dynamic effects of changes in retail energy prices on the consumer price level using a novel monthly database, covering 110 countries over 2000:M7 to 2016:M6. We find that (i) the price level responds positively to retail energy price shocks, with effects being, on average, modest and transitory. However, our results suggest significant heterogeneity across countries owing to differences in institutional factors. In particular, the response of the consumer price level to these shocks is relatively larger and more persistent in countries with less flexible labor markets, a lower energy intensity, a looser fiscal policy stance, and a less credible monetary policy. We also find evidence of non-linearity and asymmetry in the responses, with both positive and bigger energy price shocks leading to larger and more persistent effects on the consumer price level.

Topic 2. Understanding macro-financial linkages

2. [Defying the Odds: Remittances during the COVID-19 Pandemic](#)

Kangni Kpodar, Montfort Mlachila, Saad Quayyum and Vigninou Gammadigbe
The Journal of Development Studies

Summary: In this paper published in The Journal of Development Studies, K. Kpodar, M. Mlachila, S. Quayyum and V. Gammadigbe provide an early assessment of the dynamics and drivers of remittances during the COVID-19 pandemic, using a newly compiled monthly remittance dataset for a sample of 52 countries (including 25 LICs). The paper documents a strong resilience in remittance flows, notwithstanding an unprecedented global recession triggered by the pandemic. Using the local projection approach, the results suggest that show that: (i) remittances responded positively to COVID-19 infection rates in migrant home countries, underscoring its role as an important automatic stabilizer; (ii) stricter containment measures have the unintended consequence of dampening remittances; and (iii) a shift from informal to formal remittance channels due to travel restrictions appears to have also played a role in the surge in formal remittances. Lastly, the size of the fiscal stimulus in the host country is positively associated with remittance flows to migrants' home country as the fiscal response cushioned the economic impact of the pandemic.

Topic 3. Building resilience

3. [Macroeconomic Outcomes in Disaster-Prone Countries](#)

Alessandro Cantelmo, Giovanni Melina, and Chris Papageorgiou
Journal of Development Economics

Summary: Using a dynamic stochastic general equilibrium model, we study the channels through which weather shocks affect macroeconomic outcomes and welfare in disaster-prone countries. We solve the model using Taylor projection, which deals effectively with high-impact weather shocks calibrated in accordance to empirical evidence. We find large and persistent effects of weather shocks that significantly impact the income convergence path of disaster-prone countries. For these countries, on average, weather shocks cause a welfare loss equivalent to a permanent fall in consumption of 1.24 percent, relative to non-disaster-prone countries. Finally, we examine policies that mitigate the adverse welfare effects. Welfare gains from investing in resilience infrastructure are tiny, if disaster-prone countries have to fully bear its extra cost. International aid yields significant welfare gains. However, to achieve a given welfare gain, it is more cost-effective for donors to contribute to the financing of resilience before the realization of disasters, rather than disbursing aid ex post.

4. [Do Monetary Policy Outcomes Promote Stability in Fragile Settings?](#)

Oumar Diallo, Steve, Loris Gui-Diby and Patrick A. Imam
Applied Economics

Summary: This paper assesses how monetary policy outcomes affect fragility. Diving into the universe of the most prominent combinations of pursued monetary policy objectives across fragile settings, we examine the relationships between monetary policy and fragility, and find the combination of reduction of inflation and lower unemployment to be the one that delivers the highest payoff in terms of promoting peace and cohesion. Setting aside the challenges of monetary policy transmission, results from our analysis broadly confirm the above 'winning' combination, with low inflation as a primary desired outcome and low unemployment rate as a secondary one. We also carry out a series of robustness tests, which confirm our findings. Overall, our results lend credence to the importance of paying attention – in the context of reducing fragility – to monetary policy outcomes.

Topic 4. Promoting structural change and institutional development

5. [Public Investment and Human Capital with Segmented Labour Markets](#)

Edward F Buffie, Christopher Adam, Luis-Felipe Zanna, Lacina Balma, Dawit Tessema and Kangni Kpodar

Summary: We develop a dynamic general equilibrium macroeconomic model with segmented labour markets and efficiency wages to examine how labour market structures influence the impact of human capital investment in low-income countries. For plausible calibration values, public investment in education is much more effective than infrastructure investment in promoting long-run economic development, but because investment in education affects labour productivity with a lag, policymakers face an intertemporal trade-off which depends on their social discount rate and the weight of distributional objectives in the social welfare function. We show the distortionary structure of labour markets matters in leveraging welfare gains from public investment and in shifting the optimal public investment programme further in favour of human capital, relative to the case of flex-wage full-employment labour markets.

Topic 5. Enhancing inclusion

6. [Loss-of-learning and the Post-Covid Recovery in Low-income Countries](#)
Edward F. Buffie, Christopher Adam, Luis-Felipe Zanna and Kangni Kpodar
Journal of Macroeconomics

Summary: We analyze the medium-term macroeconomic impact of the Covid-19 pandemic and associated lock-down measures on low-income countries. We focus on the impact of the degradation of health and human capital caused by the pandemic and its aftermath, exploring the trade-offs between rebuilding human capital and the recovery of livelihoods and macroeconomic sustainability. A dynamic general equilibrium model is calibrated to reflect the structural characteristics of vulnerable low-income countries and to replicate key dimensions of the Covid-19 shock. We show that absent significant and sustained external financing, the persistence of loss-of-learning effects on labor productivity is likely to make the post-Covid recovery more attenuated and more expensive than many contemporary analysis suggests.

7. [Tax Revenues in Low-income Countries](#)
Adrian Peralta-Alva, Xuan Tam, Xin Tang and Marina Tavares
The Economic Journal

Summary: The paper consolidates the theoretical insights on revenue mobilization in low-income countries obtained from applications using the inequality toolkit developed in earlier phases of the program. It quantitatively investigates the welfare costs of increasing tax revenues in low-income countries. Three tax instruments are considered in the paper: consumption, labour income and capital income taxes. The analysis is conducted using a parsimonious version of the inequality toolkit which is a general equilibrium model featuring heterogeneous agents, incomplete financial markets, and rural and urban areas. The model is calibrated to the Ethiopian economy and the welfare costs are decomposed into their aggregate and distributional components. The paper finds that changing taxes alter the composition of demand. This, together with limited labour mobility, causes the incidence of higher taxes to fall disproportionately on the rural population, regardless of the instrument. Among all, consumption taxes are the instrument with the largest welfare loss.

Output 2.1. Applications by IMF country staff and country authorities

1. [Application of DIGNAD model to Madagascar \(Article IV\)](#)

Summary: Investing in climate change mitigation and adaptation with the goal of reaching SDGs could significantly increase potential growth. Model-based simulations using the Debt, Investment, Growth, and Natural Disasters (DIGNAD) model⁹ suggest that investments to scale up resilient infrastructure and build human capital, with the objective of reaching SDGs, using the proceeds from mitigation measures and additional grants, might boost growth while preserving fiscal sustainability. However, such an outcome would require a significant acceleration of reforms supported by improved governance and public investment management capacity. ¹⁰ The reform package supported by the ECF program on revenue mobilization, social spending targets, improvements in PFM, transparency and governance aims to create the fiscal space for the needed investments in inclusive growth and climate resilience and provide the conditions for a successful and sustainable economic development.

2. [Policy Lessons from DIGNAD Simulations in Rwanda](#)

Summary: An analysis using the DIGNAD toolkit is featured in Box 2 of the IMF Country Report No 22/381. It assesses the impact of natural disasters on GDP and total public debt for Rwanda in the context of the country's request for an arrangement under the RST facility. The simulations illustrate that investing in more robust infrastructure results initially in higher public debt but improves the resilience of the economy by reducing the adverse impact of natural disasters on output, damages to physical assets, and post-disaster fiscal costs for rebuilding and lifeline support. Enhanced reforms to improve the efficiency of public investment raises the resilience of the economy to shocks, and the initial increase in public debt can be mitigated by securing private financing as well as more concessional financing.

3. [Macro-Fiscal Implications of Climate Change Policies in Bangladesh](#)

Summary: An analysis using the DIGNAD toolkit to assess the macro-fiscal implications of climate change policies in Bangladesh is featured in Annex III.D of the IMF Country Report No 23/066. It assesses the impact of natural disasters on GDP and total public debt in Bangladesh in the context of its request for an arrangement under the RST facility. The simulations illustrate that accelerating investment in adaptation infrastructure could help buttress a green recovery from the pandemic, mitigate the negative impact of natural disasters, and reduce macroeconomic and fiscal risks for Bangladesh. Improved public investment management and efficiency could further lessen the growth-debt trade-off for adaptation investment.

4. [Application of DIGNAD model to Timor-Leste \(Selected Issues\)](#)

Summary: Timor-Leste is one of the most vulnerable countries to natural disasters and has limited fiscal space to deal with climate change shocks. Using a dynamic general equilibrium model, this annex shows that investing in climate-proof infrastructure, albeit costly, can make the Timorese economy resilient against natural disasters, limiting the post-disaster economic losses, recovery costs, and a rise in public debt. The analysis also shows how timely Public Financial Management reforms, including those that strengthen public investment management, boost the gains from such investment. Given Timor-Leste's limited fiscal space, this further stresses the importance of rationalizing public spending and undertaking revenue mobilization reforms to create more space for prioritizing resources towards building resilient infrastructure with significant dividends. The authorities should tap grant-based financing sources based in partnership with other development partners to help improve resilience to natural disasters. Clearly outlining a medium-term expenditure and finance roadmap for an adaptation plan in the budget planning is also crucial.

5. [Selected Issues Paper: Macroeconomic Gains from Closing Gender Educational Gaps in Niger](#)

Summary: Chapter two of this Selected Issues Paper explores the state of gender equality and education attainment of girls in Niger. It also estimates the macroeconomic gains from reducing gaps in education between boys and girls using a micro-founded general equilibrium model. The analysis shows that Niger has made some progress toward higher educational attainment for girls, but the country still lags far behind other sub-Saharan African countries. Closing the gender gaps in education would boost female labor participation, increase income earned by women and improve fiscal outcomes. More importantly, closing the gender gap in years of schooling in each income percentile would boost long-term GDP by 11 percent. These significant economic gains from investing in girls' education will contribute to the achievements of the strategic goals defined under the Programme de Développement Economique et Social (PDES) 2022-26. Taking stock of the implications of the model for Niger will help sharpen gender equality and education programs in other low-income countries.

6. [Mining Revenues to Strengthen Guinea's Development](#)

Summary: Annex IV of the IMF Country Report No. 2023/043 features an analysis on how to create

additional fiscal space and how to use this to stimulate growth and reduce poverty. This model-based assessment suggests that reforming the mining code and exemptions could yield additional mining revenues of around 2 percent of GDP in Guinea. Such additional mining revenues, if properly invested, could have transformative effects. Increasing investment in infrastructure, education spending and social transfers would have the greatest impact on output with additional 1.1 percentage points of growth over 30 years, poverty reduction of 17.8 percentage points and improvements in several inequality indicators.

7. [Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes \(Article IV\)](#)

Summary: This note analyzes the role for income taxes in this new revenue strategy, taking into account its aggregate and distributional effects. An outstanding issue has been the proposal from the 2017 Vanuatu Revenue Review of introducing a personal income tax. This annex considers the distributional effects of alternative revenue-mobilization strategies for Vanuatu through three exercises: (i) the introduction of a personal income tax without changing value-added tax rates; (ii) alternative combinations of value-added and income taxes that can increase the tax-to-GDP ratio by 2 percentage points; and finally; (iii) introduction of income taxes in an economy with a smaller informal sector. These exercises are performed using a heterogeneous agents general equilibrium model for low-income countries (developed by Peralta-Alva, Tam, Tang, and Tavares; 2019, 2022). The model was designed to analyze the trade-offs between efficiency and equity of different taxes and to study the trade-offs between different tax structures. The model is rich, but to be made tractable it abstracts from external sector dynamics, and debt and investment decisions.

8. [Economic Effects of Climate Change and Food Insecurity in Niger: Niger \(Selected Issues Paper\)](#)

Summary: Niger's exposure to recurrent shocks, including climate shocks, increases its vulnerability to food insecurity. This paper aims to quantify the combined effects of climate shocks and food insecurity on key economic variables and identify the most effective mitigation policy responses using a general equilibrium model. Results indicate that rural households would be the most affected by a climate shock resulting in a decline in domestic agricultural production, which would reduce their consumption, erode their capital, and thus increase urban-rural inequalities. Simulations show that cash transfers and the reduction of internal mobility costs appear to be more effective in mitigating the impact on households of a climate shock on agricultural production.

Output 2.2 – Courses

1. Course on Macroeconomics of Gender Equality

Summary: This clinic, jointly developed by ICD, FAD, LEG, MCM, SPR, and STA, will help staff incorporate gender issues into core IMF work, in line with the IMF Gender Mainstreaming Strategy. The clinic examined trends in gender inequality over time and across countries, including the impact of the COVID-19 pandemic; assist staff in identifying macro-critical gender gaps that would undermine the prospects for inclusive, sustainable growth; analyze policy and institutional reform options in the fiscal, financial, and legal areas to help address gender inequality; and discuss available analytical tools, including the newly released IMF Gender Data Hub. The clinic was introduced by IMF Deputy Managing Director Antoinette Sayeh and moderated by IMF Institute of Capacity Development Deputy Director Michaela Erbenova. This particular delivery focused relatively more on low-income developing countries and emerging markets; a subsequent delivery will focus relatively more on advanced economies.

2. Course on Distributional Impact of Policies and Reforms

Summary: On November 14th, the IMF-FCDO team virtually gave “Clinic on Distributional Impact of Policies and Reforms.” Attended by around 30 IMF staff, the clinic taught the Multi-sector Incomplete Markets Macro Inequality (MIMMI) model and hands-on training on the associated MIMMI app. The first version of the app's brand-new user manual was released for the course. The first course presented the history and past applications of the MIMMI model and its calibration. The second presented basic concepts and a refresher of incomplete markets models and conducted a hands-on session on building a box for an Article IV Staff Report with the MIMMI browser-based application. Finally, course participants had the opportunity to access the app's interface and its calibration repository (currently consisting of calibrations for Guinea and Namibia) through the Fund's intranet without installing any additional software. Participants were able to compute scenarios in real time during the course.

3. Online Course Delivery: Training Course on Macroeconomics of Climate Change

Summary: This virtual training on “Macroeconomics of Climate Change (AT22.24v)” was held on April 20, 2022, hosted by the African Training Institute (ATI), collaborating with the IMF's other departments (FAD, ICD, RES). The MRLIC team presented an overview of the DIGNAD model of resilience to natural disasters, an example application to a disaster prone country and policy trade-offs in building up climate resilience. The training was well attended by country officials from a wide range of sub-Saharan African countries (including

20 low-income countries). The participants engaged actively, asking many questions, and expressed their appreciation of the presentation.

4. ATI/AFE Workshop on Climate Change and Macro-Financial Policies

Summary: The team presented DIGNAD at ATI/AFE Workshop on Climate Change and Macro-Financial Policies at the Kenya School of Monetary Studies (KSMS), Nairobi, March 6, 2023. Participants included Ministry and Central Bank staff from AFE member countries (Eritrea, Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Uganda, South Sudan), EU and FCDO. The workshop on climate is the result of cross-departmental collaboration between ICD/FAD/RES/MCM and responds to the demand for more practical sessions to complement the Macroeconomics of Climate Change (MCC) from several of the central bank governors and finance ministers in the region (Ethiopia, Kenya, Rwanda, Tanzania, Uganda).

5. Helsinki Principle 4 Workshop: Using Economic Tools to Adapt and Build Resilience to Climate Change

Summary: The DIGNAD model, was presented to participants from Ministries of Finance [around the world](#), including many LICs, at the Coalition of Finance Ministers for Climate Action HP4 Workshop on June 27, 2022. The workshop aimed to present the needs and benefits of Ministries of Finance to integrate the effects of climate change and associated risks into macro-fiscal decision-making. The presentation covered the model and an application to the Maldives. The presentation was very well received, with specific thanks from the Coalition Secretariat.

Output 3.1 – High-level Policy Conferences Attended by IMF Senior Staff

1. [2022 International Conference on Development Economics](#)

Summary: Jointly with the French Association of Development Economics and other distinguished organizations, the IMF-FCDO project organized a high-level international conference on development economics, hosted by the Centre d'Études et de Recherches sur le Développement International (CERDI), Clermont-Auvergne University, France, from June 30 to July 1st, 2022. The conference offered a platform for discussing the latest research in development economics, notably on migration, climate change, growth, poverty, monetary policy, international trade, inequality, and fiscal policy. Keynote speakers included Rabah Arezki (formerly African Development Bank, Cote d'Ivoire), Jean-Marie Baland (Université de Namur, Belgium), and Ana María Ibáñez (Universidad de Los Andes and Inter-American Development Bank, Colombia). More than fifteen participants funded by IMF-FCDO from LICs across the world presented at the conference.

2. Conference on Fragile States

Summary: On June 6-7, the International Monetary Fund organized a conference, under the IMF-FCDO partnership, to explore the nexus between fragility, conflict, and macroeconomic policy. The conference gathered FCS policymakers, leading academics, and practitioners to reflect on the role of macroeconomic policy in FCS, and the Fund's stepped-up efforts to support these countries. Discussions highlighted insights and lessons learned from the volume *Macroeconomic Policy in Fragile States* ([OUP, 2021](#)). The sessions focused on the critical role fiscal, monetary, and financial sector policies can play in reversing state fragility and preventing a spiral into state failure. Challenges and opportunities to build state capacity in FCS were also highlighted. Some discussions were also dedicated to the Fund's FCS Strategy, which aims to enhance the IMF's ability to deliver tailored, robust, and long-term support to FCS.

