

Hot, Flat, and Crowded?

How will the G5 Sahel Country Climate and Development Report inform the region's development?

Introduction

In Spring of 2022, the World Bank began releasing its first Country Climate and Development Reports (CCDRs). The reports provide analysis of climate-related risks targeted for specific countries and offer recommendations for the governments, private sector, and for the World Bank regarding its role in addressing these challenges through development strategies that take into account country-specific commitments centered on climate adaptation and mitigation strategies.

According to the World Bank, the purpose of the [CCDRs](#) is to “help inform policy and institutional reforms, as well as public and private investments, that support high-impact climate action, achieving meaningful greenhouse gas (GHG) emission reductions and improving resilience.”¹ CCDRs will also be used in creating Systematic Country Diagnostics (SCDs) and Country Partnership Frameworks (CPFs). The World Bank has already committed to producing 25 CCDRs this fiscal year, and plans to release all of the remaining CCDRs for WBG countries within the next four years. The first three CCDRs released are those for [Türkiye](#),² [Vietnam](#),³ and the [G5 Sahel Region](#).⁴

The World Bank disclosed the CCDR for the G5 Sahel countries in July 2022. The G5 Sahel is a coalition of five sub-Saharan countries: Burkina Faso, Chad, Mali, Mauritania, and Niger. These countries have similar environments as well as levels of development, and four of the five countries—Mauritania being the exception—are classified by the Bank as “[Fragile and Conflict-affected Situations \(FCS\)](#)”⁵ as of fiscal year 2023. Therefore, they face similar challenges in [regards to achieving climate-adapted development](#),

1 <https://thedocs.worldbank.org/en/doc/c8781cc9ab9e9286930475da-27f0903a-0020012021/original/COP26-ClimateBriefs-CCDRs-Financial-2610.pdf>

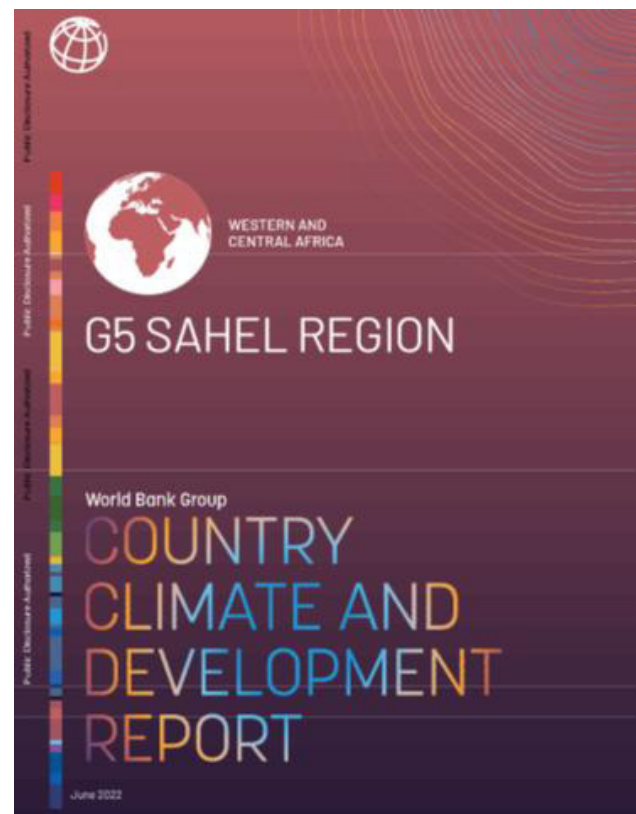
2 <https://openknowledge.worldbank.org/handle/10986/37521>

3 <https://openknowledge.worldbank.org/handle/10986/37618>

4 <https://openknowledge.worldbank.org/handle/10986/37620>

5 <https://thedocs.worldbank.org/en/doc/69b1d088e3c48ebe2cd-f451e30284f04-0090082022/original/FCSList-FY23.pdf>

and their grouping into one CCDR follows this logic. The key messages within this CCDR are (i) There are significant opportunities for resilient and lower-carbon development in the G5 Sahel countries; (ii) Rapid, resilient, and inclusive growth is the best strategy for climate adaptation and meeting development goals; and (iii) The costs of inaction are greater than the costs of action.



