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► **To cite this version:**

Bruno Cabrillac, Camille Fabre, Luc Jacolin. Debt sustainability and climate change B249. FERDI Notes brèves / Policy briefs, 2023. hal-04125648

HAL Id: hal-04125648

<https://hal.science/hal-04125648v1>

Submitted on 13 Jun 2023

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Debt sustainability and climate change

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Climate change has both immediate and long-term consequences on the debt trajectories of developing countries. Their high physical vulnerability to global warming and the increase in natural disasters, combined with lower socio-economic resilience (food and agricultural insecurity, high population growth, lack of social safety nets and political instability), are putting a strain on public finances at a time when they already have little budgetary leeway.

In addition, financing the energy transition represents a major financial challenge for the sustainable development of these countries. According to [UNECA](#), African countries will need to invest around \$500 billion in the energy transition by 2030. The need to adapt to climate change is both more immediate and greater in relative terms than in developed countries. For African countries, the financing needs to adapt to climate change are estimated at \$438 billion by 2030 ([Songwe et al., 2022](#)). Thus the financing needs associated with the fight against climate change represent an essential component of the financing requirements necessary for sustainable development.

At the same time, climate change is weighing on the investment and debt capacity of developing countries. Losses in economic growth caused by climate change ([De Bandt et alii, 2022](#)) may limit their ability to raise fiscal and borrowing resources. As early as 2015, Standard and Poor's warned of the risk of massive deterioration in the creditworthiness of vulnerable countries ([Kraemer et alii, 2015](#)) and rating agencies have begun to take climate vulnerability into account. [Klusak et alii \(2021\)](#) estimate that if emissions were to remain at a high level¹ consistent with a temperature rise of 5°, 63 countries would see their sovereign ratings downgraded by just over one notch, on average. Rising climate risks are putting upward pressure on the cost of market financing (e.g., in the form of climate risk premiums) on the order of 65-120 basis points ([Geneva 25 : Climate and Debt, 2022](#)) for the most vulnerable countries.

This scissor effect, between rising financing needs on the one hand and lower financing available at a higher cost on the other, risks triggering a vicious circle for the most vulnerable countries, paralysing their adaptation efforts and delaying their climate transition, particular-

ly energy transition. The international financial community is naturally concerned by this issue, which is at the crossroads of the management of two global public goods: sustainable development and the fight against climate change. In fact, multilateral financing tools dedicated to combating climate change and mitigating the financial impact of natural disasters have been progressively put in place ([CMAF Report, 2019, pp. 33-41](#)), including the establishment in 2022 [of the IMF's Resilience and Sustainability Trust and associated financing facilities](#).

However, the scarcity of ODA resources in relation to the scale of the needs means that financial engineering solutions are being sought to leverage this type of funding. With regard to the prevention of debt crises caused by natural disasters, a first avenue that can be explored is that **of insurance or contingent instruments**. These instruments make it possible to transfer part of the risk to creditors or insurers, with ODA possibly covering part of the cost of this transfer. Another way to avoid a vicious circle between climate and financial vulnerability could be **to take adaptation efforts into account when assessing the net risk of natural disasters**. Finally, debt/climate swaps can also be a solution, particularly in the context of debt restructuring operations. Apart from this, their comparative advantage over direct financing remains limited ([Quentin et alii, 2022](#)).

Can the same instruments be used to address **the risk of the transition to net zero**,² particularly in terms of energy? This risk is even more difficult to assess than the physical risk, at least for low-income countries and Africa, which only emit a small share of greenhouse gas emissions (3% in the case of Africa). This is because the time horizon for their commitments is further away

1. *Representative Concentration Pathways 8.5*, compatible with a 5° increase in temperature.

