

CLIMATE CHANGE:

ADAPTING TO A NEW NORMAL



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Turning political ambitions into concrete climate financing actions for Africa

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One of the main targets of the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27) in Sharm El-Sheik, Egypt, was “to accelerate global climate action through emissions reduction, scaled-up adaptation efforts and enhanced flows of appropriate finance.” While the breakthrough agreement on a new “Loss and Damage” Fund for vulnerable countries is a welcome development, progress on climate finance leaves much to be desired. This is worrisome for African countries.

Recent reports on climate change such as the African Economic Outlook 2022 and the Sixth Assessment Report of the Intergovernmental Panel on Climate Change have reiterated that the climate crisis is likely to worsen, especially in Africa, and that the time for action to avert the impending catastrophe is now. World leaders have missed (again) the opportunity to move from mere political commitments and ambitions to concrete actions.

Africa’s climate paradox

As the late Kofi Annan perfectly put it, all continents are in the same boat when it comes to addressing climate change. However, individual regions and countries are not equally responsible for global environmental problems. This principle of common but differentiated responsibility and respective capabilities is at the core of climate justice and just energy transition.

Africa’s case is especially concerning. The continent is the least polluting region¹ of the world but faces a disproportionate burden from the impact of climate change. Between 1850 and 2020, Africa’s contribution to global emissions remained below 3 percent² and yet, it lost about 5 percent to 15 percent annually of GDP per capita growth between 1986 and 2015. About 70 percent of the used global carbon budget is accounted for by just the United States, European Union, United Kingdom, and China (Figure 35a). An average African had a carbon footprint of just 0.95 tons of carbon dioxide equivalent (tCO₂eq) in 2020, well below the 2.0 tCO₂eq required to achieve the net-zero transition target. On the other extreme, an average American had a carbon footprint of up to 14 tCO₂eq, fifteen times higher than that of an average African (Figure 35b).

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- 1 The Intergovernmental Panel on Climate Change (IPCC). 2021. “Climate Change 2021: The Physical Science Basis.” Working Group I contribution to the Sixth Assessment Report. The Intergovernmental Panel on Climate Change.
 - 2 AfDB.2022. “African Economic Outlook 2022”. African Development Bank.

FIG.35A

EVOLUTION OF ANNUAL CARBON EMISSIONS, 1850-2020

Africa contributes, on both an absolute and per capita basis, very little to global emissions. The U.S. contributes the most in per capita CO2 emissions, while China’s contribution to total CO2 emissions recently surpassed other major economies.

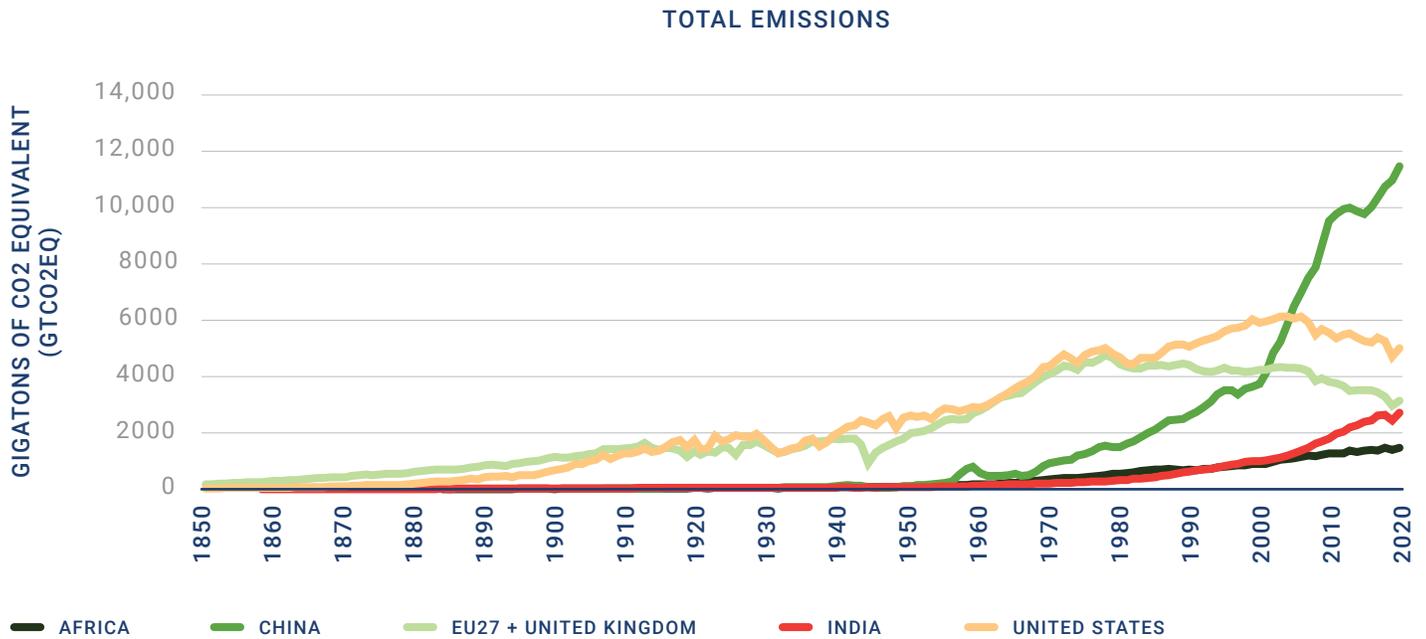
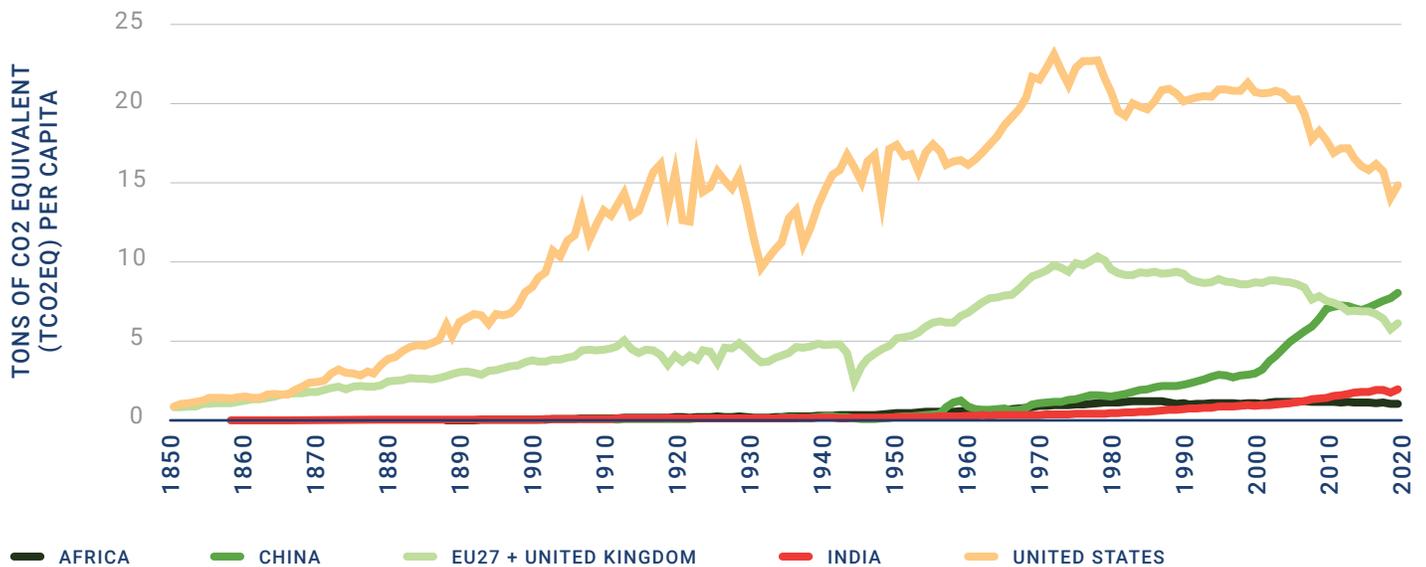


FIG.35B

EMISSIONS PER CAPITA



Source: Authors' calculations using Our World In Data. 2022.

