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Financing for climate adaptation – an overview of current regimes

Asha Amirali
Institute of Development Studies
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Question

What are the main funding mechanisms for climate adaptation/resilience programmes in developing countries?

Contents

1. Summary

This rapid review finds that the majority of climate adaptation and resilience activities in developing countries are financed through domestic resources. However, the academic and policy literature reviewed does not reveal much about how these revenues are generated. This could mean that, as yet, only a small number of climate-targeted fiscal tools have been developed and rolled out in these countries and general public revenues are being directed to adaptation purposes. Alternatively, it could be that the limited time available for this review constrained identification.

The review finds that international public sector finance is heavily skewed towards mitigation; however, it is still an important source for climate adaptation activities. Market-rate loans make up a large portion of these funds – this may reduce uptake by developing countries and raises climate justice issues. Private finance – both international and national – is also significant, but its role is thought to be complementary to public investment and its efficacy in achieving adaptation goals is contested. The aggregate of adaptation funding from all sources – public and private, domestic and international – is much below what is needed to prevent largescale damage to populations and built environments. There are indications however, that climate finance is increasing and that developing country governments are beginning to prioritise adaptation.

A PFM tool that has significant potential to raise climate finance is environmental tax reforms (ETRs). ETRs are packages of policies that combine environmental taxes with tax shifts (reductions in other taxes) and expenditure policies, yet they have rarely been used in developing countries. However, a number of developing countries have begun integrating climate into their national budget processes. This is a significant step forward, shown to increase monies available for climate purposes, improve the effectiveness of money spent, and ensure project sustainability. Dedicated national funds for climate response have also proliferated, although these can suffer from a lack of government ownership and implementation problems.

2. Adaptation financing – the poor cousin

Box 1: Definitions

Climate adaptation and **climate resilience** are terms used to describe programmes that aim to reduce the risks posed by climate change. These include activities such as building flood defences, water storage, farmers planting drought-resistant crops, etc. For the purposes of this report, they are understood as synonyms.

Climate change mitigation refers to measures that directly address the root causes of climate change and can include reducing greenhouse gas emissions, switching to low-carbon energy sources, and protecting and expanding carbon sinks (Bird 2014).

The literature shows that donor preferences continue to strongly favour mitigation over adaptation. **Approximately 17-20% of known climate finance flows are directed to adaptation.** Oxfam reports that 2015-16 funding for adaptation made up only an estimated 20% of international public climate finance, virtually unchanged from 19% in 2013 and 2014 (Oxfam, 2018). United Nations Environment Programme (UNEP) estimates this number to be 17% while estimating adaptation costs to be USD140-300 billion per annum by 2030, i.e. 6 to 13 times more than what was raised for these purposes in 2015. The finance gap in 2050 is expected to be much larger, to the order of 12 to 22 times current flows (UNEP, 2016: 23)

3. Sources of adaptation finance

Adaptation finance takes four forms:

- international public finance
- international private finance
- domestic public finance
- domestic private finance

Measuring climate finance flows is a difficult task. The lack of an internationally agreed definition of climate finance compounded by the paucity of data on domestic and private flows means that available figures are rough estimates rather than precise statements. Data on adaptation allocations in domestic budgets is limited because domestic budgets are typically managed by line ministries, and expenditures are rarely explicitly earmarked as supporting adaptation to climate change. Similarly, there is no reliable data on private sector financing because investments are not identified by whether they have any relevance to adaptation, and because the private sector is not required to subscribe to any minimum criteria for labeling an investment as climate-adaptive (UNEP, 2016: 5).

