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OPINION

Understanding the USD 10+ trillion climate finance dilemma: Implications for the 2023 COP28 climate conference

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Financing global climate change governance: From 1992 earth summit to 2023 COP28 conference

While 'climate finance', which can be described broadly as local, national and/or global public and private sources of financing that seeks to support climate change mitigation and adaptation actions, seems to be a global policy concern without equal in 2023, it has been a subject of global priority from the very beginning of the global environmental governance process since 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro. The 2009 COP15 conference in Denmark, for instance, pledged to provide new and additional resources in the range of USD 30 billion for the period 2010–2012 divided equally between mitigation and adaptation [1]. Most notably, the 2009 COP15 Conference established the voluntary global target of mobilising USD 100 billion per year for climate action in developing countries by 2020 [2], which has proven to be so contentious in recent years in terms of whether the OECD industrialized countries are truly meeting the principle of "common but differentiated responsibilities", formally articulated and introduced as international law at the 1992 UNCED [3]. According to a 2022 OECD analysis [2], the total amount of global climate finance mobilized from a wide range of public (bilateral and multilateral), private, an export credits reached USD 83.3 billion, falling short of the US$100 billion a year for developing countries by 2020 target set in 2009.

In terms of what the international community needs to mobilize by 2050 to be consistent with a 1.5 C global warming scenario, a 2022 Climate Policy Institute analysis estimates that the annual climate finance flows in 2019/2020 reached USD 653 billion on average or 15% higher than in 2017/18., with 2021 climate finance flows reaching an all-time high of USD 850 –US$ 940 billion. Overall, global climate finance flows have almost doubled in the last decade, with an annual average of USD 480 billion and a cumulative USD 4.8 trillion in climate finance committed between the years 2011 and 2020. However, as noted in Fig 1, this positive trend is overshadowed by the fact that the international community will need to mobilize at least USD 4.3 trillion in annual finance flows by 2030 or in the range of USD 6 to 14 trillion by 2050 to avoid the worst impacts of climate change, according to the Climate Policy Institute [4].

Even as climate change as an environmental, economic, and social problem intensifies (July 2023, for instance, has become the warmest month on record, according to the World Meteorological Association [5]), bridging the gap between what the international community can mobilize versus what it needs to secure in terms of global climate finance is rapidly becoming

