CLIMATE CHANGE IN CAMEROON: KEY CHALLENGES AND REFORM PRIORITIES[1]

A. Outline

1. Climate change is an imminent threat to the people and the economy of Cameroon. It is expected to result in significant output losses, exacerbate poverty and inequality, food insecurity and conflict risk, leading to increased population displacement. Climate-related losses in output would impede export capacity, and may increase imports either to cope with food, sanitation and health needs during crises or to invest in rebuilding after crises. Therefore, climate change will also increase balance of payments needs and require fiscal space. Social and economic impact would affect human capital accumulation, jeopardize development, and hinder inclusive growth.

2. Cameroon needs to step up both its adaptation and mitigation efforts. World Bank Climate Change and Development Report (CCDR) estimates that Cameroon will incur GDP loss ranging from 4 to 10 percent in the most pessimistic scenario by 2050 due to climate change if no adaptation action is taken. Cameroon is vulnerable to climate change and natural disasters, in particular, through its impact on human capital and economic sectors such as agriculture and infrastructure. Being a hydrocarbon producer and exporter, the country should also advance its mitigation efforts and reforms to further energy transition, as the global low carbon transition could lead to spillovers risks, including to the country's financial stability.

3. Advancing climate agenda has been slow due to weaknesses in the institutional and policy framework for climate change. There is still a lack of a comprehensive legal and regulatory framework governing climate reforms. Climate considerations are yet to be effectively integrated in the Public Financial Management (PFM) framework, including in fiscal planning and public investment management. The government also faces capacity constraints and lacks an effective coordination mechanism; it is yet to operationalize its institutional and governance frameworks to respond to climate challenges.

4. Mobilizing climate finance is a serious challenge for the authorities. In the near term, the main source of climate-related financing will likely remain donor financing. Going forward, Cameroon needs to develop its capital markets to harvest the potential private funding for climate investments and engage the private sector in supporting its climate agenda.

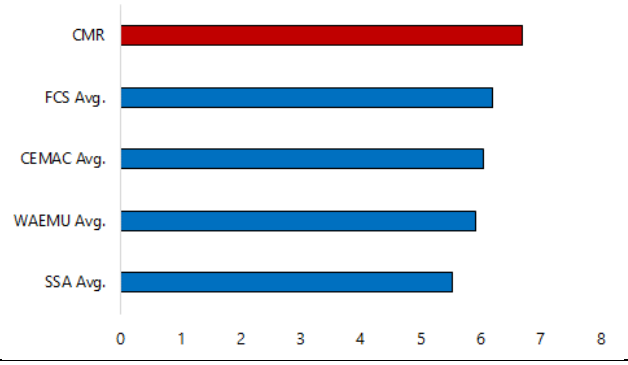
The rest of the note is structured as follows. Section 2 presents the context in Cameroon. Section 3 identifies key challenges related to climate change and priority reform areas.

[1] Prepared by Idossou Adom, Kaihao Cai, Asel Isakova and Balazs Stadler (AFR).

B. Context

5. Cameroon is ranked 16th most vulnerable to impacts of climate change globally (Text Figure 1).[2] Climate hazards are getting more severe in Cameroon. Temperatures are getting progressively warmer, with the temperature increase especially pronounced in recent years (Text Figure 2), and this trend is projected to continue. While precipitation projections are less certain, models predict an increase in the number of heavy precipitation days.[3] Extreme weather events, such as droughts and floods, are increasingly reported – with the number of recorded events doubling in the past three decades (Text Figure 3).[4] These changes have a significant impact on the society and the economy, causing both immediate damages and long-term output losses. Climate change is projected to cause a GDP loss between 4 to 10 percent by 2050, with larger output losses in the most pessimistic scenario and if no adaptation action is taken- according to the World Bank CCDR.[5] It is important to note that such estimates do not incorporate all of the impact channels outlined below.

Figure 1. Cameroon: Climate Change Vulnerability
(Higher value indicates higher vulnerability)



Source: Climate-related INFORM Risk Indicator, 2022 and IMF staff calculations.
Note: The Climate-related INFORM Risk Indicator includes three sub-indicators for components of risk: vulnerability, lack of coping capacity, hazards & exposures. The figure shows the vulnerability sub-indicator.

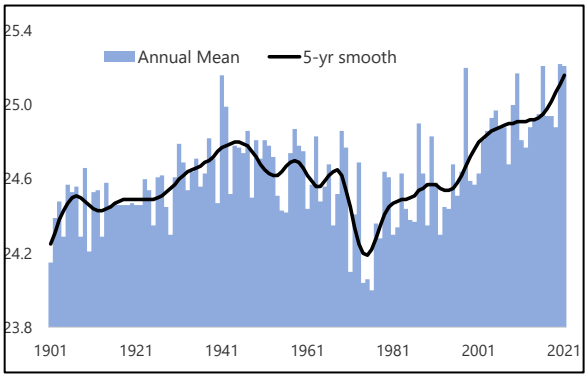
[2] Based on the 2022 Climate-driven INFORM Risk indicator, which is based on the European Union's INFORM Risk Indicator, adjusted by the IMF staff to focus only on climate risks. It has three subcomponents: coping capacity, hazards and exposure, and vulnerability. The index and its subcomponents range from 0 to 10, with larger values indicating higher risks. The vulnerability dimension represents economic, political, and social characteristics of the community that can be destabilized in case of a hazardous event. Cameroon's 2022 vulnerability index is the 16th largest globally, and it ranks 41st in terms of the total INFORM Risk Indicator (for details on the methodology, see Marin Ferrer M, Vernaccini L and Poljansek K. INFORM Index for Risk Management: Concept and Methodology, Version 2017. EUR 28655 EN. Luxembourg (Luxembourg): Publications Office of the European Union; 2017. JRC106949)

[3] Potsdam Institute for Climate Impact Research, 2022, Climate Risk Profile: Cameroon.