3. [Conference on Monetary Policy Frameworks-An Index and New Evidence](#)

Summary: On June 30th, 2022, D. Filiz Ünsal and Chris Papageorgiou hosted at the IMF a conference (in hybrid form) titled "Monetary Policy Frameworks-An Index and New Evidence" and launched the [Monetary Policy Frameworks: IAPOC toolkit](#) to the external audience. This conference aimed at disseminating and promoting the use of the IAPOC Index, also describing the methodology covered in [Working Paper](#) released in February 2022. D. Filiz Ünsal guided the audience on how to use and download the data through the website, with the support of different country case examples. The conference included welcoming remarks by Pierre-Olivier Gourinchas (IMF) and a discussion moderated by David Wessel (The Hutchins Center on Fiscal and Monetary Policy, Brookings Institution) with Alan Blinder (Princeton University), Richard Clarida (Columbia University) and D. Filiz Ünsal. Leading researchers and practitioners participated in this conference both online and in person, contributing to the discussion on monetary policy frameworks, the importance of the data shared, and stimulating new ideas.

Output 3.2 –Results of the research reflected in IMF policy papers such as Board papers, SDNs, policy memos to management

Fiscal Monitor/WEO/REO/SDN

1. [April 2022 Fiscal Monitor Box 1.1: Social Protection and Poverty during the Pandemic](#)

Summary: It finds that an estimated 70 million more people were in extreme poverty in 2021 relative to pre-pandemic trends, assuming no change in inequality. If inequality had risen, poverty would have been even higher, with a one percentage point increase in the Gini index translating into a poverty increase similar to the impact from a one percentage point decrease in per capita real GDP growth. It also explores to what extent policy and structural factors are associated with the projected post-pandemic rise in poverty, with a special focus on LIDCs where poverty remains pervasive. The box takes a close look at the changing impact of fiscal support and social safety nets. Poverty projections are also classified along other dimensions such as the economic sector, health preparedness, size of the informal sector and initial income inequality.

2. [2022 External Sector Report – Box 1.3: External Sector Impact of Disaster Shocks](#)

Summary: An analysis using the DIGNAD model (Marto, Papageorgiou, and Kluyev, 2018)—a workhorse model developed under the FCDO-IMF partnership—is featured in Box 1.3 in Chapter 1 of the IMF's 2022 External Sector Report, published in August 2022. The model allows to assess the impact of natural disasters on the external sector of natural disaster-prone economies, which are in large part small low-

income countries. Together with an empirical analysis showing that natural disasters tend to be followed by large current account deficits, model-based results show that the impact of natural disasters on both GDP and the current account can be mitigated by ex-ante investments in adaptation. A contingency fund can also reduce reliance on external debt to finance reconstruction, thereby smoothing the recovery.

Papers discussed by the IMF Executive Board

1. [IMF Strategy Toward Mainstreaming Gender](#)

Summary: The team produced this background paper that provides additional details on substantiation, illustrations, and arguments to support the Board Paper “IMF Strategy Toward Mainstreaming Gender.” Their work brings forth an overview of the evolution of gender disparities across different dimensions that limit women’s economic empowerment and, in turn, the full potential of total productivity and economic growth of countries.

2. [Macroeconomic Developments and Prospects in Low-income Countries—2022](#)

Summary: The 2022 LIC report discusses recent macroeconomic developments, outlook and policy priorities for Low Income Countries (LICs). Russia’s war in Ukraine has slowed down LICs’ recovery from the pandemic; inflation has accelerated; and fiscal position is increasingly under stress, further intensifying debt vulnerabilities. The international community has stepped up support to LICs, but more needs to be done considering the additional financing needs for LICs, estimated at \$440bn. Priorities in the near term include fighting inflation, addressing debt vulnerabilities, supporting recovery and protecting the vulnerable through a concerted use of all policy instruments. Effective public debt management can also play a critical role in mitigating debt vulnerabilities. In the medium to long term, structural reforms to address poverty, inequality, climate change and to promote digitalization, are key ingredients for development and income convergence. The report was discussed by the IMF Executive Board on December 1, 2023. The team conducted outreach to the U.K. FCDO, the OECD DAC, the AfDB, and at an event organized by the Banque de France and FERDI.

3. [G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity](#)

Summary: The surge in food and energy prices during the past few years has fueled inflation and hurt growth. Prices of food and energy commodities increased steadily following the onset of the pandemic and reached historic highs after Russia’s invasion of Ukraine. While international prices have since moderated, they have nonetheless contributed to upward pressure on domestic inflation. Moreover, high energy prices have increased input and transportation costs, weighing on economic activity and feeding into higher food prices through production linkages. The result has been a cost-of-living crisis, with the most vulnerable economies and people particularly hard-hit and with a marked increase in food insecurity. In addition, empirical estimates highlight that the increased volatility of commodity prices is likely to weigh on medium-term growth and increase inflation volatility. The current challenges could worsen if risks to the outlook materialize. A further erosion of real incomes could lower household spending and spark social unrest, harming livelihoods and growth. An extended disruption of the energy supply in Europe poses further downside risks. Moreover, unfavorable inflation developments could necessitate a sudden tightening of financial conditions from larger-than-expected further policy interest rate increases, raising borrowing costs for many economies that are already dealing with elevated debt levels. Further geoeconomic fragmentation could restrict trade and increase concentration risks in the energy supply, exacerbating food and energy security concerns. Policymakers have responded amid difficult policy tradeoffs. Monetary policy has been tightened markedly in most G-20 economies to help bring down inflation. At the same time, fiscal measures have been implemented to ease the cost-of-living pressures, especially in Europe. However, in many economies, these measures have often been untargeted and aimed at suppressing the pass-through of higher international prices. Restrictions on trade have also been imposed in the attempt to ensure the domestic food supply. To address energy security concerns, some economies have scaled up reliance on fossil fuels, setting back the green transition.

Other outputs

Newsletters

- 1. [June 2022 Newsletter](#)
- 2. [September 2022 Newsletter](#)
- 3. [December 2022 Newsletter](#)
- 4. [March 2023 Newsletter](#)

Blogs/Article/Press/Other

- 1. [VoxEU Blog: Investigating the drivers of remittance fees](#)
- 2. [IMF Blog: How Africa Can Escape Chronic Food Insecurity Amid Climate Change](#)
- 3. [IMF Blog: Africa Food Prices Are Soaring Amid High Import Reliance](#)
- 4. Food insecurity was a top issue raised by all low-income countries (LICs)' governors. The work by the MRLIC team on food security was featured prominently, including in the [MD's curtain raiser speech](#) of the 2022 IMF-World Bank Annual Meetings. Recognizing recent food price surges, she highlighted the importance of the new "food shock window" as part of the Fund's emergency financing tools to support countries most affected by term of trade shocks. There was also an [analytical corner presentation](#) featuring the MRLIC team's work, joint with the IMF's African Department, on [climate change and chronic food insecurity](#). Representatives from many LICs were interested using our analytical framework on food insecurity.

Internal presentations

- 1. Presentation on "A Macroeconomic Framework for Climate Adaptation and Mitigation Analysis" at the IMF Climate Innovation Challenge 2022
- 2. Presentation on "Adapting to Climate Change: A Macro Framework" at the IMF Research Development-Macroeconomic Seminar Series on June 27, 2022.
- 3. Presentation of Monetary Policy Framework (MPF) toolkit/data to IMF's iLab on May 18, 2022.
- 4. Presentation on "A Monetary Policy Framework for Low Income Countries"" at the IMF Research Development-Macroeconomic Seminar Series on September 21, 2022.
- 5. Presentation on "A Macroeconomic Framework for Climate Adaptation and Mitigation Analysis" at the IMF FAD Analytical Hour in December 2022.
- 6. Internal Launch: The DIGNAD toolkit was launched at an iLab Innovation Event on Thursday, December 8, 2022.
- 7. Presentation of the DIGNAD model and toolkit at Institute for Capacity Development Department's Climate Working group in October 2022.
- 8. Presentation of the DIGNAD model and toolkit to Strategy, Policy and Review Department in November 2022.
- 9. Presentation of the DIGNAD model and toolkit to IMF's Resilience and Sustainability Trust working group in November 2022.
- 10. Presentation of the DIGNAD model and toolkit to Climate Indicators Dashboard's working group of Statistics Department in February 2023.

External presentations

- 1. Presentation of "A Monetary Policy Framework for Low Income Countries" during the 2nd Lille Reading Workshop on International Finance on November 18th.
- 2. Presentation of "Staple Food Prices in Sub-Saharan Africa: An Empirical Assessment" at CSAE Conference on March 19-21, 2023.
- 3. Presentation on "Monetary Policy Frameworks-An Index and New Evidence" a joint research seminar with the 'Caucasus, Central Asia, and Mongolia Regional Capacity Development Center' (CCAMTAC) on July 28th, 2022.
- 4. Presentation of "Current Developments in LICs" London School of Economics in February 2023.
- 5. Presentation of "Current Global Crises and their Impact on the Great Divergence" at London School of Economics on January 25, 2023.
- 6. Presentation at international discussion meeting "New horizons for increasing the understanding of the economic consequences of climate change" at the Royal Society in London on March 29-30, 2023.

Toolkits

- 1. Gender Labor Market Tool

Summary: Staff developed an innovative Excel-based toolkit that simplifies gendered labor market analysis. The toolkit is user-friendly and helps identify the most important factors contributing to employment gender

gaps in levels and rates of change. With this tool, employment gender gaps can be easily decomposed into gaps in Employment Rates, LFP Rates, and Population Shares, making it an essential resource for staff working with gender issues. It can be applied to individual countries, regions, income groups, or the entire world. To make it even more convenient, the toolkit is already populated with all the data covering the entire IMF membership, which saves valuable time and resources.

ODA Memo to Management

1. The team provided an updated memorandum on potential crowding-out of development aid in the context of Russia’s war in Ukraine to our Senior Management. The memorandum recognized mounting concerns over potential crowding-out of official development aid for low-income countries. This was because many advanced economies scaled up defense spending and refugee-related aid to Ukraine. Although there was no clear evidence at the time of aid budgets diversions from LICs to increase military spendings.



**Macroeconomic Research in Low-Income Countries
An FCDO/IMF Research Partnership**

**Eleventh Year Annual Report to FCDO
(for period April 2022—March 2023)**

Prepared by the Staff of the Research (Hites Ahir, Futoshi Narita, Cedric Okou, Chris Papageorgiou) and Strategy, Policy and Review (Alassane Drabo, Carine Meyimdjui, Baoping Shang, Ana Paola Cepeda Valor) Departments

May 31, 2023

1. PROGRAM DESCRIPTION

The FCDO and IMF have established the “Macroeconomic Research in Low-Income Countries” as a strategic research partnership, which aims at (a) enhancing the generation of high-quality research on key macroeconomic issues in low-income countries (LICs); (b) ensuring uptake through the design of the research, and its execution in close collaboration with policymakers within and outside the IMF; (c) using the IMF’s catalytic power to expand the network of macroeconomic researchers working on LICs; and (d) achieving this as cost-effectively as possible. The project started in March 2012, with the current phase (Phase 4) to conclude on March 31, 2025 (extended from the original end date of March 31, 2023, reflecting a rephasing of the disbursement schedule).

Our research agenda encompasses key components of the macroeconomic challenges facing LICs in the current global environment. We leverage the comparative advantage of the IMF, by designing and implementing frontier analytic tools to address core macroeconomic challenges. The IMF focuses on core macroeconomic and development issues that are critical to achieving sustained and inclusive growth. Many of these issues are at the risk of being neglected by the profession at large: very few macroeconomists work on LICs; very few development economists work on macroeconomics (outside of structural/growth issues); and central banks and other macroeconomic institutions in LICs face capacity challenges.

The program, articulated around five core areas, includes new topics that are being investigated during the fourth phase of the project:

- (1) Modelling and understanding policy choices
 - For example, monetary, exchange rate, fiscal and structural policies
- (2) Understanding macro-financial linkages
 - For example, capital flows, financial deepening and inclusion, macro-prudential policies, and transmission of macro-financial shocks
- (3) Building resilience
 - For example, issues related to natural disaster, climate change, migration, and conflict
- (4) Promoting structural change and institutional development
 - For example, public investment, growth, and debt sustainability, macroeconomic management of natural resource wealth, growth through diversification, structural reforms
- (5) Enhancing inclusion
 - For example, income inequality, macroeconomic policy and income distribution, gender and macroeconomics

IMF staff members and project-funded researchers collaborate to produce high-quality research papers aimed at policymakers in LICs and at the country teams at the IMF. To further maximize the policy impact of the project’s research outputs, most papers are freely shared with FCDO and external policy makers through FCDO’s research portal and a dedicated project [website](#) maintained by the IMF. In addition to encouraging uptake of the work by the country authorities as well as the IMF, other crucial components of the IMF-FCDO partnership include designing frameworks to support IMF policy for LICs, presentations at high-level policy conferences, training, commissioned papers, quarterly e-newsletters to a broad network of LIC researchers and policy makers, and project-financed conferences.

Start and End Dates:

Phase I: March 2012 to March 2015

Phase II: April 2015 to March 2017

Phase III: April 2017 to March 2020

Phase IV: April 2020 to March 2025

Countries Covered:

The project covers the countries listed in Table 1. These countries are referred to as “low-income countries (LICs)” in this report.

Table 1. Countries Covered in This Project and Their GNI Per Capita¹

Country	2011 GNI per capita (US \$)	Country	2011 GNI per capita (US \$)
Afghanistan	410	Maldives	6530
Bangladesh	770	Mali	610
Benin	780	Marshall Islands	3910
Bhutan	2070	Mauritania	1000
Bolivia	2040	Micronesia	2900
Burkina Faso	570	Moldova	1980
Burundi	250	Mongolia	2320
Cambodia	830	Mozambique	470
Cameroon	1210	Myanmar	NA
Cape Verde	3540	Nepal	540
Central African Republic	470	Nicaragua	1170
Chad	690	Niger	360
Comoros	770	Nigeria	1200
Congo, Rep.	2270	Papua New Guinea	1480
Congo, Dem. Rep.	190	Rwanda	570
Côte d'Ivoire	1100	Samoa	3190
Djibouti	1270	São Tomé and Príncipe	1360
Dominica	7090	Senegal	1070
Eritrea	430	Sierra Leone	340
Ethiopia	400	Solomon Islands	1110
Gambia, The	610	Somalia	NA
Georgia	2860	South Sudan	984
Ghana	1410	St. Lucia	6680
Grenada	7220	St. Vincent and the Grenadines	6100
Guinea	440	Sudan	1300
Guinea-Bissau	600	Tajikistan	870
Guyana	2900	Tanzania	540
Haiti	700	Timor-Leste	2730
Honduras	1970	Togo	560
Kenya	820	Tonga	3580
Kiribati	2110	Tuvalu	5010
Kyrgyz Republic	920	Uganda	510
Lao PDR	1130	Uzbekistan	1510
Lesotho	1220	Vanuatu	2870
Liberia	240	Vietnam	1260
Madagascar	430	Yemen	1070
Malawi	340	Zambia	1160
Memorandum Item			
Zimbabwe	640		

Source: Fund WEO, World Bank, World Development Indicators, and OP 3.10, Annex C, of July 2012.
Fund Board decision of April 8, 2013, on Eligibility to Use the Fund's Facilities for Concessional Financing.

¹ The countries included in this table are those that were eligible for the IMF concessional financing under the Poverty Reduction and Growth Trust (PRGT) as of 2013, and the table includes the countries that had graduated since then (e.g., Bolivia and Mongolia) but continued to face policy challenges similar to those in the PRGT-eligible countries.

2. OVERVIEW OF THE YEAR

Progress and Achievements

The MRLIC has concluded a productive fiscal year in a context where LICs have faced multiple challenges, including high inflation, intensified debt vulnerabilities, and acute food insecurity. Concomitantly, governments continued to manage the legacies of the COVID-19 pandemic while grappling with the pervasive spillovers of geopolitical and economic fragmentation. The MRLIC project has contributed to analytical tools that will assist policymakers as they address these challenges. Specifically, the team has performed at a high level, meeting the high target for all outputs except three, where two outputs are above the medium target, and one meets the medium target. The unexpected temporary financial support from the COVID-19 Crisis Capacity Development Initiative (CCCDI) fund last year has helped meet the project's financial needs, enabling the successful completion of numerous deliveries. Nonetheless, the uncertainty surrounding the FCDO funding has triggered a particularly stressful transition period for team in carrying out our ambitious research and policy program. Highlighted below are some of the MRLIC's key output.

First, MRLIC products were featured in high-level policy documents of the IMF. A box in the April 2022 Fiscal Monitor discusses social protection and poverty during the pandemic. It highlights that 70 million more people fell into extreme poverty in 2021, relative to pre-pandemic trends. It also explores the extent to which policy and structural factors have contributed to the projected rise in poverty, with a special focus on low-income developing countries (LIDCs) where poverty remains widespread. A box in the 2022 External Sector Report analyzes the impact of natural disasters on the external sector for economies that are prone to such shocks. It emphasizes that the adverse effects of natural disasters can be mitigated ex-ante through investment in adaptation.

Second, the MRLIC project contributed to two important policy documents that were discussed at the IMF Executive Board. One is the IMF Strategy toward Mainstreaming Gender, and the other is the 2022 Macroeconomic Development and Prospects in LICs. The latter has been disseminated broadly, with presentations to the U.K. FCDO, the Organisation for Economic Co-operation Development and Development Assistance Committee (OECD DAC), and the African Development Bank (AfDB), as well as at a meeting organized by the Banque de France and Fondation pour les Etudes et Recherches sur le Developpment International (FERDI). Both documents helped highlight LIC issues within and outside the IMF.