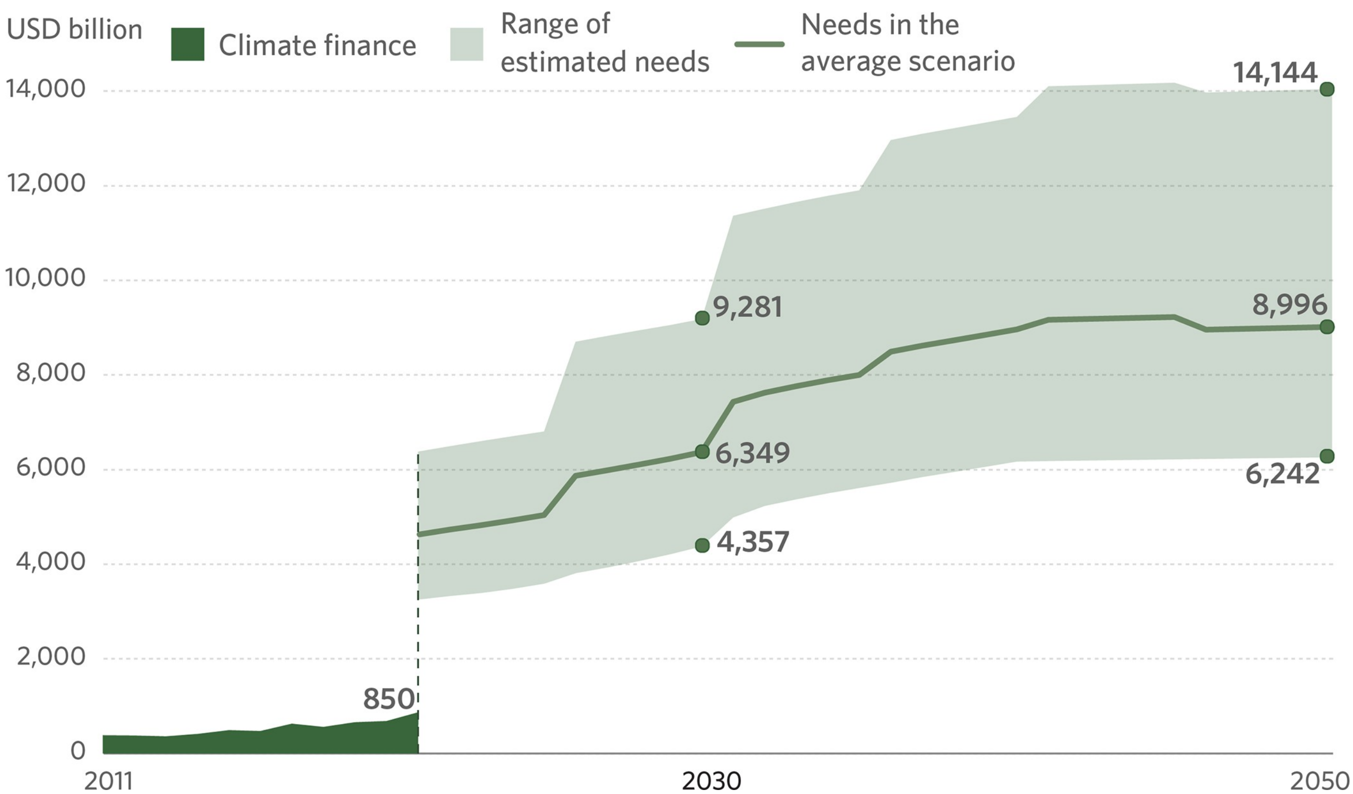

Fig 1. Estimated annual climate finance and investment needs through 2050 [4]**.** SOURCE: Climate Policy Institute (2022) https://www.climatepolicyinitiative.org/wp-content/uploads/2022/10/Figure-2-Climate-finance-and-needs-range.png.

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the first among equal litmus test of the UN climate change convention (COP) process specifically and the international community more broadly in ensuring a viable path for a sustainable planetary future. As we look towards the 2023 COP28 Conference in Dubai, United Arab Emirates (UAE), one obvious looming question is this: if we are still debating whether a relatively easy (or something that should be relatively easy) target of mobilizing USD 100 billion in climate finance for the developing world by 2020 has been achieved, how and when will the international community be ready to discuss the annual flows of USD 4.4 to USD 9.3 trillion in global climate finance that will be needed by 2030?

Potholes and pathways of climate finance: Insights from South Africa's just energy transition partnership case study

Scaling climate finance to USD 10 trillion+ in similar in policy ambition to what the World Bank once observed as the "billions to trillions" [6] challenge. However, to help visualize the challenge of accelerating climate finance from billions to trillions as a more realistic policy measure, it is important to contextualize this challenge through a multidimensional country case study that integrates the goals of decarbonization, clean energy development, social justice, and local/regional economic resilience like South Africa's Just Energy Transition Partnership (JETP) initiative [7]. There is no one model of a sustainable climate finance framework that fits all the diverse range of socio-economic, technological, and geographical domains in the context of the Global South. As a middle -income emerging market country with the second or third largest economy and the largest financial market in Africa, however, South Africa serves as a good country case study that reflects the diverse challenges confronting the Global

South in terms of climate finance market and policy barriers and energy transition landscape. There are two important climate finance insights with global implications that can be derived from South Africa's JETP case study.

The first insight deals with what one might describe as the climate finance 'pothole' problem that focuses on the quantity or the supply side of the climate finance mobilization dilemma. Climate finance is traditionally divided into two buckets of investment flows: mitigation, which deals with climate actions that lower greenhouse gas emissions and adaptation, which focuses on "actions that help communities reduce the risks they face and harm they might suffer from climate hazards like storms or droughts". With the adoption of the Warsaw International Mechanism for Loss and Damage at the 2013 COP19 conference, a third category known as 'loss and damage' that focuses on adverse effects of climate change that can include extreme weather events like flooding, wildfire, but also "slow onset events, such as sea level rise, ocean acidification, desertification", was added [8]. While all three of these climate finance types are important, for South Africa and other countries in the Global South, finance and investment flows from climate adaptation and loss and damage funding need to be prioritized in terms of scale and acceleration.

