C3A Coalition for Capacity on Climate Action

Policy *Note*

Mainstreaming Climate Action into the Budget Policies of Emerging Market and Developing Economies

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Executive *Summary*

In most low-income countries (LICs) and lower middle income countries (LMICs), the vast majority of Expenditures on Climate Action are funded from public resources. As such, the government budget plays a central Role in the implementation of Climate Action investments and Policies. In Economies with very limited Fiscal space, it is essential to fully integrate (mainstream) Climate Action into the budget policy and planning process to ensure that Expenditures on Climate Action are prioritized, cost effective, complement broader developmental objectives and do not undermine Long Term Fiscal and macroeconomic sustainability.

The paper sets out a strategy for mainstreaming Climate Action into the budget process, building on the foundation of policy based budgeting and Medium-Term budget frameworks (MTBF) which have been adopted in many LICs and LMICs. The strategy should comprise four components. First, a top-down Medium-Long Term Macro-Fiscal framework which determines the projected available resources for aggregate budget Expenditures, including those for Climate change mitigation and adaptation. Second, detailed Long Term Mitigation Strategies (LTS) and National Adaptation Plans (NAP) which are consistent with the Long-Term budget resource constraints and include fully costed priority projects which can be considered for inclusion in the budget; the LTS and NAP should be multi-sector collaborative exercises given that multiple line ministries will be responsible for implementing different Climate Action projects and programs. Third, an institutional process, which commands political support, for determining how large a share of scarce budget resources can be allocated to Climate Action and, within Climate Action, what the budget priorities should be (e.g. the balance between mitigation and adaptation). A fourth component is for the Ministry of Finance to incorporate the Fiscal risks of Climate change (physical and transition risks) into Fiscal risk analysis and draw up a strategy for managing these risks.

JEL classification: H5, Q54

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1. Introduction

This paper proposes a strategy for mainstreaming Climate Action in emerging market and Developing Economies (EMDEs) into their budget Policies. Climate Action refers to policy measures to both mitigate Climate change (reducing global warming) and to adapt to it (reducing or preventing the damage caused by global warming). We define mainstreaming as the integration of Climate Action into the Long-Term national development strategies and public Policies of a country, in a way which optimally complements other developmental priorities or minimises the trade-offs with them. The paper focuses on mainstreaming Climate Action into the budget Policies and processes of EMDEs, especially Low-Income Countries (LICs) and Lower Middle-Income Countries (LMICs), because budget Policies are the most important policy tool available for delivering Climate Action in these Economies. Indeed, for most EMDEs, almost all of the investments for mitigation and adaptation are financed from public sources (e.g. public revenue and grants and public borrowing). Even where Climate Action is undertaken by the private sector (such as private investment in renewable energy) it is likely that budget Policies will make some contribution to enhancing the incentives for private sector Actions, either explicitly (e.g. through subsidies) or implicitly (e.g. through contingent Fiscal liabilities).

The paper focusses on LICs and LMICs which involve different priorities and challenges from those of the more industrialized Upper Middle-Income Countries (UMICs). Most of the former make only a very small contribution to global greenhouse gas (GHG) emissions but are very vulnerable to Climate change, in part because socio-economic development itself reduces vulnerability. Although Climate Action presents some innovative challenges for budget planners, the contention of this paper is that the Medium-Term budget frameworks (MTBFs) which entail policy based (or program) budgeting and which are already in place and operational in many EMDEs, albeit in a fairly elementary form in some of them, can be used, with some modifications, to accommodate Climate Action. One of the key objectives of the MTBF is to improve the alignment of budget resource allocations with national development priorities. MTBFs entail the combination of a top down Fiscal framework, prepared by the finance ministry, which provides a hard budget constraint for aggregate Expenditure, with bottom-up sectoral spending plans prepared by line ministries and derived from policy objectives for the respective sectors, sometimes in collaboration with other stakeholders *(Allen et al, 2017; Brumby and Hemming, 2013; World Bank, 2013; World Bank, 2023)*.

United Nations Framework Convention on Climate Change (2011) sets out a four-stage process for adaptation (figure 1).

The four stages are:

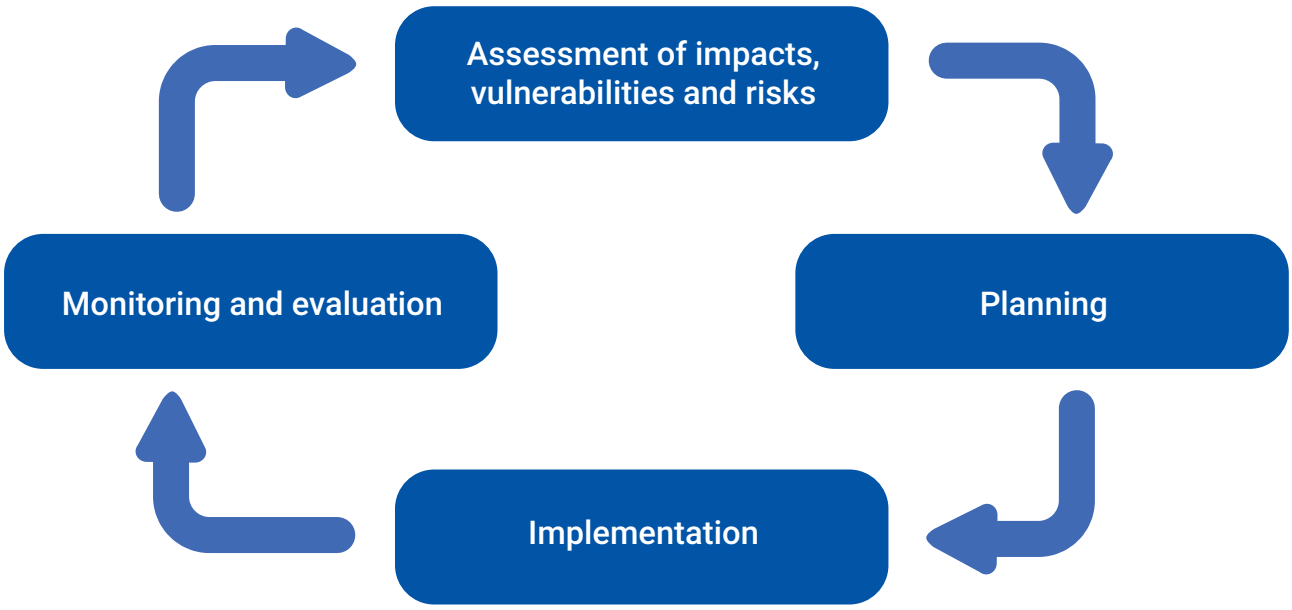
i) Assessment of impact, vulnerabilities and risks;

ii) Planning for adaptation;

iii) Implementation of adaptation

iv) Monitoring and evaluation. This paper mainly pertains to the planning stage, for which the finance ministry will have a major

Figure 1.
The Four Major Components of the Adaptation Process



Source: United Nations Framework Convention on Climate Change (2011), p7, the arrows show how each stage influences what happens in another stage. The process is iterative, so that the findings of monitoring and evaluation of adaptation measures feedback to inform improved assessments of vulnerabilities and risks.

responsibility. We assume that the assessment of impacts, vulnerabilities and risks will be carried out during the preparation of the Nationally Determined Contribution (NDC)[1], Long Term Strategies (LTS) and National Adaptation Plan (NAP)[2], possibly guided by reports such as the Country Climate and Development Report (CCDR)[3]. Implementation and monitoring and evaluation will mainly be the responsibility of line ministries and other public agencies, although the specific responsibilities will vary across countries; we do not cover these here because, although they involve important budgetary issues, especially the technical efficiency of project implementation, it is not obvious that adaption and mitigation projects present any particular implementation and monitoring challenges which are different from those of other types of public investment project.