Third, the team organized several high-level conferences to facilitate engagement with external stakeholders: In collaboration with the French Association of Development Economics and other prominent organizations, the IMF-FCDO project organized a high-level international conference on Development Economics, hosted by the Centre d'Études et de Recherche sur le Development International (CERDI), Clermont-Auvergne University in France. The objective of the event was to deepen the discussion on innovative research in development economics, in particular on development financing, sustainable development paths and, the integration of development economies into the global economy. The event was attended by researchers from around the world, including leading scholars and practitioners. The program also contributed to the organization of a flagship conference on Fragile States. This meeting explored the nexus between fragility, conflict, and macroeconomic policy, and was attended by officials from Fragile and Conflict-affected States (FCS). The crucial role of relevant policies was discussed, and some presentations focused on the IMF's strategy for building resilience in FCS. Another major conference organized by the program centered around monetary policy frameworks. The event aimed at launching and disseminating the use of the Independence and Accountability, Policy and Operational Strategy, and Communications (IAPOC) toolkit—which provides information on the key dimensions that monetary frameworks need to consider for more consistent and effective monetary policymaking. Pierre-Olivier Gourinchas (IMF) opened the hybrid conference, and David Wessel (The Hutchins Center on Fiscal and Monetary Policy, Brookings Institution) moderated a discussion, featuring Alan Blinder (Princeton University) and Richard Clarida (Columbia University) as panelists.

Fourth, the G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity, which compiled and discussed the threats to food and energy insecurity and charted pathways to bolster resilience for LICs, was presented to the international community. The note identified key constraints that have hindered the beneficial effects of policy actions and proposed reinforcing policies.

The project has consistently delivered high quality and policy relevant research. This has helped formulate policy advice by IMF country teams and macroeconomic decision-making by country authorities. **Antoinette Monsio Sayeh**, Deputy Managing Director in charge of LICs at the IMF, stated “The challenges facing low-income countries have grown immensely in recent years. They have suffered from the pandemic and a succession of economic shocks, and many of them are struggling with scarcer financing, high inflation, persistent food insecurity, rising debt vulnerabilities and sociopolitical tensions. This, coupled with structural impediments in the areas of human capital accumulation, infrastructure development, and climate change among others, threatens to reverse a long-term trend of steadily converging living standards. Sound economic policies and international support are central to avoid a lost decade for LICs. The MRLIC program has played a critical role in helping the IMF support LICs to address both the immediate and structural challenges. Models and toolkits developed under the program have been instrumental in shaping policy choices and enhance resilience against future shocks, and we look forward to continued support from the program for LICs.”

Advancing on the previous point and acclaiming the critical role of the FCDO-IMF collaboration, **Pierre-Olivier Gourinchas**, the IMF’s Economist Counselor and Director of the Research Department, stated, “Low-income countries are grappling with a challenging global environment, ranging from the legacies of the pandemic, escalating geopolitical tensions, and tightening global financial conditions. Responding to the ripple effects of these global shocks requires well designed macroeconomic policies. The IMF-FCDO partnership has delivered rigorous, evidence-based, and cutting-edge analytical tools that help tackle these urgent policy challenges, safeguard macroeconomic stability, and build resilience in low-income countries.”

In addition, research developed under the program have been published in renowned academic journals, such as the *Economic Journal*, the *Journal of Development Economics*, the *Journal of Macroeconomics*, the *Oxford Economics Paper*, among others. This demonstrates that the program’s outcomes have deepened the academic understanding of LICs’ macroeconomic policy.

As in the previous annual reports, we continue to collaborate with the IMF Library¹ to assess the research impact of the project through publication bibliometric analysis. Citations are compiled from three sources: Lens.org, Altmetric, and Overton. The metrics indicate that the 241 research products have been cited at least 4,054 times—an increase from the 3,326 citations reported last year. 83 percent of our publications have been cited, with an average of 17 citations per article. Notably, 85 percent of the citations are by authors with no IMF or FCDO affiliation. IMF Working Papers are the most frequently cited, both externally and internally, totaling 1,336 citations. Geographically, IMF publications are cited by over 137 organizations in 44 countries.

Several articles were also widely circulated in social media and other platforms. There are over 1,500 social media posts from 78 different countries. For example, the Twitter activity on the paper “*Structural Reforms and Elections: Evidence from a World-Wide New Dataset*” started with a mention from Robin Hanson, Professor of Economics at George Mason University and Research Associate at Oxford University. The publication has since continued to be re-tweeted and mentioned, even three years after its initial publication. The topic has been referenced by 182 Twitter accounts with around 1,142,477 followers. Another paper, “*Loss-of-Learning and the Post-Covid Recovery in Low-Income Countries*” has gained attention within one month of its March 2023

¹ The IMF Library team (Gladys K. H. Mitchell) compiled citation data from Lens.org, Altmetric, and Overton. The IMF Library team also conducted the analysis on social media and other platforms. The number of downloads of the IMF Working Papers was provided by the IMF’s Communication Department (Axana Abreu Panfilova, Begona Nunez Allue).

publication from several Twitter accounts with a total of 15,076 followers, including the Department of International Development at Oxford University. Finally, the number of downloads of IMF working papers increased to around 155,000 from 140,000 last year, with the average of 885 per paper.

As to the collaborative work with IMF country teams, the MRLIC team has been actively responding to requests from country desks, particularly regarding the challenges posed by the unfolding energy and food crises, and the increasing severity of climate change-related consequences. The Debt Investment Growth and Natural Disaster (DIGNAD) toolkit has continued to capture the attention of country teams that have sought its application to specific country circumstances. For example, the team produced a Technical Assistance Report to Madagascar and conducted Article IV for Rwanda, Bangladesh, and Timor Leste. The development of a Gender Labor Market toolkit contributed to the Niger Selected Issues Paper (SIP), where staff conducted an analysis of the education gaps for girls. Other toolkits assisted in the Guinea Country Report on revenue and the Vanuatu Article IV.

The team has continued to provide technical assistance support to the Bank of Ghana Forecasting and Policy Analysis System (FPAS). The team assisted the Bank of Ghana (BoG) to decompose model-based GDP into agriculture, oil, and non-agriculture-non-oil value added, allowing a deeper analysis of the drivers of price dynamics, which is critical in the context of entrenched inflationary pressures in the economy.

The MRLIC team has also actively contributed to trainings for IMF staff and country authorities. On climate change, the team provided three courses on Macroeconomics of Climate Change. The first course was presented during an event host by the African Training Institute (ATI) and offered an overview of the DIGNAD model of resilience to natural disasters. An illustrative application to a disaster-prone country on policy trade-offs in building climate resilience were also discussed. The course was well attended by officials from Sub-Saharan African countries, including 20 LICs. The interest generated by this course led to another course instructed at the Kenya School of Monetary Studies (KSMS), as officials from Central Banks and Finance Ministries of Ethiopia, Kenya, Rwanda, Tanzania, and Uganda requested additional practical sessions on the Macroeconomics of Climate change. The team also presented the DIGNAD model to many Ministries of Finance officials during the Coalition of Finance Ministers for Climate Action HP4 Workshop. As the course helped understand the needs and benefits that the Ministries of Finance may obtain from integrating the effects of climate change and associated risks into macro-fiscal decision-making, it was specifically acknowledged by the Coalition Secretariat.

On gender issues, a clinic on Macroeconomics of Gender Equality was carried out. The clinic was designed to help staff identifying gender issues in their day-to-day analyses. The MRLIC contribution focused on key issues relevant for gender matters in LICs, in line with the IMF Gender Mainstreaming Strategy. More specifically, the clinic aimed to assist staff in using fiscal policies to help address gender inequality with a tool designed for LICs.

On inequality, the IMF-FCDO team conducted a virtual clinic on the Distributional Impact of Policies to support analytical and operational work. During the clinic, they presented the newly developed toolkit, the Multi-sector Incomplete Markets Macro Inequality (MIMMI). This toolkit comes with an App and is designed to simulate the long-run macro and distributional impacts of diverse economic policies and shocks in a customized calibrated model economy.

Challenges

Like last year, the substantial budget cuts have created a challenging work environment. Thanks to the unexpected one-off CCCDI financing, the impact has been somewhat mitigated. However, funding uncertainties have severely weighed on activities throughout the fiscal year. Given that our operational model relies on contractuals, the main challenge remains that contractual employees, who deliver more than 70% of the work, are difficult to find if contract renewal beyond the initial contract cannot be guaranteed.

Following the recommendations from last year and due to the limited funding, the team has continued to prioritize work on interconnected issues such as food security, climate change, and gender. Also as recommended last year, the committee to oversee the operationalization of the partnership was finally established. But due to the confluence of shocks around the world and the urgent requests from our membership, the committee has yet to meet. In the meantime, the work is still closely monitored by IMF senior management to ensure good management and operationalization.

Highlights of five broad topics

In this section, we provide a brief summary of the main outcomes that have been developed across the five main topics covered by the program.

(i) Modeling and Understanding policy choices

Under this topic, MRLIC staff have developed critical analyses on key issues related to the drivers of energy and food prices and monetary policy responses under fragile environments. This workstream is one of the current priority areas of the IMF's work.

A paper published in the *Journal of International Money and Finance* showed that price level is sensitive to energy price shocks with larger and more persistent effects in economies with lower energy intensity, less flexible labor market, looser fiscal policy stance, and less credible monetary policy. An IMF working paper assesses the drivers of local staple food price changes in Sub-Saharan Africa. Confirming the vulnerability of the region to global food price shocks, the analysis shows that staple food price inflation is lower in economies with greater local production and among products with lower consumption shares, while natural disasters and wars contribute to sharp real increases in staple food prices. According to this analysis, economic policy can help lower food price inflation, as monetary and fiscal policies can assist in addressing some of the economic and social constraints that drive cross-country differences in staple food price variations. Another paper published in *Applied Economics* analyses the role of monetary policy in fragility. It finds that a combination of reduced inflation and lower unemployment helps promote peace and cohesion. These findings highlight the need for increased attention to monetary policy when addressing fragility.

Furthermore, a research paper described the Quarterly Projection Model (QPM), which serves as the foundation for the Bank of Ghana's FPAS. The paper highlighted the historical track record of real-time policy analysis and medium-term forecasting with the QPM, underscoring its critical role in supporting the Central Bank's forward-looking monetary policy framework.

(ii) Understanding macro-financial linkages

The work under this topic has documented the resilient role of remittances from migrants, even when remittance fees are high, and analyzed policy actions that could potentially help reduce remittance fees. A paper published in the *Journal of Development Studies* documents that remittances increase with Covid-19 infection rates in recipient countries and that fiscal stimulus in host countries was positively associated with an increase of remittances in migrant home countries. Regarding the drivers of remittance fees, an IMF working paper finds that high remittance fees are associated with high rural population share and lower amount of remittances, while lower remittance fees tend to be associated with stability of the exchange rates and access to internet. It also finds that remittance corridors dominated by banks and few players are characterized by higher fees. Furthermore, our research shows that remittance fee reductions have been effective at boosting remittance flows. However, the effect lasts for a quarter. Other findings also document that higher competition in the remittance market, a deeper financial sector, and adequate correspondent banking relationships are associated with a lower elasticity of remittance to fees, while improved

financial literacy and higher ICT development coincide with remittances being less sensitive to fees.

A commissioned paper under the banking sector workstream analyzes bank ownership worldwide using a sample including 59 LICs. It finds that state-owned and foreign-owned banks located in developing economies pay and charge lower interest rates than their domestic private counterparts. State-owned banks also stabilize credit in the presence of domestic shocks while foreign banks amplify external shocks.

Overall, the research conducted in this area provides valuable insights into the dynamics of remittances and the role of different bank ownership structures, offering valuable policy implications.

(iii) Building resilience

As in the previous years, the team has deepened analyses of external shocks and developed policy tools to address them. A paper published in the *Journal of Development Economics* shows that large and persistent effects of weather shocks significantly impact the income convergence path of disaster-prone countries. On average, shocks cause a welfare loss equivalent to a permanent fall in consumption of 1.24 percent relative to non-disasters-prone countries. The paper finds larger welfare gains from international aid, if donors contribute to the financing of resilient settings before the realization of disasters rather than make disbursement aftershocks.

Another working paper covers 34 IMF reports for disaster years in 16 disaster-prone countries and finds that there has been a lack of systematic approach to monetary policy response to the increasing climate shocks in disaster-prone countries in recent decades. The research documents that inflation targeting remains the welfare-optimal regime and that the best strategy for monetary authorities is to resist the impulse of accommodating in the face of catastrophic natural disasters, and instead continue to focus on price stability.

These research findings contribute to a better understanding of the impact of external shocks on disaster-prone countries and provide insights into the role of monetary policy in such contexts.

(iv) Promoting structural change and institutional development

Of critical interest to the IMF, a departmental paper examines climate change and chronic food insecurity in Sub-Saharan Africa, as many LICs have been facing high food insecurity amid climate challenges and other shocks. The paper provides policy recommendations to adapt to climate shocks and mitigate their impacts while addressing household's immediate food access needs. The research finds that strengthening social assistance programs and public infrastructure, improving access to finance, enhancing regional trade integration, and improving transport infrastructure, help household access food immediately, while reinforcing acquisition of resilient and green production capacities and exchange facilities between countries. Another research uses high frequency data to assess trade barriers and finds that within-year retaliations through temporary barriers are more important in terms of intensity and frequency than previously understood in the literature. It also documents that trade retaliation is larger during periods of higher unemployment and when the trading partner targeted a domestic sector with comparative advantage.

A paper published in the *Oxford Economic Papers* analyses how labor market structures influence the impact of human capital investment in LICs. Using a setting that considers a segmented labor market, it documents that the distortionary structure of labor markets plays a role in shifting the optimal public investment program further in favor of human capital, relative to the case of flex-wage full-employment labor markets.

Another publication studies political institutions and output collapses and finds that growth is more likely to be sustained under democracy than under autocracy, with outputs collapse being more persistent in this latter group while democratic countries appear to be more resilient.

The research findings under this topic provide valuable insights into addressing food insecurity, optimizing public investment programs, navigating political fragmentation, and understanding the relationship between political institutions and economic stability.

(v) Enhancing inclusion

Significant output has been delivered under this topic and could help inform policymaking on the distributional implications of policies.

Related to Covid-19, a paper published in the *Journal of Macroeconomics* analyzes the medium-term macroeconomic impact of the pandemic and associated lockdown in LICs and finds that without sustained external financing, the loss-of-learning effects on labor productivity is likely to make the post-pandemic recovery more muted and more costly than researchers have previously suggested. Another research studies income convergence in the aftermath of the pandemic and finds that higher vaccination rates and targeted virus containment policies are associated with faster recovery in income in the medium term. However, in the case of developing countries, there is no clear evidence that economic support policies efficiently reduce cross-country income inequality. In parallel, another research shows that firms mainly respond to global lockdowns and the spread of the virus by reducing trade volumes (intensive margin) as opposed to exiting from import and export markets (extensive margin), with adjustment on extensive margin playing a more important role in developing countries.

Another publication in the *Economic Journal* draws theoretical insights on revenue mobilization in LICs from applications of the inequality toolkit developed in the earlier years of this partnership. A calibration on Ethiopian data shows that changing taxes alters the composition of demand, which in the context of limited labor mobility, causes the incidence of higher taxes to fall disproportionately on the rural population, regardless of the instrument. The research also finds that consumption taxes are the instrument with the largest welfare loss. The work also assesses the potential benefits of increasing the taxation of a foreign extractive sector in Guinea. It quantifies the long-run equilibrium impact of additional taxation when the proceeds are invested in human capital, inclusive infrastructure, and social transfers, and finds complementarities among the three forms of investment.

Two chapters of the book “Promoting inclusive growth in the MENA”, recently published by the IMF show that (i) a reform that simultaneously reduces market distortions and improves access to credit could lead to a more efficient allocation of resources and significantly boost output, wages, and jobs, and (ii) gender disparities in basic and financial legal rights are likely to be the most powerful barriers to women’s participation in economic activities in the MENA region, followed by restrictions in labor market codes and regulation.

3. LOG-FRAME OUTPUTS

The output of this research project is articulated around four main categories:

- 1) Produce high quality, policy-relevant research on macroeconomic issues affecting LICs
- 2) Promote and increase the usage of IMF research products generated under this project by IMF country teams and partner authorities
- 3) Strengthen engagement by senior IMF policymakers on issues affecting LICs
- 4) Strengthen capacity-building by expanding the network of LIC researchers

An overview of the research outputs for the eleven years of this project is given in Table 2. We have met the high target for all outputs for year 11 (FY2023) of the programme except for three outputs, where two exceeds the medium target and one meets the medium target. It is important to note the project remains on track on its deliverables despite the very challenging global context—inflationary pressures, heightened debt, trade disruption and geopolitical tensions—and budget cuts and turnover in staff.

To reflect the substantial reduction in funding, the targets were revised in May 2023 and the log-frame was also streamlined (this is reflected in Table 2 and Appendix I).

Table 2. Summary of Research Outputs

Type of output	Year 1 Outputs	Year 2 Outputs	Year 3 Outputs	Year 4 Outputs	Year 5 Outputs	Year 6 Outputs	Year 7 Outputs	Year 8 Outputs	Year 9 Outputs	Year 10 Outputs	Year 11 Outputs	Total	Revised Targets	
	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023			
Working papers (1.1)	13	17	10	16	20	18	20	16	21	14	15	180	H	176
													M	172
													L	168
Published papers (1.2)	2	6	8	9	15	10	12	15	13	8	7	105	H	105
													M	103
													L	101
Instances of uptake by authorities and IMF teams (2.1)	10	14	17	16	23	34	22	25	22	20	10	213	H	214
													M	211
													L	208
Courses (2.2)	.	.	.	.	.	9	7	4	8	10	5	43	H	44
													M	42
													L	40
High-level policy conferences attended by senior IMF staff (3.1)	6	4	2	1	9	8	6	4	2	8	3	53	H	54
													M	53
													L	52
Results of the research reflected in IMF policy papers such as Board papers, SDNs, policy memos to management (3.2)	4	4	3	2	6	10	7	5	8	5	5	59	H	59
													M	57
													L	55
Thematic areas of IMF policy influenced and made LIC-specific (1)	3	2	0	0	3	2	1	1	4	2	2	20	H	20
													M	19
													L	18

Log-frame Outputs

Output 1: Produce high quality, policy relevant research on macroeconomic issues affecting LICs

This year our team produced 13 working papers and published 6 papers on peer-reviewed journals.