From climate finance commitments to reality and at scale

The \$100-billion promise,³ made by developed countries since 2009 at COP15 in Copenhagen, has still not been achieved. According to the OECD,⁴ climate financing provided and mobilized by developed countries reached \$83.3 billion in 2020, some \$16.7 billion below the target. Indeed, a 2020 report commissioned by the United Nations concluded the only realistic scenario is that the \$100-billion target will be out of reach in the short- to medium-term.

Africa's share of global climate finance—provided and mobilized by developed countries for developing countries—increased by only 3 percentage points on average during 2010 to 2019, from 23 percent (\$48 billion) in 2010–2015 to 26 percent (\$73 billion) in 2016–2019 (Figure 36). This means that Africa benefited from \$18.3 billion a year from 2016–2019, far behind Asia, which benefited \$27.3 billion a year, over the same period. Yet, Africa accounted for about 40 percent of all countries eligible to benefit from this support, compared with only 20 percent for Asia. In addition, between 2010 and 2019, debt instruments (mostly loans) accounted for about two-thirds of all climate finance channeled to Africa, out of which two-fifths were on non-concessional terms.

Climate finance inflows to Africa are dwarfed by the enormity of resources needed for Nationally Developed Contributions (NDCs), estimated to range from about \$1.3 trillion to \$1.6 trillion between 2020 and 2030, or \$118.2 billion to \$145.5 billion per year over this period. Under the current climate finance trends, Africa's annual financing gap could thus reach an estimated average of \$108 billion per year until 2030. This climate injustice needs urgent attention.

Mobilizing more climate finance for Africa is within the reach of the global community. For instance, between January 2020 and September 2021, the global community mobilized about \$17 trillion through various fiscal measures in response to the effects of the COVID-19 pandemic. Almost \$15.3 trillion (or 90 percent of these fiscal measures) was mobilized by G-20 economies. This demonstration of political will and innovative use of fiscal policy rules to address the global threat posed by COVID-19 is commendable. Like COVID-19, climate change is a global commons problem but perhaps with even longer-term and systemic impacts.

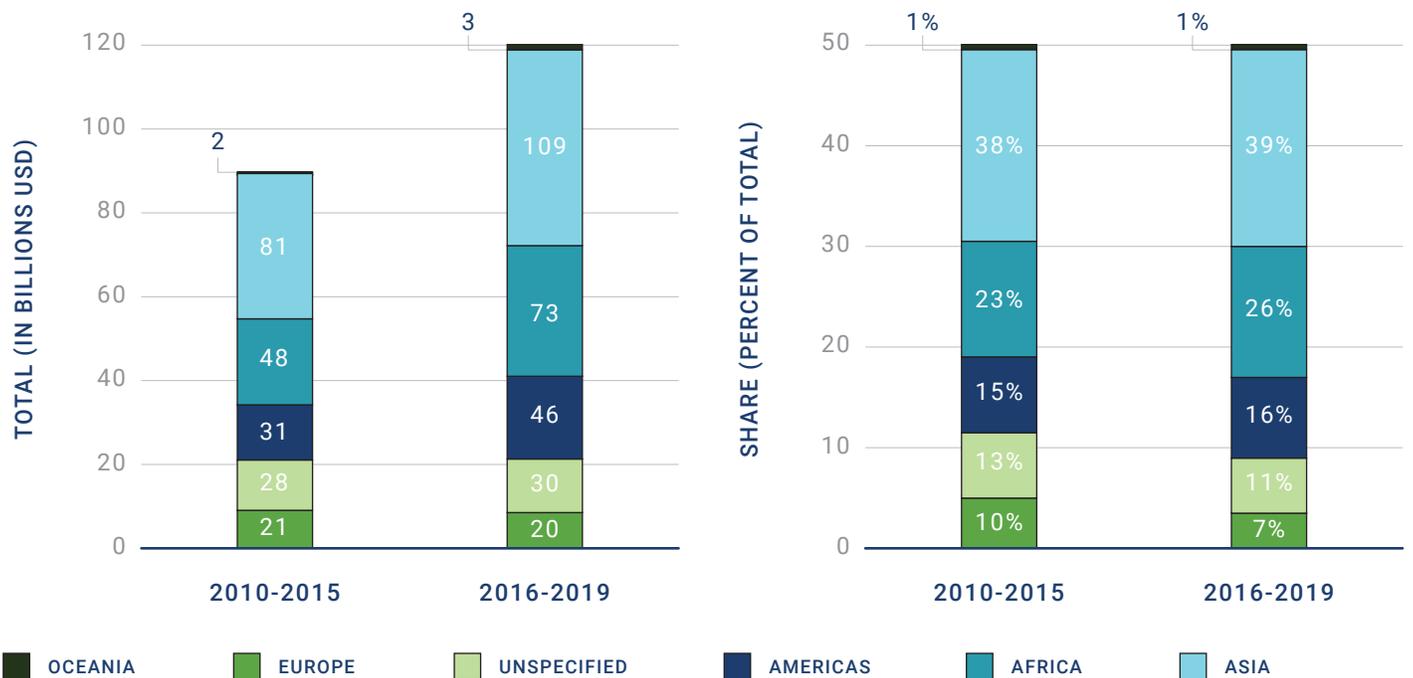
3 Jocelyn Timperley. 2021. "The broken \$100-billion promise of climate finance – and how to fix it."

4 OECD. 2022. "Climate Finance Provided and Mobilised by Developed Countries in 2016-2020."

FIG.36

AFRICA'S SHARE OF GLOBAL CLIMATE FINANCE FLOWS HAS NOT KEPT PACE WITH INCREASED VULNERABILITY AND DAMAGES

Africa has increasingly borne the brunt of damages associated with climate change, despite contributing comparatively little to global emissions. Yet, Africa has some of the lowest per capita climate finance inflows—far less than more resilient and less vulnerable regions in the world. This suggests that the global climate finance architecture requires significant reform to better align with climate vulnerability.



Source: African Economic Outlook. 2022.

Ultimately, climate change is a global commons problem. Climate solutions will not be sustainable unless all actors play their part. The climate challenge cannot be addressed if any country fails to meet its Nationally Determined Contributions (NDCs).

Why Africa deserves more in climate financing

Mobilizing climate finance to avert the growing climate catastrophes in developing countries calls for similar political will and collective action. To this end, an important milestone is for the international community and developed countries to step up to the plate in mobilizing and providing the requisite climate resources to developing countries.