1. Nationally Determined Contributions are commitments made by national governments to reduce the GHG emissions of their countries, usually along with an outline of proposed Policies to achieve this. Governments register their NDCs with the UNFCCC Secretariat and the NDCs are intended to be updated every five years.

2. Long Term Strategies are prepared by governments to provide a more detailed strategy for delivering the NDC commitments for GHG emission reductions than is set out in the NDC and should in principle include implementable Policies and projects. Similarly, National Adaptation Plans are government strategies for implementing Policies and projects to enhance resilience to the adverse impacts of Climate change.

3. The Country Climate and Development Report is a diagnostic and analytical document prepared by the World Bank intended to identify priority policy Actions to reduce GHG emissions and enhance resilience to Climate change.

The paper is organised as follows. Section 2 provides some context by giving an Overview of the Climate Action Landscape in EMDEs, the Implications of which for Fiscal Policies and the Role of Finance Ministries are discussed in Section 3. Section 4 briefly outlines the main components of the MTBF process and Sections 5-7 set out the basic requirements for integrating Climate Action into the MTBF. These are determining the aggregate budget resource envelope (Section 5), drawing up spending plans for Climate Action based on the LTS and NAP (Section 6) and determining the Medium-Term Expenditure Ceilings for Climate Action (Section 7). Section 8 examines how the Fiscal risks of Climate change should be analysed and managed by Finance Ministries. Section 9 concludes. Our paper complements other work which addresses the challenges of mainstreaming Climate Action into economic and Fiscal policy, notably Bellon and Massetti (2022), CABRI (2021), Coalition of Finance Ministers for Climate Action (2023), Eguino and Delgano (2023) and Pigati (2019). However, we specifically focus on LICs and LMICs and as such place most of our emphasis on the Expenditure side of the budget, for the reasons expounded in Section 2, and in integrating Climate Action into the MTBF process, which has not received much emphasis in the literature.

2. An Overview of the Climate Action Landscape *in Developing Economies*

Climate Action comprises two distinct components. The first, termed mitigation, entails Actions which reduce emissions of GHGs (e.g. replacing fossil fuel powered energy with renewable energy) or sequester GHGs from the atmosphere (e.g. afforestation). The second, termed adaptation, entails actions to reduce vulnerability of people, production and assets to the Long-Term adverse effects of Climate change; these effects include both gradual, incremental changes, such as rising sea levels or higher temperatures, and the greater incidence and severity of Climate induced natural disasters, such as hurricanes. Both mitigation and adaptation will not take place at optimal levels without public policy interventions, although for different reasons.

The social returns [4] from investments in mitigation include the reduction in GHGs, which is a global public good (GPG) – a positive externality - and therefore cannot be captured by a private investor undertaking the investment. As such, private investment in mitigation will be sub-optimally low without public intervention to offset the market failure. That does not mean that all mitigation investments cannot be undertaken by private investors in the absence of public policy intervention, because for some investments, the private returns might still exceed the costs, e.g. investment in renewable energy (RE) power generation can be profitable and in some countries can improve access to power at the lowest cost to consumers. Furthermore, the adoption of some low emission technologies could generate higher social and economic returns than more carbon intensive alternatives in LICs and LMICs. For example, the adoption of clean cooking technologies in Africa can both improve peoples' health (by reducing air pollution) and reduce the labor time needed to obtain fuel, while also reducing GHG emissions. A strategy to decarbonize transport systems, for example by investing in public transport and shifting goods transport from road to rail, could not only reduce GHG emissions, but strengthen the resilience of these systems to Climate change impacts and generate large economic gains *(World Bank Group, 2024)*.

Nevertheless, EMDEs face major constraints in attracting private investment into mitigation even for projects where the expected private returns are positive, mainly because these are capital intensive investments with long payback periods, for which investors usually require very high rates of return, denominated in foreign currency, to offset perceived risk, which makes the prices at which the output (e.g. the electricity) of these projects must be sold unaffordable for domestic consumers. Data *et al* (2024) estimate that the weighted average cost of capital (WACC) for private investors in the power sector of 48 African countries in 2023 was 18 percent. As a consequence, many large RE projects in EMDEs are undertaken by the public sector and usually funded, at least partially, by sovereign borrowing,

4. The social return of an investment captures all of the financial, social and environmental costs and benefits of an investment, including both those which are generated through the market, and which are usually borne by and/or accrue to the owners of the investment and the non market costs and benefits; the positive and negative externalities.

Table 1.
Climate Finance for sub-Saharan Africa from Public and Private Sector
Sources, 2021 and 2022 combined, USD millions, percentages of totals in parentheses

	Mitigation	Adaptation	Multiple	All Uses objectives
Public sources	22,903 (79.2)	21,026 (97.1)	9,324 (99.6)	53,390 (88.9)
Private sector sources	6,022 (20.8)	637 (2.9)	38 (0.4)	6,697 (11.1)
Total	28,925	21,663	9,362	60,087

The data include finance from both external and domestic sources.
Source: Climate Policy Initiative Website

in some cases with concessional or semi-concessional multilateral and/or bilateral loans which reduces the cost of capital and therefore makes the power more affordable for domestic consumers.

Many adaptation investments are pure public goods which do not generate returns which could be captured by private investors, e.g. large scale flood defences and making public infrastructure more resilient to the damage from Climate change. By definition, this type of investment must be undertaken by the public sector.[5] There are some, often smaller scale, adaptation investments which could generate monetizable private returns (e.g. farmers could invest in more drought resistant farm technology), but even for these types of investments, there are major constraints to optimal private sector investment in EMDEs, including lack of awareness of Long Term Climate risks and of adequate information with which to evaluate the financial viability of investment, as well as financial market constraints *(World Bank, 2024)*. Consequently, in most EMDEs, the bulk of adaptation investment is likely to be undertaken by the public sector.

Table 1 provides a breakdown of Climate finance utilised in sub-Saharan Africa (SSA) in 2021 and 2022. Of the USD 60 billion of total Climate finance utilised in SSA in these two years combined, 89 percent came from public sources (mainly multilateral and bilateral development finance institutions and domestic government resources, such as rax revenues) and only 11 percent from private sector sources. The share of public sources in the USD 27.6 billion of total adaptation finance was 97 percent.

Belianska et al (2022) identify and analyze four potential sources of Climate finance for SSA which have not been used in the past on any substantial scale: i) concessional financing through Climate funds; ii) debt instruments linked to Climate change such as green, blue and sustainability bonds and debt for nature swaps; iii) international carbon credit schemes; and iv) Climate related insurance schemes.