[4] IDMC (Internal displacement monitoring center). Cameroon | IDMC – Internal Displacement Monitoring Centre (internal-displacement.org); EM-DAT.

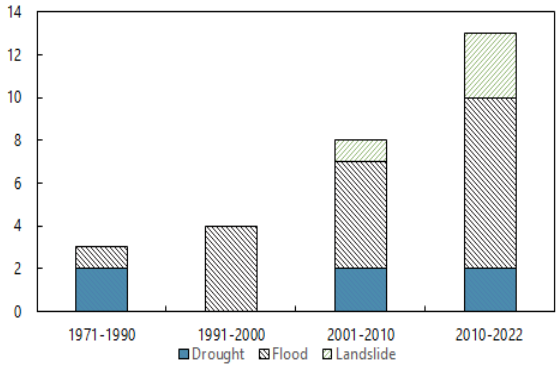
[5] World Bank CCDR, 2022. The results are reported for three Representative Concentration Pathways—RCP2.6, RCP4.5 and RCP8.5, the largest effect being under RCP8.5.

Figure 2. Cameroon: Observed Annual Mean Temperature, 1901-2021



Source: World Bank Group, Climate Change Knowledge Portal (2023).

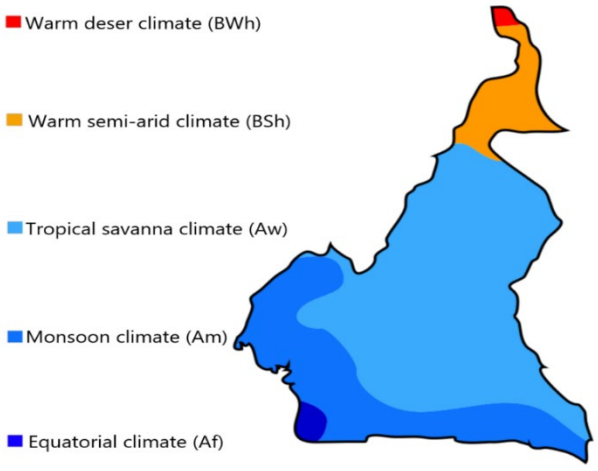
Figure 3. Cameroon: Natural Disasters



Source: EM-DAT, CRED / UCLouvain, Brussels, Belgium.
Note: EM-DAT reports natural disasters if it affects at least 100 or more people, or causes at least 10 deaths, or there's a declaration of state emergency, or call for international assistance. The increase in recent years may also be partially driven by better monitoring and measurement of such events.

6. Geographical diversity exposes Cameroon to diverse climate shocks. While some areas are less vulnerable to climate risks, all regions face their specific challenges, and failing to address them may lead to spillovers to other regions and the economy as a whole. Northern regions in the desert and semi-arid areas are most vulnerable to climate change and exposed to droughts and desertification. Historically, between 20 and 50 percent of the Extreme North's population has been affected by droughts.[6] Central and coastal regions experience heavy rainfalls and floods, which often take lives and damage vital infrastructure. The sea-level rise damages Cameroon's coastline and will continue causing costal erosion. South Cameroon is the least affected by climate events, but deforestation and mining activities undermine conservation efforts of the second largest carbon sink of the world, the Congo Basin.

Figure 4. Cameroon: Climate Classification

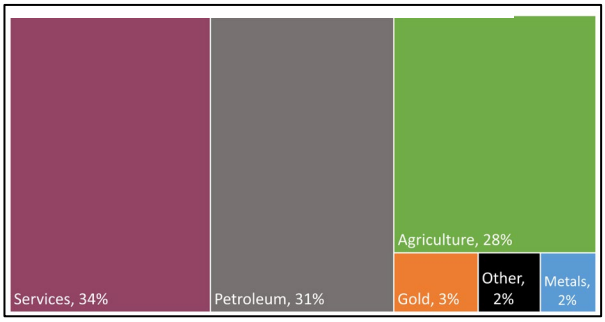


Source: Beck et al., (2018).

[6] UNDRR and CIMA (2019). Cameroon Disaster Risk Profile.

7. Climate change is expected to affect agriculture the most, reducing output, exports, and incomes, and increasing food insecurity. Agriculture in Cameroon employs over 70 percent of the population[7], and accounts for almost a third of export earnings—most important after the crude oil (Text Figure 5). It is mainly rainfed, and thus, crop cultivation is highly dependent on changes in precipitation. Higher temperatures and heat stress are expected to affect agriculture through their direct impact on labor productivity, lower crop yields, and other heat-related human health shocks.[8] Subsistence farming is widespread, in particular, in rural areas, and often relies on traditional farming methods and outdated technologies, making it especially vulnerable to weather shocks. Major subsistence crops, including cassava, maize and rice, have already experienced drop in yields due to climate-related factors, with a particularly large drop in the Northern regions. For example, the maize yield in Far North declined by over 20 percent in 1998-2012.[9] Overall, agriculture output is projected to lose between 6 to almost 14 percent by 2050 due to climate change.[10]

Figure 5. Cameroon: Export Structure, 2019



Source: Hausmann, et al. (2013)., staff calculations.