Output 1.1 – Working Papers

Topic 1. Modelling and understanding policy choices

1. [Quarterly Projection Model for the Bank of Ghana](#)
2. [Staple Food Prices in Sub-Saharan Africa: An Empirical Assessment](#)

Topic 2. Understanding macro-financial linkages

3. [What Explains Remittance Fees? Panel Evidence](#)
4. [How Do Transaction Costs Influence Remittances](#)
5. [Bank Ownership Around the World](#)

Topic 3. Building resilience

6. [Monetary Policy Under Natural Disaster Shocks](#)
7. [Do Monetary Policy Outcomes Promote Stability in Fragile Settings?](#)

Topic 4. Promoting structural change and institutional development

8. [Political Institutions and Output Collapses](#)
9. [Climate Change and Chronic Food Insecurity in Sub-Saharan Africa](#)
10. [Retaliation through Temporary Trade Barriers](#)

Topic 5. Enhancing inclusion

11. [Trade and the COVID-19 Pandemic: Lessons from French Firms](#)
12. [Income Convergence or Divergence in the Aftermath of the COVID-19 Shock?](#)
13. [Mining Revenues and Inclusive Development in Guinea](#)
14. [Inclusiveness, Growth, and Stability](#) [Chapter 2 of Promoting Inclusive Growth in the Middle East and North Africa]
15. [Addressing Gender Gaps in MENA Labor Markets](#): [Chapter 5 of Promoting Inclusive Growth in the Middle East and North Africa]

Output 1.2 – Published Papers

Topic 1. Modelling and understanding policy choices

1. [How large and persistent is the response of inflation to changes in retail energy prices?](#)
Journal of International Money and Finance

Topic 2. Understanding macro-financial linkages

2. [Defying the Odds: Remittances during the COVID-19 Pandemic](#)
The Journal of Development Studies

Topic 3. Building resilience

3. [Macroeconomic Outcomes in Disaster-Prone Countries](#)
Journal of Development Economics
4. [Do Monetary Policy Outcomes Promote Stability in Fragile Settings?](#)
Applied Economics

Topic 4. Promoting structural change and institutional development

5. [Public Investment and Human Capital with Segmented Labour Markets](#)
Oxford Economic Papers

Topic 5. Enhancing inclusion

6. [Loss-of-learning and the Post-Covid Recovery in Low-income Countries](#)
Journal of Macroeconomics

Output 2: IMF research product produced under this project used by authorities and IMF country teams

This year there are 10 uptakes by country authorities and IMF country teams, and 5 courses offered to country authorities and IMF staff.

Output 2.1 – Country Applications with authorities and IMF Country Teams

FPAS framework - no publication under this topic this year.

1. Ghana Forecasting and Policy Analysis System (FPAS) TA

Diversification – no publication under this topic this year.

DIG/Investment scaling up/Debt sustainability – no publication under this topic this year.

Natural disasters/DIGNAD

2. [Madagascar: Technical Assistance Report—Climate Macroeconomic Assessment Program \(CMAP\)](#)
3. [Application of DIGNAD model to Madagascar \(Article IV\)](#)
4. [Policy Lessons from DIGNAD Simulations in Rwanda](#)
5. [Macro-Fiscal Implications of Climate Change Policies in Bangladesh](#)
6. [Application of DIGNAD model to Timor-Leste \(Selected Issues\)](#)

Income and Gender Inequality

7. [Selected Issues Paper: Macroeconomic Gains from Closing Gender Educational Gaps in Niger](#)

Other

8. [Mining Revenues to Strengthen Guinea's Development](#)
9. [Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes \(Article IV\)](#)
10. [Economic Effects of Climate Change and Food Insecurity in Niger: Niger \(Selected Issues Paper\)](#)

Output 2.2 – Courses to authorities and IMF Staff

1. Course on Macroeconomics of Gender Equality
2. Course on Distributional Impact of Policies and Reforms
3. Online Course Delivery: Training Course on Macroeconomics of Climate Change
4. ATI/AFE Workshop on Climate Change and Macro-Financial Policies
5. Helsinki Principle 4 Workshop: Using Economic Tools to Adapt and Build Resilience to Climate Change

Output 3: IMF strengthens engagement by senior IMF policymakers on issues affecting LICs

This year our team held and contributed to 3 high-level policy conferences, involving IMF senior staff. The team also contributed to 5 outputs that were discussed at the IMF Executive Board.

Output 3.1 – High-level Policy Conferences Attended by IMF Senior Staff

1. [2022 International Conference on Development Economics](#)
2. Conference on Fragile States
3. [Conference on Monetary Policy Frameworks-An Index and New Evidence](#)

Output 3.2 –Results of the research reflected in IMF policy papers such as Board papers, SDNs, policy memos to management

1. [April 2022 Fiscal Monitor Box 1.1: Social Protection and Poverty during the Pandemic](#)
2. [2022 External Sector Report – Box 1.3: External Sector Impact of Disaster Shocks](#)
3. [IMF Strategy Toward Mainstreaming Gender](#)
4. [Macroeconomic Developments and Prospects in Low-income Countries—2022](#)
5. [G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity](#)

Outcome Indicator 1 – Thematic areas of IMF policy influenced and made LIC-specific

1. Monetary policy and natural disasters and stability in fragile settings
2. Multi-sector Incomplete Markets Macro Inequality (MIMMI)

Other Outputs

E-newsletters

1. [June 2022 Newsletter](#)
2. [September 2022 Newsletter](#)
3. [December 2022 Newsletter](#)
4. [March 2023 Newsletter](#)

Blogs/Article/Press/Other

1. [VoxEU Blog: Investigating the drivers of remittance fees](#)
2. [IMF Blog: How Africa Can Escape Chronic Food Insecurity Amid Climate Change](#)
3. [IMF Blog: Africa Food Prices Are Soaring Amid High Import Reliance](#)
4. Food insecurity was a top issue raised by all low-income countries (LICs)' governors. The work by the MRLIC team on food security was featured prominently, including in the [MD's curtain raiser speech](#) of the 2022 IMF-World Bank Annual Meetings.

Internal presentations

1. Presentation on "A Macroeconomic Framework for Climate Adaptation and Mitigation Analysis" at the IMF Climate Innovation Challenge 2022
2. Presentation on "Adapting to Climate Change: A Macro Framework" at the IMF Research Development-Macroeconomic Seminar Series on June 27, 2022.
3. Presentation of Monetary Policy Framework (MPF) toolkit/data to IMF's iLab on May 18, 2022.
4. Presentation on "A Monetary Policy Framework for Low Income Countries" at the IMF Research Development-Macroeconomic Seminar Series on September 21, 2022.
5. Presentation on "A Macroeconomic Framework for Climate Adaptation and Mitigation Analysis" at the IMF FAD Analytical Hour in December 2022.
6. Internal Launch: The DIGNAD toolkit was launched at an iLab Innovation Event on Thursday, December 8, 2022.
7. Presentation of the DIGNAD model and toolkit at Institute for Capacity Development Department's Climate Working group in October 2022.
8. Presentation of the DIGNAD model and toolkit to Strategy, Policy and Review Department in November 2022.
9. Presentation of the DIGNAD model and toolkit to IMF's Resilience and Sustainability Trust working group in November 2022.
10. Presentation of the DIGNAD model and toolkit to Climate Indicators Dashboard's working group of Statistics Department in February 2023.

External presentations

1. Presentation of "A Monetary Policy Framework for Low Income Countries" during the 2nd Lille Reading Workshop on International Finance on November 18th.
2. Presentation of "Staple Food Prices in Sub-Saharan Africa: An Empirical Assessment" at CSAE Conference on March 19-21, 2023.

3. Presentation on “Monetary Policy Frameworks-An Index and New Evidence” a joint research seminar with the 'Caucasus, Central Asia, and Mongolia Regional Capacity Development Center' (CCAMTAC) on July 28th, 2022.
4. Presentation of “Current Developments in LICs” London School of Economics in February 2023.
5. Presentation of “Current Global Crises and their Impact on the Great Divergence” at London School of Economics on January 25, 2023.
6. Presentation at international discussion meeting “New horizons for increasing the understanding of the economic consequences of climate change” at the Royal Society in London on March 29-30, 2023.

Toolkits

1. Gender Labor Market Tool

ODA Memo to Management

1. The team provided an updated memorandum on potential crowding-out of development aid in the context of Russia's war in Ukraine to our Senior Management.

4. OUTPUTS: ADDITIONAL INFORMATION

Nothing more to report at this time.

5. UPTAKE/ENGAGEMENT WITH BENEFICIARIES

By design, this project continually aims to produce high quality research that is applicable to LICs and usable by country authorities, academics, and IMF staff. Each output captured in the log-frame reflects this overarching goal. Sections 2, 3, and 6 of this report address our uptake and engagement with beneficiaries in greater detail.

6. OUTCOMES AND IMPACTS

The MRLIC partnership has continued achieving great outcomes that have impacted various policy and academic audiences worldwide. Activities during this fiscal year have featured deliveries that have informed policy decision-making, as countries assess strategies to respond to multiple shocks while pursuing the sustainable development agenda. The program has disseminated knowledge through training, conferences, and the production of insightful documents and toolkits, further enriching the field of expertise.

Output from the MRLIC program has also continued to be featured in flagship IMF documents such as the Regional Economic Outlook (REO), the External Sector Report, the Fiscal Monitor, various Staff Reports and Article IV, and Technical Assistance Reports. Output from the MRLIC program was also featured at the curtain raisers during IMF global events such as the 2022 IMF-World Bank Annual Meetings.

The program also contributed to the delivery of the IMF Strategy toward Gender mainstreaming which is central to the institutions' efforts to deepen engagement on gender issues in membership.

The MRLIC staff contributed to the G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity. The document flagged the rising food and energy insecurity and various related geopolitical and structural challenges. Acknowledging steps already taken by the international community to tackle the issue, the note underscored the urgent need for more efforts and better coordination from the international community to help mobilize more resources toward energy and food security in LICs.

Among other activities, the production and presentation of the LICs Report, both at the IMF Executive Board and during in-person outreaches with key international and regional policy institutions (such as Banque de France and the African Development Bank), have provided significant exposure to the program. The report documented key stylized facts and presented in-depth analyses together with proposals to improve living conditions in LICs. It should also be noted that the LIC report serves as an anchor for the Poverty Reduction and Growth Trust (PRGT) fundraising efforts. The report has received strong positive feedback from participants.

The program was involved in the organization of several important conferences on topics relevant to the LICs. There have been high-level conferences organized that involved participants from academia, country and regional authorities, international institutions, and civil societies. These widely attended events provided great platforms to discuss insights and lessons from research and practices and to better understand LICs circumstances and the critical necessity of shaping relevant policies to address their issues. The Economic Development conference held in Clermont-Ferrand, France, saw the MRLIC program sponsoring over fifteen participants from LICs around the world. The recipients of this support greatly appreciated the opportunity to attend the conference, as it would have been challenging for many of them to do so without it.

Output from the MRLIC program has also been disseminated online in various platforms, including in quarterly newsletters and internationally renowned blogs such as VoxEU. Supported by this partnership, program staff also participated and presented research within the IMF and at academic institutions which have provided positive feedback and constructive suggestions for future research.

The toolkits developed under the program have continued to appeal to country desks, leading to a large number of country applications. In particular, with countries looking for ways to mitigate and adapt to climate change challenges, the DIGNAD toolkit has been utilized in six country applications. The toolkit has also been presented at the ATI/AFE workshop on Climate Change and Macro-Financial Policies in Nairobi Kenya, and training has been provided to participants from central banks and country authorities from LICs. These courses allowed the opportunity for participants to engage in in-depth discussions.

With gender, inequality, and inflation remaining prominent issues to LICs, the newly developed toolkits, such as the Gender Labor Market toolkit and the MIMMI toolkit, are expected to attract more country applications in the coming years.

Clinics presented internally were also very welcome by staff and helped with their work. The clinic on Macroeconomics of Gender Equality was well-received, earning an impressive average rating of 4.54 out of 5. More than 80 percent of participants agree that the course coverage was great, while more than 95 percent indicate that the course expectations were met. The clinic on the MIMMI app was also greatly received by participants.

As monetary authorities in LICs seek to improve their monetary policy conduct, the IAPOC toolkit provides key tools to strengthen monetary frameworks for more effective effects of monetary policies.

Stressing the importance of building resilience to shocks in LICs, **Bo Li**, Deputy Managing Director overseeing climate work, stated “The IMF has a crucial role in assisting its members in addressing the challenges of climate change, which pose a significant threat to long-term growth and prosperity. Countries around the world have emerged from the pandemic with higher debt levels and are also facing spillover effects from the war in Ukraine. This has further complicated the task for policymakers in scaling up climate-resilient investments, which are critical for reducing vulnerabilities to natural disasters and the gradual impacts of climate change. The FCDO-IMF partnership has been instrumental in advancing research on the macroeconomics of climate adaptation, leading to the development of models and toolkits that have empowered IMF country teams to provide policy advice across a wide range of country applications, addressing the macro-fiscal trade-offs involved in scaling up adaptation investments.”

Acknowledging the immense contribution of the MRLIC, **Ceyla Pazarbasioglu**, Director of the Strategy, Policy, and Review Department, said “For more than a decade, the IMF-FCDO MRLIC program has played a tremendous role in our commitment to serve low-income countries. This has become even more critical in the last few years, when LICs were hit by multiple shocks, including the pandemic, higher energy and food prices, tightening global financial conditions, and a slowing global economy. The collaboration has made a rich contribution by helping highlight the impacts of the shocks and assess policy options with often difficult tradeoffs. In addition, the IMF is scaling up its engagement on emerging topics such as climate change and gender issues which are being integrating into all aspects of IMF operations including surveillance, lending, and capacity development. This program has provided great support in these efforts for LICs, and we are eager to continue our partnership going forward.”

The IMF is stepping up its efforts to strengthen financial and technical capacities in LICs as they find ways to overcome the multiple shocks and improve living conditions. In this regard, the FCDO-IMF partnership remains pivotal to reinforcing sound data-informed policy decisions.

7. COSTS, VALUE FOR MONEY, AND MANAGEMENT

The approved budget for the project is US\$29.5 million.²

Appendix 2 provides the project's formal financial reporting, generated by the IMF's accounting system. As of April 2023, \$24.9 million has been drawn from the subaccount. These figures reflect a lag of actual expenses of approximately two to three months to enable the requisite verification of expenses before they are charged to donor subaccounts.

The following table provides an indicative breakdown of spending over 11 years of the project. We do not foresee any changes in cost structures due to exchange rates.

Table 3. Project Expenditures in Years 1-11

Activity	Years 1-11, Cumulative
HQ led missions including entire mission team	\$6,823,847
Research HQ based / Visiting Scholars; Short-term Advisors; Development of CD tools; Development of general CD technical materials; Development of training courses or other learning materials	\$10,644,535
Seminars & Study Tours; Interactive learning and workshops	\$1,772,410
Project Backstopping	\$3,173,599
Project Management	\$344,669
Exceptional Expenses	\$550,638
Language Services	\$2,170
Trust Fund Fee	\$1,631,131
Total	\$24, 932,999

Source: Appendix 2.

Note: Activity items are consolidated.

Value for Money:

This project remains highly cost effective, owing to solid governance of the procurement process and the high-quality work by the team. The team strictly follows all Fund guidelines for hiring, travel, and conferences. All contractual employees undergo a competitive process before being hired. Outputs are produced within strict timeframes and must meet Fund requirements for publication. The quality of our papers is further assessed when they are submitted to peer-reviewed publications.

The average cost per paper is lower than the FCDO benchmark of \$186,720 (£150,000) per paper.³ Table 4 shows that the cost per working paper for the 11 years is approximately \$72,000

² This is based on \$23.3 million up to Phase 3 plus \$6.2 million of Phase 4 (which is equivalent to £5 million based on the exchange rate as of May 13, 2023).

³ The currency conversion is based on the exchange rate as of May 13, 2023 (U.K. £1 = U.S. \$1.24). The FCDO benchmark cost per paper is £150,000, while its value in U.S. dollars is subject to exchange rate fluctuations. Also, note that last year, 24 working papers were reported but only 14 were counted during the review process. Hence, the cost per working paper is slightly up this year compared to last year as we adjust the total numbers of working papers from 191 to 180.

(£57,000), compared to about \$70,000 (£58,000) last year and that the cost per published paper is about \$124,000 (£100,000), compared to about \$124,000 (£102,000) last year. We estimate that staff, contractual employees, and visiting scholars spend 75 percent of their time on research papers, while the remaining 25 percent is devoted to country applications work.⁴ The total staff, contractual, and visiting scholar cost is thus split between papers and applications.

The quality of the project outputs is very high despite the low average cost. The total number of publications reached 105 over the 11 years. The full list of the publications is available at the project's [website](#) (in an excel file under "Outputs" in the middle of the left-side menu section). As noted in a dedicated paragraph in the Progress and Achievements part of Section 2, the papers are published on high-ranked journals and are well cited by external researchers. Our products are also featured in programs of prestigious conferences as noted in Section 6. Strong uptakes by country authorities and IMF country teams also demonstrate the high relevance and usefulness of the project's outcomes in practical policymaking.

Table 4. Cost per Working and Published Paper during Years 1-11

Total Staff/Contractual/VS Costs ¹	\$17,468,382
Research Paper Costs	\$13,101,287
Country Applications Costs	\$4,367,096
Working Papers ²	180
Cost Per Working Paper	\$72,785
Published Papers ²	105
Cost per Published Paper	\$124,774

¹ Estimated as the sum of the first two lines of Table 3. Note that the first line of Table 3 includes both IMF staff salary and travel expenses. Thus, the estimates we have calculated for working and published paper costs likely overestimate the true cost of research time.