2. Transition risk is the risk of not being on track to meet its emission reduction commitments. In this case, the country may be forced by foreign pressure (border carbon tax, conditionality of aid, diplomatic actions, etc.) to take brutal measures that weigh on production.

than the 2050 carbon neutrality commitments of the advanced countries included in the Paris Agreement, and the degree of risk associated with failing to meet these commitments is also difficult to assess. However, it might seem logical to take transition efforts into account when assessing sovereign risk, if we consider that the delay in transition investments weighs on potential long-term growth. But this reasoning undoubtedly applies to many public investments with a high economic return and underpins the balance sheet approach (net debt of public assets) supported in particular by China ([I. Ball et alii, 2021](#)).

1) The question of the sustainability of public debt in light of climate change is a central issue for low-income countries, which raises several questions:

- **The first is how to take proper account of the reduction in sovereign risk engendered by climate policies.** Increasing vulnerability to physical risks due to climate change makes it a key factor in sovereign risk assessment. It is therefore logical to consider only the net risk in debt sustainability analyses, taking adaptation efforts into account, provided that indicators are available to measure the actual impact of these investments. Thus, for example, an investment in irrigation reduces the risk of drought. This is a powerful incentive for both the donor and the beneficiary to invest in adaptation.
- The same reasoning can be applied to the climate transition risk defined as the additional cost associated with a transition that is too late, too limited or, on the contrary, too abrupt. Assessing this risk and therefore mitigating it is also difficult. The first risk is that of stranded assets. While it is appropriate to try to assess this risk, for example in the case of fossil energy resources, it will be less obvious to assess its mitigation through diversification policies. Another risk that is more difficult to measure is the risk of not meeting emission reduction commitments. The extent of this risk depends crucially on pressure from the international community (climate conditionality, carbon tax at borders, etc.).
- **Should we go so far as to no longer take into account the net financial debt, but the net debt of public assets contributing to climate policies?** The answer lies in an old and more general debate on a balance sheet approach to public debt, from which public assets are deducted. This approach, advocated by Larry Summers for example, is based on a logic of economic return on public investment (i.e., in terms of growth), which is often verified for advanced countries ([A. Abiad et alii, 2015](#)). In addition to the fact that the growth efficiency of public capital is more uncertain in low-income countries, due both to problems of investment quality and multiple bottlenecks in the development process, this approach does not necessarily guarantee debt sustainability. On the one hand, in LICs, sovereign debt is largely external and in foreign currency and growth does not necessarily generate more external revenue. On the other hand, the capacity of governments to transform growth into tax revenue is less and also uncertain ([see for exemple H. Ahir et alii, 2021](#)). Moreover, the implementation of development strategies based on the accumulation of public capital was largely a failure at the end of the last century, resulting in a severe debt crisis. Yet international initiatives to promote infrastructure investment in developing countries have proliferated, including the recent G7-led *Partnership for Global Infrastructure and Investment*, the European Union's *Global Gateway* strategy and China's *Belt and Road Initiative (BRI)*. The fact that many of the countries that have benefited from the BIS are over-indebted or have even defaulted on their debts raises the question of the relevance of this strategy.
- Extrapolating from this, we can ask **the question of whether all assets, including nat-**

ural and human capital, should be taken into account. This approach is facilitated by the work carried out under the coordination of the World Bank, which aims to provide an exhaustive inventory of a country's capital ([The Changing Wealth of Nations 2021](#)). Compared to the previous approach, this approach has the advantage of taking into account changes in natural capital (and therefore in environmental policies, including biodiversity, as well as the depreciation of fossil assets), but also in human capital and therefore in education policies. This would meet the wishes of Nature Finance, which advocates ([Integrating Nature into Debt Sustainability Analysis](#)). The link with long-term growth could be less tenuous than in the case of physical assets alone, even if the link with medium-term repayment capacity remains problematic. However, *the Changing Wealth of Nations* approach shows that SSA is the only region in the world that has lost wealth over the last two decades. It is probably no coincidence that it is also the region with the most episodes of balance of payments and/or debt crises.