8. Climate change is also expected to impact livestock farming, fishing, and aquaculture. Livestock farming contributes about 13 percent to the agricultural output and employs 30 percent of the rural population, mainly in the Northern and Western parts of the country. Changes in weather patterns impact availability of water and food for livestock, their migration patterns, disease spread, and thus, animal health and productivity. The sector of fishing and aquaculture is also important for livelihoods and the economy with access to the Atlantic Ocean, and numerous rivers and lakes; Cameroon is one of the most dependent on marine food, with one of the largest projected decline catch potential due to climate change, according to the IPCC.[11] Moreover, it threatens livelihoods through lower incomes and access to food in an already highly food insecure environment: about 2.4 million people were severely food insecure in June 2023.[10]

9. Climate change is expected to limit water availability, particularly in northern Cameroon. Compared to other countries in Africa, Cameroon has abundant surface water resources, due to high precipitation throughout most of the year and in most parts of the country. However, there is high seasonality and regional variation in water availability (with water scarcity in Lake Chad

[7] World Bank, CCDR, 2022.

[8] World Bank CCDR, 2022.

[9] World Bank CCDR, 2022.

[10] World Bank CCDR, 2022. The impact depends on the scenario with the lowest losses in RCP2.6 and highest losses in the most pessimistic (RCP 8.5) scenario, assuming no reform.

[11] Trisos et al. (2022).

[10] WFP Cameroon Country Brief, June 2023.

region, for example). More intense use of water resources by agriculture and industry are also likely to impact demand for water and its availability.

10. Climate change would limit resources and, in turn, likely aggravate conflict and fragility risks. Cameroon, being a fragile and conflict affected state, has suffered years of conflict in its Extreme North, and Northwest and Southwest regions. In the Extreme North, bordering the Lake Chad Basin, competition over water and land had been driving conflict before the violence by the insurgent groups erupted in 2009.[11] Competition over resources will likely increase, with increased scarcity of water supply and increasing food insecurity. As of March 2023, over one million people in the country were internally displaced (IDPs) due to violence and climate hazard, and there were almost half a million refugees and asylum seekers, including from neighboring countries.[12] In the Extreme North, over 60 percent of recent displacements were caused by floods. Recent intercommunal violence in Cameroon's Logone Birni commune in Extreme North region, reflected growing tensions among fishing, farming, and herding communities, and the broader developments in the region. Climate shocks strain fragile states even further, acting as a threat multiplier, where consequences of climate change, including resource scarcity, food insecurity, and human displacement will likely aggravate conflict and violence.

11. Natural disasters damage infrastructure and thus affect people and economic activity. Road infrastructure in Cameroon is particularly vulnerable to weather shocks. Over 94 percent of roads in Cameroon are unpaved and only 11 percent of the national and regional road networks are considered in good condition.[13] More frequent floods and landslides are likely to damage and block roads—about 274 km of the transportation system (about 0.2 percent of all roads) is affected every year.[14] The average annual economic losses due to floods are estimated to be around US$130 million (or about 0.3 percent of the GDP) – according to the UNDRR[15]. Even if the direct damage to roads will presumably be small (around 0.06 percent of GDP due to multi-hazard risk based on a study cited by the IPCC),[16] indirect costs are likely to be sizeable, as frequent disruptions to trade, movement of people, and goods will have consequences for food security and economic productivity. There can also be an impact on the neighboring countries that rely on the port infrastructure in Cameroon, e.g., ports of Douala and Kribi, such as Chad and the Central African Republic.

12. Climate change poses a threat to human capital accumulation and labor productivity. Cameroon ranks 151 out of 191 countries in the 2022 Human Development Index,[17] with human

[11] Over the last 60 years, the lake Chad has shrunk in size by 90 percent due to pressures on the use of water, droughts, and the impact of the climate change. This has destroyed livelihoods and led to loss of biodiversity. This has also caused resource-based conflicts, especially due to water scarcity. (Osano, 2022).

[12] Cameroon: Humanitarian Dashboard (January to March 2023).

[13] World Bank CCDR, 2022.

[14] UNDRR and CIMA (2019). Cameroon Disaster Risk Profile. And MINTP (2020).

[15] UNDRR and CIMA (2019). Cameroon Disaster Risk Profile.

[16] Koks et al. (2019).

[17] Human Development insights.

capital development lagging in many areas. Children in Cameroon are the 10th most exposed and vulnerable to climate risks in the world.[18] Climate impacts health and education directly through heat-related illnesses and damages to education infrastructure.[19] For example, the floods in September 2022 damaged or destroyed 88 schools, in addition to more than 9,000 homes.[20] Climate shocks can also impact human capital indirectly through limiting peoples' ability to invest in healthcare and education due to income losses because of climate-related events. A study cited by the IPCC, found that a decline of plantain productivity by 43 percent was due to the temperature increase, and was associated in 6 months lower school attendance on average due to lower parental investment in education.[21] In addition climate change will likely contribute to spread of water-borne and food-borne diseases, though the exact impact is unknown.[22] The World Bank estimates show that about 60 percent of the loss to GDP by 2050 due to climate change would come from direct labor productivity losses.[23]

13. Climate change exacerbates existing inequalities and poverty. Climate change affects the poor more. Over 55 percent of Cameroonians live in poverty which affects several aspects of their lives, including health, education, living conditions and work. About 38 percent are severely impoverished, with the poverty incidence particularly high in rural parts of the Extreme North and Eastern regions, where structural underdevelopment and frequent weather shocks, including floods and prolonged dry spells, have a detrimental impact on livelihoods.[24] A very high urban population growth, [25] and poor urban planning and urban infrastructure development that do not account for climate challenges, will also increase inequality among the urban population, where informal settlements around the cities are especially vulnerable.[26]

14. Demographic growth will further increase Cameroon's vulnerability to climate change. A growing population increases pressure on natural resources, exacerbates food insecurity and leads to more GHG emissions. Climate-related shocks tend to affect women more, which is explained by the existing gender inequalities (Panel Figure 2), such as limited access to resources, education, and economic opportunities that complicates their adaptation to climate change challenges. Demographic growth is also driven by high fertility rates in Cameroon explained by women's lack of access to family planning and control of their reproductive choices.