Achieving this will require significant reform of the current global climate finance architecture,⁵ to ensure that the most vulnerable countries (especially in Africa), effectively harness climate resilience opportunities. The structure, flow, and scale of the global climate finance architecture, as currently designed, is misaligned with climate vulnerability. For example, as illustrated in Figure 36 above, more resilient and less vulnerable regions receive more climate finance, in per capita terms, than their less resilient but more vulnerable counterparts. Moreover, the climate finance architecture is modelled to mirror the current global financial architecture that is risk averse and discriminatory against fragile economies. The loose definition of climate finance has also led to proliferation of various climate finance instruments, including debt instruments. The latter exacerbates debt vulnerabilities in countries where climate impacts are already constraining fiscal health.

There is thus need for a clearer definition of climate finance, better coordination among existing global climate finance facilities, dedicated climate initiatives, as well as enhanced harmonization of funding requirements that can channel climate finance flows to the most climate-vulnerable countries. While African countries do have their part to play, the principle of common but differentiated responsibility and respective capabilities requires that the most polluting countries bear the greatest burden of climate financing.

Ultimately, climate change is a global commons problem. Climate solutions will not be sustainable unless all actors play their part. The climate challenge cannot be addressed if any country fails to meet its Nationally Determined Contributions (NDCs).

And the world cannot expect Africa to implement its NDCs if the expected climate finance flows to fund the conditional NDCs, are not made available. Should the current trends continue, it is certain that Africa will not achieve its NDCs by 2030. By implication, the global community will not be able to reach the Paris Climate Accord.

5 Charlene Watson, Liane Schalatek, and Aurélien Evéquo. 2022. "The Global Climate Finance Architecture."

The charge due to custodians of the world's lungs

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It is time to rebalance the scales in Africa's favor when it comes to climate finance. The African continent is home to 16 percent of the world's population and 25 percent of the world's remaining rainforests¹—yet Africa attracts only 3.19 percent of global climate finance (\$30 billion of \$940 billion global climate flows), and the pledges to accelerate adaptation and mitigation financing of \$100 billion by 2020 in developing countries are yet to fully materialize.² Climate finance can be a catalytic tool for fiscal stability, especially for African countries that are struggling with economic recovery, amid multiple global shocks.

However, for African countries and non-state actors to attract increased climate finance and play a greater role in structuring the green financial architecture, Africa must position itself as a worthy investment destination for climate finance focused on long-term development issues. To achieve this, I propose a few key areas of focus for policymakers. First, countries must have green investment plans, and second, it is critical to bring the private sector to the table and to give it space to innovate. In addition, policymakers should use public finance to de-risk private investment and have a regulatory environment that enables doing business with variable financing tools. Lastly, developed countries must deliver on the pledges already made without any further and new conditionalities to spur green development for a common 1.5 degrees future.

African Nationally Determined Contributions (NDCs), that is countries' action plans to cut emissions and adapt to climate impacts, should be accompanied by national investment strategies that prioritize green infrastructure and natural resource protection. These can create a green development pathway that promises economic growth opportunities, industrialization, and jobs, propelling Africa past a more traditional, less green infrastructure and development approach.

Country platforms should also encompass the private sector, so that there is a cohesive approach as to who will invest where, and who is best placed to tackle the varying aspects of mitigation and adaptation and protection. A good example of this approach on leveraging the private sector is the proposal by members of the "Nairobi Declaration on Sustainable Insurance" that identified the African insurance sector as a key climate mitigation and adaptation agent; and re-affirmed its triple role of risk manager, risk carrier, and investor through commitment to a Africa climate risk management fund. This fund will cover \$14 billion worth of climate and nature-related risks such as floods, droughts, and tropical cyclones through innovative insurance products and solutions. These kind of innovations by the private sector are in line with what the Paris Agreement envisioned.

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- 1 World Bank Africa Region. 2017. "Forests in Sub-Saharan Africa: Challenges & Opportunities." The Program on Forests (PROFOR).
 - 2 Naran, Baysa. 2022. "Global Landscape of Climate Finance: A Decade of Data: 2011-2020." Climate Policy Initiative.

Of the great rainforests in the world, only the Congo rainforest has enough standing forest left to absorb more carbon from the atmosphere than it releases.

Second, debt-for-climate swaps and carbon markets should be rolled out more broadly as part of the solution to debt crises which plague a long and growing list of African nations. This effort starts with valuing Africa's wealth in the totality of its nature assets. Nature has become the world's most important commodity, and its protection is paramount for the world's survival. According to the World Resources Institute, of the great rainforests in the world, only the Congo rainforest has enough standing forest left to absorb more carbon from the atmosphere than it releases.³

Commercializing such nature assets, and making sure they attract fair value and benefit neighboring communities, is a key feature of the Africa Carbon Markets Initiative (ACMI)⁴—an initiative that has created a roadmap for developing African voluntary carbon markets, with the aim to accelerate and scale carbon credit production on the continent. The initiative proposes to leverage an advanced market commitment (AMC), which in essence is an upfront guarantee from buyers and multiple corporations, to purchase African carbon credits. This AMC will help send a strong demand signal and incentivize appetite for good quality and innovative credits. There is huge potential in making carbon markets work to attract more climate finance.

Third, there is need for gender-informed investing to enhance climate adaptation and resilience. At its core, this means acknowledging climate action as a development issue; recognizing that the climate crisis is not “gender-neutral,” and that women and girls are disproportionately affected; and finally, that the devastating impacts of extreme climate occurrences cause more economic scarring to the poorest and most vulnerable in our societies. *2xCollaborative* has developed a gender-lens investing toolkit that can, and should be, widely used to promote gender-lens climate finance to businesses and adaptation projects, involved or led by women.

We cannot afford the current architecture of global green finance to perpetuate existing disparities in those it serves. It is time for African countries to unite, strategically position themselves, and demand that the world does more to deliver climate finance for the continent; it promises great return for all, and it is what is due to the custodians of the “lungs of the world.”

3 Harris, Nancy and David Gibbs. 2021. “Forests Absorb Twice as Much Carbon as They Emit Each Year.” World Resources Institute.

4 ACMI is a joint initiative of GEAPP, SE4All, UNECA and supported by the UN Climate Change High Level Champions.

The case for climate financing

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With already soaring debt levels and borrowing costs, climate action must be funded through more equity investments and concessional financing. Climate finance is inefficient, insufficient, and unfair.

In a world that suffers from a surplus of crises and a deficit of trust, and after many years of unfulfilled promises, it is of no surprise that the main theme for the 27th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27) was that of “implementation.” We must move beyond pledges and into action, to address Africa’s climate problems without exacerbating its already high debt burden.

Climate change costs Africa between 5 percent and 15 percent of its per capita GDP every year,¹ with 278 million of the population suffering from chronic hunger,² and 250 million living in high water stress.³ Yet, Africa is a continent with ample opportunities, especially when it comes to clean and renewable energy. Climate change can provide almost \$3 trillion worth of investment opportunities in Africa.⁴

However, climate finance is far short of what is needed. Africa needs \$277 billion annually to implement its Nationally Determined Contributions by 2030.⁵ Annual climate flows stand at \$30 billion; less than 11 percent of what is required. Moreover, almost 55 percent of Africa’s climate finance is in the form of debt, with private sector accounting for no more than 14 percent of total climate finance and 3 percent of adaptation finance.