- Whatever the scope of the assets taken into account when assessing solvency, **the question arises of how to account for the investments contributing to these assets** (i.e., a forward-looking approach to the solvency standard). In this case, it is no longer a question of assessing the denominator of the solvency ratios in terms of stock (debt/stocks of public assets), but of removing from the numerator the flows that contribute to the growth of physical or natural capital (debt-programmed investments contributing to the acquisition of public assets). This is also a long-standing issue that has given rise to much debate, particularly in the context of discussions on budgetary rules, especially in the European Union. The same arguments can be put forward to defend or incriminate this approach for developing countries. In particular, the economic and social profitability (in terms of global public goods) of future investments is

even more difficult to assess and therefore more uncertain than that of existing capital. However, this approach seems consistent with international aid, which now has two main focuses: development and global public goods.

- Whatever the perspective, it is essential to integrate the climate dimension into **medium- and long-term debt sustainability analyses** (DSA), with a view to mobilising and catalysing external financing (official and private), or guiding debtor countries' debt strategies over the medium and long term. The adoption of appropriate methods for dealing with climate risk and the implementation of climate stress tests are possible ways of refining the DSAs. It is a question of finding a balance between the need to include the climate dimension in order to enable countries to strengthen their resilience, and the need to reflect the conclusive constraint that debt ultimately represents. **Extending the time horizon of debt sustainability analyses** also seems essential in order to take into account physical and transitional risks as well as the investments that reduce them. The inclusion of private creditors on the one hand and domestic debt on the other, whose weight is growing, is also essential. Finally, transparency is a determining factor for the credibility and support of creditors, both in terms of debt sustainability analyses and responsible debt strategies on the part of debtor countries.

- The climate dimension must also be better integrated by the rating agencies in order to mobilise private financing and limit the financing costs for vulnerable countries. While these agencies have begun to take climate vulnerability into account in their ratings, the low differentiation between project risk and country risk ratings penalises the financing of adaptation or mitigation projects, which are generally given a sovereign rating. Greater transparency and dialogue between the rating agencies, the beneficiary countries and the project promoters are

therefore necessary in order to develop ratings for adaptation and energy transition projects that take into account the expected economic, social and environmental returns, and in particular the growth gains linked to the climate transition.

2) *Financing instruments tailored to climate risks and policies*

- **Global risks – macroeconomic, environmental and geopolitical – have increased.**

This increases the vulnerability of debt, particularly for emerging countries and especially low-income countries. In this context, the search for instruments to reduce the impacts of these risks through insurance-type instruments is one of the most natural solutions. This type of instrument seems particularly well suited to the physical risks generated by climate change. These events are completely independent of the actions taken by local authorities. However, the impact of these events is directly dependent on the adaptation policies implemented by these authorities. However, the moral hazard attached to any insurance instrument is reduced and can be further limited by ad hoc clauses. In this context, **it would be useful to develop a broader range of tools**, ranging from the development of *State-Contingent Debt Instruments (SCDIs)*, which are currently attracting renewed interest, to the ability of institutions such as the IMF to mobilise resources counter-cyclically or to leverage private insurance.

- The first type of instrument consists of financing with automatic debt rescheduling clauses in the event of an external event. For the reasons mentioned above (independence of the event from the actions of the creditor), this type of instrument is very well suited to natural disasters. Recent progress has been made on natural disaster clauses, which provide debtor countries with liquidity relief in the event of shocks, including pandemics in the

latest version. In September 2022, Barbados issued a bond with natural disaster and pandemic clauses, providing for a suspension of payments in the event of a new global pandemic declared by the WHO. In November 2022, in preparation for COP 27, the International Capital Markets Association (ICMA) [published a model of Climate Resilient Debt Clauses \(CRDCs\)](#) in sovereign bonds. This initiative is strongly supported by the British Government, which has introduced such clauses [in its export financing and is working with many multilateral and bilateral lenders to develop them.](#) For the past fifteen years, Agence Française de Développement (AFD) has been offering its clients “Highly Concessional Contra-Cyclical Loans”, which contain clauses of this type with a trigger linked to the terms of trade (international price of a raw material exported by the debtor). The success of this type of loan has been mixed, but the lesson we can draw from it is, as with all contingent debt instruments (particularly the best-known, such as GDP-linked bonds), that a sufficient amount of debt must be contingent on the same type of event to protect both creditors and the debtor. There is therefore a problem of coordination between creditors and comparability of treatment. Indeed, if official creditors adopt such clauses, difficulties may arise in the event of private co-financing in the absence of comparable clauses on the part of private creditors. Another issue related to the development of such clauses is the definition of the trigger event. Indeed, the diversity of natural disasters can be an obstacle to the implementation of standardised instruments and indicators.