[18] UNICEF (2021). The climate crisis is a child rights crisis.

[19] World Bank CCDR, 2022.

[20] Davies (2022, September).

[21] Fuller et al (2018).

[22] World Bank CCDR, 2022.

[23] World Bank CCDR, 2022. The estimates are for contribution of damages to GDP loss in RCP 4.5.

[24] World Food Program: Cameroon.

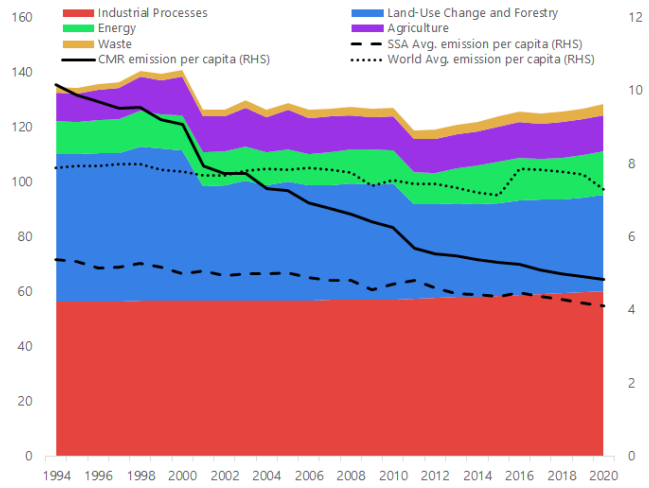
[25] The World Development Indicators.

[26] Aziz and Kakdeu (2021). The proliferation of informal housing in major cities in Cameroon: evidence, drivers and the way forward.

15. Cameroon's greenhouse gas emissions are only about 0.25 percent of the total global emissions, but higher than SSA average in per capita terms. The key contributing sectors are industrial process (47 percent) and land-use change and forestry (27 percent), followed by energy (12 percent), agriculture (10 percent) and waste (3 percent). The per capita emissions of the country decreased between 1998 and 2018 by about 47.5 percent but are still above SSA average (Text Figure 6). Moreover, the emissions per unit of GDP for Cameroon were higher than both the SSA and the world averages.[27] As a large hydrocarbon producer, Cameroon should strengthen its mitigation policies, that should support its NDC commitments and also yield social and economic benefits. Strengthening mitigation efforts will also dampen the risk of a carbon lock-in, whereby the continued reliance on fossil fuels for development will significantly increase the cost of switching to cleaner energy sources in the future.

Figure 6. Cameroon: GHG Emissions

(MtCO2e, tCO2e per person)



Source: Climate Watch, staff calculations.

C. Key Climate Challenges and Reform Priorities

Strengthening Institutions

16. Cameroon places climate change among key challenges in its development strategy. The National Development Strategy (SND30) identifies adaptation and mitigation to climate change as key objectives to achieve sustainable and inclusive growth. As part of the implementation of the strategy, the authorities plan to: (i) strengthen actions relating to sustainable management of natural resources; and (ii) take adequate measures to adapt to and mitigate the effects of climate change. In addition, in order to address the consequences of climate change, including floods and landslides in some cities and rural areas, the Government is committed to: (i) ensure that climate change concerns are taken into account in sectoral strategies and policies, both in formulation and implementation; (ii) build the capacity of institutions responsible for climate surveillance; (iii) operationalize the system for monitoring, preventing, and responding to the effects of climate change; and (iv) develop and implement a national waste management strategy while promoting corporate social responsibility. Vision 2035 also emphasizes and recognizes the importance of climate change and its economic and social impact.

17. Cameroon took important steps towards building its institutional framework governing climate policies. The key climate change policy documents are the National Climate

[27] World Bank CCDR, P.20.

Change Adaptation Plan 2015–19, which is accompanied by a costed implementation plan, and Nationally Determined Contribution (NDC) updated in 2021. Cameroon had signed key international conventions on climate change, has developed strategies in some sectors, e g., in agriculture and water. Several regional and municipal governments adopted local Climate Change Action Plans (CCAP). The central role in Cameroon's NDC institutional mechanism was given to the Ministry of Environment, Nature Protection and Sustainable Development (MINEPDED) and its agency, the National Observatory on Climate Change (ONACC).

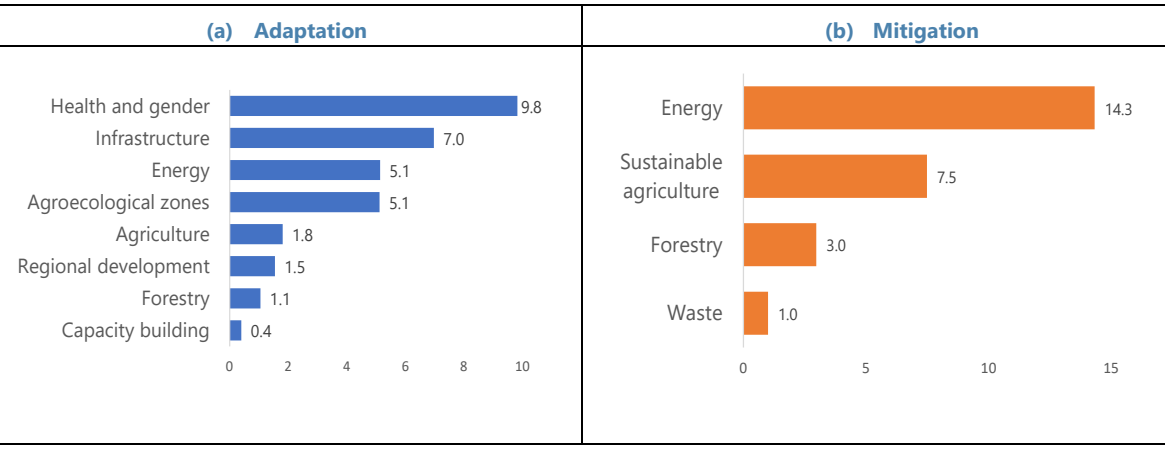
18. However, important challenges remain in implementation of climate policies. First, both central and local governments face resource and technical capacity constraints in implementing adopted plans. Second, there is still no comprehensive regulatory framework that would require to integrate climate change into the government's policy, planning instruments and processes. Finally, there is a lack of an effective coordination mechanism across arms and levels of government. This leads to duplication of functions and mandates with other agencies, which warrants clearly defining roles and responsibilities across ministries and designing appropriate coordination processes.