For implementation to be possible, this must change. First, as a token of trust, rich countries must deliver on their promised \$100 billion a year. To date, only seven out of 23 countries have mobilized their fair share. Even if delivered, that is only a drop in the ocean.⁶ Much more financing must flow to support Africa’s adaptation and accelerate its mitigation.

Second, with already soaring debt levels and borrowing costs, climate action must be funded through more equity investments and concessional financing. Climate finance is inefficient, insufficient, and unfair.

Efficient lending mechanisms such as the World Bank’s International Development Association (IDA), traditionally provided to lowest-income countries, should be extended to low-middle income countries, and adopted by various multilateral institutions. Less than half of African countries today are classified as low-income. Moreover, Multilateral development banks need to increase their risk appetites to de-risk climate investments in Africa and enhance projects’ viability for investment. Third, it is critical that investments from the private sector be scaled up. In COP26, through the Glasgow Financial Alliance

- 1 AfDB.2022. “African Economic Outlook 2022”. African Development Bank.
- 2 Martin Armstrong. 2022. “A fifth of people in Africa are suffering from chronic hunger. This map shows where the situation is most severe”. World Economic Forum.
- 3 The World Meteorological Organization.2022. “State of Climate in Africa highlights water stress and hazards.”
- 4 Africa Renewal. 2022. “UN Global Compact launches Africa Business Leaders Coalition to advance climate action and sustainable growth.”
- 5 CPI. 2022. “Landscape of Climate Finance in Africa”. Climate Policy Initiative.
- 6 Sarah Colenbrander, Laetitia Pettinotti and, Yue Cao. 2022. “A fair share of climate finance? An appraisal of past performance, future pledges and prospective contributors.”

for Net Zero (GFANZ), over 450 financial firms across 45 countries,⁷ responsible for over \$130 trillion of private capital, committed to accelerate transition to net zero and mobilize capital to emerging and developing economies. Those assets must be turned into investment flows to developing countries. For that matter, the GFANZ Africa Network was launched in Egypt, in September 2022, to enhance private finance flows into the continent.

Contrary to common perception, African countries can provide investable climate project pipelines. This was evident in the unprecedented initiative, launched by the COP27 presidency, in partnership with the U.N. Regional Economic Commissions and the High-Level Champions for COP26 and COP27. In a series of five regional investment forums, starting with Africa, 19 core projects were presented, split equally between mitigation and adaptation. With a total cost of around \$37 billion, projects covered different areas, including energy, food, water, cities, carbon markets, and the blue economy.

Finally, innovative financing solutions must be encouraged. Debt for climate and nature swaps, especially those linked to sustainability key performance indicators, can boost investments while reducing debt in African countries. Moreover, developing high-integrity voluntary carbon markets in Africa can provide valuable revenue streams for climate action.

FIG.37

OUTCOMES OF COP27 IN EGYPT

TOPIC	KEY DECISION OUTCOME	FURTHER IMPLICATIONS AND INFORMATION
Loss and damage funding	Established a loss and damage fund to help poor countries cope with the harmful consequences of climate change.	The deal does not specify which countries will contribute to the fund and in what amounts (a committee of delegates from 24 countries will clarify these details in 2023). When these determinations are made, however, contributing countries will be held legally accountable for their payments to the fund.
Agriculture	Four-year extension for Kornivia Joint Work for Agriculture	Food was among the most debated line items during COP27. The extension of Kornivia, underscores the importance of connecting food systems and climate change.
Attendance	Second most attended COP. Protestors were allowed inside the premises for the first time. Lobbyists more visible.	According to Corporate Accountability, there were 25 percent more energy sector lobbyists than in COP26.
Mitigation	Reaffirmed the Glasgow pact (COP26) to limit the rise in global average temperature to 1.5°C. Acknowledged that "the impacts of climate change will be much lower" at a 1.5°C rise vis-à-vis those at a 2°C increase.	However, targets on cutting greenhouse gas emission remained insufficient to meet the 1.5°C temperature limit. Initial draft text that called for a peak in emission and net-zero by 2050 was later revised.
Mitigation	Finalized a work program to expand ambition and implementation of mitigation efforts. The work program will run till 2026.	Details of work program lacked specific goals and will not oblige countries to take certain actions or obtain certain results.
Mitigation	Clarity for corporations setting emissions targets.	A task force chaired by former Canadian Environment Minister Catherine McKenna presented ten criteria that corporations should follow when articulating their net emission targets.
Gas	COP27's final agreement recommended to increase "low-emissions energy."	It remains to be seen what energy sources "low-emissions" includes. As is, it captures a wide variety of energy sources, including renewables like wind, and also gas and carbon capturing coal plants.

7 Glasgow Financial Alliance for Net Zero. 2022. "Amount of finance committed to achieving 1.5°C now at scale needed to deliver the transition."

Climate adaptation finance in Africa

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Mainstreaming adaptation in economic sectors and selecting investments that enhance the resilience of communities and nations can have high levels of economic benefit-to-cost ratios.

Climate change continues to cause devastation in Africa. The impacts of climate change in Africa are being further exacerbated by the impact of global shocks such as the COVID-19 pandemic, food and energy crisis, and the ongoing war in Ukraine. The financing needs to help Africa enhance its resilience and be better prepared for a rapidly changing climate are enormous.

A recent analysis by the Climate Policy Initiative and the Global Center for Adaptation shows that an annual average of \$29.5 billion in climate finance was committed to Africa in the years 2019 and 2020. Of this amount, about \$11.4 billion, or 39 percent, was for adaptation investments.¹ Further analysis of Nationally Determined Contributions (NDCs) also indicates that the adaptation finance needs for the continent over the period 2020-30 are close to \$580 billion. Unless adaptation finance increases substantially in Africa, a gap of \$453 billion will accumulate over this decade.²

The largest sources of adaptation finance are multilateral development institutions (53 percent), African governments (23 percent), and bilateral agencies (16 percent). The private sector represents a very small fraction of adaptation finance (3 percent) and out of this nearly 90 percent was committed by institutional investors (foundations, insurance companies, asset management firms, pension funds, and endowments). More than half (53 percent) of the adaptation finance commitments to Africa were loans.

In order to increase the level of adaptation financing, it is important to see it, not as a sunk cost to reduce the impact of disasters. Rather, mainstreaming adaptation in economic sectors and selecting investments that enhance the resilience of communities and nations, can have high levels of economic benefit-to-cost ratios. The IMF projects growth in sub-Saharan Africa to slow sharply from the recovery path of 2021 when GDP grew 4.7 percent, down by one percentage point to 3.6 percent, and remain close to that level in 2023.³ The global economic slowdown, tight finances, and inflation are impacting the region in areas such as food and energy prices. Public debt and local inflation are at very high levels. The IMF recommends tackling urgent socioeconomic crises while trying to build resilience to future shocks, including climate shocks. The IMF also recognizes the critical importance of high-quality growth and policies to set the stage for a sustainable recovery.⁴

To understand the benefits of a sustainable recovery investment program that puts adaptation and resilience at its core, together with UNECA, we modeled for several African countries (Senegal, Cote D'Ivoire, Democratic Republic of Congo (DRC), Egypt, Kenya, and South Africa) and compared a traditional stimulus package versus a package centered around the most needed adaptation and development programs.⁵