- With this in mind, multilateral institutions have in recent years developed tools to reduce debt servicing in the event of a natural disaster. The IMF has gradually adapted its financing to respond to emergencies related to natural disasters (Ferd Policy Brief B227, see illustration below). For example in 2015 with the [Catastrophe Containment and Relief Trust \(CCRT\)](#) which

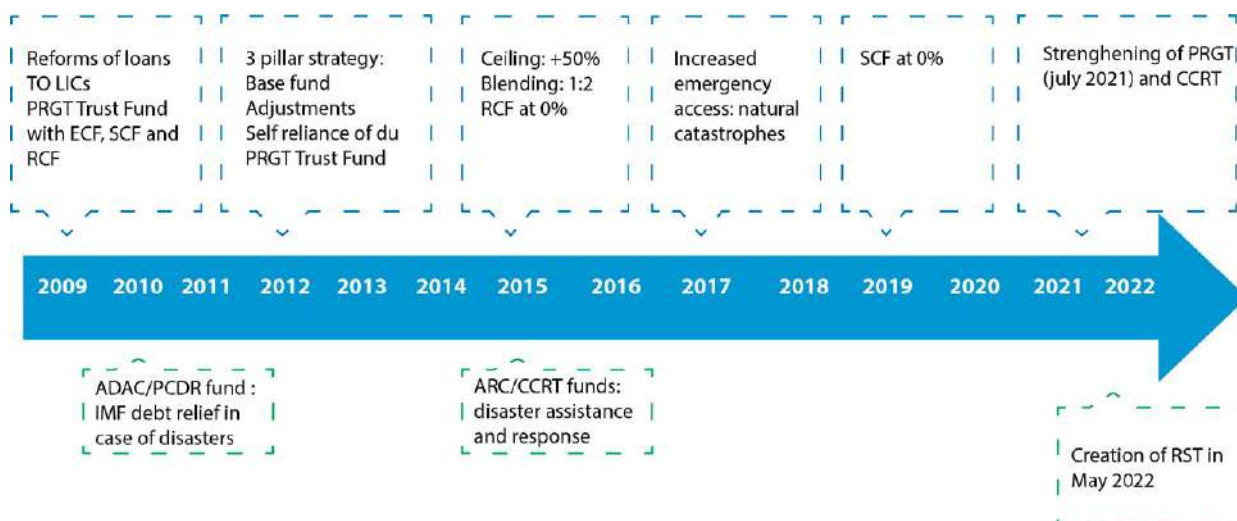
succeeded the Post Catastrophe Debt Relief Trust, to deal with the consequences of the Ebola epidemic. The purpose of this trust fund is to cancel debt service owed to the IMF by poor and vulnerable countries affected by a natural disaster or epidemic over several years. It is financed on a voluntary basis by donations from IMF member countries. This is also the rationale behind [the initiative taken by the G20 countries](#) to suspend debt servicing for more than 70 vulnerable countries during the Covid epidemic (between May 2020 and December 2021).