19. PEFA diagnostic conducted in 2023 revealed that climate change considerations are poorly integrated in Cameroon's PFM framework. Climate risks are not considered in fiscal planning tools, such as macroeconomic forecasting and medium-term budget expenditure framework. There are no formal definitions in the budget nomenclature of expenditures related to climate, which impedes their effective monitoring and evaluation. Budget evaluation and audit do not consider the impacts on climate risks. Valuation of fixed assets do not take into account their exposure and vulnerability to climate change.

20. Public investment management lacks the framework to mainstream climate considerations in the project cycle. Cameroon envisages multiples projects to enhance its adaptation efforts, in particular, by improving the resilience of the national healthcare system, infrastructure, and agriculture. Key objectives and projects are outlined in the NDC. Priority areas include promoting climate smart agriculture, building resilient energy and transport infrastructure, diversification of energy supply, disaster risk reduction, and improving population resilience. The NDC estimates financing needs to support adaptation projects at over US$32 billion until 2030 (Text Figure 7). However, implementation of these projects is challenging due to lack of the framework to mainstream climate considerations in the public investment cycle. Projects addressing climate risks are not prioritized in the investment project selection, and climate-related considerations are not taken into account in procurement.

Figure 7. Cameroon: Adaptation and Mitigation Financing Needs outlined in NDC

(bn CFAF)



Source: Cameroon NDC, 2021.

Building Resilient Agriculture and Infrastructure

21. Cameroon puts emphasis on enhancing adaptation efforts in agriculture and infrastructure. Priority areas outlined in the NDC include promoting climate-smart agriculture, building resilient energy and transport infrastructure, diversification of energy supply, disaster risk reduction, and improving population awareness and capacity. There are several challenges that hinder adaptation efforts, such as limited access to modern inputs and technologies, inadequate infrastructure, and financing constraints.

22. Building resilient infrastructure is crucial for the long-term economic health of Cameroon, especially for the agricultural sector. There are significant linkages between infrastructure and agriculture that become crucial in the context of climate change. These linkages include physical, digital, and social infrastructure that support agriculture, including transport, irrigation and water management, energy, storage, and processing. Infrastructure in general is important for the development of sustainable and productive agricultural systems. However, frequent extreme weather events, such as rainfalls and floods, damage infrastructure, disrupting the transportation and storage of food products. Building resilient infrastructure can promote sustainable farming and protect environment.

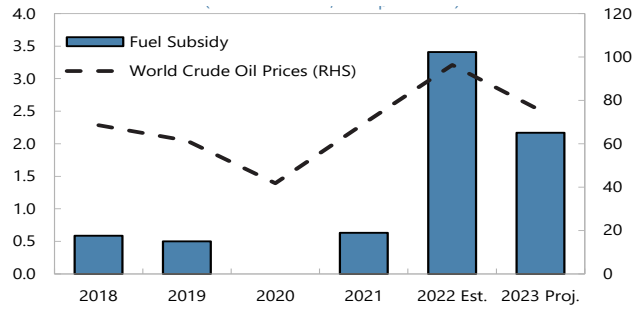
Advancing Mitigation Efforts

23. Under the NDC, Cameroon committed to reduce greenhouse gas emissions by 35 percent by 2035 relative to 2010, including an unconditional target of 12 percent. The NDC outlined specific sectors and activities targeted for emissions reduction: energy (including transportation), forestry, agriculture, and waste management (Text Figure 7). Cameroon committed to promoting renewable energy sources such as hydropower, solar, and wind energy. It also aims to improve energy efficiency to reduce emissions from the energy sector. Cameroon also recognized the importance of climate-smart agriculture practices to reduce emissions and enhance food

security, through improved land management, agroforestry, and sustainable farming techniques. This reduction target is conditional on receiving international support in the form of finance, technology transfer, and capacity building.

24. Phasing out fuel subsidies should be part of the effective mitigation strategy. Cameroon's government subsidizes fuel consumption by fixing the local pump prices for domestic fuel consumption. Soaring oil prices in 2021-22 have resulted in a considerable increase in the fiscal cost of fuel subsidies, estimated at over 1,000 billion CFAF in 2022. While this crowds out other priority spending, the true cost of the fuel subsidy is higher, given its environmental costs. In addition, the fuel subsidy is not well targeted at the poor and tend to benefit mostly the higher income households. Phasing out fuel subsidy should be accompanied by social protection measures, which would also contribute to building resilience to climate risks. The authorities are currently working with the World Bank on strengthening their social safety net.