Summary of the G5 Sahel CCDR

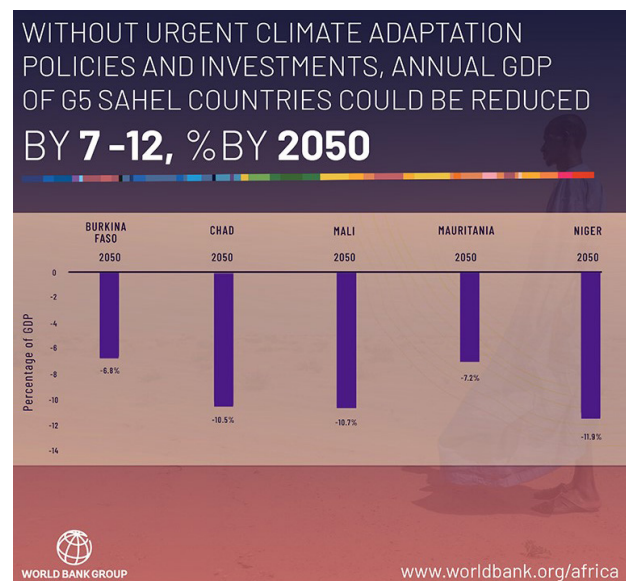
The report is divided into four main sections covering (i) the current situation and challenges in regards to development and climate change; (ii) the countries' climate commitments and policies; (iii)

the macroeconomic and poverty impacts of climate change as modeled through different scenarios; and (iv) priorities for climate and development. The first section identifies many current barriers to achieving climate-smart development – notably, the fragility within these countries, including violence, inequity, lack of security, tensions between pastoralists and cultivators, malnutrition, and poor infrastructure. These factors make coordination and credible implementation of mitigation and adaptation policies more challenging, while creating a false perception of unimportance, as the policies are crucial to overcoming their fragility. Additionally, their low rankings in regards to rule of law,⁶ as well as in protection of property rights,⁷ indicate that these countries currently lack the institutional foundations to successfully implement climate-informed development strategies through just the support of the private sector. Another challenge is the lack of coordination between sectors compounded with little regulation, exacerbated by limited data and risk assessment capabilities. Low literacy rates, especially for women, pose further barriers to climate action, creating challenges for educating people about climate risks and resolutions.

More structural challenges that the economies of G5 Sahel face result from their being largely agrarian. Climate change greatly affects the agricultural sector due to changes in heat and rainfall patterns. This work also occurs mostly outside, which means the rising temperatures can also impact the health of agricultural workers and their productivity. A significant portion of the economy will be facing these drastic risks and intensify the obstacle of achieving sufficient climate resilience and adaptation. Moreover, the need for rapid growth within these countries could instead lead to carbon-intensive growth, if measures are not taken to avoid and mitigate emissions throughout development. Although there are significant challenges to climate-smart development, prompt action must be taken to enact effective and enduring climate-resilient growth.

The second section addresses each country's climate commitments and existing policies. As signatories of the Paris Agreement, the G5 Sahel countries have committed to achieving net-zero emissions by 2050. In addition to this commitment, the countries have also pledged a certain Nationally Determined Contribution (NDC) by 2030. Each country's NDC is first examined in terms of the GHG mitigation

they have committed to by 2030 as a percentage compared to the business as usual (BAU) baseline for GHG emissions. All five of the Sahel countries have made conditional commitments to mitigation in addition to their unconditional commitments. If they receive sufficient support from external sources in carrying out these commitments, then they would collectively reduce GHG emissions within the region by about three times more than otherwise.⁸ The World Bank and other donors and partners are especially important for these countries due to the potential of their climate finance and contributions and since additional resources will greatly impact the G5 Sahel's readiness for climate action.