The key reason is that the focus of climate mitigation finance is tilted heavily toward investments in GHG emissions reduction activities (e.g. carbon capture technologies in the oil and gas sectors) in OECD developed countries. Multi-billion climate change activities in the U.S. Inflation Reduction Act might help position and restore U.S. leadership in global climate change and energy efficient technologies, but it will not provide any meaningful help and support to accelerate adaptation finance, particularly in rural communities, in South Africa and the Global South. Even conservative estimates of climate adaptation funding needs may reach USD 30–50 billion per year by 2030, which is three to six times larger than the USD 7.8 billion that was provided by wealthy OECD countries for adaptation projects worldwide in 2019 [9].

Although Africa is expected to account for no more than 4 percent of cumulative global energy-related CO2 emissions by 2050, the gap is growing between what South Africa and other countries in the Global South 'needs' versus what they are 'likely to have' in the investment pipeline terms of climate adaptation financing. Case in point: cumulative analysis of Nationally Determined Contributions (NDCs) of 51 African countries shows a need of an estimated USD 579 billion in adaptation finance through, 2030 although they only received USD11.4 billion in annual adaptation finance as recently as 2020 [10]. If one were to include a more explicit focus on loss and damage financing, the gap would be even higher.

The second insight deals with the climate finance 'pathways" dilemma that focuses on the quality and directionality of the climate finance mobilization process, particularly in terms of climate and energy justice. South Africa's Just Energy Transition Partnership (JETP) is a Global South case study with important global implications because it asks the complex governance question of whether rapid renewable energy development and decarbonization can coexist with domestic financial and socio-economic constraints as well as global donor pressures (e.g. South Africa's donor-funded $8.5 billion JETP initiative over the 2023–2028 period) to [11]. The JETP process accelerates the decarbonization of South Africa's economy by mobilizing an initial commitment of $8.5 billion for the first phase of financing, through grants, concessional loans and investments, preventing up to 1–1.5 gigatons of GHG emissions over the next 20 years by helping South Africa to move away from coal, and accelerating the country's transition to a low emission, climate resilient economy [12].

The focus of climate finance on decarbonization is a critical strategic policy choice since South Africa's energy system is one of the most carbon intensive in the world. Coal accounts over 5 percent of the country's GDP, while the power sector (mostly from Eskom) is responsible for nearly half of South Africa's total carbon footprint and 86 percent of electricity comes from domestic coal-fired power in South Africa, the highest in the G20. However, it is unclear what a "just energy transition" might or should mean for the economically marginalized Black South Africans employed in the coal value chain in a country with one of the highest unemployment and underemployment rates among the G-20 countries. At the same time, South Africa's high-carbon energy system is essentially falling apart with electricity blackouts known in the country as "load shedding", with an estimated negative GDP impact that could be high as 5 percent [13].

Decarbonization should be a climate finance investment priority in South Africa, but can climate finance strategies be designed in a way that the goals of decarbonization, clean energy market development, and just energy transition are complementary rather than conflicting? In the short-term, this gap between climate finance "availability" and climate finance "needs" in South Africa (as well as in other countries in the Global South) is likely to grow wider as aid recipient countries often underestimate their financial needs, particularly in terms of adaptation and loss and damage financing. This gap between largely unfulfilled promises made at annual UN climate conferences and the actual delivery of funding resources by U.S., European Union, and other Western OECD industrialized countries is leading some African political leaders like Ugandan president, Yoweri K. Museveni, to conclude that "Africa should not sacrifice its future prosperity for Western climate goals" and that "Africans have a right to use reliable, cheap energy . . . Africa will have to use fossil fuels as it makes the transition . . . including using "natural gas as a greener option that will help the continent reduce emissions even as it grows, as developed nations have done themselves." [14].

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