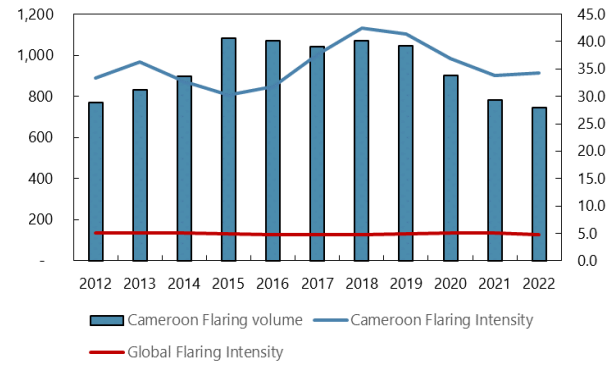
Figure 8. Cameroon: Fuel Subsidy and World Oil Prices



Source: IMF WEO, country authorities, staff estimates and calculations.

25. Rapid deforestation hampers Cameroon's ability to achieve its mitigation objectives. Cameroon has large areas of rainforests of the Congo Basin, the second largest rainforest in the world. It covers about 40 percent of its territory, but unfortunately is subject to considerable deforestation problems related to logging and farming, ineffective forest management, climate change, and growing population. Despite the authorities' conservation efforts, annual rate of deforestation is around 0.6 percent and exceed the rate of reforestation of only 0.1 percent.[28] Given the role of the rainforest in mitigating the climate change, protecting the rainforest and reforestation policies can play a crucial role in addressing climate challenges. Forest conservation and sustainable forest management are also components of Cameroon's NDC. Further strengthening forestry governance and law enforcement against illegal logging would support the policies to reduce deforestation. Promoting eco-tourism would also make the rainforest more valuable and be part of the conservation strategy.

Figure 9. Cameroon: Gas Flaring Volume (Millions m^3) and Intensity (m^3 per barrel)



Source: NOAA, the Payne Institute at the Colorado School of Mines, World Bank/GGFR.

26. Gas flaring has significant environmental and economic implications. Hydrocarbons represent more than one third of the country's exports, and their exploitation is associated with gas flaring, which contributes to greenhouse gas emissions. Cameroon is among top 30 countries by volume of gas

[28] NDC 2021, FAO 2020.

flaring and has one of the highest intensities of gas flaring in the world.[29] In addition of greenhouse gas emissions, flaring gas wastes an important resource that could be used for power generation or other purposes. To deal with the problem of gas flaring, several potential solutions exist, such as capturing and utilizing this gas, and imposing penalties on companies to reduce such emissions.

Identifying Financing Sources

27. Estimated climate financing needs are significant. For example, the Climate Policy Initiative suggest that the overall climate financing needs in Cameroon are about USD 60 billion.[30] Addressing these needs would also help at close existing development and infrastructure gaps. These estimates suggest that considerable funding is required to achieve Cameroon's climate goals.

28. In the near term, the main source of climate-related financial flows will likely need to come from official sources of financing.[31] Between 2017 and 2021 Cameroon has received around US$ 2.7 billion in climate-related development financing, mainly from multilateral development banks targeting mitigation goals in the energy sector. About 80 percent of the funds were delivered to the government entities. Introducing green measures in public financial management could be beneficial, for example, climate budget tagging, where budget lines are tagged if they contribute to climate mitigation and adaptation objectives of the country. Moreover, in a country with relatively limited fiscal space, climate budget tagging may need to go beyond climate positive public expenditures, and will have to identify high-carbon and climate-vulnerable public spending to support reform measures, such as fuel subsidy reforms. Such policies, if sequenced appropriately and integrated well into the existing PFM framework, could improve management of public finances as well as contribute towards climate goals. These measures also provide a strong signal to donors and reduce uncertainty.

29. Achieving climate objectives will not be possible without private sector involvement. Going forward, mobilization of private sector financing will be key to address climate related challenges. Climate Policy Initiative estimates that in 2019-20, private financing only accounted for about 2.6 percent of total mobilized climate financing.[32] Therefore, participation of the private sector poses a significant challenge to implementing climate policies in Cameroon. Moreover, partnerships with businesses and industry associations can promote sustainable practices, technological innovation, and investment in low-carbon solutions. There is a need for a dynamic and competitive private sector to achieve long-term economic growth and support the country's climate agenda. However, private sector's involvement in climate considerations has so far been limited.

30. Among other obstacles, private sector has been constrained by weaknesses in the national Public – Private Partnerships (PPP) framework. Although the legal framework for PPPs has been in place for over a decade, management of PPPs varies among sectors, with some line

[29] World Bank (2023). Global Gas Flaring Tracker Report.

[30] AfDB (2023).

[31] OECD DAC data.

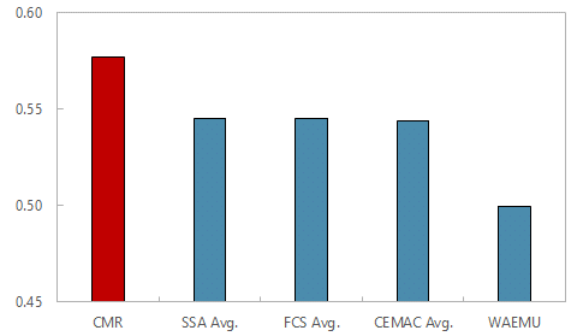
[32] AfDB (2023).

ministries and agencies conducting PPPs autonomously without involvement of national PPP structures. Sectoral governance issues, such as in the energy sector and ports, may send negative signals to prospective investors. Therefore, a comprehensive review of the PPP framework and its implementation, including funding for the Support Council for the Realization of Partnership Contracts, the PPP unit, would support the development of climate-smart infrastructure projects. It will be critical to ensure a uniform and efficient implementation based on the capacity and convening power of the national PPP structure, line ministries, and agencies, as well as developing a PPP pipeline based on sector assessments, to create a roadmap for mobilizing private financing.