Consequently, most research on climate finance focuses on international public financing mechanisms where data is most easily available. A problem then with reviewing the financial landscape in this field is that known flows are mostly those that originate from:

- Development finance institutions: multilateral, bilateral, national and subnational development banks (approximately USD21 billion of 2014 international public finance total of USD25 billion)
- Governments and their bilateral aid agencies (USD3 billion)
- Dedicated climate change funds (USD1 billion)

However, there is strong evidence that **adaptation programmes in developing countries are largely financed through domestic budgets**. Based on a number of systematic investigations that have been conducted since 2010, it appears that in many cases i) domestic public finance for climate change *as a whole* exceeds that from international sources (with the exception of some small island states and highly aid-dependent countries), and ii) finance for adaptation largely comes from domestic sources rather than international (Allan et al., 2019: 14). National

budget surveys reveal developing countries heavily prioritise adaptation over mitigation (UNEP, 2016: 28). Evidence from East Africa for example, as well as Bangladesh, Nepal, and elsewhere, demonstrates that very significant national budget provisions are being made for adaptation. Over four years at the start of the decade, both Ethiopia and Tanzania committed USD1.5 billion, representing 14%and 5% respectively of the national budget (Bird, 2014: 8). These are clearly large expenditures with high opportunity costs, and yet they have been prioritised as governments realise the costs – monetary and human – of not acting.

International public sector finance

Most studies find international public finance for adaptation inadequate in provision, and inefficient in its delivery mechanisms (Bird, 2014; Oxfam, 2018; UNEP, 2016). Approximately USD22.5 billion of public monies were allocated to climate adaptation in developing countries in 2014[1], i.e. approximately 17% of all public climate finance committed that year. **84% of international public finance consisted of market-rate loans from development finance institutions** (UNEP, 2016: xiv, Micale et al., 2018: 8). The ethical issues raised by this are significant and a subject of much controversy in the literature (Khan et al., 2019; Bird, 2014; Romani and Stern, 2011). For example in 2018, Oxfam accused donors of over-reporting climate assistance by approximately 100% by including these market-rate loans along with grants. Oxfam and other agencies have called for climate finance to take the form of grants, not loans, arguing that **loans are unjust because they put the full burden of adaptation on developing countries** that have not benefited from fossil-fuel led growth.

Water and wastewater management projects attract about 50% of all international public sector finance; agriculture, forestry and land-use sector claim 21%, and disaster risk management activities such as early-warning and rapid response systems account for approximately 13% (Micale et al., 2018: 10). In terms of geographic distribution, most adaptation-related international public finance has flowed to sub-Saharan Africa and South Asia. Both regions are highly vulnerable to climate change and Niger, Bangladesh and Nepal are amongst the largest recipients of adaptation finance. Small-island developing states such as Jamaica, Samoa, and the Maldives are amongst the largest recipients of finance for disaster-risk reduction (Nakhooda et al., 2014: 12).

Private sector finance

There is still very limited evidence on adaptation undertaken by the private sector. Available data does not allow assessment of “what is really going on at a sectoral, or even a company level comprehensively. Beyond a few case studies, business surveys and consultancy reports, we do not know how most companies consider climate risk, let alone if they take any action” (Surminski, 2013: 944). Also, private sector finance for adaptation is usually integrated into development interventions or business activities and therefore difficult to measure. UNEP rather hopefully suggests the following: “While quantitative estimates of financial flows are not available, private domestic investment and remittances are good examples of adaptation-

[1] The total amount for adaptation, i.e. including for developed countries, was USD25 billion in 2014 (UNEP, 2016: 23).

relevant investments. Private domestic investment levels are rising in developing countries and, if this trend holds true for micro and small-sized enterprises, a portion of those funds is likely to be spent on adaptation-relevant activities, particularly for those enterprises active in agriculture, a sector that is especially sensitive to climate change" (UNEP, 2016).

However, **many scholars are skeptical of the contribution that businesses are making to climate resilience** (e.g. Goldstein et al., 2019; Pauw, 2014; Surminski, 2014). They note that business activities have to date prioritised short-term profit-making rather than long-term sustainability and the adaptive innovations taking place are often not in line with the long-term needs: "Companies' disclosures on climate risk reveal a preference for incremental or reactive adaptation strategies, such as business continuity planning and energy efficiency installations rather than retreating from certain areas, desalination infrastructure, disaster relief programmes and coastal ecosystem restoration that begin to consider nonlinear change… companies too often translate the complex challenge of climate change into solutions that align with business-as-usual practices" (Goldstein et al., 2019).