² These include commissioned papers.

Direct project management costs represent approximately one percent of our total budget. If we include the Trust Fund management fee, program management costs will be about eight percent. This means that most of the funds available to this project have been spent on producing high quality research.

⁴ The total research staff costs are estimated as the sum of the first two lines of Table 3. Note that the first line of Table 3 includes both IMF staff salary and travel expenses. Thus, the estimates we have calculated for working and published paper costs likely overestimate the true cost of research time.

8. WORK PLAN AND TIMETABLE

Individual work plans

An overview of our plans for each topic is presented below.

(1) COVID-19

- a. The team will prepare a paper on *Will Working from Home Stick in Developing Economies?* In developing economies, a shift to working from home during the COVID-19 pandemic varies substantially. An increase in teleworking days per week ranges from 0.7 to 17.6 percentage points across 10 developing countries covered by an online survey to about 500 respondents per country. An estimated income discount associated with telework disappeared temporarily at the onset of the pandemic. A calibrated model indicates that workers' preferences to telework may largely depend on their educational attainments. Whether telework will sustain in these countries could depend on obstacles to telework, particularly for workers with less education, and a degree of economy-wide externality.
- b. The team will develop a toolkit on *Online Survey on COVID-19 Impacts on Developing Economies*. This toolkit contains a preview on some of the responses for a survey on the impacts of COVID-19 in different areas for ten developing economies. The survey is conducted by Nielsen, a global market research company. The countries included are Argentina, Brazil, Ecuador, India, Indonesia, Pakistan, Peru, South Africa, Türkiye, and Vietnam. Here the authors aggregate some of the responses in terms of telework, health and economic impacts during the pandemic as well as some respondent's characteristics.

(2) Modelling policy choices

- a. The team will work on a paper on market reforms and debt sustainability. Many emerging market and developing economies face a difficult trade-off between economic support and fiscal sustainability. Market-oriented structural reforms ease this trade-off by promoting economic growth and strengthening public finances. The empirical analysis in this note, based on 62 EMDEs over 1970-2014, shows that reforms are associated with sizeable and long-lasting reductions in the debt-to-GDP ratio mainly through higher fiscal revenue and lower borrowing costs. These effects are larger in countries with greater tax efficiency, lower informality, and higher initial debt. Moreover, a model-based analysis elaborates on such fiscal gains can be enhanced when revenue windfalls associated with reforms are saved or channeled through higher public investment.
- b. Staff will work on a paper that will focus on an anatomy of monetary policies, tools, and transmission in LICs. The paper will examine the institutions of monetary transmissions in LICs by surveying country teams and authorities, utilizing country technical assistance reports, central bank documents, and the IMF's internal database. It emphasizes the structural elements/frictions essential for understanding the transmission (or lack thereof) of monetary policy, including financial factors, fiscal concerns and real sector issues. It quantifies the degree of these frictions and studies how they conceptually and empirically impact monetary transmissions.
- c. Staff will do a macroframeworks technical assistance (TA) on developing a forecasting and policy analysis system at the Bank of Ghana. The TA mission will work towards improving the existing FPAS organization at the Bank of Ghana (including fine-tuning of

the model extensions, construction of alternative scenarios, and upgrading documentation) and its better integration into the decision-making process. The mission will also contribute towards further development of analytical and forecasting skills of the Bank of Ghana staff.

- d. The team will produce a paper on *A Monetary Policy Framework for Low Income Countries*. The authors will develop an Open Economy HANK model with relevant features for low-income countries: poor households with no access to markets and a subsistence level of consumption for tradable goods. With the model calibrated for an average LIC, the authors analyze the effects of a shock to external prices on macro variables, inequality and poverty, and how monetary policy can best respond. The authors also plan to present the paper at external conferences.
- e. The team will provide input to a paper on *Strengthening Monetary Policy Frameworks in the Caucasus and Central Asia*. The team will contribute to the paper with some inputs from the existing work on Monetary Policy Frameworks. This paper reviews the Caucasus and Central Asia (CCA) region's monetary policy landscape, highlights challenges in monetary policy design and implementation, and identifies areas that warrant strengthening.
- f. The team will put together a paper on *Monetary Policy Frameworks and Communication in the Caucasus and Central Asia*. Central banks in Caucasus and Central Asia (CCA) have been upgrading their monetary policy frameworks in the last decade and are at different stages of the transition to a type of inflation targeting regimes. This paper documents their progress and the state of their monetary policy framework, using the IAPOC index covering Independence and Accountability, Policy and Operational Strategy, and Communications developed by Unsal and others (2022) with additional information from central banks' laws and monetary operations. In addition, press releases of CCA central banks are assessed in terms of their features, content, and tones.
- g. The team will put together an IMF blog on central banks communications. The focus of this blog will be on the improvements made in central bank communications between 2018 and 2021, and possible drivers of such changes. The authors will talk about how the latter are heterogeneous across different income-levels, with emerging markets improving more compared to others, also providing country examples. The authors are planning to connect these outcomes to our updated IAPOC toolkit (data for 2021 to be also released at the time of the blog).
- h. Staff will do a country application of DIGNAR 19 for Guinea to study the impacts of investments in public infrastructure in the context of an increase in commodity-driven exports.
- i. Staff will develop an economic growth excel tool to simulate economic growth scenarios taking into account gender gaps in the labor market.
- j. A team will develop a toolkit to provide a user-friendly excel-based interface for nowcasts of quarterly GDP growth for 200 economies around the world. Nowcasts are generated based on a new panel approach that can even cover countries without quarterly GDP data.

(3) Understanding macro-financial linkages

Currently, we do not have any work planned under this topic, but this could change in the coming months.

(4) Building resilience

- a. Staff will work on an application to Solomon Islands using Big Data and High Frequency Surveillance for Pacific Islands Countries. Pacific Islands Countries typically have capacity constraints that prevent them from publishing timely high-frequency data, a key input for macroeconomic surveillance in general and especially during disruptive events, such as social unrest, natural disasters, or a pandemic. This project aims to fill that gap by implementing a simplified version of Arslanalp, Koepke and Verschuur (2021) using satellite-based vessel tracking data from the Automatic Identification System on ships activity to nowcast monthly trade flows. Additionally, the authors use port activity data to estimate economic disruptions due to social unrest in 2021.
- b. Staff will have a series of work on *A Macroeconomic Framework for Climate Adaptation*. This includes a working paper, conference presentation, an application in an Article IV and Selected Issues Paper. The authors build a small open economy model to analyze climate adaptation needs in developing economies. They model two types of climate risks, slow moving depletion of resources and natural disasters. Their model features endogenous entry and adaptation choice in the land-intensive agricultural sector, while firms are neoclassical in the manufacturing and services sectors. The authors model explicitly the private sector's endogenous climate adaptation decisions, such as adopting green technology and investing in resilient capital, and study how government policies can help achieve the first-best level of private adaptation.
- c. There will be an online course for IMF staff and country authorities on *Macroeconomics of Climate Change - Economics of Adaptation*. IMF staff and government officials will be welcome to register for this course. In this course, participants will learn about the definition of adaptation, as well as policies and strategies for promoting and mainstreaming adaptation. They will also learn about DIGNAD, a climate modeling tool countries (in particular low-income countries that are exposed to natural disasters) can use to analyze their resilience to climate shocks.
- d. There will be also a course on *Debt, Investment, Growth, and Natural Disaster* (DIGNAD model) for IMF staff.
- e. There will be a series of country application with IMF country teams on DIGNAD in the context of the country's request for an arrangement under the Resilience and Sustainability Trust (RST) facility. Countries included are: Mauritania, Kenya, and potentially others. An analysis using the DIGNAD toolkit could be featured as a Box or Annex of the IMF Country Report. It will assess the impact of natural disasters on GDP and total public debt for the country in the context of the country's request for an arrangement under the RST facility. The simulations illustrate the pros and cons of investing in more robust infrastructure that could result initially in higher public debt but could improve the resilience of the economy by reducing the adverse impact of natural disasters on output, damages to physical assets, and post-disaster fiscal costs for rebuilding and lifeline support.
- f. The team plans to do an external release of the DIGNAD Toolkit User Manual for external users along with publication of the toolkit.
- g. There will be a workshop to IMF staff on *Climate Community of Practice – Macroframeworks and Projections*. With the impact of climate change on the economic activity becoming ever more pronounced and with climate policies expected to reshape many economies, both authorities and country teams are facing the challenge of incorporating these effects into their macroeconomic frameworks (including in the context of the RST). A community of practice involving economists from both area and

functional departments would facilitate the exchange of ideas, approaches, and experiences in this area as well as dissemination of information about available tools and best practices. The main objective of the workshop is to familiarize Fund staff, particularly country economists, with these models and help them understand similarities and differences between the models and make informed decision about applying the models in their work.

- h. There will be a workshop on *Climate Change and Macro-Financial Policies*. Following the successful *ATI/AFE Workshop on Climate Change and Macro-Financial Policies* at the Kenya School of Monetary Studies, the DIGNAD team are invited to present the toolkit with hands-on practice session at a similar workshop with Africa Regional Technical Assistance Center South in Sandton, South Africa. The workshop on climate is the result of cross-departmental collaboration and responds to the demand for more practical sessions to complement the *Macroeconomics of Climate Change* (MCC) from several of the central bank governors and finance ministers.
- i. There will be an academic workshop on the economics of climate adaptation for DIGNAD's external launch. There will be 6 presentations with discussants, 3 internal, 3 external, with a 'keynote' presentation to launch DIGNAD.
- j. The team will do a country application on Chad's *Development and Resilience to Climate Change*. It will explore the impact of development policies based on limited fiscal space and measure their protective power from climate change.
- k. The team will present the work on climate change and domestic debt costs at the *1st Women in Macroeconomics, Law and Economics, and Economic History Workshop* in Boon (Germany).
- l. A working paper will explore how does the private sector react to large natural disasters in terms of investment.

(5) Promoting structural change and institutional development

- a. There will be a working paper on mitigating social unrest from fuel price increases. This paper investigates empirically whether fuel price increases are typically associated with social unrests using a sample of 101 developing countries over the period 2000-2020. The mitigation roles of macroeconomic and institutional factors are also investigated.
- b. The team plans to put together a paper on *Do Capital Inflows Spur Technology Adoption? Evidence from a New Technology Diffusion Index*. The authors will assess the link between capital flows and the adoption of new technologies across emerging economies and low-income countries. They will compile a novel indicator of the technological intensity of imports of each country leveraging patent data from PATSTAT, and evaluate the impact of exogenous variations in statutory capital flow regulations on this measure.
- c. Staff will work on a paper that will look at growth strategies and diversification for Pacific Islands Countries. The authors examine growth strategies for the Pacific Islands Countries by focusing on the effects of tourism and diversification. First, the authors quantify the contribution of tourism to growth using panel regressions and they compute how much additional tourism would be needed by Pacific Islands Countries to sustain the growth rate of comparators. The authors then identify diversification spurts in the Pacific Islands Countries and quantify its benefits using the synthetic control method. Finally, the authors outline a framework for designing growth strategies in the Pacific Islands Countries, focusing on how to detect Pacific Islands Countries' binding constraints and work around its limitations.

- d. Another paper will look at climate shocks and structural transformation. The occurrence of climate shocks and natural disasters affects differently economic sector and may have larger impact on agricultural one, leading to reallocation of labor force to industry and services. This change in sectoral employment structure is similar to traditional structural transformation, except that it is caused by productivity lost in agriculture and not improvement in other sectors. The project explores this atypical structural change caused by climate shocks using a relevant measure of structural transformation and sectoral disaggregated dataset.

(6) Enhancing inclusion

- a. The team extend the MIMMI App to include gender differences that can be used to test the mutual impact of gender and macro/distributional outcomes.
- b. There will be a working paper on *International Food Prices, Growth and Inequality in Africa*. The paper will look at the long run effects of higher international food prices and policy remedies.
- c. There will be another paper on *Mining Revenues and Inequality in Guinea*. The paper will look at the impacts of development policy using increased revenue from foreign extractive industries.
- d. Another paper will look at *Distributional Consequences of Fiscal Policies in Namibia*.
- e. There will be an internal training, a user's manual, and internal app of MIMMI for IMF staff. It will provide a new version of the application for the computation of customizable economic models to analyze the macroeconomic and distributional consequences of shocks and policies.
- f. Staff will look at the *Impact of the Simandou Project In Guinea*. They will estimate the macro-inequality impact of a large mining project in Guinea and produce guidance regarding the use of the increased government revenues from the project.
- g. A team will examine the impact of digitalization on people's perceptions of women as political leaders in 34 Sub-Saharan African countries. The project will also be presented at the *2nd Workshop on Gender and Economics* in Luxembourg University (Luxembourg).
- h. A team will put together a paper on legal barriers to women's labor force participation: which laws matter the most? The paper will evaluate the effectiveness of 35 different policies in fostering increasing participation of women in the labor market.
- i. A paper will look at gender as a factor for remittance inflow. Using household survey data, the authors will explore the gendered effects on remittance inflows and balance of payments.
- j. A toolkit will assess the interplay of gender inequality in the labor market and debt sustainability analysis.
- k. Finally, there will be a paper on drivers of life expectancy in low-and-middle income countries. It will do an empirical assessment of the determinants of health outcomes in LICs.

9. RISK

The main challenge of the FCDO-IMF partnership stems from the project's annual budget cuts. These funding cuts come at very difficult time where many LICs are grappling with a host of daunting policy challenges, ranging from high debt, lingering inflation, climate shocks, legacies of the pandemic, to the spillovers of geoeconomic fragmentation and the fallout of the war in Ukraine. Additional budget cuts, disbursement delays, or funding uncertainties will severely compromise the team's ability to sustain the production and delivery of much needed high-quality outputs to strengthen sound policy-making and boost economic resilience in LICs as initially agreed in the Letter of Understanding. Practically, it has been extremely difficult to retain or hire competitive contractuels and visiting scholars and respond to the increased number of requests for support the project is facing. Noticeably, 7 out of the 15 FCDO team members who have left RES and SPR since last year are contractuels. These 7 contractuels accounted from about a third of RES and SPR staff working the program. This has triggered a broad and time-consuming hiring process and weighed on the number of outputs produce to meet the yearly targets. Moreover, because the CCCDI envelope used to support the program this year is only temporary, this adds to the funding uncertainty and compels the IMF to look for complementary sources of funding in the future. Searching for alternative funding sources requires time and puts more pressure on our already stretched team.

10. MONITORING AND EVALUATION

Monitoring

IMF reports to FCDO annually regarding the outputs included in the log-frame. In addition to this formal reporting requirement, we provide quarterly updates to our [website](#) so that FCDO and the public in general have up-to-date information on our research and progress. The team sends out quarterly e-newsletters that reach an audience of more than 1500 academics, policymakers, central bank staff, and government representatives, among others. These e-newsletters are posted on the project website. We also upload all publicly available working and published papers to the R4D portal on the FCDO website so that FCDO staff members can easily search and retrieve our outputs. To further ensure public access to all outputs produced through the grant, we provide “gold access” to journal publications. When deemed necessary by the IMF and FCDO project members, we conduct video conference calls to discuss the project.

Evaluation

While FCDO conducts a yearly evaluation of the program, no budget for an external evaluation was included in the project budget.

11. FURTHER INFORMATION

Our team has started brainstorming on a Phase V proposal to improve the analytical and policy tools to bolster the economic resilience of LICs amid increasingly frequent and large shocks.

APPENDIX 1. LOG-FRAME

PROJECT NAME	Macroeconomic Research in Low-Income Countries (LICs)							
IMPACT	Impact Indicator 1		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)
Better macroeconomic policymaking in LICs leading to faster economic growth, job creation and poverty reduction.	Proportion of people living in extreme poverty in LICs	Planned	(2018) MRLIC countries: 28.5%					
		Achieved						
		Source						
		World Bank, Poverty and Equality dataset, Poverty headcount ratio at \$1.90 a day (2011 PPP) (% of population), Simple average of MRLIC countries (Table 1 of Annual Report).						
	Impact Indicator 2		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)
	Economic growth rates in LICs	Planned	(2019) MRLIC countries: 4.0%					
		Achieved						
		Source						
		IMF WEO data, Real GDP growth, Annual percent change, Simple average of MRLIC countries (Table 1 of Annual Report).						