Source: <https://www.worldbank.org/en/news/infographic/2022/09/19/g5-sahel-region-country-climate-and-development-report>

The CCDR also approaches NDCs for each country through climate finance by assessing the amount of financial investment necessary both in US Dollars and as a percentage of 2021 GDP and total capital expenditure.⁹ These investments are broken down into mitigation and adaptation finance. All countries require significant investments which are above the capacity of each country. Thus, some investments must be sourced externally. This section also analyzes policies within the G5 Sahel countries pertaining to disaster and climate risk management, urban planning, water management, financial and social protection, and decarbonization. Overall, the G5 Sahel countries are making efforts for developing strategies in these areas, but experience shortfalls

⁸ World Bank Group. 2022. [G5 Sahel Region Country Climate and Development Report](https://www.worldbank.org/en/news/infographic/2022/09/19/g5-sahel-region-country-climate-and-development-report) ["G5 CCDR"], CCDR Series. Washington, DC.: World Bank, p. 46, Table 2.1: Summary of mitigation commitments in Sahel NDCs by 2030.

⁹ G5 CCDR, p. 47, Table 2.2: Summary of NDC investment needs in G5 Sahel NDCs by 2030.

⁶ <https://worldjusticeproject.org/rule-of-law-index/>
⁷ <https://www.internationalpropertyrightsindex.org/>

in implementing them. They often lack adequate social and environmental impact assessments as well as the human and financial resources for proper implementation. Specifically in the energy sector, these countries have struggled to achieve the intended results of policies due to limited government planning capacity.

The third section of this CCDR shows macro-structural modeling using country-specific Climate Change Macro-Fiscal Models (CCMFM). These models provide projections of climate impacts as well as the effectiveness of adaptation measures within six different possible scenarios: pessimistic, intermediate, optimistic, wet, dry, and hot. The pessimistic, intermediate, and optimistic scenarios range from highest change in both temperature and precipitation to lowest change in both temperature and precipitation. The wet, dry, and hot scenarios are more self-explanatory, being the scenarios with the most precipitation, the least precipitation, or the highest temperatures respectively.¹⁰

Within these scenarios, the models explore six different impact channels: rainfed crop yields, heat and labor productivity, heat-related human health shocks, livestock yields, inland flooding, and roads and bridges. First, these impact channels are observed without any adaptation measures. Without adaptation, the rainfed crop and livestock yields decrease under the dry climate scenario, but increase under the wet climate scenario. Conversely, impacts on roads and bridges are more costly under the wet climate scenario compared to all of the other scenarios. The impacts on inland flooding did not differ significantly among these scenarios. While human health-related costs were greatest in the pessimistic scenario, they ultimately had the smallest impact compared to the other impact channels. Overall, heat and labor productivity impacts tend to be the most significant across scenarios and cause the greatest negative impacts on GDP in the pessimistic scenario.¹¹

After the initial analysis with no adaptation, the models introduce three impact channel-specific adaptation measures. The first adaptation measure addresses rainfed crop yields. This intervention aims to expand irrigation through two approaches: “(1) rehabilitation of irrigation infrastructure for cash crops; and (2) construction of new shallow groundwater-based irrigation for smallholders for cash crops and food crops” (CCDR, p. 75). The second

adaptation measure focuses on livestock yields, specifically increasing livestock feed measures by (1) “purchasing crop residues from in-country crop production to use as feed; and (2) investment in establishing fodder banks” (CCDR, p. 75). The last adaptation measure is directed toward roads and bridges and requires “investments to make roads and bridges network climate resilient” (CCDR, p. 75). As a result of these modeled adaptation measures, the additional benefits from action would be larger than the losses that would be avoided for all countries, making these adaptation measures an essential investment in managing climate risks and fostering economic growth with GDP increasing up to three percent above baseline.

The fourth section provides recommendations regarding climate and development and outlines priorities for the G5 Sahel countries. The recommendations include five main topics: Institutions, Climate Financing and Risk Mitigation, Energy, Landscapes, and Cities. Institutions and Climate Financing and Risk Management are grouped together as cross-cutting enabling factors. Energy, Landscapes, and Cities are three key sectors that the World Bank deems as the most vulnerable to climate change impacts and in need of reform in this region. Within each topic of focus, recommendations are disaggregated by policy recommendations and investment recommendations as well as actions to take within the next three years and actions to take by 2030.