Similarly, some years ago, Winn et al. (2011) found most businesses to be working with the assumption that "current economic and social conditions will continue to flourish regardless of unfavorable biophysical conditions in Earth's natural and climate systems". This assumption inclined them to adopt a risk management approach that was inadequate in the face of the scope, scale, and systemic uncertainty associated with climate change impacts.

Box 2**:** Private sector climate finance

The Global Innovation Lab for Climate Finance (the Lab) is a public-private initiative founded in 2014 that channels private investment into climate change mitigation and adaptation in developing countries. To date, Lab 'solutions' have mobilised USD2.07 billion of private finance towards climate mitigation and adaptation-oriented activities[2].

An example of Lab solutions is Climate Adaptation Notes (CAN), which is a new funding source being developed to fund water and waste-related climate adaptation infrastructure projects in Southern Africa.

CAN's attract investment from institutional investors and impact investment funds while creating a new source of credit for commercial banks. They work by issuing Debt Capital Markets-based Notes to commercial banks, which then lend short-term and take on technology risk for early-stage water and waste-related climate adaptation projects. The instrument is structured to be tradeable and repayable with interest over an agreed period aligned with the project's life span and cash flows, creating a stable and dependable cash flow stream for investors. The goal is to enhance the investment value of the notes with concessional-based funding, allowing larger-scale private investment in this area.

A large number of 'blended finance' and new funding solutions are in the process of being developed and rolled out around the world. The evidence on their effectiveness however, is contested.

[2] The Global Innovation Lab for Climate Finance: https://www.climatefinancelab.org

National funds

An increasing number of dedicated national institutions are emerging to channel climate finance. Some of these rely mainly on international sources while others have a greater focus on mobilising domestic capital towards adaptation and mitigation activities. For example:

- The People's Survival Fund of the Philippines was established in 2012 to provide domestic financing for climate-related programmes. The Fund's budget is guaranteed by the state but it is open to international contributors[3].
- Namibia's Environmental Investment Fund is a national entity established to provide a sustainable source of domestic funding for climate-related projects. It is accredited by the Green Climate Fund and co-financing is being used to support resilience-building projects[4].
- Brazil's Amazon Fund has attracted USD1 billion of international climate finance pledges so far and is the largest source of international climate finance in Brazil (Nakhooda et al. 2014:
- The *Fonds Climat Mali* (FCM) was created in Mali in 2012 and has been active since 2014. The fund is financed by annual contributions from Sweden and Norway and has so far funded 14 projects. 80% of its activities are oriented towards adaptation, 20%to mitigation, and it has a specific focus on energy, agriculture, and forestry sectors[5].

Some climate analysts argue that such dedicated funds, although useful, are not as effective as mainstreaming climate adaptation into the government budget (Allan et al., 2019). Firstly, mainstreaming typically mobilises a larger volume of funds; secondly, it avoids the implementation problem that dedicated funds typically face (because they lack the capacity to implement and rely on other government ministries and departments for this); finally, mainstreamed funding is more likely to be scrutinised as part of routine oversight and audit, and therefore realise value for money and effectiveness.

Nakhooda et al. (2014: 67) also sound a cautionary note about the use of dedicated funds, arguing that "docking international climate finance in a national institution, does not, in and of itself, assure deeper stakeholder engagement and ownership in programming". In many cases, national funds have been dominated by the ministry or department they are anchored in and enormous efforts have been required to bring the relevant institutions into the process.

4. Public Financial Management (PFM) and adaptation

[3] http://psf.climate.gov.ph/

[4] https://www.greenclimate.fund/ae/eif

[5] https://ndcpartnership.org/news/mainstreaming-climate-change-national-budgets-best-practices-mali

The integration of climate concerns into PFM has been growing over recent years. Formal international recognition of its importance came in 2019 as a 20-strong Coalition of Finance Ministers for Climate Action endorsed the 'Helsinki Principles' promoting national climate action through fiscal policy and the use of PFM systems[6]. The Coalition recognised that national budget processes, budget planning, public investment management, procurement practices, and intergovernmental fiscal relations must prioritise climate change[7].