- The second type of instrument is more directly insurance-based. The aim is no longer to relieve debt servicing in the event of a natural disaster, but to compensate for all or part of the damage caused. Private insurance alone cannot do this. On the one hand, the risks are increasing sharply as a result of climate change, and on the other, this increase is very difficult to predict. Consequently, the price of insurance is very high. This does not mean that public/private partnerships cannot be devised to encourage

greater coverage of this type of risk. Regulators can help. This is the purpose of [the initiative of Japan's G7 Presidency in collaboration with the International Association of Insurance Supervisors \(IAIS\) and the Global Climate Risk Shield launched by the G7 and the most vulnerable countries in November 2022.](#)

- Finally, the development of multilateral financing instruments to respond to shocks has increased multilateral institutions' potential to participate in financing the repercussions of natural disasters. A third of multilateral funding is thus dedicated to climate objectives (see graph below), often with the explicit objective of using leverage to mobilise private financing. This is the rationale behind, for example, the Global Climate Risk Shield facility launched by the World Bank in November 2022 in support of the G7 initiative mentioned above. The discussions launched by COP 28 on a fund to compensate for loss and damage are also a natural extension of this approach.

Key Developments in IMF Financing for Poor Countries*



At the top of the arrow, developments concerning the financing delivered by the PRGF, at the bottom the creation of other specific financing funds open to eligible countries.

* FRPC eligible.

Acronyms: Extended Credit facility, Rapid Credit Facility, Standby Credit Facility. The other facilities for poor countries (in green) are issued by the Post-Catastrophe Debt Relief Trust Fund (ADAC/Post Catastrophe Debt Relief) then the Disaster Assistance and Response Trust Fund (ARC/ Catastrophe Containment and Relief Trust), Resilience and Sustainability Trust (RST).

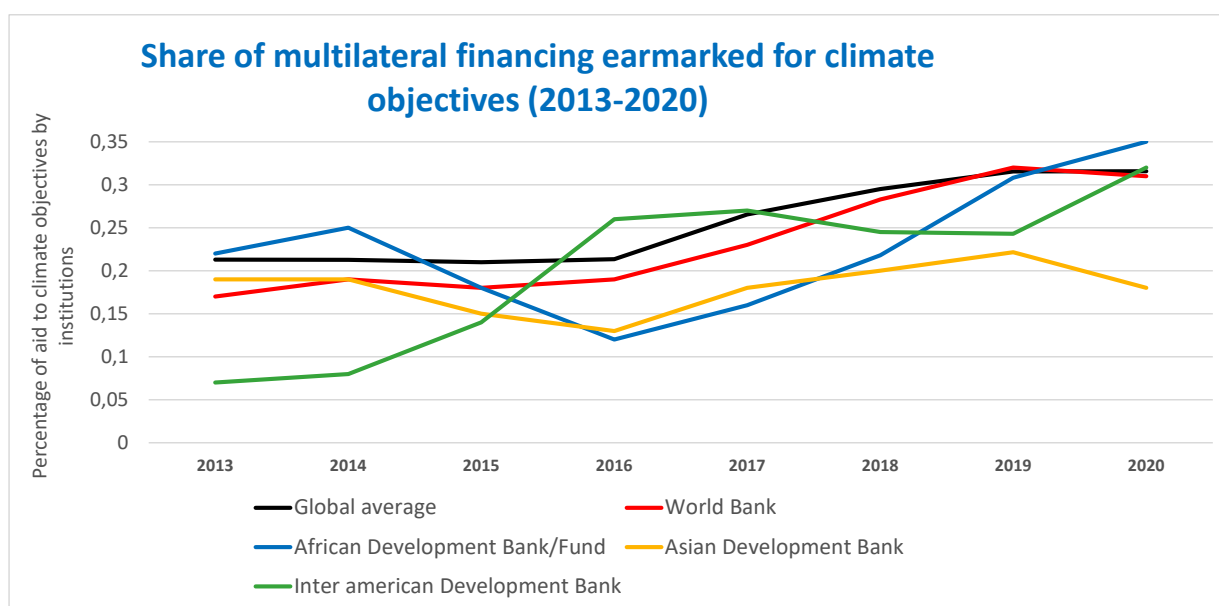
Source : FMI.