Apart from concessional financing, private finance could contribute to the other three sources of potential Climate finance. However there are serious challenges to mobilizing finance from these sources on any substantial scale. For example, negotiating

5. For some of these adaptation investments, private economic agents might derive some pecuniary benefits; e.g. flood defences could raise the value of private property which is better protected from floods. Although free rider problems would constrain private property owners from optimally investing in a collective flood defence project, it might be possible for the government to recoup some of the costs of the public investment by taxing the increase in the value of private property brought about by the investment.

debt swaps with multiple private sector creditors is very complex and time consuming and entails very high transaction costs, often for relatively small amounts of debt relief. International carbon credit markets have so far been peripheral to mobilizing private Climate finance because demand for carbon credits from the private sector has been low and has not growth in recent years and prices for carbon credits are very low. Moreover, even if private finance can be mobilized through any of these instruments, most of it is likely to flow directly to governments rather than the private sector; e.g. it will be governments which issue green bonds or obtain Climate related debt relief for sovereign debt.

Investment needs for decarbonized development will be very large for EMDEs. According to the Climate Policy Initiative, estimates of the annual investment needs of EMDEs through 2030 to decarbonize their Economies range from approximately USD 1.4 trillion to USD 2.8 trillion, which is 3-6 percent of GDP on average.[6] Songwe *et al (2022, Box 3.1)* report different estimates of the total investment needs of Africa for Sustainable development and tackling Climate change. To meet the targets for adaptation investments alone, Africa would need to invest USD 280 billion (7 percent of GDP) annually by 2030. Other estimates for adaptation investment needs (from the Economic Commission for Africa) are even higher; USD 400 billion (10 percent of GDP) annually by 2030, in addition to USD 500 billion annually (12 percent of GDP) of investment in the energy sector to meet SDG targets. The total Climate finance of USD 60 billion mobilized by SSA in 2021 and 2022, shown in table 1, amounts to an average of only 1.5 percent of their combined GDP in these years.

Most LMICs and LICs are severely fiscally constrained, and many are at high risk of debt distress, with very limited capacity to expand public borrowing *(Mawejje, 2024)*. Hence substantial increases in the magnitude of Climate finance for these countries seems unrealistic in the current context. Given that savings are a scarce resource, investments of the magnitude needed for Climate Action unavoidably compete with the Expenditures required to achieve other development priorities of EMDEs, such as transport infrastructure or human capital development. Although there are synergies between Climate Action and other development objectives, there are also unavoidable trade-offs requiring difficult decisions about the allocation of public resources.

In the current context, EMDEs will most likely have the resources to implement only a fraction of all the potentially socially efficient Climate Action investments. It is, therefore, essential that they prioritise those investments which can generate the highest social returns and that budget allocations for Climate Action do not crowd out allocations for other developmental priorities which would yield higher social returns, if they are to maximize the contribution of Climate Action to their overall development objectives. EMDEs are heterogeneous and their priorities with respect to Climate Action will reflect this heterogeneity. However, it is likely that the priority for most LICs and LMICs will be adaptation. These countries make only a small contribution to the annual global emissions of GHGs; LMICs contributed 15 percent of total global CO_2 emissions in 2019 (of which one country, India, contributed almost half), while LICs contributed only 0.6 percent.[7] The low contributions to global GHG emissions of these countries reflects the fact that their Economies are small, most are not industrialized and their energy consumption is low. Consequently,

6. Climate Policy Initiative (2022) annex 2.

7. The data pertain to CO_2 emissions from the burning of fossil fuels and the manufacture of cement. Source: World Development Indicators.

mitigation by these countries will not make a significant impact on global GHG emissions, let alone the accumulated stock of GHGs in the atmosphere, and hence on global warming. However, there may still be strong grounds for investing in RE projects, to reduce energy supply gaps in countries where RE offers the lowest cost options for power generation (e.g. countries with large untapped hydropower potential).

LICs and LMICs are very vulnerable to Climate change. Of the 93 LICs and LMICs ranked in the ND-GAIN Index of vulnerability to Climate change and other global challenges in combination with their readiness to improve resilience, 58 (nearly two thirds) are in the bottom third of the rankings of 187 countries in total, and all but 17 are in the bottom half of the rankings.[8] Their vulnerability to Climate change emanates from multiple factors including much greater dependence of their Economies on tropical agriculture, in which crop yields are vulnerable to heat stress and the likely increased incidence of droughts, greater exposure of the workforce to heat stress and thus lower productivity, because of the nature of the work and their tropical locations, the poorer quality of their infrastructure that makes it less resilient to damage from Climate related shocks such as storms and generally weak social security systems and household buffers against shocks to income and assets. Moreover, within EMDEs, it is generally the poorest sections of the population which are most vulnerable to Climate change. The evidence showing the links between development, poverty and vulnerability to Climate change is reviewed in Word Bank (2024).

Given their vulnerability to Climate change and relative lack of resilience, adaptation investments could potentially yield large social returns, if well planned and efficiently implemented. Cevik (2022) identifies three pillars of an adaptation strategy. The first pillar comprises investments in physical infrastructure to strengthen resilience to Climate related shocks, together with investments in soft infrastructure such as early warning systems and policy measures to help vulnerable communities adapt to Climate change. The second pillar involves the building up of Fiscal buffers to fund the Expenditures necessary to provide relief and recovery from a natural disaster, without jeopardizing Fiscal sustainability. These buffers could include sovereign insurance cover. The third pillar entails contingency plans and other measures to enable an expeditious response to a disaster. Obviously, the first two pillars have important Implications for Fiscal policy and the budget.

8. The data are available on the Notre Dame Global Adaptation Initiative (ND-GAIN) website.

3. What are the Implications for Fiscal Policies and the Role *of Ministries of Finance?*

The dominant contribution of public resources for Climate finance and the constraints to private investment discussed above, indicate that the government budget will be the most important vehicle for implementing Climate Action in most LICs and LMICs and hence Finance Ministries will play a central Role in formulating and implementing Climate Action Policies. Finance Ministries have the responsibility for managing the use of public resources through the budget and, in most countries, play an important Role in macroeconomic management and overall development Policies. Finance Ministries should take the lead to integrate (i.e. mainstream) public Policies for Climate Action into Long Term national development plans and into budget planning in particular. Their objectives should be to ensure that, to the maximum extent possible, Climate Action can complement other strategic development objectives and that scarce budget resources are allocated to maximize their developmental benefits. Obviously, decisions about the optimal allocation of public resources – between Climate Action and other public Expenditure priorities and between competing Climate Action spending proposals – will be crucial to realizing these objectives. The contribution of Finance Ministries is crucial to this process because of their Role at the centre of budget planning and also because, in many EMDEs, they have greater technical capacities than other public agencies for analysing the complementarities and trade-offs between multiple policy objectives.

The above considerations suggest some basic principles which should guide policymakers in integrating Climate Action into their government budgets.

First, the national development plan should set out the country's priorities for Climate Action, based on an assessment of the vulnerabilities and risks the country faces from Climate change, the opportunities for investing in Climate Action, complementarities with other sectoral objectives and a realistic assessment of the resources that are available over the Medium to Long Term. This should guide the commitments made in the country's NDC and the development of its LTS and NAP.

Second, public investments in Climate Action must be consistent with Long Term Macro-Fiscal sustainability. In particular, budget policymakers must take care to avoid unSustainable borrowing and incurring potentially unaffordable contingent liabilities.