CCDR recommendations regarding Institutions focus on the need for capacity building and clear organization of planning and finance functions within institutions (CCDR, p. 80). The CCDR groups Climate Financing and Risk Management recommendations into three categories, each dedicated to achieving a different goal. These goals are to use existing financial resources in a climate-informed manner, increase large-scale private sector finance, and increase climate adaptation and mitigation finance (CCDR, p. 81-82). The recommendations for these two topics of focus, Institutions and Climate Finance and Risk Management, are critical because without sufficient capacity for planning, financing, and executing projects, the G5 Sahel countries cannot facilitate climate-smart development. These organizational changes are essential for the success of policy and investment recommendations for Energy, Landscapes, and Cities. However, these three topics allow for specific recommendations to guide the G5 Sahel countries’ development once that capacity is established and expanded.

10 G5 CCDR, p. 62, Table 3.1: Climate scenarios modelled.

11 G5 CCDR, p. 67-69, Figure 3.2 Annual GDP loss (% deviation from the baseline) from six impact channels, with no adaptation

THE G5 CCDR PROVIDES
RECOMMENDATIONS FOR
MAKING CLIMATE-INFORMED
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Source: <https://www.worldbank.org/en/news/infographic/2022/09/19/g5-sahel-region-country-climate-and-development-report>

In the energy sector, CCDR recommendations focus on electrification efforts, regional integration of electricity grids, expansion of renewable energies, and promotion of clean cooking practices (CCDR, p. 82-86). Landscapes encompass various land sectors: land management, farming (consisting of agriculture, livestock, and fisheries), and water security (including sanitation services). The World Bank advocates for strengthening land management practices through three main pillars: “(i) Participation: involving local communities, especially marginalized groups like women; (ii) Governance: including clarity of land rights, access to funding, and integrating climate resilience; and (iii) Sustainability: empowerment and capacity building, addressing conflict-sensitive land interventions, and assuring resilience to climate impacts” (CCDR, p. 88). Farming recommendations hold great significance, especially due to the great food insecurity and rising food prices in the region, exacerbated by droughts and price shocks from Russia’s war on Ukraine.

For agriculture, the Bank advises the G5 Sahel countries to expand irrigation and agroforestry, and for crop choices to be responsive to shifts in availability of arable land and rainfall (CCDR, p. 92). The Bank also suggests that these countries diversify and build resilience within water resources, and improve information and monitoring systems related to water, sanitation, and hygiene (WASH). It also advises they achieve universal access to water and sanitation (CCDR, p. 93-95).

On the topic of cities, the Bank focuses on the need for more resilient urban planning, as well as improvement of informal settlements that have emerged as a result of increased urbanization from agricultural losses. The Bank calls specifically for investments in flood management, solid waste management, and upgrades that add resilience to existing informal settlements and limit the creation of new informal settlements (CCDR, p. 97-98).

Lastly, the recommendations briefly touch on the possibility of considering mining and transport sectors more thoroughly in the long term. While many of the recommendations in the last three topics are more sector-specific, there are themes around capacity building and promoting human capital that can be applied across sectors. One of the specific recommendations in updating data collection and information systems for improved risk assessments is especially applicable across sectors, as most sectors must account for climate-related risks in their operations. Additionally, the professionalization and involvement of marginalized groups, including women and pastoralists, should be applied across sectors.

Areas for CCDR Improvement

1. Use Models to Better Inform Adaptation Measures. The CCDR for the G5 Sahel countries covers in depth the modeling tools used to analyze risks and adaptation measures, as well as the results from these models. These technologies can be extremely helpful in guiding resilient development for this region, but for that to happen, the findings must be considered in project planning. In the scenarios modeled for the Sahel region, the Bank found that the most significant impact channel on losses was heat and labor productivity. The increasingly negative impacts of labor productivity under heat stress on GDP caused GDP impacts to remain negative for all countries in the modeled dry/pessimistic scenario both with and without the three examined adaptation measures.