OUTCOME	Outcome Indicator 1		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
Better engagement by IMF policy-makers on LIC-specific macroeconomic issues, leading to improved policy-making in specific project thematic areas.	Evidence of Improved IMF policymaking and integration of LIC-specifics in project thematic areas.	Planned	March 2020 (12)	By March 2021: H (16) M (14) L (12)	By March 2022: H (18) M (16) L (14)	By March 2023: H (20) M (19) L (18)	By March 2024: H (21) M (20) L (19)	By March 2025: H (22) M (21) L (20)	Specific context: the average per year (Yr 1 - 8) is 2. So medium case is one per year for Yr 11-13. High case one additional, low case one fewer.
		Achieved		16	18	20			
		Source							
		IMF Reporting - board papers, policy papers, conference reports/papers, pilot applications of country teams, refs in staff docs, or internal policy memos.							
INPUTS (£)	FCDO (£)	Govt (£)	Other (£)	Total (£)				FCDO SHARE (%)	Memorandum
	£5.1 million		£1.0 million	£6.1 million				84	<p>"Other" is USD 1.2 million for FY2022 from the IMF's COVID-19 Crisis Capacity Development Initiative (CCCDI), which is an external funding vehicle (with U.K. £1 = USD 1.219950, as of May 13, 2022). "Other" does not include the cost-sharing from the IMF's internal budget.</p> <p>The outputs of the CCCDI-funded project are counted towards the output targets for the MRLIC, only when the outputs are assessed to be within the aims and scope of the MRLIC.</p> <p>For Yr 11 - 13, the annual disbursement is rephased and the output target levels are adjusted accordingly.</p>

OUTPUT 1	Output Indicator 1.1		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
High quality, policy relevant research on macroeconomic issues affecting LICs produced.	Number of priority research papers produced, on the five research themes of the MRLIC (see Assumptions)	Planned	March 2020 (130)	By March 2021: H (151 papers) M (146 papers) L (141 papers)	By March 2022: H (167 papers) M (160 papers) L (155 papers)	By March 2023: H (176 papers) M (172 papers) L (168 papers)	By March 2024: H (186 papers) M (182 papers) L (178 papers)	By March 2025: H (196 papers) M (192 papers) L (188 papers)	<p>Specific context: the average output per year (Yr 1 - 8) is 16. So medium case is 8 per year for Yr 11-13. High case 3 additional, low case 3 fewer. High-level context:</p> <p>1) No major global challenge was initially assumed, such that IMF staff can devote time to the project as committed, but two global shocks (COVID-19 pandemic, war in Ukraine) required adjustments.</p> <p>2) IMF are able to identify high-quality academics working on specific research topics, and agreeable to IMF terms and conditions.</p> <p>3) Academic researchers are able to deliver contracted inputs consistent with timeframes envisaged for the project.</p> <p>4) Counterpart inputs materialise as anticipated.</p> <p>Five research themes of the MRLIC:</p> <p>(1) Modelling and understanding policy choices</p> <p>(2) Understanding macro-financial linkages</p> <p>(3) Building resilience</p>

								(4) Promoting structural change and institutional development (5) Enhancing inclusion
	Achieved		151	162	180			
	Source							
	IMF publications							
Output Indicator 1.2		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
Number of research papers accepted for publication in appropriate high-quality peer-reviewed journals	Planned	March 2020 (77)	By March 2021: H (90 papers) M (86 papers) L (82 papers)	By March 2022: H (99 papers) M (95 papers) L (91 papers)	By March 2023: H (105 papers) M (103 papers) L (101 papers)	By March 2024: H (110 papers) M (108 papers) L (106 papers)	By March 2025: H (115 papers) M (113 papers) L (111 papers)	Specific context: the average output per year (Yr 1 - 8) is 9. So medium case is 5 per year for Yr 11-13. High case 2 additional, low case 2 fewer.
	Achieved		90	98	105			
IMPACT WEIGHTING (%)	Source							
34	IMF to provide details of academic publications and acceptances							

OUTPUT 2	Output Indicator 2.1		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
IMF research products (policy analysis, practical and operational tools and frameworks) produced under this project used by IMF country teams and partner authorities.	Application and use of tools and frameworks by country authorities and country teams.	Planned	March 2020 (161)	By March 2021: H (181) M (174) L (167)	By March 2022: H (199) M (194) L (189)	By March 2023: H (214) M (211) L (208)	By March 2024: H (222) M (219) L (216)	By March 2025: H (230) M (227) L (224)	Specific context: the average output per year (Yr 1 - 8) is 21, including courses that are now separated to new output indicator 2.2. Medium case is 8 per year for Yr 11-13. High case is 3 additional, low case is 3 fewer.
		Achieved		183	203	213			
		Source							
		IMF reporting on evidence of number of country teams applying policy tools and frameworks							
	Output Indicator 2.2		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
	Courses offered to country authorities and IMF staff	Planned	March 2020 (20)	By March 2021: H (28) M (25) L (22)	By March 2022: H (35) M (32) L (30)	By March 2023: H (44) M (42) L (40)	By March 2024: H (48) M (46) L (44)	By March 2025: H (52) M (50) L (48)	Specific context: Newly separated from output indicator 2.1. Medium case is 4 per year for Yr 11-13. High case 2 additional, low case 2 fewer.
		Achieved		28	38	43			
	Source								
IMPACT WEIGHTING (%)		IMF reporting evidence of number of country authorities applying policy tools and frameworks							
33									

OUTPUT 3	Output Indicator 3.1		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
Engagement by senior IMF policymakers on issues affecting LICs strengthened through this project.	High level policy conferences attended by senior IMF staff reflect findings of research papers funded under this project.	Planned	March 2020 (40)	By March 2021 H (45) M (43) L (41)	By March 2022: H (48) M (46) L (44)	By March 2023: H (54) M (53) L (52)	By March 2024: H (57) M (56) L (55)	By March 2025: H (60) M (59) L (58)	Specific context: the average output per year (Yr 1 - 8) is 5. Medium case is 2 per year for Yr 11-13. High case is 1 additional, low case is 1 fewer.
		Achieved		42	50	53			
		Source							
		IMF reporting on number of policy conferences drawing on outputs from the project							
	Output Indicator 3.2		Baseline	Milestone 1	Milestone 2	Milestone 3	Milestone 4	Target (March 2025)	Assumptions
IMPACT WEIGHTING (%)	Results of the research reflected in IMF Board discussions and papers such as IMF Policy Papers, Staff Discussion Notes, policy memos to management etc.	Planned	March 2020 (41)	By March 2021: H (48) M (45) L (42)	By March 2022: H (53) M (52) L (50)	By March 2023: H (59) M (57) L (55)	By March 2024: H (62) M (60) L (58)	By March 2025: H (65) M (63) L (61)	Specific context: the average output per year (Yr 1 - 8) is 5. Medium case is 3 per year for Yr 11-13. High case is 2 additional, low case is 2 fewer.
		Achieved		49	55	59			
		Source							
33		IMF reporting on number of IMF Board discussions and IMF Policy Papers drawing on outputs from the project							

APPENDIX 2. FINANCIAL REPORTS



International Monetary Fund
United Kingdom - Project on Macroeconomic Research in LICs
Bilateral - Cash Flow Statement
As of April 30, 2023
(In U.S. Dollars)

	Cumulative						
	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total
Contributions ^{1/}	19,623,637	1,968,935	2,088,790	-	2,270,441	-	25,951,803
Interest Earned	65,170	56,743	41,005	236	1,438	54,253	218,845
Total Cash Available	19,688,807	2,025,678	2,129,795	236	2,271,879	54,253	26,170,648
Expenses Paid ^{2/}	16,398,896	2,490,122	1,892,693	1,790,324	1,093,154	1,267,810	24,932,999
Cash Balance	3,289,911	2,825,467	3,062,569	1,272,481	2,451,206	1,237,649	1,237,649

^{1/}Contributions are net of transfers and return of funds.

^{2/}Expenses paid include the 7% TFM.



International Monetary Fund
United Kingdom - Project on Macroeconomic Research in LICs
Bilateral - Detailed Progress Report
As of April 30, 2023
(In U.S. Dollars)

Region/Country	Project ID	Project Description	Status	Start Date	End Date	Latest Approved/ Proposed Budget	Expenses	Remaining Balance 1/	Execution (%)
International Monetary Fund	IMF_IMF_2012_01	DFID Macro Research 1&2	Closed	5/1/2012	3/31/2017	12,451,409	12,451,410	0	100%
		HQ led missions including entire mission team				6,411,796	6,411,796	-	-
		Short-term Advisors - CD delivery				477,102	477,102	-	-
		Research HQ based / Visiting Scholars				2,235,765	2,235,765	-	-
		Seminars & Study Tours				1,273,384	1,273,384	-	-
		Project Backstopping				1,911,379	1,911,379	-	-
		Project Management				141,984	141,984	-	-
International Monetary Fund	SPR_IMF_2017_04	DFID Macro Research 3	Closed	4/1/2017	3/31/2020	6,991,674	6,991,674	0	100%
		HQ led missions including entire mission team				389,849	389,849	-	-
		Short-term Advisors - CD delivery				48,460	48,460	-	-
		Research HQ based / Visiting Scholars				4,677,110	4,677,110	-	-
		Seminars & Study Tours				400,115	400,115	-	-
		Project Backstopping				1,054,899	1,054,899	-	-
		Project Management				84,611	84,611	-	-
		Exceptional Expenses				335,282	335,282	-	-
		Language Services				1,348	1,348	-	-
International Monetary Fund	SPR_IMF_2020_02	DFID-4 Macro Research	Approved	4/1/2020	3/31/2025	6,902,049	3,858,784	3,043,265	56%
		HQ led missions including entire mission team				22,202	22,202	-	-
		Research HQ based / Visiting Scholars				1,185,909	1,185,909	-	-
		Project Backstopping				207,321	207,321	-	-
		Project Management				20,668	20,668	-	-
		Exceptional Expenses				215,356	215,356	-	-
		Language Services				822	822	-	-
		CD project management 2/				305,000	87,406	-	-
		Development of CD tools 2/				1,416,000	53,554	-	-
		Development of general CD technical materials 2/				2,618,671	1,898,814	-	-
		Development of training courses or other learning materials 2/				100,100	67,821	-	-
		Field-Based work 2/				50,000	-	-	-
		Interactive learning and workshops 2/				760,000	98,911	-	-
Sub Total						26,345,131	23,301,868	3,043,265	
Trust Fund Management Fee						1,844,159	1,631,131	213,029	
Grand Total						28,189,291	24,932,999	3,256,294	

Agreement Summary	
Contributions to date	25,951,803
Net Transfers	-
Interest Earned	218,845
Total Inflows(A)	26,170,648
Expenses	24,932,999
Remaining Budget (including projects pending approval)	3,256,294
Total Outflows(B)	28,189,292
Future Contributions (based on signed agreements)(C)	2,124,469
Total Available & Future Contributions(A-B+C)	105,825

1/ The remaining balance for closed projects is zeroed out upon project completion.

2/ The expenses shown do not include costs related to Long-Term Experts.

APPENDIX 3. RESEARCH OUTPUTS

Output 1.1 – Working Papers

Topic 1. Modelling and understanding policy choices

1. [Quarterly Projection Model for the Bank of Ghana](#)

Philip Abradu-Otoo, Ivy Acquaye, Abubakar Addy, Nana Kwame Akosah, James Attuquaye, Simon Harvey, Shalva Mkhattrishvili, Zakari Mumuni and Valeriu Nalban

Summary: The paper describes the Quarterly Projection Model (QPM) that underlies the Bank of Ghana Forecasting and Policy Analysis System (FPAS). The New Keynesian semi-structural model incorporates the main features of the Ghanaian economy, transmission channels and policy framework, including an inflation targeting central bank and aggregate demand effects of fiscal policy. The shock propagation mechanisms embedded in the calibrated QPM demonstrate its theoretical consistency, while out-of-sample forecasting accuracy validates its empirical robustness. Another important part of the QPM is endogenous policy credibility, which may aggravate policy trade-offs in the model and make it more realistic for developing economies. Historical track record of real time policy analysis and medium-term forecasting conducted with the QPM – as a component of the broader FPAS analytical organization – establishes its critical role in supporting the Bank’s forward-looking monetary policy framework.

2. [Staple Food Prices in Sub-Saharan Africa: An Empirical Assessment](#)

Cedric Okou, John A Spray and Filiz D Unsal

Summary: This paper analyzes the domestic and external drivers of local staple food prices in Sub-Saharan Africa. Using data on domestic market prices of the five most consumed staple foods from 15 countries, this paper finds that external factors drive food price inflation, but domestic factors can mitigate these vulnerabilities. On the external side, our estimations show that Sub-Saharan African countries are highly vulnerable to global food prices, with the pass-through from global to local food prices estimated close to unity for highly imported staples. On the domestic side, staple food price inflation is lower in countries with greater local production and among products with lower consumption shares. Additionally, adverse shocks such as natural disasters and wars bring 1.8 and 4 percent staple food price surges respectively beyond generalized price increases. Economic policy can lower food price inflation, as the strength of monetary policy and fiscal frameworks, the overall economic environment, and transport constraints in geographically challenged areas account for substantial cross-country differences in staple food prices.

Topic 2. Understanding macro-financial linkages

3. [What Explains Remittance Fees? Panel Evidence](#)

Thorsten Beck, Mathilde Janfils and Kangni R Kpodar

Summary: This paper uses data across 365 corridors to document time and country variation in remittance fees and explore factors predicting variation in remittance fees. We document a general reduction in such fees over the past decade although the goal of fees below 3 percent has not been met yet in many corridors. We identify both cost- and risk-based constraints and market structure as barriers to lower remittance fees. Higher transaction costs as result of a more rural population in the sending country and lower scale are associated with higher remittance fees. However, lower risks due to the stability of fixed exchange rates and Internet rather than cash payment are associated with lower remittance fees. Finally, remittance corridors dominated by banks and few players are characterized by higher fees.

4. [How Do Transaction Costs Influence Remittances](#)

Kangni R Kpodar and Patrick A. Imam

Summary: Using a new quarterly panel database on remittances (71 countries over the period 2011Q1- 2020Q4), this paper investigates the elasticity of remittances to transaction costs in a high frequency and dynamic setting. It adds to the literature by systematically exploring the heterogeneity in the cost-elasticity of remittances along several country characteristics. The findings suggest that cost reductions have a short-term positive impact on remittances, that dissipates beyond one quarter. According to our estimates, reducing transaction costs to the Sustainable Development Goal target of 3 percent could generate an additional US\$32bn in remittances, higher than the direct cost savings from lower transaction costs, thus suggesting an absolute elasticity greater than one. Among remittance cost-mitigation factors, higher competition in the remittance market, a deeper financial sector, and adequate correspondent banking relationships are associated with a lower elasticity of remittance to transaction costs. Similarly, remittance cost-adaptation factors such as enhanced transparency in remittance costs, improved financial literacy and higher ICT development coincide with remittances being less sensitive to transaction costs. Supplementing the panel analysis, the use of micro data from the USA-Mexico corridor confirm that migrants facing higher transaction costs tend to remit less, and that this effect is less pronounced for skilled migrants and those that have access to a bank account.

5. [Bank Ownership Around the World](#)

Ugo Panizza

Summary: This paper builds a dataset on bank ownership that covers more than 6,500 banks in 181 countries (including 59 low-income economies) over 1995-2020. It is found that until 2010, there was a reduction in state-ownership of banks and an increase foreign ownership. However, the Global Financial Crisis interrupted or reversed these trends. At the country level, the relationship between bank ownership and each of GDP growth and financial depth is mixed: results show that the presence of foreign owned banks is positively associated with future economic growth and state ownership is negatively but not robustly associated with future financial depth. Bank level regressions indicate that state-owned banks are less profitable and have a higher share of non-performing loans than their private (domestic or foreign) counterparts. State-owned and foreign-owned banks located in

developing economies pay and charge lower interest rates than their domestic private counterparts. There is also evidence that state-owned banks stabilize credit in the presence of domestic shocks while foreign banks amplify external shocks. In terms of domestic shocks, foreign banks are not significantly different from their domestic private counterparts.

Topic 3. Building resilience

6. [Monetary Policy Under Natural Disaster Shocks](#)

Alessandro Cantelmo, Nikos Fatouros, Giovanni Melina, and Chris Papageorgiou

Summary: With climate change increasing the frequency and intensity of natural disasters, what should central banks do in response to these catastrophic events? Looking at IMF reports for 34 disaster-years, which occurred in 16 disaster-prone countries from 1999 to 2017, reveals lack of any systematic approach to monetary authorities' response to climate shocks. Using a standard small-open-economy New-Keynesian model with disaster shocks, we show that consistent with textbook theory, inflation targeting remains the welfare-optimal regime. Therefore, the best strategy for monetary authorities is to resist the impulse of accommodating in the face of catastrophic natural disasters, and rather continue to focus on price stability.

7. [Do Monetary Policy Outcomes Promote Stability in Fragile Settings?](#)

Oumar Diallo, Steve Loris Gui-Diby and Patrick A. Imam

Summary: This paper assesses how monetary policy outcomes affect fragility. Diving into the universe of the most prominent combinations of pursued monetary policy objectives across fragile settings, we examine the relationships between monetary policy outcomes and fragility and find the combination of reduction of inflation and lower unemployment to be the one that delivers the highest payoff in terms of promoting peace and cohesion. Setting aside challenges of monetary policy transmission, results from our analysis broadly confirm the above “winning” combination, with low inflation as a primary desired outcome and low unemployment rate as a secondary one. We also carry out a series of robustness tests, which confirm our findings. Overall, our results lend credence to the importance of paying attention—in the context of reducing fragility—to monetary policy outcomes.

Topic 4. Promoting structural change and institutional development

8. [Political Institutions and Output Collapses](#)

Patrick A. Imam and Jonathan R. W. Temple

Summary: Major output collapses are costly and frequent in the developing world. Using cross-country data, we classify five-year periods using a two-dimensional state space based on growth regimes and political institutions. We then model the joint evolution of output growth and political institutions as a finite state Markov chain, and study how countries move between states. We find that growth is more likely to be sustained under democracy than under autocracy; output collapses are more persistent under autocracy; and stagnation under autocracy can give way to outright collapse. Democratic countries appear to be more resilient.

9. [Climate Change and Chronic Food Insecurity in Sub-Saharan Africa](#)

Diogo Baptista, Mai Farid, Dominique Fayad, Laurent Kemoe, Loic Lanci, Pritha Mitra, Tara Muehlschlegel, Cedric Okou, John Spray, Kevin Tuitoeck, and Filiz Unsal

Summary: Climate change is intensifying food insecurity across sub-Saharan Africa (SSA) with lasting adverse macroeconomic effects, especially on economic growth and poverty. Successive shocks from the war in Ukraine and COVID-19 pandemic have increased food prices and depressed incomes, raising the number of people suffering from high malnutrition and unable to meet basic food consumption needs by at least 30 percent to 123 million in 2022 or 12 percent of SSA's population. Addressing the lack of resilience to climate change—that critically underlies food insecurity in SSA—will require careful policy prioritization against a backdrop of financing and capacity constraints. This paper presents some key considerations and examples of tradeoffs and complementarities across policies to address food insecurity. Key findings include (1) Fiscal policies focused on social assistance and efficient public infrastructure investment can improve poorer households' access to affordable food, facilitate expansion of climate-resilient and green agricultural production, and support quicker recovery from adverse climate events; (2) Improving access to finance is key to stepping up private investment in agricultural resilience and productivity as well as improving the earning capacity and food purchasing power of poorer rural and urban households; and (3) Greater regional trade integration, complemented with resilient transport infrastructure, enables sales of one country's bumper harvests to its neighbors' facing shortages. The international community can help with financial assistance—especially for the above-mentioned social assistance and key infrastructure areas—capacity development, and facilitating transfers of technology and know-how.