Third, budget planning for Climate Action should be fully integrated into the normal budget processes and, where applicable, into the relevant sector Expenditure plans.

Fourth, the allocation of budget resources for Climate Action Expenditures should be determined by similar criteria to all other Expenditure priorities in the budget: e.g. estimated social rates of return, equity objectives. Climate Action Expenditures should not be accorded privileged treatment, e.g. by allocating budget resources to Climate

Action projects which yield lower estimated rates of return than other types of Expenditures, unless this can be justified on other grounds (such as the avoidance of potentially catastrophic but low probability risks).

Fifth, Climate change poses potentially large risks for society and the economy which will unavoidably translate into Fiscal risks. Fiscal policy makers should develop a clear analysis of these Fiscal risks and adopt a cost-effective strategy for managing them.

In the following sections we examine how these broad principles can be operationalised in the Fiscal policy and planning process. In order to clarify the context of our proposals, we begin with a brief outline of the MTBF budget process and the links between the different components of the process.

4. Outline of the Medium-Term *Budget Framework*

Although the MTBF is not identical in all countries which implement it, a meaningful MTBF should include some key components, which are outlined in table 2 below.[9] The key features of the MTBF, which distinguish it from the traditional line item budgeting, are twofold: i) the budget is planned on a Medium Term basis, with Medium Term sector Ceilings allocated to spending agencies on the basis of national policy priorities (even if, in the context of each annual budget, the Ceilings for the outer years of the Medium Term framework are only indicative); and ii) spending agencies articulate coherent sector spending priorities, sometimes in the form of sector programs (e.g. for primary health care in the health sector), and these spending priorities influence the allocation of budget resources within the respective sector. Sector budget priorities are often set out in sector development plans.

The Terms MTBF and Medium-Term Expenditure Framework (MTEF) are sometimes used synonymously. However. World Bank (2023) makes a distinction between the MTEF and the MTBF. It defines the MTEF as a broader concept which can include three stages, one of which is the MTBF. The first stage of the MTEF is the Medium-Term Fiscal Framework (MTFF), which is the multi-year aggregate budget resource envelope prepared by the Ministry of Finance. The MTBF is the second stage, in which the MTFF is combined with the bottom-up spending plans prepared by the spending agencies and reconciled with the aggregate budget resource envelope of the MTFF. The third stage of the MTEF, which most EMDEs have not yet implemented, is the Medium-Term Performance Framework (MTPF). The MTPF combines the MTBF with the measurement and evaluation of the performance outputs of public spending. In the following sections we discuss how Climate Action can be incorporated into the MTBF concept outlined in table 2.

9. World Bank (2023) also notes that: "In practise, MTEFs are being implemented in various ways and encompass a broad array of variations on the basic concept" (page 9).

Table 2.
Key components of the MTBF Process

Activity	Agencies responsible
Ensuring Macro-Fiscal sustainability - Medium Term Fiscal Framework	
Medium Term macroeconomic projections, from which to derive projections of revenue, etc.	Ministry of Finance
Medium Term Fiscal deficit and borrowing targets determined on the basis of debt sustainability analysis and other Macro-Fiscal objectives and constraints	Ministry of Finance
Projections of the Medium-Term aggregate budget resource envelope, based on projections of revenue and grants, and consistent with Fiscal deficit targets	Ministry of Finance
An annual budget background paper articulating Macro-Fiscal objectives and projections of variables needed for budget planning (the resource envelope, prices, exchange rate, etc)	Ministry of Finance
Medium Term Budget Framework The MTFF as above plus:	
Spending agencies draw up sector budget development plans identifying policy priorities and the spending programmes (recurrent and development) to realize these priorities	Spending agencies (e.g. line ministries) plus other stakeholders
Cabinet approves broad allocation of aggregate budget resource envelope to budget sectors and their priority programmes, as well as all non-discretionary Expenditures (e.g. interest payments). This is formalised in a Medium Term Expenditure Framework (MTEF) spreadsheet detailing the sector/program Ceilings for each year of the Medium Term budget planning horizon.	Ministry of Finance and Cabinet (or other high level budget planning committee)
Medium Term Expenditure Ceilings are determined and, where appropriate, allocated within sectors to priority programs. These are included in the budget call circular sent to all spending agencies.	Ministry of Finance
Spending agencies prepare their budget submissions consistent with their sector Ceilings and priorities articulated in sector budget development plans	Spending agencies
Bilateral discussions between the MOF and spending agencies to finalize annual budget allocations and agree the indicative allocations for the outer years of the MTEF.	Ministry of Finance and spending agencies
Annual budget is submitted to the legislature for approval. Budget document includes the MTEF spreadsheet of indicative Medium-Term sector and program Ceilings.	Ministry of Finance

Source: Adapted from World Bank (2023, box 2)

5. Ensuring that Climate Action is Compatible with *Macro-Fiscal sustainability*

A prerequisite for mainstreaming Climate Action into the budget is to determine the Fiscal space available over the Medium-Long Term to fund Climate Action from public resources. This requires a Medium-Term Fiscal framework (MTFF) with projections of budget revenues, borrowing and Fiscal deficits consistent with public debt sustainability, non-discretionary Expenditure commitments, etc, and preferably covering a time horizon of at least five years. Fiscal space analysis can be used to determine the size of the average annual budget resource envelope which will be available for funding Expenditure policy priorities, including Expenditures on Climate Action *(Baum et al, 2017; Cheng and Pitterle, 2018; International Monetary Fund, 2018)*. It can also be used to explore how Fiscal space might possibly be expanded, e.g. through tax policy reforms, retrenchment of non-priority Expenditures, additional grants if potentially available.

This type of MTFF exercise is not new for Finance Ministries of EMDEs and most already have the technical expertise and tools for doing this. It is an essential foundation for Sustainable Fiscal policy. Climate Action does not present any particularly novel challenges for this exercise with the possible exception that the future availability of concessional external finance on a large scale is probably subject to greater uncertainty than is the case for concessional finance in general. It is important that the projections of budget resources should be realistic especially with regard to the amount of external resources which can be mobilised.

There is a growing literature which demonstrates the significant negative impact of Climate change on public debt, Fiscal sustainability and sovereign credit risk *(e.g. Asafu-Adjaye et al, 2024; Bolton et al, 2022; Kling et al, 2018)*. Hence, it would be useful to incorporate Climate induced risks (e.g. Climate disasters which reduce real output and have consequences for the budget) into Macro-Fiscal frameworks and debt sustainability analysis, especially for countries which are very vulnerable to Climate shocks. Some EMDEs are already doing this.