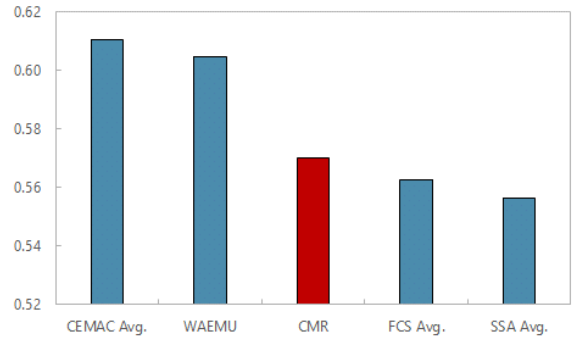
31. Cameroon needs to develop its capital markets to harvest the potential private funding for climate investments. Raising private climate finance entails several steps, including ambitious and stringent climate policies, disseminating relevant data, and developing capacity. Standard stress testing methodologies could be extended to include climate risks in the financial sector. One possible approach to raise green financing is to develop taxonomy for thematic bonds, such as green or sustainability bonds — a financial product designed to raise funds for sustainable development projects related to mitigation and adaption. Such bonds would allow sending a clear signal to the market about climate benefits. Implementing such financial strategies would require advancing development of Cameroon's capital and financial markets.

Figure 10. Cameroon: Development and Climate Indicators

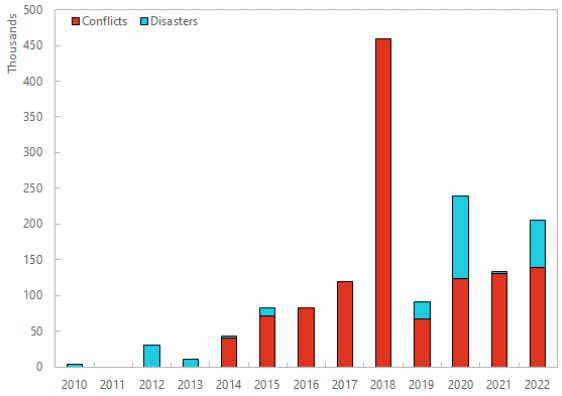
Human Development Index
(Value, 2017-2021 Avg.)



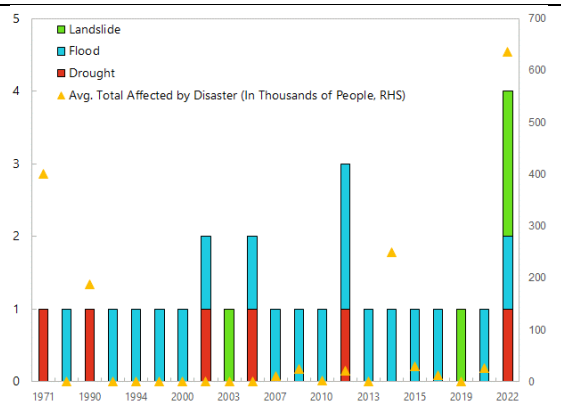
Gender Inequality Index
(Value, 2017-2021 Avg.)



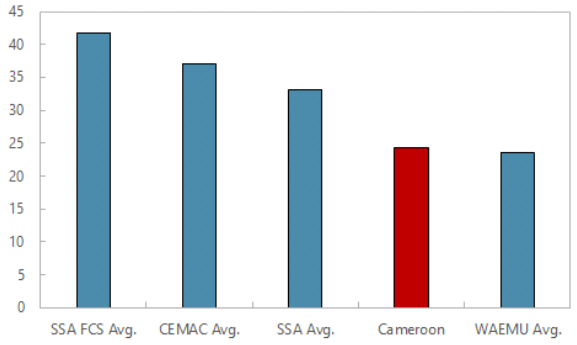
Internal Displacement induced by Conflicts and Natural Disasters
(2010-2022, in Thousands of People)



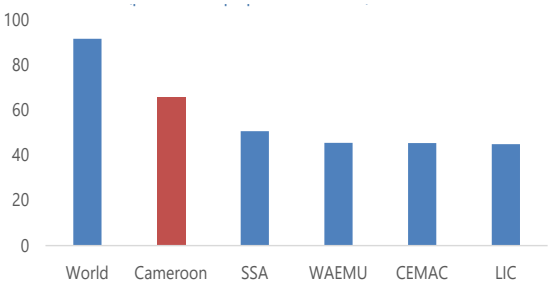
Natural Disasters in Cameroon
(1971-2022, Frequency, in Thousands of People)



Poverty Incidence
(International poverty rate, $2.15 in 2017 PPP)



Access to electricity
(Percent of population, 2021)



Source: World Bank WDI, retrived On July 31, 2023.

Source: Human Development Programme, IDMC (Internal displacement monitoring centre), EM-DAT, World Bank Macro Poverty Outlook.

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Annex I. Cooperation with Development Partners

1. Cameroon has been working with development partners to tackle climate challenges. While climate-related development finance flows have been on the rise in recent years, they are smaller than the estimated needs and relatively volatile, making planning difficult. About two-thirds of the flows targeted mitigation projects (Figure 1) with the large majority financing the energy sector (Figure 3). Agriculture, forestry, and fishing were the most targeted sectors for adaptation flows (Figure 4), with about a forty percent share. Adaptation flows also targeted multisectoral goals such as urban and rural development and disaster risk management, transportation, water supply, and disaster risk reduction. In terms of providers, multilateral partners were the most active accounting for three quarters of recent flows (Figure 2).