10. [Retaliation through Temporary Trade Barriers](#)

Davide Furceri, Jonathan Ostry, Chris Papageorgiou and Pauline Wibaux

Summary: Are Temporary Trade Barriers (TTBs) introduced for strategic reasons? To answer this question, we construct a novel sectoral measure of retaliation using daily bilateral data on TTB responses in 1220 subsectors across a panel of 25 advanced and emerging market economies during the period 1989-2019. Stylized facts and econometric analysis suggest that within-year responses are more important in terms of intensity and frequency than commonly understood from the existing literature, which has tended to ignore them. We find that retaliation often consists of responses across many sectors and that same-sector retaliation is far from being the norm. In addition, we find that larger countries tend to retaliate more, and that retaliation is larger during periods of higher unemployment and when the trading partner targeted a domestic comparative advantage sector.

Topic 5. Enhancing inclusion

11. [Trade and the COVID-19 Pandemic: Lessons from French Firms](#)

Mariya Brussevich, Chris Papageorgiou and Pauline Wibaux

Summary: This paper uses granular customs data from France to investigate propagation of the COVID-19 shock along the supply chains in 2020. It quantifies the effect of the COVID-19 shock on trade adjustment and identifies mitigating and amplifying factors contributing to

French firms' heterogeneous adjustment paths. Early in the pandemic, firms mainly responded to global lockdowns and spread of the virus by reducing trade volumes (intensive margin) as opposed to exiting from import and export markets (ex-tensive margin). However, adjustment along the extensive margin played a more important role in trade with developing countries. It is shown that the impact of lockdowns was stronger for final consumer goods and the trade recovery was predominantly demand-driven. More automated, inventory-intensive, older, and medium-sized firms were more insulated from the shock, whereas firms' reliance on air transportation for shipping goods amplified the shock. Trade bans and promotion measures implemented by governments in response to the pandemic had little impact on aggregate trade flows.

12. [Income Convergence or Divergence in the Aftermath of the COVID-19 Shock?](#)

Mariya Brussevich, Shihui Liu and Chris Papageorgiou

Summary: The paper extends the work of Deaton (2021) by exploring the period of post-crisis recovery in 2021-2024. The paper documents per-capita income divergence during the period of post-shock recovery, with countries at the bottom of the income distribution falling significantly behind. Findings suggest that higher COVID-19 vaccination rates and targeted virus containment measures are associated with faster recovery in per-capita incomes in the medium term. Evidence on the effectiveness of economic support policies for reducing cross-country income inequality, including fiscal and monetary policies, is mixed especially in the case of developing countries.

13. [Mining Revenues and Inclusive Development in Guinea](#)

Alejandro Badel, Rachel F. Lyngaas

Using a multi-sector macro-inequality model with heterogeneous agents applied to Guinea, this paper assesses the potential benefits of increasing the taxation of a foreign extractive sector. We quantify the long-run equilibrium impact of additional taxation when the proceeds are invested in human capital, inclusive infrastructure, and social transfers. The assessment focuses on the response of GDP, labor formalization, poverty rates, Gini coefficients, rural/urban inequality and sectoral reallocation, and finds that the three forms of investment are complementary. Infrastructure investments favor formal production in the urban area while growth and government transfers boost the demand for food. These effects help support the rate of return to education, protecting job formalization through higher wages and prices of informal goods, as the education policy boosts labor supply in rural and urban areas.

14. [Inclusiveness, Growth, and Stability](#) [Chapter 2 of Promoting Inclusive Growth in the Middle East and North Africa]

Chiara Maggi and Xin Tang

Summary: Chapter 2 of this book recently published by the IMF examines quantitatively how the lack of inclusiveness in an economy can cause lower economic growth. The chapter uses a general equilibrium model in which individuals are different in their income, wealth, skill level, and occupations. The presence of barriers and financial frictions creates misallocation by preventing skilled entrepreneurs from entering a business. Calibrated to an average MENA economy, simulations show that a reform package that simultaneously

reduces market distortions and improves access to credit could lead to a more efficient allocation of resources and significantly boost output, wages, and jobs. Importantly for the MENA region, the simulations show that an increase in public investment that achieves the same increase in output would not be able to generate the same improvement in welfare compared with reforms that remove market distortions and support a more dynamic economy with an expanded role for the private sector. The book was published during the IMF-World Bank 2022 Annual Meetings in October.

15. [Addressing Gender Gaps in MENA Labor Markets](#): [Chapter 5 of Promoting Inclusive Growth in the Middle East and North Africa]
Hippolyte Balima and Diego Gomes

Summary: Chapter 5 of this book focuses on the reasons why female labor force participation is much lower in the MENA region than in the rest of the world. Its main finding is that gender disparities in basic and financial legal rights are likely to be the most powerful barriers to women's participation in economic life in the MENA region, followed by restrictions in labor market codes and regulation. While to a certain extent those factors reflect well-established social norms that may prove difficult to change, removing barriers that prevent women's participation in the labor force and entrepreneurship promises to have a substantial impact on output and welfare.

Output 1.2 – Published Papers

Topic 1. Modelling and understanding policy choices

1. [How large and persistent is the response of inflation to changes in retail energy prices?](#)

Chadi Abdallah and Kangni Kpodar
Journal of International Money and Finance

Summary: We estimate the dynamic effects of changes in retail energy prices on the consumer price level using a novel monthly database, covering 110 countries over 2000:M7 to 2016:M6. We find that (i) the price level responds positively to retail energy price shocks, with effects being, on average, modest and transitory. However, our results suggest significant heterogeneity across countries owing to differences in institutional factors. In particular, the response of the consumer price level to these shocks is relatively larger and more persistent in countries with less flexible labor markets, a lower energy intensity, a looser fiscal policy stance, and a less credible monetary policy. We also find evidence of non-linearity and asymmetry in the responses, with both positive and bigger energy price shocks leading to larger and more persistent effects on the consumer price level.

Topic 2. Understanding macro-financial linkages

2. [Defying the Odds: Remittances during the COVID-19 Pandemic](#)

Kangni Kpodar, Montfort Mlachila, Saad Quayyum and Vigninou Gammadigbe
The Journal of Development Studies

Summary: In this paper published in The Journal of Development Studies, K. Kpodar, M. Mlachila, S. Quayyum and V. Gammadigbe provide an early assessment of the dynamics and drivers of remittances during the COVID-19 pandemic, using a newly compiled monthly remittance dataset for a sample of 52 countries (including 25 LICs). The paper documents a strong resilience in remittance flows, notwithstanding an unprecedented global recession triggered by the pandemic. Using the local projection approach, the results suggest that show that: (i) remittances responded positively to COVID-19 infection rates in migrant home countries, underscoring its role as an important automatic stabilizer; (ii) stricter containment measures have the unintended consequence of dampening remittances; and (iii) a shift from informal to formal remittance channels due to travel restrictions appears to have also played a role in the surge in formal remittances. Lastly, the size of the fiscal stimulus in the host country is positively associated with remittance flows to migrants' home country as the fiscal response cushioned the economic impact of the pandemic.

Topic 3. Building resilience

3. [Macroeconomic Outcomes in Disaster-Prone Countries](#)

Alessandro Cantelmo, Giovanni Melina, and Chris Papageorgiou
Journal of Development Economics

Summary: Using a dynamic stochastic general equilibrium model, we study the channels through which weather shocks affect macroeconomic outcomes and welfare in disaster-prone countries. We solve the model using Taylor projection, which deals effectively with

high-impact weather shocks calibrated in accordance to empirical evidence. We find large and persistent effects of weather shocks that significantly impact the income convergence path of disaster-prone countries. For these countries, on average, weather shocks cause a welfare loss equivalent to a permanent fall in consumption of 1.24 percent, relative to non-disaster-prone countries. Finally, we examine policies that mitigate the adverse welfare effects. Welfare gains from investing in resilience infrastructure are tiny, if disaster-prone countries have to fully bear its extra cost. International aid yields significant welfare gains. However, to achieve a given welfare gain, it is more cost-effective for donors to contribute to the financing of resilience before the realization of disasters, rather than disbursing aid ex post.

4. [Do Monetary Policy Outcomes Promote Stability in Fragile Settings?](#)

Oumar Diallo, Steve, Loris Gui-Diby and Patrick A. Imam
Applied Economics

Summary: This paper assesses how monetary policy outcomes affect fragility. Diving into the universe of the most prominent combinations of pursued monetary policy objectives across fragile settings, we examine the relationships between monetary policy and fragility, and find the combination of reduction of inflation and lower unemployment to be the one that delivers the highest payoff in terms of promoting peace and cohesion. Setting aside the challenges of monetary policy transmission, results from our analysis broadly confirm the above ‘winning’ combination, with low inflation as a primary desired outcome and low unemployment rate as a secondary one. We also carry out a series of robustness tests, which confirm our findings. Overall, our results lend credence to the importance of paying attention – in the context of reducing fragility – to monetary policy outcomes.

Topic 4. Promoting structural change and institutional development

5. [Public Investment and Human Capital with Segmented Labour Markets](#)

Edward F Buffie, Christopher Adam, Luis-Felipe Zanna, Lacina Balma, Dawit Tessema and Kangni Kpodar
Oxford Economic Papers

Summary: We develop a dynamic general equilibrium macroeconomic model with segmented labour markets and efficiency wages to examine how labour market structures influence the impact of human capital investment in low-income countries. For plausible calibration values, public investment in education is much more effective than infrastructure investment in promoting long-run economic development, but because investment in education affects labour productivity with a lag, policymakers face an intertemporal trade-off which depends on their social discount rate and the weight of distributional objectives in the social welfare function. We show the distortionary structure of labour markets matters in leveraging welfare gains from public investment and in shifting the optimal public investment programme further in favour of human capital, relative to the case of flex-wage full-employment labour markets.

Topic 5. Enhancing inclusion

6. [Loss-of-learning and the Post-Covid Recovery in Low-income Countries](#)

Edward F. Buffie, Christopher Adam, Luis-Felipe Zanna and Kangni Kpodar
Journal of Macroeconomics

Summary: We analyze the medium-term macroeconomic impact of the Covid-19 pandemic and associated lock-down measures on low-income countries. We focus on the impact of the degradation of health and human capital caused by the pandemic and its aftermath, exploring the trade-offs between rebuilding human capital and the recovery of livelihoods and macroeconomic sustainability. A dynamic general equilibrium model is calibrated to reflect the structural characteristics of vulnerable low-income countries and to replicate key dimensions of the Covid-19 shock. We show that absent significant and sustained external financing, the persistence of loss-of-learning effects on labor productivity is likely to make the post-Covid recovery more attenuated and more expensive than many contemporary analysis suggests.

7. [Tax Revenues in Low-income Countries](#)

Adrian Peralta-Alva, Xuan Tam, Xin Tang and Marina Tavares
The Economic Journal

Summary: The paper consolidates the theoretical insights on revenue mobilization in low-income countries obtained from applications using the inequality toolkit developed in earlier phases of the program. It quantitatively investigates the welfare costs of increasing tax revenues in low-income countries. Three tax instruments are considered in the paper: consumption, labour income and capital income taxes. The analysis is conducted using a parsimonious version of the inequality toolkit which is a general equilibrium model featuring heterogeneous agents, incomplete financial markets, and rural and urban areas. The model is calibrated to the Ethiopian economy and the welfare costs are decomposed into their aggregate and distributional components. The paper finds that changing taxes alter the composition of demand. This, together with limited labour mobility, causes the incidence of higher taxes to fall disproportionately on the rural population, regardless of the instrument. Among all, consumption taxes are the instrument with the largest welfare loss.

Output 2.1 – Country Applications with Authorities and IMF Country Teams

FPAS framework

1. Ghana Forecasting and Policy Analysis System (FPAS) TA

Summary: The IMF-FCDO team continues to support the Bank of Ghana (BoG) in its efforts to develop a Forecasting and Policy Analysis System (FPAS). In this context, ICD conducted an in-person TA mission during July 4-15, 2022 focusing, among other things, on extending the Quarterly Projection Model (QPM) used by the BoG to produce policy analysis and forecasts for its Monetary Policy Committee (MPC). The TA team helped BoG decompose the model-based GDP into agriculture, oil, and non-agriculture-non-oil value added. This allows to better capture the demand-side vs. supply-side inflationary pressures and more accurately assess the fundamental drivers of price dynamics in Ghana. Using the extended modeling environment, the TA mission assisted the BoG staff in preparing the real-time analysis and forecasts for the July 2022 MPC sessions, amidst a very challenging macroeconomic environment, with inflation rates close to 30%.

Diversification

We have no publication under this topic this year.

DIG/Investment scaling up/Debt sustainability

We have no publication under this topic this year.

Natural disasters/DIGNAD

2. [Madagascar: Technical Assistance Report—Climate Macroeconomic Assessment Program \(CMAP\)](#)

Summary: The MRLIC team has been contributing to the Climate Macroeconomic Assessment Program (CMAP), a technical assistance program primarily led by the IMF's Fiscal Affairs Department. During a CMAP mission held in April, the MRLIC team used the model on Debt-Investment-Growth-Natural-Disasters (DIGNAD) to quantify the impact of climate change to Madagascar through repeated natural disasters and slowly changing temperature patterns that would decrease productivity. The simulation analysis indicates a sizable implication on debt sustainability from climate change risks in the long run, highlighting the need for Madagascar to proactively design a comprehensive package of policy response measures, factoring in these risks in macroeconomic and fiscal projections.

3. [Application of DIGNAD model to Madagascar \(Article IV\)](#)

Summary: Investing in climate change mitigation and adaptation with the goal of reaching SDGs could significantly increase potential growth. Model-based simulations using the Debt, Investment, Growth, and Natural Disasters (DIGNAD) model⁹ suggest that investments to scale up resilient infrastructure and build human capital, with the objective of reaching SDGs, using the proceeds from mitigation measures and additional grants, might boost growth while preserving fiscal sustainability. However, such an outcome would require a significant acceleration of reforms supported by improved governance and public investment management capacity. ¹⁰ The reform package supported by the ECF program on revenue mobilization, social spending targets, improvements in PFM, transparency and governance aims to create the fiscal space for the needed investments in inclusive growth and climate resilience and provide the conditions for a successful and sustainable economic development.

4. [Policy Lessons from DIGNAD Simulations in Rwanda](#)

Summary: An analysis using the DIGNAD toolkit is featured in Box 2 of the IMF Country Report No 22/381. It assesses the impact of natural disasters on GDP and total public debt for Rwanda in the context of the country's request for an arrangement under the RST facility. The simulations illustrate that investing in more robust infrastructure results initially in higher public debt but improves the resilience of the economy by reducing the adverse impact of natural disasters on output, damages to physical assets, and post-disaster fiscal costs for rebuilding and lifeline support. Enhanced reforms to improve the efficiency of public investment raises the resilience of the economy to shocks, and the initial increase in public debt can be mitigated by securing private financing as well as more concessional financing.

5. [Macro-Fiscal Implications of Climate Change Policies in Bangladesh](#)

Summary: An analysis using the DIGNAD toolkit to assess the macro-fiscal implications of climate change policies in Bangladesh is featured in Annex III.D of the IMF Country Report No 23/066. It assesses the impact of natural disasters on GDP and total public debt in Bangladesh in the context of its request for an arrangement under the RST facility. The simulations illustrate that accelerating investment in adaptation infrastructure could help buttress a green recovery from the pandemic, mitigate the negative impact of natural disasters, and reduce macroeconomic and fiscal risks for Bangladesh. Improved public investment management and efficiency could further lessen the growth-debt trade-off for adaptation investment.

6. [Application of DIGNAD model to Timor-Leste \(Selected Issues\)](#)

Summary: Timor-Leste is one of the most vulnerable countries to natural disasters and has limited fiscal space to deal with climate change shocks. Using a dynamic general equilibrium model, this annex shows that investing in climate-proof infrastructure, albeit costly, can make the Timorese economy resilient against natural disasters, limiting the post-disaster economic losses, recovery costs, and a rise in public debt. The analysis also shows how timely Public Financial Management reforms, including those that strengthen public investment management, boost the gains from such investment. Given Timor-Leste's limited fiscal space, this further stresses the importance of rationalizing public spending and undertaking revenue mobilization reforms to create more space for prioritizing resources

towards building resilient infrastructure with significant dividends. The authorities should tap grant-based financing sources based in partnership with other development partners to help improve resilience to natural disasters. Clearly outlining a medium-term expenditure and finance roadmap for an adaptation plan in the budget planning is also crucial.

Income and Gender Inequality

7. [Selected Issues Paper: Macroeconomic Gains from Closing Gender Educational Gaps in Niger](#)

Summary: Chapter two of this Selected Issues Paper explores the state of gender equality and education attainment of girls in Niger. It also estimates the macroeconomic gains from reducing gaps in education between boys and girls using a micro-founded general equilibrium model. The analysis shows that Niger has made some progress toward higher educational attainment for girls, but the country still lags far behind other sub-Saharan African countries. Closing the gender gaps in education would boost female labor participation, increase income earned by women and improve fiscal outcomes. More importantly, closing the gender gap in years of schooling in each income percentile would boost long-term GDP by 11 percent. These significant economic gains from investing in girls' education will contribute to the achievements of the strategic goals defined under the Programme de Développement Economique et Social (PDES) 2022-26. Taking stock of the implications of the model for Niger will help sharpen gender equality and education programs in other low-income countries.