For near to Medium Term MTFF projections, Climate change induced shock scenarios can be included alongside baseline projections, with the impact of shocks calibrated from the averages of historical shocks and also potential tail events (extreme shocks). Longer Term Macro-Fiscal projections could incorporate expected annual average losses from Climate shocks, possibly with alternative scenarios which capture different adaptation strategies. One of the benefits of this type of analysis would be to guide the magnitude and nature of the Fiscal buffers which it is prudent to hold to safeguard Fiscal sustainability *(Aligishiev et al, 2022)*.[10] Climate change vulnerabilities

10. Climate change shock scenarios are already included in the Debt Sustainability Analysis of many Climate vulnerable countries.

should also be included in Fiscal risk analysis, as discussed in Section 8, and this analysis should in turn feed back into the macro-Fiscal projections.[11]

Each country's NDC submission should be formulated to be Compatible with this Macro-Fiscal framework, i.e. the requirements of the NDC commitments for public Expenditure should be fully and realistically costed, and in aggregate they should respect the projected budget resources available for Climate Action. If that is not the case, it will not be possible to implement the NDC commitments fully and, as a guide to strategic planning, they will have little value. As such, the contribution of Finance Ministries is essential for an implementable NDC.

It might be possible to generate additional Fiscal space through some form of carbon pricing. This can involve the reduction or removal of explicit fuel subsidies[12] *(Damania et al, 2023)* or imposing a carbon tax. From a technical standpoint, removing explicit fuel subsidies and taxing carbon are very attractive, because they both create Fiscal space and better align the price incentives facing consumers of fossil fuels with the social costs of fossil fuel use *(Timilsina, 2022)*.[13] For most LICs and LMICs, the most administratively feasible instrument for carbon taxation is an upstream fuel tax on producers and/or importers of fossil fuels (which can often be added to existing fuel duties to minimise tax administration costs); this tax is then fed downstream through the distribution chain and is eventually borne by consumers in the form of higher fuel prices. One advantage of such a tax instrument is that it brings informal sector consumers of fuel into the tax base.

An environmental tax reform, specifically raising energy taxes upstream and using the revenue mobilized to reduce labour taxes and/or expand social spending or public investment, can have significant welfare benefits beyond just the reduction of GHGs, such as improving the efficiency of the tax system and reducing local air pollution, and these benefits are larger in EMDEs than in advanced Economies *(Heine and Black, 2019)*. However, the higher fuel prices that this entails has often proved very politically contentious, given the impact that this has on the living costs of poor people. Hence it needs to be implemented in a very sensitive manner and probably is best done during periods when global fuel prices are falling, so that the immediate impact on domestic retail fuel prices is minimized .

11. The Bank-Fund Debt Sustainability Analysis (DSA) for Low Income Countries was revised in 2024 to incorporate the future impact of Climate change induced risks and of Climate related investments and Policies (*International Monetary Fund, 2024*). In the revised DSA, the baseline projections incorporate the estimated negative impact of both slow moving Climate changes and the increased incidence and severity of Climate induced shocks (e.g. via scarring), while it also reflects the impact of extreme weather events on the volatility of macroeconomic variables around the baseline, which can be analyzed with natural disaster stress tests. The DSA also incorporates the impact on macroeconomic variables of the investments and Policies needed to achieve Climate change related targets.

12. An explicit fuel subsidy is a subsidy which enables fuel to be sold at a price which is lower than the full internal cost of supply, i.e. excluding the cost of the externality. The subsidy can entail a direct payment from the government budget and/or some form of quasi Fiscal operation, such as the provision of an input, at less than its full market price, by a state owned enterprise to the fuel supplier.

13. Black *et al* (2023) and the associated on-line data base provides data on explicit and implicit fossil fuel subsidies by country and energy source. The data base gives some indication of the magnitude of budget resources which could potentially be mobilized in each country by removing explicit subsidies or by imposing carbon taxes to reduce implicit subsidies, to the extent that this is possible politically.

Implementing carbon pricing raises the question of whether the budget revenue mobilized should be hypothecated for spending on Climate Action. In general, hypothecating budget revenues is not optimal from the standpoint of public finance, but it may help to diffuse some of the political opposition to higher fuel prices if some of the revenue mobilized is used to offset the adverse impact on consumers, for example by providing cash transfers to low income households or investing in better public transport and/or subsidizing public transport fares *(Vogt-Schilb and Hallegatte, 2017)*.

Morocco is an example of an EMDE which has implemented a largely successful fuel subsidy reform program. Energy subsidies cost the budget the equivalent of 6.5 percent of GDP in 2012, when the subsidy reforms began. By 2017, most fuel subsidies had been removed, with the exception of subsidies for LPG which were retained because their removal would have had a severe impact on the poor. The Fiscal cost of fuel subsidies was less than two percent of GDP by 2017. The Moroccan government was largely able to avoid political opposition because the subsidies were removed gradually, mostly during a period of falling global fuel prices, which cushioned the impact on domestic retail prices of fuel. There was also an extensive communication campaign to explain the subsidy reforms and an expansion of social safety net schemes to provide cash transfers and free health insurance for the poor *(Vidican Auktor and Loewe, 2022)*.

6. Formulating Budget Expenditure Plans *for Climate Action*

The bottom-up component of the MTBF entails the formulation of sector development plans (e.g. for health, education, water and sanitation) setting out the strategic Medium Term public spending priorities for each applicable sector, which guide the actual budget allocations for Expenditures in each sector. For Climate Action, the equivalent of the sector development plans is the LTS and NAP. The LTS and NAP are essential for translating the aspirations and commitments set out in each county's NDC into an implementable set of projects and programmes.

The LTS and NAP should include detailed Medium Term policy priorities for Climate Action, which are translated into fully costed programs and projects, ranked in order of priority. The analogy of the LTS and NAP with the sector development plans is not, however, straightforward, because whereas each one of the latter generally involves only a single or a small number of line ministries or other spending agencies, both the LTS and especially the NAP involves multiple ministries and agencies which will have ultimate responsibility for implementing the projects and programs in them. That means that all the ministries and agencies involved must collaborate to prepare the LTS and NAP and, once the spending priorities have been identified, the budget resource requirements needed to implement them must be allocated to the applicable ministry or agency.

An additional complication is that, whereas some Climate Action projects are standalone projects (e.g. a sea wall to protect against coastal flooding), many involve modifying existing project proposals to incorporate the requirements of adaptation, such as modifying the design of an infrastructure project to make it more resilient to damage from Climate events such as floods projected to occur during the lifetime of the project. Adaptation will also entail retrofitting existing public infrastructure assets to strengthen their resilience to damage from Climate change.[14]

The costs of adaptation are very sensitive to the technical and engineering specifications required, as shown by Hallegatte *et al* (2019), who make estimates of the cost of strengthening the resilience of public infrastructure in the power, transport and water sectors in LICs and LMICs. If the specific hazards to which assets are exposed are known, so that the technical and engineering standards can be applied specifically to counter these hazards, the costs are much lower than if uniform standards are applied to the entire infrastructure network on the assumption that the specific hazards facing each asset are unknown or are too uncertain. Consequently, substantial gains in the allocative efficiency of Climate adaptation could be achieved if the relevant line minis-

14. The additional costs required to make public infrastructure resilient to Climate change will vary from country to country, depending on the nature and severity of the Climate hazards to which they are exposed. They are also likely to vary between different types of infrastructure. Tiedemann *et al* (2021) estimate the additional costs required to meet the SDGs on a sample of 25 Climate vulnerable small Developing states. These estimates include the costs of making roads resilient to Climate change. The median cost of this amounts to 18 percent of total road infrastructure costs, but there is wide variation between the 25th percentile (2 percent) and the 75th percentile (39 percent).

tries and spending agencies invest in the technical capacities required to evaluate the specific Climate hazards to which each item of infrastructure is vulnerable and to modify its design accordingly.