A PFM tool that has significant potential is environmental tax reforms (ETRs). ETRs are packages of policies that combine environmental taxes with tax shifts (reductions in other taxes) and expenditure policies, yet they have rarely been used in developing countries. When utilised, they have been targeted largely towards mitigation activities but ETR fiscal instruments can easily also be used for adaptation. According to the World Bank, the biggest obstacle to rolling out these fiscal reforms is the fact that until now, finance ministries have mostly remained at the periphery of climate action because environmental policies have traditionally fallen under the purview of line ministries. This is changing however, as evidenced by the growing number of countries that are integrating climate into their national fiscal frameworks (Pigato, 2019: xviii).

Budgeting for Adaptation

Some developing country governments have already started to build climate change and wider environmental sustainability analysis into budget processes, a measure that offers some distinct advantages over other funding channels (Allan et al., 2019; Nakhooda et al., 2014). Budgets are thought to be better-suited to managing the integrated nature of development and adaptation, i.e. **resilience is best achieved by adapting a country's *existing* development plan rather than through new targeted investments**. The latter are explained by international climate funds' need to fulfill reporting requirements and track contributions towards the United Nations Framework Convention on Climate Change (UNFCCC) financing goals, but the effectiveness and sustainability of such projects is shown to be lower. Other advantages of national budgets are that existing institutional structures can be mobilised and used, budgets are more predictable (particularly compared to climate-related Overseas Development Assistance), and they are shown to be more suitable for financing long-term adaptation investments or those requiring recurring expenditures (Allan et al., 2019).

[6] 'The Coalition of Finance Ministers for Climate Change': https://www.worldbank.org/en/news/press-release/2019/04/13/coalition-of-finance-ministers-for-climate-action

[7] Understanding the role that PFM can play in adaptation and mitigation is at an early stage. Earlier this year, the Public Expenditure and Financial Accountability (PEFA) – comprising seven large international development actors including the European Commission, the IMF, WB, and the governments of France, Norway, Switzerland, and the UK – released a call for research proposals to enable research into 'whether and how climate change interacts with public financial management and/or whether and how public financial management can play a role in climate change mitigation and adaptation'.

Box 3: Examples of successful climate-budget integration

Indonesia has made relatively significant progress in integrating climate change in planning and budgeting systems, improving resilience against adverse climate impacts. The government has developed and implemented a Climate Budget Tagging (CBT) process to monitor and track expenditures on climate actions in the national budget system. The CBT has helped increase climate-informed budgeting from around USD5 billion in in 2016 to nearly USD9 billion in 2018 and increased the allocations towards climate adaptation by USD3.5 billion (WB, 2019: 7).

In 2014, Bangladesh launched its Climate Fiscal Framework (CFF), a tool to track, assess, plan, budget, audit, and mainstream climate finance in government decision-making. The CFF mainstreams climate finance into the national fiscal system, and reveals that more than 80% of climate-related projects (which in Bangladesh are heavily focused on adaptation and resilience-building rather than mitigation) are funded by domestic resources. **60% of this approximately USD1 billion of domestic finance comes from Bangladesh's Annual Development Programme, while the remaining 40% comes from the revenue budget** (Suhardiman et al., 2019: 32). Also, the information generated by the CFF makes it possible for civil society actors and political parties to mobilise around key climate-related agendas and demand more and better public financing for climate adaptation (Allan et al., 2019).

5. Expanding investment in adaptation

This review found some limited evidence of developing country governments using targeted domestic revenue-raising measures to fund adaptation:

Sovereign green bonds have been issued by Indonesia and Fiji, with a handful of other developing countries set to follow this year. Green bonds are debt instruments used by countries and companies to finance environmental projects – governments issuing green bonds is a relatively recent development, sparked by the Republic of Poland's issuance in 2016. The practice is slowly catching on – earlier this year, Indonesia issued the sharia-compliant green sukuk worth USD2 billion to a very interested national market (Ahmed, 2020), while other smaller states such as Fiji, the Maldives and Bahrain have issued smaller amounts.