- These approaches seem less well suited to the significant risks of transition. Contingent or insurance-based instruments cannot be applied to risks that are public policy-related. In such cases, the instruments used must instead aim to support mitigation policies, rather than to protect against transition risks. An initial path, already widely explored, is that of climate conditionality. This can be integrated into project aid (only green investments are financed), but it can also be an element of conditionality in budgetary aid, whether or not it is earmarked. The disadvantage of this type of conditionality is that the greening of funding for the poorest or most vulnerable countries is not explicitly accompanied by an increase in aid volumes. On the contrary, if this greening entails additional costs, it may imply a reduction in the economic and social returns on the investments or policies financed.

- But there are other ways of doing this that are **more in the nature of incentive policies**: additional funding, to avoid any windfall effects, linked to greenhouse gas emission reduction targets. This could be accompanied by an increase in debt ceilings (see above). The advantage of this approach is that it materialises the additional financing associated with mitigation

or transition policies. However, the gains derived from these policies relate to the preservation of a “pure” global public good (the climate) and therefore follow a very different logic from that of official development assistance. The crowding-out effects of development aid flows by this type of financing could therefore be limited, particularly if they are distributed through specific channels (ad hoc cross-sectoral funds, or trust funds in MDBs). If initially it seems realistic that these channels are financed on a voluntary basis, thus systematizing the multi-stakeholder approach of [Just Energy Transition Partnerships \(JETPs\)](#), an international agreement on the basis of a fair sharing of the burden of mitigation is naturally desirable. These new channels are intended to raise additional resources, but they should not exacerbate aid fragmentation. That is why it would be better to create trust funds within existing institutions, including MDBs, as is already the case at the Asian Development Bank (ABD), with [the Energy Transition Mechanism](#).

- The third possibility for additional financing of mitigation policies is to capitalise on the preservation of natural capital that contributes to the reduction of greenhouse gas emissions. This approach has been explored since the late 1980s through debt-for-nature operations ([Quentin](#)



Source: [OCDE-CAD](#).

[et alii, 2022](#)). In recent years, there has been a revival of interest in this approach, albeit more intellectual than operational. The amounts concerned remain very limited because of the difficulties involved in implementing them, both for creditors and debtors. Some of these difficulties relate to the nature of the transaction (i.e., debt reduction). There seems to be a consensus that this type of instrument can make a contribution in specific cases, but cannot by itself restore the sustainability of a country's debt. The publication of guidelines could nevertheless be useful for developing this type of operation. This raises the question of additional financing not linked to debt, in particular the valuation of carbon credits linked to the existence and preservation of carbon sinks (the Congo Basin in Africa in particular). As noted in the Geneva report, current carbon credit systems appear fragmented, not very credible and under-remunerated, and fairer remuneration for efforts to conserve natural carbon sinks is in line with the demands made by African states at the COPs. The main difficulty that remains to be resolved is how to value the gains associated with preserving natural capital, particularly in terms of a counterfactual (what would have been done if this funding had not been available?). However, the poorer and more vulnerable the countries are, the less significant any windfall effect.

- Even if the logic of additional financing linked to mitigation policies limits the crowding-out effects of development financing, it does not necessarily resolve the trade-offs between the various SDGs, including the trade-off between adaptation and mitigation policies. We would then need to consider additional funding linked to achieving all the SDGs rather than targets linked solely to climate policies. But if this were the case, the rationality and efficiency of fund-raising on a burden-sharing basis for a global public good would become blurred.
- Finally, over and above the development of new financing instruments adapted to take account of climate risks and policies, a review of the impact of existing regulations on the availability and cost of financing for projects related to adaptation to climate change and the energy transition could also be undertaken. While prudential rules are absolutely essential to guarantee greater stability in the financial system, it would be interesting to analyse their impact on the geographical scope of institutional investments. The application of the Basel III and IV and Solvency II regulations may have had the effect of increasing the cost of cross-border and non-OECD financing. A study of the impact of this application on access to financing for countries vulnerable to climate change could be an avenue worth exploring.



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n° ISSN : 2275-5055

Publication director: Patrick Guillaumont