Once the Medium-Term public spending priorities have been identified in the LTS and NAP, the applicable line ministries should then incorporate those which pertain to their own sector into their sector development plans. That would probably entail including in each sector development plan, a section on Climate Action, setting out the spending priorities and how they relate to, and complement, the overall sector development strategy, together with the applicable costs of these projects and programs. It will then be possible to estimate how much more budget resources each sector will require to fully incorporate the relevant components of national Climate Action strategies (the LTS and NAP) into its sector development plan.

Given that the demands for budget resources from multiple competing projects are much greater than the available budget resources, budget planners need robust methodologies for evaluating projects so that they can choose which projects should be prioritized and included in the budget. Mainstreaming Climate Action into the budget implies that, in general, Climate Action projects and programmes should be evaluated using the same principles as projects and programmes with other objectives (e.g. roads, education). Scarce budget resources should, in general, be allocated to the projects which generate the highest social returns *(Bellon and Massetti, 2022)*, a principle which should apply both within the set of Climate Action projects and across the different sectors of the budget. However, maximizing the efficiency of budget resources is not the only objective of budget planners; other objectives are distributional, such as targeting the benefits of public spending at the poorest and the most vulnerable sectors of society who most need them and, what is particularly pertinent for some adaptation projects, avoiding catastrophic outcomes even if the likelihood of such outcomes is low (risk aversion).

United Nations Framework Convention on Climate Change (2011) describes the three main methodologies for evaluating adaptation projects and their respective strengths and weaknesses: social cost benefit analysis (CBA), cost effectiveness analysis (CEA) and multi-criteria analysis (MCA). CBA offers the advantage that, in principle, it enables the net benefits of projects to be estimated quantitatively and thus all competing project proposals to which CBA is applied can be ranked and prioritised in terms of their estimated net benefits. Budget planners can use this ranking to determine which projects – both Climate related and non-Climate related – should be included in the budget to maximize the welfare benefits of a given budget resource envelope. The drawbacks of CBA are that it can be difficult to quantify in monetary Terms all of the non-market benefits of projects and that the estimated benefits are confined to social welfare (i.e. efficiency); CBA does not directly capture distributional objectives or other objectives such as avoidance of risk. Distributional objectives could be incorporated into CBA by assigning different weights to the various different components of the benefits, depending on who receives these benefits (e.g. benefits received by the poor would be accorded a higher weight than benefits for the non-poor), but the weights are unavoidably somewhat arbitrary.

CEA is useful if planners have identified a policy objective which must be achieved, whatever the net benefits relative to other objectives, and aim to achieve the objective at least cost to the budget. It therefore focusses on estimating the discounted costs of building and operating competing projects which can all deliver the desired policy objective. MCA is most relevant for analy-

sing projects for which there are multiple policy objectives and where some of these objectives cannot be quantified in monetary Terms to allow each project to be assigned a single estimated monetary value in Terms of net benefits. As such, MCA could be used to assess and rank competing adaptation projects which have the same, multiple, objectives but it is less useful for comparing adaptation projects with other types of public projects which have different objectives.

An additional challenge for CBA in quantifying the benefits of adaptation projects with long life times, is that the benefits, in Terms of the Climate damage that the project prevents, are uncertain (in the Knightian sense; i.e. they cannot be quantified probabilistically) because the Long Term impact of Climate change and hence the damage that it will cause is itself uncertain *(Heal and Miller, 2013; Weitzman, 2011)*. Furthermore, most adaptation projects are location specific and the uncertainty around Climate change impacts is greater the smaller is the geographical scale.

A further challenge is that large projects, which have a structural impact on the economy, will also affect the social costs and returns of other projects.[15] Hence it is not valid to appraise each project separately. Instead, a package of projects must be appraised collectively, taking into account the interactions between the projects.

As a complement to the methodologies outlined above, criticality analysis can also play an important Role in designing an efficient adaptation strategy. Criticality analysis examines all of the assets within a system (such as a transport or energy system) and identifies which specific assets are the most critical, in that their damage (such as that caused by a natural disaster) would lead to the largest social and economic costs. The most critical assets would then be accorded priority, within the system, in Terms of ensuring that they are the most resilient to damage *(Hallegatte et al, 2020, toolbox C, pp 72-73)*.

The robustness of a project, to different possible future scenarios, becomes an important criterion for decision makers in the face of uncertainty. Hallegatte *et al* (2012) discuss decision making strategies for long lived investment projects under Climate change related uncertainty. Strategies to make adaptation investments more robust include selecting projects which yield benefits under a range of possible outcomes (no regret strategies), selecting projects which are reversible or are flexible enough to be modified if climatic conditions change in the future, and building safety margins into projects (which is often cheaper if done at the onset of a project than once it has already been built), and choosing projects with shorter lifespans.

Planners can use scenario analysis to identify the range of possible uncertain outcomes from a given Climate threat, such as a powerful hurricane, although they would not be able to assign objective quantitative probabilities to each scenario materializing within a given period. As such there will be an unavoidable element of subjectivity in evaluating and estimating the degree of risks posed by specific Climate threats. Scenario analysis could enable planners to identify risks which should be avoided at all costs, because the consequences of their materializing would be so catastrophic, even if the probability of these risks materializing is unquantifiable but likely to be small. In these circumstances, budget planners might then use CEA to determine the least cost adaptation solution to averting the extreme risk.

When the relevant sectors are considering whether to incorporate Climate Action

15. For example, in an economy facing electricity supply deficits, the net social benefits of projects to electrify the transport sector will be dependent on investments to expand the power supply.

projects into their own sector development plans, th ey should compare the estimated net benefits of these projects with those of the other priority projects in their sectors. Hence sectors in which Climate Action projects yield high net benefits, or achieve other priority objectives, relative to other projects, will generally have a larger share of Climate projects within their sector development plan than would be the case for sectors in which Climate Action projects yield lower relative net benefits.

7. Determining the Medium-Term Expenditure Ceilings *for Climate Action*

The top-down estimates of the Medium-Term aggregate budget resource envelope from the MTFF and the bottom up identification of fully costed Climate Action spending priorities from the LTS and NAP and their incorporation into sector development plans must be brought together in the budget process to determine the Medium Term resource envelope for Climate Action which can be translated into Expenditure Ceilings for the relevant ministries and agencies. Even before Climate Action became a budget priority, the integration of the top-down Macro-Fiscal component and the bottom-up sectoral spending priorities was the most challenging aspect of the MTBF, for two reasons.