Even though this impact had the most costly effects, the recommendations largely cater towards other impact channels, specifically rainfed crop and livestock yields. Even within the report, the Bank mentions that the modeled adaptation measures are not comprehensive. They provide the specific example of moving away from agriculture and towards industry and service sectors, which are more often indoors, and therefore, less affected by heat. Although this action was specifically mentioned

and defined as an adaptation measure, the results of this action were not at all modeled or analyzed. The report largely lacked adaptation measures that addressed the effects of heat on labor, which is a pathway that must be considered given the significance of rising temperatures through the Bank's modeling. Recommendations provided by the Bank for other sectors will certainly assist in building climate resilience. However, without sufficient action taken to promote human capital and manage losses in productivity that are a result of heat, many of these sector-specific recommendations cannot be successfully implemented.

2. Fully Integrate Inclusion in Climate-Smart Development. The Country Climate and Development Report for the G5 Sahel countries touches on the disproportionate impact of climate change, both on countries contributing less to carbon emissions – including the G5 Sahel countries, as well as on marginalized communities within those countries. This report focuses on the vulnerability of women, children, pastoralists, and persons with disabilities. Throughout the sections on current challenges, the World Bank explains the barriers women face, especially in education, but also seen through high maternal mortality rates and pay gaps, particularly in agriculture. Additionally, high rates of child marriage and teenage pregnancy have led to malnutrition and lower the productivity of both these women and their children. As a result of these challenges, the Bank advocates for women to be included in adaptation efforts, including land management and farming. Some of these sectors offer specific recommendations to increase the inclusion of women, for example: “strengthen women’s formal land rights” (CCDR, p. 92). However, most recommendations lack any further depth and simply state that women should be included.

While it is important to advocate for the inclusion of women, it would be helpful for the report to provide specific and effective recommendations for achieving this inclusion or what it would tangibly look like. The same lack of depth in social inclusion recommendations applies to children, pastoralists, persons with disabilities, and other marginalized groups. The CCDR does mention the challenges posed to pastoralists both by sedentary populations, other nomadic peoples, and climate change, yet, it does not fully address the concerns of pastoralists in the recommendations. The Bank suggests inclusive land management practices, but avoids further detail on how to address the complications of climate change and unclear rights to land and water usage,

specifically for nomadic pastoralists. Even more concerning, while the CCDR mentions persons with disabilities as a specific vulnerable population, it does not address the challenges specifically posed to people with disabilities in the region, nor advise countries on how to promote the inclusion of people with disabilities in climate adaptation measures.

3. Address Differences in Climate Vulnerability and Political Feasibility. Although the G5 Sahel countries can be categorized regionally and face similar climate and development-related challenges, there are still key differences among these five countries that must be addressed in the CCDR. The countries vary in regards to climate vulnerabilities and political feasibility of project and policy implementation. Mauritania is the only one of the five countries that is a coastal country. This aspect of Mauritania’s geography introduces additional climate risks that the other countries do not share. Coastal flooding and erosion can severely impact those living in Mauritania’s coastal cities—notably the two largest cities, Nouakchott and Nouadhibou. The CCDR acknowledges this particular climate vulnerability for Mauritania, yet does not go into any further detail for addressing it. Only in the annex of the report is the recommendation of nature-based solutions to address coastal flooding and erosion in Mauritania mentioned, still, it lacks substantial information on funding, implementation, and impacts.

Another important characteristic that sets the G5 Sahel countries apart is Chad’s role as an oil exporter. As of 2020, [11.3 percent of Chad’s GDP is attributed to oil rents](#), while the GDPs of the remaining G5 Sahel countries are virtually unaffected by oil rents. (Niger and Mauritania, however, are expected to be net oil exporters by 2024.) This means that a transition away from fossil fuels will have a different impact on Chad’s economy than on the other economies where oil rents are less significant. While the CCDR predicts that oil prices will be lower – causing Chad to sustain GDP losses – thus incentivizing further investment in renewables rather than oil, these recommendations aim to be implemented within the next 3 to 7 years. This assumed decrease in oil prices may not be realized in the suggested time frame, especially given current rising oil and gas prices, which have been exacerbated by Russia’s war on Ukraine.