2. The largest multilateral provider of climate-related development finance is the World Bank. The latest Development Project Financing (DPF) targets multiple critical climate areas in Cameroon, through its sustainability pillar. The Bank seeks to improve the climate resilience of road infrastructure by targeting road and road maintenance through operationalizing the relevant law and implementing it through a decree. Water management is another targeted area, which seeks to ensure the efficient allocation of water across various uses, given its importance for agriculture. The final climate-related leg of the World Bank program is the expansion of safety nets, with the eventual goal of having adaptive social safety net that can effectively respond to disasters.

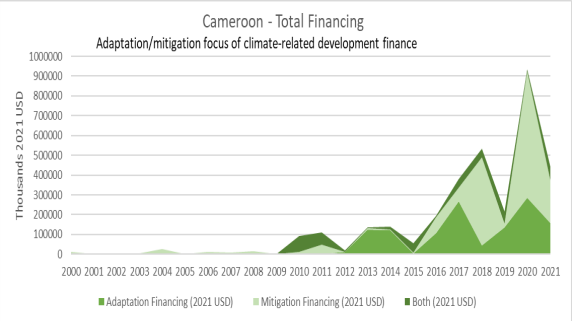
3. UN agencies are active in Cameroon, with many of the interventions focusing on disaster risk reduction and management. The World Food Program (WFP) is strengthening resilience against disasters through improving data collection to enhance early warning systems, laying the policy and legal framework for disaster risk reduction. An important aspect of the program is the strengthening of digitalization of social information, which would enable social safety nets to respond quickly and effectively in case of a disaster. In terms of disaster risk finance, the WFP is devising an insurance scheme for agricultural workers to improve their resilience to climate-related risks. UNESCO is also supporting the authorities in the areas of: (i) recording data to observe climate impacts, for example on water quality and flooding to prevent the spread of water-borne diseases; (ii) raising awareness in local communities of the climate-related risks, thereby providing an important step for an enabling environment in which private actors can manage their own risks; and (iii) providing alternative income generating activities for local indigenous populations through agroecology. In addition, the International Organization for Migration supports governance and knowledge generation for sustainable solutions of internal displacement by climate risks especially in conflict affected areas of Cameroon.

4. UN agencies are also active in forestry management. The Food and Agricultural Organization (FAO) is convening consultations and supporting the authorities on facilitating the development of a regulatory framework to promote sustainable logging, creating an inventory of biodiversity and forests, and developing capacity of forestry communities to implement forestry management plans. The International Fund for Agricultural Development is planting selected species

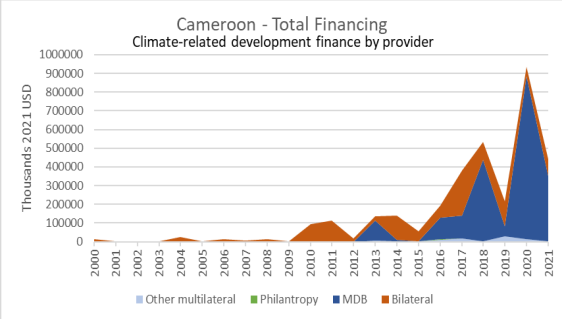
of trees to increase forest resilience in various areas. The UN High Commissioner for Refugees has multiple projects on reforestation to increase the resilience of refugees to climate risks.

5. European governments and agencies are the most active bilateral partners in Cameroon. The European Development Fund is the largest donor having projects in agricultural policy and management, with the goal of helping the government promote sustainable and inclusive growth favorable to vulnerable populations and consolidating democratic, economic, and administrative governance. The German Federal Ministry for Economic Cooperation and Development (BMZ) focuses on forestry management and improving agricultural production by making food systems more resilient.[1] The French Development Agency (AFD) is supporting Cameroon in the development of renewable energy, sustainable forest management, flood prevention, and structuring national climate change strategies.[2]

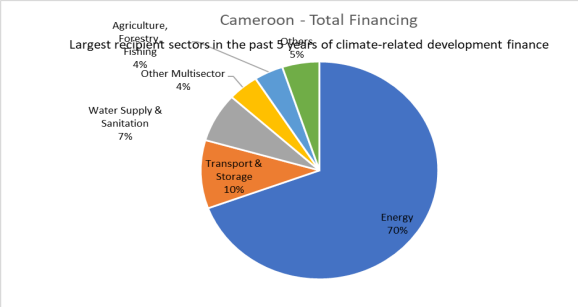
Cameroon: Adaptation/mitigation focus of climate-related development finance
(Thousands of 2021 USD)



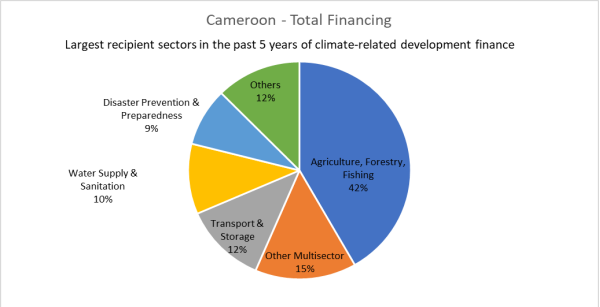
Cameroon: Providers of climate-related development finance



Cameroon: Sectors targeted by mitigation flows 2017-2021



Cameroon: Sectors targeted by adaptation flows, 2017-2021



Source: OECD DAC data.

[1] Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung. Cameroon. https://www.bmz.de/en/countries/cameroon (accessed: 11/30/2023)

[2] Agence Française de Développement. Cameroon. https://www.afd.fr/en/page-region-pays/cameroon (accessed: 11/30/2023)