1 GCA. 2022. State and Trends in Adaptation Report 2022. Global Center on Adaptation.

2 CPI. 2022. The Landscape of Climate Finance in Africa. Climate Policy Initiative.

3 IMF. 2022. "World Economic Outlook." October 2022. International Monetary Fund.

4 IMF. 2022. "Regional economic outlook. Sub-Saharan Africa: Living on the edge." International Monetary Fund.

5 GCA. 2021. "State and Trends in Adaptation 2021. Global Center on Adaptation.

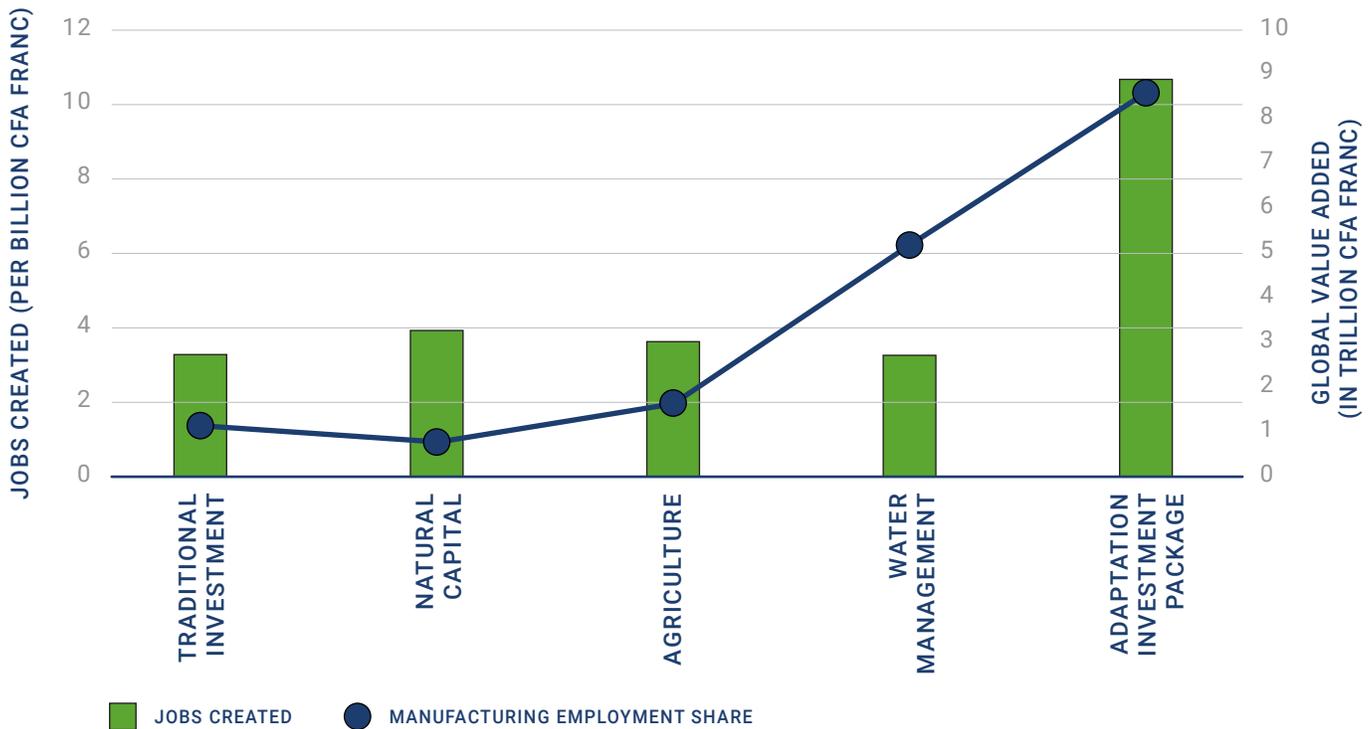
In every country, the economic returns and jobs generated are higher in an adaptation-focused stimulus package (see Figure 38 below). For example, our modelling shows that in Senegal, investment in adaptation initiatives could create over 200 percent more jobs within five years (600 percent within 20 years) and around 700 percent greater economic value in 20 years) relative to a traditional stimulus financial package focused on gold and phosphate mining and the extraction mining hub. The adaptation-focused package includes investments in natural capital (e.g., coastal protection, aquaculture, and reforestation), agriculture (e.g., resilient seeds and agroforestry), and water management (e.g., water demand management and flood mitigation).

Investments in adaptation to climate change are not to be seen as sunk costs but as an integral part of sustainable economic recovery packages with high benefit-to-cost ratios.

FIG.38

TOTAL JOB CREATION AND GROSS VALUE ADDED BY DIFFERENT INVESTMENT PACKAGES: SENEGAL

This graph displays the total jobs in the short term (5 years, left axis) and gross value added in the long term (20 years, right axis) generated by both traditional mining investment and adaptation investment packages. “Traditional investment” refers to investment planned in the PSE-PAP 2019–2023 to develop the gold and phosphate mining as well as the extraction mining hub. The adaptation investment package includes a set of “green” sectors, each consisting of a package of interventions. The different sectors (as well as the respective interventions covered by them) are: 1) natural capital (including coastal protection, aquaculture, and reforestation); 2) agriculture (including resilient seeds, and agroforestry); and 3) water management (including wastewater treatment, water demand management, and flood mitigation). “Adaptation investment package” refers to the sum of natural capital, agriculture, and water management.



Note: A technical note in the appendix of the State and Trends Report 2022 discusses estimation approaches and assumptions. Source: GCA State and Trends Report. 2022.

Gold mining, climate change, and Africa's transition

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While global gold mine production has grown by 26 percent since 2010, in Africa it has risen by nearly 60 percent, and in at least 10 African countries it has more than doubled.

Gold mining has, over the last decade or so, been a growth industry in many host countries across Africa. For example, in Ghana—now Africa's largest gold producer—gold represents around a quarter of the value of its total annual exports. And while global gold mine production has grown by 26 percent since 2010, in Africa it has risen by nearly 60 percent, and in at least 10 African countries it has more than doubled.¹ The value of that gold and its contribution to the GDP of those host countries has risen even faster..

When undertaken responsibly, gold mining can be of strategic importance in catalysing positive change. This is highly relevant when we consider the challenges and opportunities presented by a changing climate, and the urgent need to mitigate its destructive impacts via rapid decarbonisation.

The carbon footprint of the whole gold supply chain is rooted in the gold mining process, and, to a large extent, how mining operations either generate or consume power. Research shows that through a pronounced shift away from higher carbon energy sources—such as local diesel and heavy-fuel oil generators or fossil fuel-fired grids—the industry can potentially decarbonise at a rate that is broadly aligned with Paris Agreement climate targets.² While the industry still needs to accelerate its transition to low carbon power, significant progress has been made in recent years and the opportunity for further transformative action is clear.

In seeking to decarbonize their operations, gold mining companies can also encourage development of (and investment in) renewable power in host countries. For example, by helping introduce new technologies and infrastructure in locations that might otherwise lack the capacity or incentive to initiate change.

In South Africa, for example, where gold mining's emissions are rooted in its connectivity to a largely coal-powered grid, the sector's ability to influence government policy to allow companies and sites to generate their own clean energy can have impacts well beyond the precious metals industry. Changes in the regulatory landscape would then support the economic viability of domestic renewable energy systems, prompting suppliers to grow their businesses and expand local capacity.