Although few developing countries have experience with environmental tax implementation as mentioned above, several have experience with **energy price reform** (Pigato, 2019: 172). Malaysia reduced and then eliminated diesel and gas subsidies between 2010 and 2015; Morocco eliminated fuel subsidies between 2012 and 2015 while expanding spending in health, education and transport; Jordon won a degree of public support for its subsidy removal programme through increasing food subsidies and rolling out targeted cash transfers. However, it is only in Iran that revenues from fuel sale were diverted to adaptation activities. **Iran raised fuel prices drastically in 2010 and channeled a portion of the revenue gained into less energy-intensive production.** In one day, the government raised the price of diesel by 2000%, while providing significant compensation to households in the form of bimonthly cash transfers that were visible in individual bank accounts before the day of the price hike and released on the day (Pigato, 2019: 49). The difficulty with such a scheme of course is ensuring that all poor and

vulnerable individuals are protected from the economic shock, something that is outside the scope of this review to investigate.

Finally, there are a variety of suggestions on expanding the quantum of multilateral support for adaptation and mitigation purposes. An Overseas Development Institute (ODI) policy brief outlines six 'promising financial proposals' in this regard (Granoff et al., 2017):

- **Deliver green debt reimbursement in low income countries**. Reimbursing public external debt in lieu of national climate change investments could significantly change the amount of finance available for climate-friendly projects in the poorest countries. **This is already beginning to happen on a small scale**. For example, in 2016 the Seychelles was the first country to restructure its foreign debt for climate adaptation purposes. A debt swap was set up by which investment in domestic marine conservation and climate adaptation projects allowed the country to write USD20 million off its external public debt[8].
- **Increase multilateral development bank (MDB) loan to capital ratios**. MDB's can lend out significantly more than current levels even as their equity stays the same because they face very low risk, loans are always repaid, and they enjoy a high degree of financial security. If major MDB's were to all increase their loan portfolios to five times equity, lending would expand by USD200 billion (based on 2015 numbers)[9].
- **Expand development finance institution (DFI) use of guarantees** to 'crowd in' private sector investment.
- **Encourage DFIs to invest in clean energy technology deployment**.
- **Strengthen MDB support of national financial institutions**. MDBs like the Asian Development Bank are already channeling financing through domestic financial institutions. The proposal is that they increase this amount significantly to subsidise local climate-friendly investments because local investors can access national financial institutions with much greater ease.
- **Scope a new Green Cities Development Bank**. Cities are underfunded in terms of climate finance – only 11% of multilateral climate funds approved during 2010-2015 went to city-based projects. The idea is to lobby for a bank that offers concessionary loans to green projects in developing country cities.

With the exception of green debt reimbursement, all of the aforementioned measures increase indebtedness. The World Bank has argued that financing adaptation investment through tax increases or expenditure cuts is more effective than deficit financing, observing that "deficit financing of adaption is a poor strategy. The negative impact on debt is predominant and the debt to GDP ratio stabilizes and improves only far off into the future as GDP growth outpaces the growth the debt stock (in our simulations after 2080)" (Pigato, 2019: 123). Expenditure cuts and

[8] 'Seychelles finds a novel way to swap its debt for marine protection'. 23 February 2018. National Public Radio. https://www.npr.org/sections/thetwo-way/2018/02/23/588273709/seychelles-finds-a-novel-way-to-swap-its-debt-for-marine-protections?t=1589291161714

[9] This suggestion however raises issues long flagged by climate justice analysts who argue that 'net flows' are more important than 'gross flows'. Unlike grants or concessionary loans, private sector loans at market rates do not increase the net resources available to a country (see Romani and Stern, 2011: 10) and developing countries may not want to increase national debt even if funds were available.

tax increases motivated by climate concerns are still in their infancy in the developing world, but moving resources from where they are less needed to areas of urgency and instituting progressive environmental taxation are key steps to moving towards a more resilient world.

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- Climate Policy Initiative: https://climatepolicyinitiative.org/
- Overseas Development Institute (ODI): https://www.odi.org/
- Oxfam: www.oxfam.org.uk
- UN Framework Convention on Climate Change (UNFCCC): https://unfccc.int/topics/climate-finance/the-big-picture/climate-finance-in-the-negotiations
- World Bank: http://data.worldbank.org/

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