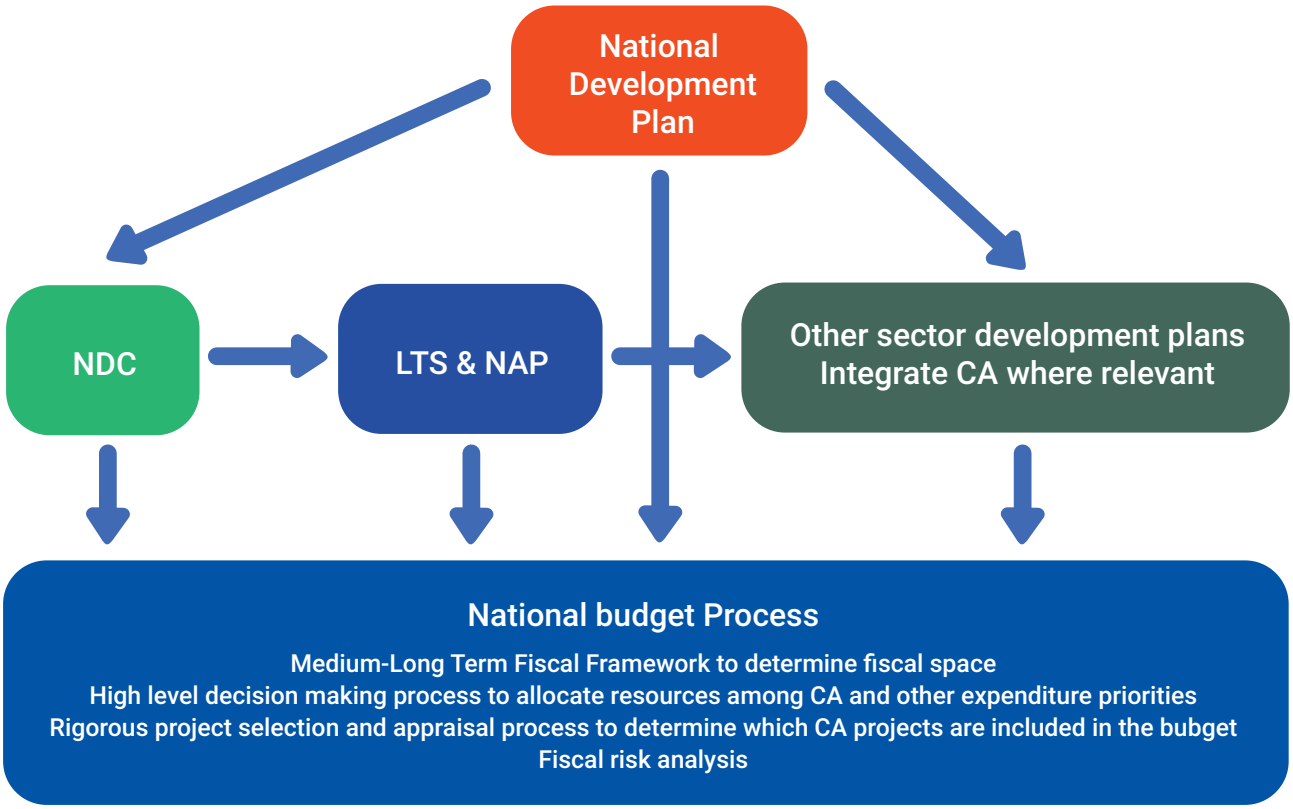
First, it is difficult to identify precise technical criteria which would enable a given aggregate budget resource envelope to be allocated quantitatively between the multiple national strategic priorities (i.e. between the health, education, transport, etc... sectors). In part this is inherently a matter of qualitative judgement (how do policymakers and the people they represent value each strategic priority relative to the others?). The NDP should provide broad guidance on these questions, but it is unlikely to provide precise quantitative instructions as to the relative allocation of budget resources between the different strategic priorities. Second, the process of allocating budget resources between sectors is inherently political; the political leadership of each sector will naturally argue that its own sector should command a larger share.

Within the budget process, there should be a high-level decision-making body which can command political support (especially the support of the Cabinet), which meets relatively early in the budget cycle and determines the Medium-Term budget allocations for the various sectors, including the allocations for Climate Action which are incorporated into specific sectors. These sectoral budget allocations can then be translated into indicative Medium Term sectoral Expenditure Ceilings. The deliberations of this body should be guided by the strategic priorities in the NDP, the resource requirements identified in each sector development plan and technical advice from the finance ministry as the ministry with responsibility for managing the budget process.[16]

To ensure that line ministries have appropriate incentives to incorporate Climate Action into their sector development plans, it will be important that their sector budget allocations are actually adjusted upward to accommodate this, so that the spending on Climate Action does not crowd out their non Climate related spending priorities. Of course, given the overall scarcity of budget resources, it is unavoidable that public spending on Climate Action will crowd out some other public Expenditures, but the sectors

16. As discussed by Brumby and Fleming (2013, p225), the allocation of budget resources between sectors (rather than within sectors) has been a weakness in many MTEFs. The inter-sectoral allocation requires high level guidance which should come from a national development and planning strategy which has endorsement at the highest levels of government, such as the cabinet and Parliament. Often, however, where a national development and planning strategy does exist, it contains a large "wish list" of priorities, unconstrained by budget resource availability, and as such is of little value in guiding actual budget allocations.

Figure 2.
Key components for mainstreaming Climate Action into the budget



One important point to emphasize is that, if Climate Action is to be integrated into a policy based budgeting framework such as a MTBF, a prerequisite is the preparation of high quality strategy and planning documents (the NDP, LTS, NAP and the sector development plans), which identify robustly costed policy priorities consistent with estimated budget resource availability. Without these documents it is not possible to translate policy objectives into actual budget allocations.

which implement the bulk of Climate Action Expenditures should not have to bear this burden disproportionately; as far as possible it should be distributed equally across all sectors irrespective of their contribution to Climate Action in the budget. In the MTBF, it may be useful to identify the budget resources allocated for Climate Action within each sectors' annual Expenditure ceiling.

Figure 2 illustrates how key components and associated planning documents of the planning and policy making process are linked to mainstream Climate Action into the budget. The NDP provides the overall high level strategic objectives for policy makers. This should guide the commitments set out in the country's NDC along with the projections of Fiscal space available in the MTFF. The NDC guides the more detailed strategies, including costed projects, which are set out in the LTS and NAP, which should be produced collaboratively with the applicable sector planners. The projects and programs prioritized in the LTS and NAP are incorporated into the applicable sector development plans. The LTS, NAP and sector development plans provide spending proposals for the budget process, with broad sectoral allocations of budget resources also guided by the NDP. The arrows in

figure 2 indicate the main direction of information flows, but the process in practice will be iterative; for example, when the priorities identified in the NAP are incorporated into sector development plans, this may generate new information or insights which require revisions to the NAP.

One important point to emphasize is that, if Climate Action is to be integrated into a policy-based budgeting framework such as a MTBF, a prerequisite is the preparation of high quality strategy and planning documents (the NDP, LTS, NAP and the sector development plans), which identify robustly costed policy priorities consistent with estimated budget resource availability. Without these documents it is not possible to translate policy objectives into actual budget allocations.

8. Analysing and Managing the Fiscal Risks *of Climate Change*

The Fiscal risks emanating from Climate change include both transition risks and physical risks *(Batten, 2018)*. Transition risks are those which emanate from the transition to the green economy and include explicit and implicit government guarantees for private sector investments in mitigation, such as renewable power generation.[17] Many of the transition risks are endogenous, because they arise from, or are shaped by, discretionary policy decisions, such as the financing of transition related projects with budget resources or government guarantees pertaining to these projects. Physical risks are those which arise because the budget is vulnerable to the damage which could be caused by a Climate change induced hazard; for example, a Climate related natural disaster could exert substantial demands on budget resources for relief and recovery operations and the repair of public infrastructure assets or lead to a loss of budget revenues due to economic disruption.[18] Physical risks are mainly exogenous, because the hazards which generate them are exogenous, although the degree of vulnerability to these hazards may be partly endogenous in that it may be possible to reduce this vulnerability through public policy measures, such as investment in Climate change adaptation.