In countries, such as Mali, Mauritania, or Democratic Republic of the Congo (DRC), where gold mines are typically dependent on self-generation of power, they may be the "first movers" in developing renewables. These projects are often undertaken as joint ventures with local partners or governments, and this can create legacy power systems that should endure well beyond the life of the gold mines. In recent years, we have witnessed such projects result in the development of solar power at the Essakane mine in Burkina Faso and the expansion of hydro power at Kabili in the DRC.

1 World Gold Council. 2022. Global Mining Production Volumes database. World Gold Council.

2 World Gold Council. 2020. "Gold and climate change: The energy transition." World Gold Council.

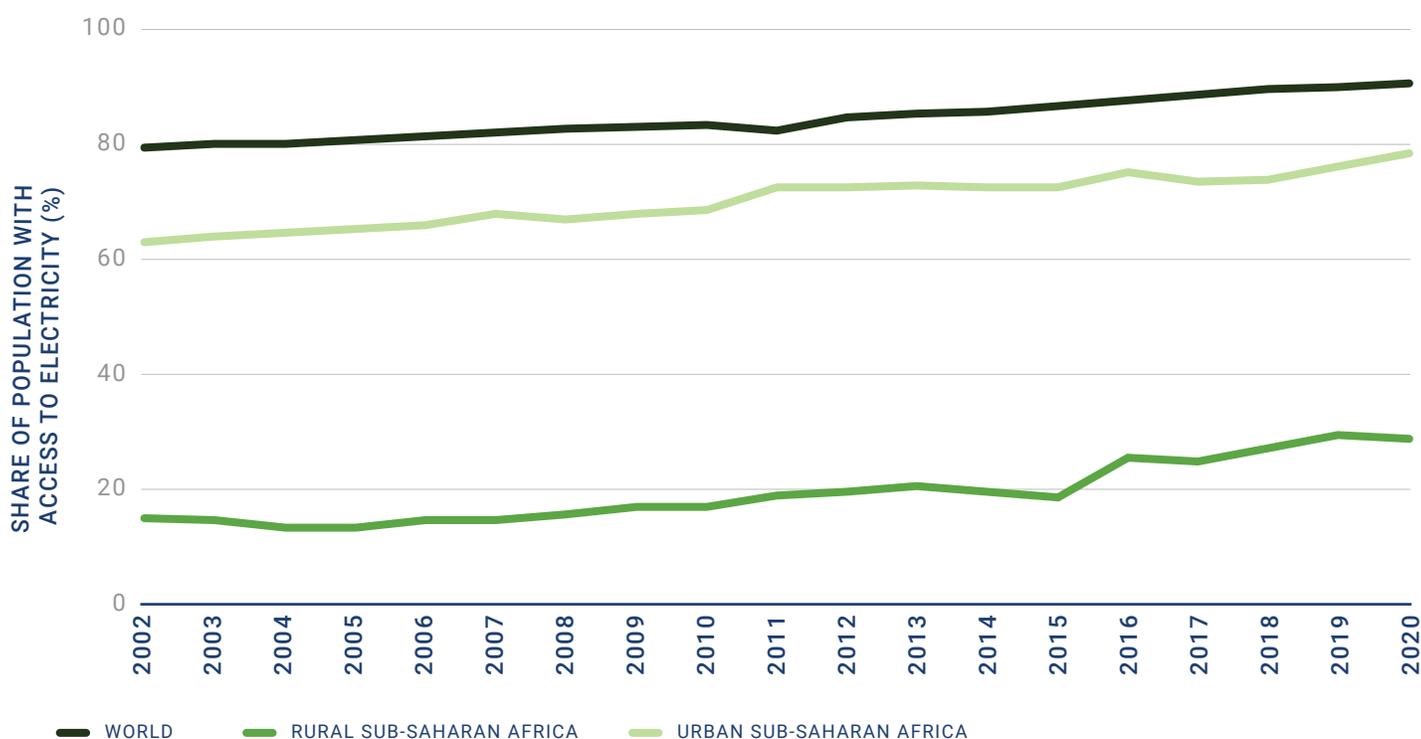
On a much smaller scale, gold mining companies are also promoting the use of mini-grids, often solar-powered, to support community infrastructure such as schools and medical centers.

The introduction of renewables can also spark a transformation in local skills and expertise—which can provide employment opportunities and wider socio-economic benefits. These benefits will need to be encouraged—with the ongoing support of gold mining in many African host nations—to help countries deliver a more inclusive and just transition.

FIG.39

THE ELECTRIFICATION GAP PERSISTS IN AFRICA, BUT PRIMARILY FOR RURAL COMMUNITIES

Approximately half (48 percent) of sub-Saharan Africa is connected to electricity, well below the global average of 91 percent. By and large, however, urban sub-Saharan Africa has access to electricity: Nearly four in five urban residents have access. The gap, therefore, is driven primarily by sub-Saharan Africa’s rural population, of whom only 29 percent have access to electricity.



Source: World Bank. 2022. World Development Indicators. World Bank Group.

Global decarbonization: Industrial opportunities for Africa

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Decarbonization at a global level is happening and will be stepped up as the impacts of climate and weather extremes threaten social and economic systems worldwide. Already, we are seeing the deployment of huge quantities of renewable energy in advanced economies, and investments earmarked to make green energy transitions feasible. Countries that lag behind in low carbon technological innovations stand to lose, both in terms of the health and social co-benefits that come with the deployment of clean infrastructure, as well as the economic co-benefits that come from manufacturing the technologies of the future. Africa needs to pay close attention to the opportunities that lie.

As the world pursues low emissions ambitions, the demand for critical minerals including lithium, cobalt, and nickel will increase six-fold by 2040.¹ Africa holds considerable resources vital to a clean energy future, which includes commodities essential in renewable energy generation technologies and battery-associated materials. This presents transformative potential for Africa's economic growth, employment, welfare, and wider sustainable development. For example, the Democratic Republic of Congo (DRC) is known to have 50-70 percent of global reserves of cobalt, and South Africa and Gabon have nearly 40 percent of global manganese reserves.² Countries such as Zimbabwe and Namibia have among the largest reserves of lithium globally.

However, if Africa is to avoid repeating past errors, its role in the global decarbonisation journey needs to be broadened beyond mineral extraction. Converting raw resources into tangible value-added opportunities in downstream activities is crucial. It may not be feasible to localize all segments of the value chain in the short-term, but serious planning and preparation are required to mitigate the risks of having Africa locked out of the green manufacturing value chain. This requires bold industrial policies and strategies to create domestic demand, opportunities for value-added exports, and doing away with the business-as-usual model of mineral and raw material extraction.

Some of these policies and interventions could include:

- **African governments must invest in national capacity to produce high quality human resources and institutions.** Countries that have the capability and capacity to navigate the changing technological and regulatory environment are well positioned to spur greater investment, and to develop local content policies that are in line with their capabilities and aspirations.
- **Regional industrial policy coordination:** A single country cannot hope to industrialize without stronger regional synergies. As such, building cross-border,

1 IEA. 2021. "The Role of Critical Minerals in Clean Energy Transitions." In: "World Energy Outlook 2021." International Energy Agency.

2 IEA. 2022. Data and statistics. International Energy Agency.

Demand for critical minerals including lithium, cobalt, and nickel will increase six-fold by 2040. Africa holds considerable resources vital to a clean energy future, which includes commodities essential in renewable energy generation technologies and battery-associated materials.