Apart from suggesting prevention of further fossil fuel subsidies and acknowledging the opportunities for growth in renewable energy, the CCDR offers no pathways for facilitating a transition to renewables if the current incentive structure is insufficient for a

comprehensive transition. Absent more granularity to address the distinctive climate action challenges in each of the five countries, this report falls short in offering recommendations that can be effectively implemented and also contend with climate vulnerabilities.

4. Clarify the Role of the World Bank. While the CCDR primarily focuses on actions for the G5 Sahel countries to take in order to facilitate sustainable and resilient development, the report also includes ways in which the World Bank can support those efforts. The specific role of the Bank within the Sahel region is much more comprehensive in this report than in the reports of other countries. This could be due to the larger role that IDA plays within the development of this region compared to the IBRD in other higher-income countries. In the executive summary of the report, the World Bank outlines the ways in which it plans to interact with the G5 Sahel countries, specifically on the issue of climate action. The Bank will engage directly with all involved actors, meaning “not only centralized governments but also regional and local governments, traditional delivery systems, the private sector, and civil society” (CCDR, p. 19). The Bank also aims to “work more effectively at the local level and with the private sector, and do more to help governments and the private sector access, mobilize, and leverage new climate financing for the large-scale programs needed today.” (CCDR, p. 80).

Although the CCDR does not allocate any specific funding to such investment projects, this guidance can be used to inform future investment decisions for the World Bank. As a result of this CCDR, the Bank has already acted to assist the G5 Sahel countries, specifically in the energy sector by working “to devise a potential loan structure, on concessional terms, that could advance projects in renewable energy” (CCDR, p. 81).

Since most of the report centers on actions that the governments, private sector, and civil society in the G5 Sahel countries should take, it is critical to clarify the role of the World Bank in executing these recommendations. As mentioned in the second section of the CCDR, the G5 Sahel countries will be largely dependent on external financing and resources for implementing these recommendations. The Bank, as the leading international financial institution, must contribute to coordinating and

financing projects based on these recommendations for the solutions in the CCDR to have a significant impact on the development of these countries.

Conclusion: Financing is key

The creation of Country Climate and Development Reports should generate a better and more comprehensive understanding of climate issues faced in WBG borrower countries as well as the existing policies and commitments of each country. The in-depth analysis provided through research and modeling in this report can help stakeholders fully comprehend the actions needed to address climate change, especially through adaptation, in the G5 Sahel countries.

The recommendations provided by the CCDR serve as a baseline for climate action. Some recommendations should be improved and expanded upon—including adaptation measures specifically addressing the negative impacts of heat on labor productivity, and the inclusion of marginalized communities in adaptation and human capital development measures. Overwhelmingly, however, these actions are essential steps in both building resilience to the changing climate and achieving development goals. Without resilience as an integral part of development in the region, these goals cannot be met.

Yet the largest challenge comes in regards to financing these actions. The CCDR mentions that these countries lack the capacity to fund these investments and policies, and they will need financial assistance from donors, the private sector, and international financial institutions, notably the Bank itself. Without obtaining the financial means to implement these recommendations, the G5 Sahel countries will not be able to build the resilience needed to sustain development. While the CCDR provides suggestions for increasing climate finance capacity, even those measures will not be enough for the G5 Sahel countries to fully finance climate action. Since the CCDR makes no binding commitments from the World Bank to financing these actions, for its goals to be realized, the Bank should at a minimum convene donors and other stakeholders to promote these recommendations and seek commitments to support the G5 Sahel countries to achieve climate-conscious and resilient development.

FOR FURTHER INFORMATION ON THE ISSUES RAISED IN THIS REPORT, PLEASE CONTACT BANK INFORMATION CENTER AT:

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