Many Finance Ministries already undertake Fiscal risk analysis and often publish Fiscal Risk Statements (FRS) in budget documents.[19] These analyses generally focus on the risks from public debt and contingent liabilities from SOEs, etc *(International Monetary Fund, 2016)*. They should be extended to cover Climate change risks. The FRS should identify and describe each Climate related Fiscal risk, provide an assessment of the probability of the risk materializing in a given period, even if this is unavoidably subjective because of uncertainty (it may only be possible to estimate the likelihood of risks materializing very roughly, as probable, possible or remote) and an assessment of the magnitude of the range of the costs, including the maximum possible loss if the risks materialize.

The optimal strategies to manage the Fiscal risks will depend on the nature of the risks. For endogenous transition risks, governments need to be very cautious about making commitments which transfer risks from private investors to the public sector and understand the potential moral hazard that this might induce, which could make the realization of these risks more likely. For physical risks, governments should invest in adaptation (e.g. by designing infrastructure to be more resilient to Climate hazards) to mitigate these risks where this can be done in a cost-effective manner and where the welfare benefits of such investments are larger than those of competing demands on budgetary resources, as discussed in Section 5.

17. Explicit Fiscal liabilities could arise from the contractual liabilities of the Government in public private partnerships. Implicit Fiscal liabilities could be incurred because of take or pay power purchase agreements signed by publicly owned transmission utilities with independent power producers.

18. If a natural disaster severely damages productive infrastructure, there could also be a Long Term fall in potential output which would reduce budget revenues.

19. Pakistan and Rwanda are examples of EMDEs which publish Fiscal risk statements, in both cases these FSRs include a short section on risks from natural disasters.

For the residual risks which cannot be efficiently mitigated through adaptation investments, governments should mitigate them through some form of sovereign insurance. The optimal form of sovereign insurance depends on the frequency and severity of the risks *(Cebotari and Youssef, 2020; Ghesquiere and Mahul, 2010)*. Governments should generally self-insure against risks which are small in nature but occur with a high frequency (and as such are relatively predictable). Self-insurance can take the form of budget contingencies, for small risks, and dedicated extra-budgetary funds for larger risks. The value of using an extra-budgetary fund is that unused funds in years in which the materialization of risks is below average can be rolled over and used in subsequent years. Self-insurance is optimal for small but frequently occurring risks because the opportunity costs of holding budget funds for this purpose is relatively small, given that the budget does not need to accumulate and hold large balances in a buffer fund for long periods without using them, and that the costs of contracting external sovereign insurance will generally be higher. However, if a dedicated extra-budgetary buffer fund is set up, it is imperative that its management is subject to strong governance arrangements, based on sound public financial management principles.

For larger but infrequent risks (such as those emanating from large natural disasters), external sovereign insurance is more optimal, because it is not feasible nor very efficient to hold large public buffer funds for long periods which would be needed to self-insure against these risks *(Ghesquiere and Mahul, 2010)*. Where possible, governments of EMDEs should seek to contract concessional external insurance cover, such as the World Bank's CAT DDOs, the Asian Development Bank's Contingent Disaster Financing Facility or insurance from official regional insurance facilities such as the Caribbean Catastrophe Risk Insurance Facility or the African Union's Africa Risk Capacity Agency.

If concessional or semi-concessional insurance is not available, or not available in sufficient quantities, governments can contract sovereign insurance from private sector insurers or the capital markets, e.g. by issuing CAT bonds[20]. However, commercial disaster insurance for sovereigns is usually quite expensive and the premiums paid are a multiple of expected insurance payments. Also, the magnitude of the payouts are usually determined by criteria which are set ex ante (e.g. the value of CAT bonds issued and the parametric triggers used to determine whether a payout is made) and as such the size of the payout is not usually well correlated with the actual Fiscal costs incurred if a disaster occurs.

20. Catastrophe bonds (CAT bonds) are securities, usually short to Medium Term, in which the repayment of principal and coupon is linked to the occurrence of a catastrophic event. The proceeds of the bond issue are held in a special purpose vehicle (SPV) and invested in safe and liquid assets. Most CAT bonds have parametric triggers, linked to the occurrence of a catastrophic event, which determine whether a payout is made. If the trigger is met, all or part of the proceeds are transferred to the issuer; if it is not, the proceeds (plus interest) are paid to the bond investors as scheduled. The CAT bond therefore provides insurance to the issuer against the risk of a specified catastrophic event (as determined by the trigger) with the risk transferred to the investors in the bonds. Traditionally CAT bonds have been issued by insurance and reinsurance companies as a form of reinsurance against the liabilities they would face from catastrophic events, but in recent years a number of sovereigns have issued CAT bonds, including some EMDEs. The World Bank provides SPV services for sovereign CAT bonds (*Ando et al, 2022*).

9. Conclusions

In most LICs and LMICs, the government budget will be the main vehicle for implementing Climate Action, largely because public resources comprise most of the available Climate finance. Mainstreaming Climate Action, therefore, primarily entails mainstreaming Climate Action into the budget, in a manner which is consistent with other strategic development objectives, including maintaining Long Term macro-Fiscal sustainability and an optimal allocation of scarce budget resources among all of the different budget policy objectives. Given that most LICs and LMICs make only a very small contribution to global GHG emissions but that they are very vulnerable to Climate change, adaptation rather than mitigation should be the priority for these countries.

Policy based budgeting, which is already established in many LICs and LMICs through the MTBF, offers a framework for integrating Climate Action into the budget process. As with other strategic budget policy priorities, a prerequisite for translating Climate Action objectives into actual budget Expenditures is the preparation of comprehensive Climate strategy documents – the LTS and NAP – which include realistically costed projects ranked in order of priority. Where applicable, Climate Action projects should be incorporated into the relevant sector development plans. As far as possible, Climate Action projects and programmes should be evaluated using the same criteria – e.g. social CBA – as all other competing demands for budget resources, and budget resources should only be allocated to Climate Action projects and programmes where they offer greater net benefits, or better meet policy objectives, than competing demands for Expenditure; Climate Action should not be accorded privileged access to budget resources.

Climate change also poses significant Fiscal risks, arising from both the transition to a greener economy and the physical impact of Climate change. Finance ministries should incorporate the risks from Climate change into their Fiscal risk analysis and develop strategies for manging these risks in a cost-effective manner. This will involve investment in adaptation where this is cost effective and the provision of insurance; self-insurance against small but frequently occurring risks and external insurance cover against large but infrequent risks.

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ADA	Americans with Disabilities Act
ADM	Arrow Diagramming Method
ADR	Alternative Dispute Resolution
AGC	Associated General Contractors of America
AIA	American Institute of Architects
AWCPA	Architectural Works Copyright Protection Act
BIM	Building Information Modeling
CCD	Constructive Change Directive
CCIP	Contractor-Controlled Insurance Program
CCN	Contemplated Change Notice
CD	Construction Documents
CGL	Commercial General Liability
CM	Construction Manager
CMAA	Construction Management Association of America

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