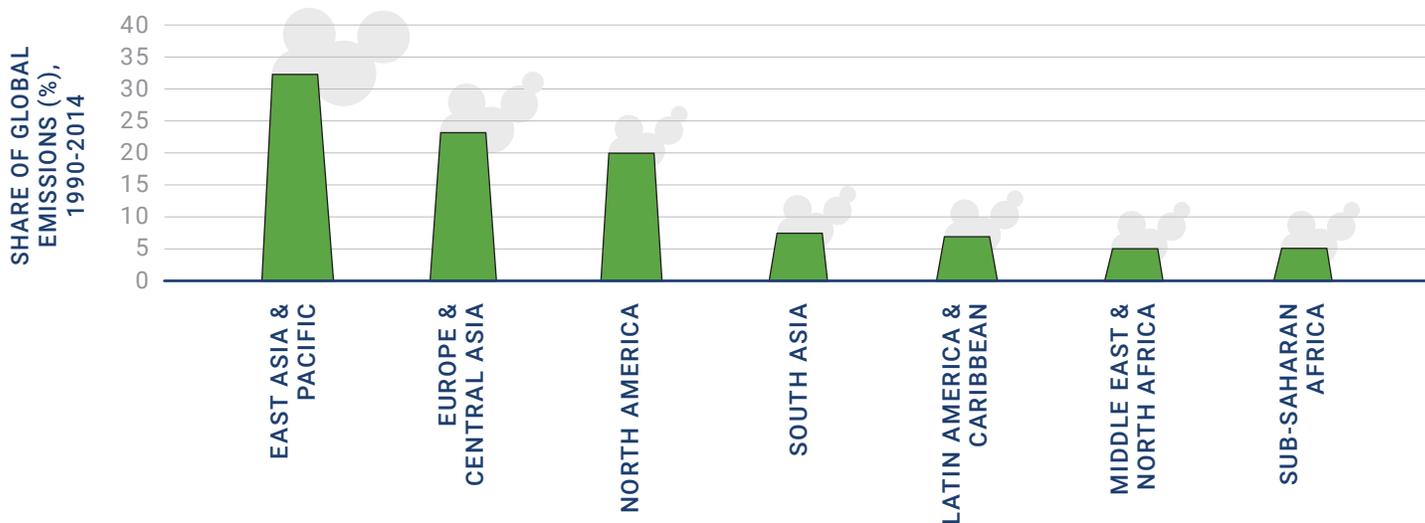
regional value chains can offer a pragmatic framework to boost collaboration and attract investment in downstream activities. This would involve trade and cooperation between countries based on their comparative advantage, such that some countries provide key mineral inputs while others manufacture technologies.

- ▾ **Develop justice-oriented national industrial policy:** The renewable energy sector offers a system-wide opportunity for industrialization. However, this needs to embrace equal opportunities and an equitable distribution of the benefits of industrialization to all stakeholders. At the heart of this is a governance framework that engages all stakeholders—including governments, mining companies, shareholders, investors, and affected communities—in a constructive dialogue to shape the direction and character of the industrialisation path.

FIG.40

SHARE OF GLOBAL EMISSIONS BY REGION (1990 - 2014)

Africa was responsible for only a marginal share of the more than 850,000 megatons of CO₂ that was emitted between 1990 and 2014. East Asia & Pacific was responsible for almost a third of such emissions over this period. Sub-saharan Africa, on the other hand, accounted for only 5.1 percent of the world’s global CO₂ emissions.



Source: European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL). Emissions Database for Global Atmospheric Research (EDGAR), release EDGAR v7.0_GHG (1970 - 2021) as of September 2022.

Managing the compounding debt and climate crises

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Sub-Saharan African countries (SSA) face twin challenges that are slowing growth and eroding decades of developmental gains: Rising debt levels and an increasing frequency and severity of climate shocks. The compounding nature of these challenges has left countries with deteriorated public finances, poor resilience to climate shocks, and limited capacity to finance adaptation.

Of the 38 sub-Saharan African countries covered in the debt sustainability analyses conducted through the joint World Bank-International Monetary Fund Debt Sustainability Framework for Low-Income Countries (LIC-DSF), seven are already in debt distress, 18 are at high risk, and 13 are at moderate risk.¹

The second challenge is high climate risk exposure. The Notre Dame Global Adaptation Index, or ND-Gain,² assesses a country's susceptibility to the effects of climate changes like sea-level rise, disease, and drought, as well as its readiness to improve resilience and adapt to them. Currently, the average ND-Gain score for 183 countries globally is 49 (out of 100). But when looking at the performance of 47 SSA countries, only three achieved scores at or above the global average—Cabo Verde, Mauritius, and Seychelles.

Climate vulnerability is deepening SSA's debt challenges. Recent evidence from the IMF shows that when controlling for conventional determinants of sovereign defaults, countries with higher climate vulnerability have an increased probability of defaulting, compared to more resilient countries.³ Of the 20 SSA countries with the highest levels of climate vulnerability in the ND-Gain Index, 30 percent are already in debt distress, and another 35 percent are at high risk.

There are three primary channels through which climate change is adversely affecting public finance and driving up debt.

- The first is via increased expenditure and borrowing required to respond to climatic shocks. In 2019, Cyclones Idai and Kenneth drove Mozambique's public debt to almost 110 percent of GDP, and the IMF gave the country a \$118 million interest-free loan.
- The second is slowed economic growth and a decline in domestic revenue. This is due to a myriad of factors including business and supply chain disruptions, productivity losses, and property damage.
- Third, exposure to climate shocks can lead to a repricing of sovereign assets, which reduces creditworthiness and drives up borrowing costs. In 2020, Fitch (credit rating agency) announced that water risks (such as water scarcity or

1 WB.2022. "Debt Sustainability Analysis (DSA)." The World Bank Group.

2 ND-GAIN Country Index. 2022. "Notre Dame Global Adaptation Initiative". University of Notre Dame.

3 IMF.2020. "Feeling the Heat: Climate Shocks and Credit Ratings". International Monetary Fund.

Climate vulnerability is deepening SSA's debt challenges. Recent evidence shows that when controlling for conventional determinants of sovereign defaults, countries with higher climate vulnerability have an increased probability of defaulting, compared to more resilient countries.

extreme water events, such as droughts and floods) will likely become a more significant sovereign rating driver over the medium- to long-term, against the backdrop of severe climate change. Fitch further noted that African countries are especially exposed to flood risks, particularly Benin, Rwanda, and Mozambique. Countries where droughts or floods have been explicitly mentioned as hinderances to growth, external finances, and/or inflation in the context of a downgrade include Namibia (June 2020) and Zambia (April 2020).

But how do African policymakers manage these compounding crises? Here are three recommendations:

- Strengthen financial planning for disasters: Governments can adopt financial instruments to reduce the need for costly emergency borrowing and time-consuming budget reallocations. This can include contingency funds that are earmarked for disaster response, sovereign insurance that delivers payouts in the event of severe crises, and catastrophe bonds for pre-arranged, cheaper lending in the event of a shock. Such instruments can provide rapid disbursements to finance critical needs such as food security, public health, and shelter when a shock occurs.
- Improve efficiency of expenditures: Medium-term fiscal planning should prioritize investments in climate resilient infrastructure to reduce future recovery and reconstruction costs, in the event of a climate-related shock.
- Closely monitor implicit and explicit contingent liabilities: Climate-related contingent liabilities are obligations that only materialize when a shock occurs. The magnitude of these liabilities, which include sovereign guarantees, additional social security spending, relief expenditures, public health costs, extraordinary critical infrastructure replacement, and firm bailouts, often remains unknown, making them one of the biggest fiscal risks across African countries. Monitoring these liabilities enables countries to be more financially prepared and have less fiscal volatility.