IAPOC Toolkit – An Assessment Toolkit for Monetary Policy Frameworks

We have no publication under this topic this year.

Other

8. [Mining Revenues to Strengthen Guinea's Development](#)

Summary: Annex IV of the IMF Country Report No. 2023/043 features an analysis on how to create additional fiscal space and how to use this to stimulate growth and reduce poverty. This model-based assessment suggests that reforming the mining code and exemptions could yield additional mining revenues of around 2 percent of GDP in Guinea. Such additional mining revenues, if properly invested, could have transformative effects. Increasing investment in infrastructure, education spending and social transfers would have the greatest impact on output with additional 1.1 percentage points of growth over 30 years, poverty reduction of 17.8 percentage points and improvements in several inequality indicators.

9. [Toward a New Revenue Strategy for Vanuatu: The Role of Income Taxes \(Article IV\)](#)

Summary: This note analyzes the role for income taxes in this new revenue strategy, taking into account its aggregate and distributional effects. An outstanding issue has

been the proposal from the 2017 Vanuatu Revenue Review of introducing a personal income tax. This annex considers the distributional effects of alternative revenue-mobilization strategies for Vanuatu through three exercises: (i) the introduction of a personal income tax without changing value-added tax rates; (ii) alternative combinations of value-added and income taxes that can increase the tax-to-GDP ratio by 2 percentage points; and finally; (iii) introduction of income taxes in an economy with a smaller informal sector. These exercises are performed using a heterogeneous agents general equilibrium model for low-income countries (developed by Peralta-Alva, Tam, Tang, and Tavares; 2019, 2022). The model was designed to analyze the trade-offs between efficiency and equity of different taxes and to study the trade-offs between different tax structures. The model is rich, but to be made tractable it abstracts from external sector dynamics, and debt and investment decisions.

10. [Economic Effects of Climate Change and Food Insecurity in Niger: Niger \(Selected Issues Paper\)](#)

Summary: Niger's exposure to recurrent shocks, including climate shocks, increases its vulnerability to food insecurity. This paper aims to quantify the combined effects of climate shocks and food insecurity on key economic variables and identify the most effective mitigation policy responses using a general equilibrium model. Results indicate that rural households would be the most affected by a climate shock resulting in a decline in domestic agricultural production, which would reduce their consumption, erode their capital, and thus increase urban-rural inequalities. Simulations show that cash transfers and the reduction of internal mobility costs appear to be more effective in mitigating the impact on households of a climate shock on agricultural production.

Output 2.2 – Courses to Authorities and IMF Country Teams

1. Course on Macroeconomics of Gender Equality

Summary: This clinic, jointly developed by ICD, FAD, LEG, MCM, SPR, and STA, will help staff incorporate gender issues into core IMF work, in line with the IMF Gender Mainstreaming Strategy. The clinic examined trends in gender inequality over time and across countries, including the impact of the COVID-19 pandemic; assist staff in identifying macro-critical gender gaps that would undermine the prospects for inclusive, sustainable growth; analyze policy and institutional reform options in the fiscal, financial, and legal areas to help address gender inequality; and discuss available analytical tools, including the newly released IMF Gender Data Hub. The clinic was introduced by IMF Deputy Managing Director Antoinette Sayeh and moderated by IMF Institute of Capacity Development Deputy Director Michaela Erbenova. This particular delivery focused relatively more on low-income developing countries and emerging markets; a subsequent delivery will focus relatively more on advanced economies.

2. Course on Distributional Impact of Policies and Reforms

Summary: On November 14th, the IMF-FCDO team virtually gave "Clinic on Distributional Impact of Policies and Reforms." Attended by around 30 IMF staff, the clinic taught the Multi-sector Incomplete Markets Macro Inequality (MIMMI) model and hands-on training on the associated MIMMI app. The first version of the app's brand-new user manual was released

for the course. The first course presented the history and past applications of the MIMMI model and its calibration. The second presented basic concepts and a refresher of incomplete markets models and conducted a hands-on session on building a box for an Article IV Staff Report with the MIMMI browser-based application. Finally, course participants had the opportunity to access the app's interface and its calibration repository (currently consisting of calibrations for Guinea and Namibia) through the Fund's intranet without installing any additional software. Participants were able to compute scenarios in real time during the course.

3. Online Course Delivery: Training Course on Macroeconomics of Climate Change

Summary: This virtual training on “Macroeconomics of Climate Change (AT22.24v)” was held on April 20, 2022, hosted by the African Training Institute (ATI), collaborating with the IMF's other departments (FAD, ICD, RES). The MRLIC team presented an overview of the DIGNAD model of resilience to natural disasters, an example application to a disaster prone country and policy trade-offs in building up climate resilience. The training was well attended by country officials from a wide range of sub-Saharan African countries (including 20 low-income countries). The participants engaged actively, asking many questions, and expressed their appreciation of the presentation.

4. ATI/AFE Workshop on Climate Change and Macro-Financial Policies

Summary: The team presented DIGNAD at ATI/AFE Workshop on Climate Change and Macro-Financial Policies at the Kenya School of Monetary Studies (KSMS), Nairobi, March 6, 2023. Participants included Ministry and Central Bank staff from AFE member countries (Eritrea, Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Uganda, South Sudan), EU and FCDO. The workshop on climate is the result of cross-departmental collaboration between ICD/FAD/RES/MCM and responds to the demand for more practical sessions to complement the Macroeconomics of Climate Change (MCC) from several of the central bank governors and finance ministers in the region (Ethiopia, Kenya, Rwanda, Tanzania, Uganda).

5. Helsinki Principle 4 Workshop: Using Economic Tools to Adapt and Build Resilience to Climate Change

Summary: The DIGNAD model, was presented to participants from Ministries of Finance [around the world](#), including many LICs, at the Coalition of Finance Ministers for Climate Action HP4 Workshop on June 27, 2022. The workshop aimed to present the needs and benefits of Ministries of Finance to integrate the effects of climate change and associated risks into macro-fiscal decision-making. The presentation covered the model and an application to the Maldives. The presentation was very well received, with specific thanks from the Coalition Secretariat.

Output 3.1 – High-level Policy Conferences Attended by IMF Senior Staff

1. [2022 International Conference on Development Economics](#)

Summary: Jointly with the French Association of Development Economics and other distinguished organizations, the IMF-FCDO project organized a high-level international conference on development economics, hosted by the Centre d'Études et de Recherches sur le Développement International (CERDI), Clermont-Auvergne University, France, from June 30 to July 1st, 2022. The conference offered a platform for discussing the latest research in development economics, notably on migration, climate change, growth, poverty, monetary policy, international trade, inequality, and fiscal policy. Keynote speakers included Rabah Arezki (formerly African Development Bank, Cote d'Ivoire), Jean-Marie Baland (Université de Namur, Belgium), and Ana María Ibáñez (Universidad de Los Andes and Inter-American Development Bank, Colombia). More than fifteen participants funded by IMF-FCDO from LICs across the world presented at the conference.

2. Conference on Fragile States

Summary: On June 6-7, the International Monetary Fund organized a conference, under the IMF-FCDO partnership, to explore the nexus between fragility, conflict, and macroeconomic policy. The conference gathered FCS policymakers, leading academics, and practitioners to reflect on the role of macroeconomic policy in FCS, and the Fund's stepped-up efforts to support these countries. Discussions highlighted insights and lessons learned from the volume *Macroeconomic Policy in Fragile States* ([OUP, 2021](#)). The sessions focused on the critical role fiscal, monetary, and financial sector policies can play in reversing state fragility and preventing a spiral into state failure. Challenges and opportunities to build state capacity in FCS were also highlighted. Some discussions were also dedicated to the Fund's FCS Strategy, which aims to enhance the IMF's ability to deliver tailored, robust, and long-term support to FCS.

3. [Conference on Monetary Policy Frameworks-An Index and New Evidence](#)

Summary: On June 30th, 2022, D. Filiz Ünsal and Chris Papageorgiou hosted at the IMF a conference (in hybrid form) titled "Monetary Policy Frameworks-An Index and New Evidence" and launched the [Monetary Policy Frameworks: IAPOC toolkit](#) to the external audience. This conference aimed at disseminating and promoting the use of the IAPOC Index, also describing the methodology covered in [Working Paper](#) released in February 2022. D. Filiz Ünsal guided the audience on how to use and download the data through the website, with the support of different country case examples. The conference included welcoming remarks by Pierre-Olivier Gourinchas (IMF) and a discussion moderated by David Wessel (The Hutchins Center on Fiscal and Monetary Policy, Brookings Institution) with Alan Blinder (Princeton University), Richard Clarida (Columbia University) and D. Filiz Ünsal. Leading researchers and practitioners participated in this conference both online and in person, contributing to the discussion on monetary policy frameworks, the importance of the data shared, and stimulating new ideas.

Output 3.2 –Results of the research reflected in IMF policy papers such as Board papers, SDNs, policy memos to management

Fiscal Monitor/WEO/REO/SDN

1. [April 2022 Fiscal Monitor Box 1.1: Social Protection and Poverty during the Pandemic](#)

Summary: It finds that an estimated 70 million more people were in extreme poverty in 2021 relative to pre-pandemic trends, assuming no change in inequality. If inequality had risen, poverty would have been even higher, with a one percentage point increase in the Gini index translating into a poverty increase similar to the impact from a one percentage point decrease in per capita real GDP growth. It also explores to what extent policy and structural factors are associated with the projected post-pandemic rise in poverty, with a special focus on LIDCs where poverty remains pervasive. The box takes a close look at the changing impact of fiscal support and social safety nets. Poverty projections are also classified along other dimensions such as the economic sector, health preparedness, size of the informal sector and initial income inequality.

2. [2022 External Sector Report – Box 1.3: External Sector Impact of Disaster Shocks](#)

Summary: An analysis using the DIGNAD model (Marto, Papageorgiou, and Kluyev, 2018)—a workhorse model developed under the FCDO-IMF partnership—is featured in Box 1.3 in Chapter 1 of the IMF's 2022 External Sector Report, published in August 2022. The model allows to assess the impact of natural disasters on the external sector of natural disaster-prone economies, which are in large part small low-income countries. Together with an empirical analysis showing that natural disasters tend to be followed by large current account deficits, model-based results show that the impact of natural disasters on both GDP and the current account can be mitigated by ex-ante investments in adaptation. A contingency fund can also reduce reliance on external debt to finance reconstruction, thereby smoothing the recovery.

Papers discussed by the IMF Executive Board

1. [IMF Strategy Toward Mainstreaming Gender](#)

Summary: The team produced this background paper that provides additional details on substantiation, illustrations, and arguments to support the Board Paper “IMF Strategy Toward Mainstreaming Gender.” Their work brings forth an overview of the evolution of gender disparities across different dimensions that limit women’s economic empowerment and, in turn, the full potential of total productivity and economic growth of countries.

2. [Macroeconomic Developments and Prospects in Low-income Countries—2022](#)

Summary: The 2022 LIC report discusses recent macroeconomic developments, outlook and policy priorities for Low Income Countries (LICs). Russia’s war in Ukraine has slowed down LICs’ recovery from the pandemic; inflation has accelerated; and fiscal position is increasingly under stress, further intensifying debt vulnerabilities. The international community has stepped up support to LICs, but more needs to be done considering the additional financing needs for LICs, estimated at \$440bn. Priorities in the near term include

fighting inflation, addressing debt vulnerabilities, supporting recovery and protecting the vulnerable through a concerted use of all policy instruments. Effective public debt management can also play a critical role in mitigating debt vulnerabilities. In the medium to long term, structural reforms to address poverty, inequality, climate change and to promote digitalization, are key ingredients for development and income convergence. The report was discussed by the IMF Executive Board on December 1, 2023. The team conducted outreach to the U.K. FCDO, the OECD DAC, the AfDB, and at an event organized by the Banque de France and FERDI.

3. [G-20 Background Note on the Macroeconomic Impact of Food and Energy Insecurity](#)

Summary: The surge in food and energy prices during the past few years has fueled inflation and hurt growth. Prices of food and energy commodities increased steadily following the onset of the pandemic and reached historic highs after Russia's invasion of Ukraine. While international prices have since moderated, they have nonetheless contributed to upward pressure on domestic inflation. Moreover, high energy prices have increased input and transportation costs, weighing on economic activity and feeding into higher food prices through production linkages. The result has been a cost-of-living crisis, with the most vulnerable economies and people particularly hard-hit and with a marked increase in food insecurity. In addition, empirical estimates highlight that the increased volatility of commodity prices is likely to weigh on medium-term growth and increase inflation volatility. The current challenges could worsen if risks to the outlook materialize. A further erosion of real incomes could lower household spending and spark social unrest, harming livelihoods and growth. An extended disruption of the energy supply in Europe poses further downside risks. Moreover, unfavorable inflation developments could necessitate a sudden tightening of financial conditions from larger-than-expected further policy interest rate increases, raising borrowing costs for many economies that are already dealing with elevated debt levels. Further geoeconomic fragmentation could restrict trade and increase concentration risks in the energy supply, exacerbating food and energy security concerns. Policymakers have responded amid difficult policy tradeoffs. Monetary policy has been tightened markedly in most G-20 economies to help bring down inflation. At the same time, fiscal measures have been implemented to ease the cost-of-living pressures, especially in Europe. However, in many economies, these measures have often been untargeted and aimed at suppressing the pass-through of higher international prices. Restrictions on trade have also been imposed in the attempt to ensure the domestic food supply. To address energy security concerns, some economies have scaled up reliance on fossil fuels, setting back the green transition.

Other outputs

Newsletters

1. [June 2022 Newsletter](#)
2. [September 2022 Newsletter](#)
3. [December 2022 Newsletter](#)
4. [March 2023 Newsletter](#)

Blogs/Article/Press/Other

1. [VoxEU Blog: Investigating the drivers of remittance fees](#)
2. [IMF Blog: How Africa Can Escape Chronic Food Insecurity Amid Climate Change](#)
3. [IMF Blog: Africa Food Prices Are Soaring Amid High Import Reliance](#)
4. Food insecurity was a top issue raised by all low-income countries (LICs)' governors. The work by the MRLIC team on food security was featured prominently, including in the [MD's curtain raiser speech](#) of the 2022 IMF-World Bank Annual Meetings. Recognizing recent food price surges, she highlighted the importance of the new "food shock window" as part of the Fund's emergency financing tools to support countries most affected by term of trade shocks. There was also an [analytical corner presentation](#) featuring the MRLIC team's work, joint with the IMF's African Department, on [climate change and chronic food insecurity](#). Representatives from many LICs were interested using our analytical framework on food insecurity.

Internal presentations

1. Presentation on "A Macroeconomic Framework for Climate Adaptation and Mitigation Analysis" at the IMF Climate Innovation Challenge 2022
2. Presentation on "Adapting to Climate Change: A Macro Framework" at the IMF Research Development-Macroeconomic Seminar Series on June 27, 2022.
3. Presentation of Monetary Policy Framework (MPF) toolkit/data to IMF's iLab on May 18, 2022.
4. Presentation on "A Monetary Policy Framework for Low Income Countries"" at the IMF Research Development-Macroeconomic Seminar Series on September 21, 2022.
5. Presentation on "A Macroeconomic Framework for Climate Adaptation and Mitigation Analysis" at the IMF FAD Analytical Hour in December 2022.
6. Internal Launch: The DIGNAD toolkit was launched at an iLab Innovation Event on Thursday, December 8, 2022.
7. Presentation of the DIGNAD model and toolkit at Institute for Capacity Development Department's Climate Working group in October 2022.
8. Presentation of the DIGNAD model and toolkit to Strategy, Policy and Review Department in November 2022.
9. Presentation of the DIGNAD model and toolkit to IMF's Resilience and Sustainability Trust working group in November 2022.
10. Presentation of the DIGNAD model and toolkit to Climate Indicators Dashboard's working group of Statistics Department in February 2023.

External presentations

1. Presentation of “A Monetary Policy Framework for Low Income Countries” during the 2nd Lille Reading Workshop on International Finance on November 18th.
2. Presentation of “Staple Food Prices in Sub-Saharan Africa: An Empirical Assessment” at CSAE Conference on March 19-21, 2023.
3. Presentation on “Monetary Policy Frameworks-An Index and New Evidence” a joint research seminar with the 'Caucasus, Central Asia, and Mongolia Regional Capacity Development Center' (CCAMTAC) on July 28th, 2022.
4. Presentation of “Current Developments in LICs” London School of Economics in February 2023.
5. Presentation of “Current Global Crises and their Impact on the Great Divergence” at London School of Economics on January 25, 2023.
6. Presentation at international discussion meeting “New horizons for increasing the understanding of the economic consequences of climate change” at the Royal Society in London on March 29-30, 2023.

Toolkits

1. Gender Labor Market Tool

Summary: Staff developed an innovative Excel-based toolkit that simplifies gendered labor market analysis. The toolkit is user-friendly and helps identify the most important factors contributing to employment gender gaps in levels and rates of change. With this tool, employment gender gaps can be easily decomposed into gaps in Employment Rates, LFP Rates, and Population Shares, making it an essential resource for staff working with gender issues. It can be applied to individual countries, regions, income groups, or the entire world. To make it even more convenient, the toolkit is already populated with all the data covering the entire IMF membership, which saves valuable time and resources.

ODA Memo to Management

1. The team provided an updated memorandum on potential crowding-out of development aid in the context of Russia's war in Ukraine to our Senior Management. The memorandum recognized mounting concerns over potential crowding-out of official development aid for low-income countries. This was because many advanced economies scaled up defense spending and refugee-related aid to Ukraine. Although there was no clear evidence at the time of aid budgets diversions from LICs to increase military spendings.