Given the interconnected nature of the climate and debt crises, prioritizing the development of financial and physical resilience to climate change, is key to supporting long-term debt sustainability.

Africa's Blue Economy can continue to deliver huge benefits to the continent

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Marine fish stocks and the fisheries they support, as part of the BE, play a vital role in meeting the food and nutritional security of millions of Africans. These fish stocks generate about 10 million tonnes of catch annually—equivalent to about 10 million mature cows.

The Blue Economy (BE) consists of economic activities taking place below, on, or adjacent to the ocean, or aquatic systems more generally. These activities include subsistence and commercial fishing, as well as emerging sectors such as renewable energy and blue carbon. The African Union (AU) published the [Africa Blue Economy Strategy](#) in 2018 because the continent's BE could be a generator of jobs and livelihoods for millions of current and future generations. The BE currently generates about \$300 billion in economic activities for the continent, supporting nearly 50 million jobs, and these [numbers are projected to continue increasing](#)¹.

A significant part of the BE depends on a thriving marine life. For instance, there will be no fisheries without fish and there will be no whale watching without whales. Marine fish stocks and the fisheries they support, as part of the BE, play a vital role in meeting the food and nutritional security of millions of Africans. These fish stocks generate about 10 million tonnes of catch annually—equivalent to about 10 million mature cows in weight. If most of this fish were caught, processed, and consumed on the continent, the fish economy would boost Africa's GDP by an estimated [\\$50 billion annually, forever](#).¹ Unfortunately, marine ecosystems are seriously threatened by overfishing, climate change, and marine pollution. The continent's fisheries are also harmed by the activities of distant water fishing fleets; illegal, unreported, and unregulated (IUU) fishing vessels; and ineffective ocean management.

As we look ahead to 2023, African leaders need to focus on policy reforms that will help develop an "ecosystem of BE actors" who seek to develop an African BE that is sustainable and inclusive for all who call Africa home. Prerequisites for developing a thriving sustainable BE is having comprehensive knowledge of the natural and human aspects of the BE. This means that the continent and its leaders must invest in science and capacity building to ensure a successful continent-wide BE. Also, Africa needs to join the world in "buying insurance" in the form of protecting 30 percent of its waters by 2030; and supporting the effort of the [World Trade Organization to remove and/or redirect harmful subsidies](#).²

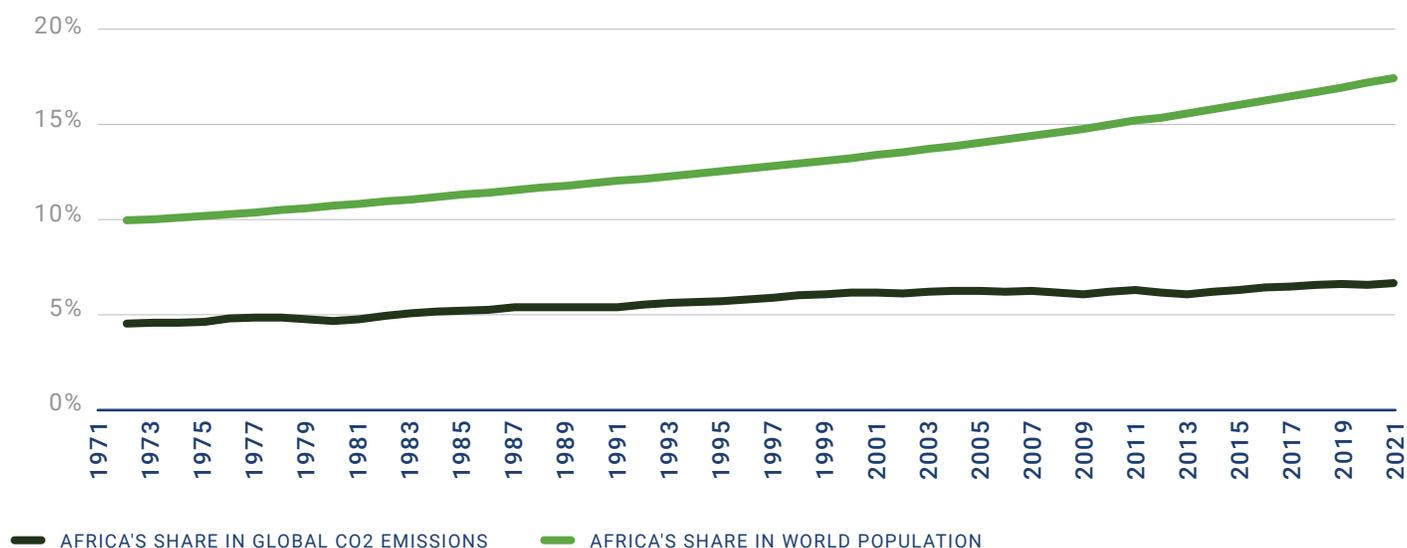
- 1 Sumaila, U. R. 2021. "Infinity Fish: Economics and the Future of Fish and Fisheries". Elsevier-Associated Press, Oxford, UK, 263 pages.
- 2 Sumaila, U. R., Skerritt, D. J., Schuhbauer, A., Villasante, S., Cisneros-Montemayor, A. M., Sinan, et al. 2021. "WTO must ban harmful fisheries subsidies". *Science*, 374(6567), 544-544.

Good ideas and plans die at the altar of no finance. Therefore, to achieve AU's Africa Blue Economy Strategy, Africa's governments at all levels, private and non-governmental organizations and the continent's international supporters have to put their money where their mouth is by investing in a sustainable and inclusive BE. Creating an enabling environment for sustainable ocean finance that prioritizes cost-effective options to guide investments in the BE is crucially needed for Africa's ocean sustainability and climate change adaptation and mitigation goals.³ Such policy reforms will help Africa maximize the prospects for development and poverty reduction in a sustainable manner.

FIG.41

AFRICA'S SHARE OF GLOBAL CO2 EMISSIONS HAS REMAINED LOW DESPITE A RAPIDLY RISING SHARE OF THE GLOBAL POPULATION

Africa's population grew rapidly over the past 50 years, nearly doubling from 10 percent of the global population in 1972, to 18 percent at present. Yet its contribution to global carbon dioxide (CO2) emissions, the greenhouse gas most responsible for climate change, has hardly changed over the same period: it increased just 2.2 percentage points over the past 40 years.



Source: European Commission, Joint Research Centre (EC-JRC)/Netherlands Environmental Assessment Agency (PBL). Emissions Database for Global Atmospheric Research (EDGAR), release EDGAR v7.0_GHG (1970 - 2021) as of September 2022. World Bank. (2022). World Development Indicators. World Bank Group.

3 Sumaila, U. R., Walsh, M., Hoareau, K., Cox, A., Teh, L. et al. 2021. "Financing a sustainable ocean economy". Nature communications, 12(1), 1-11.