EASTERN AND
SOUTHERN AFRICA

ETHIOPIA

World Bank Group

COUNTRY CLIMATE AND DEVELOPMENT REPORT

EXECUTIVE SUMMARY

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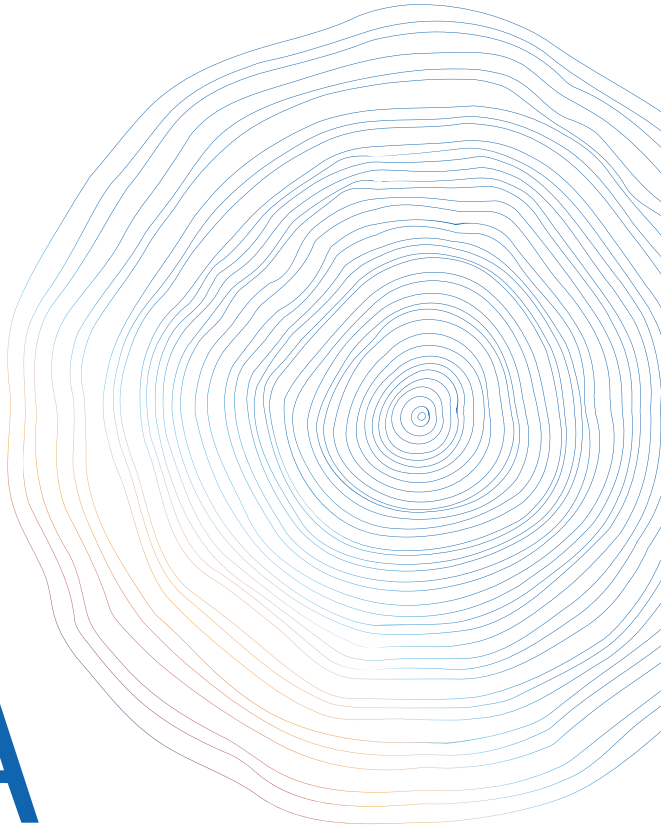
Designed By: Roots Advertising Services



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Background

Growing economic and social challenges threaten Ethiopia's economic success over the past two decades. Exceptional growth of over 10 percent between 2004 and 2019 placed Ethiopia among the fastest-growing economies in the world, trebling incomes per capita and contributing to a sharp reduction in poverty. But these achievements, although impressive, were underpinned by a state-led and investment-heavy growth model that contributed to macro-imbalances, a stalled structural transformation, declining external competitiveness, an acute shortage of fiscal resources and debt vulnerabilities, and increasingly limited space for the private sector to operate in. Meanwhile, development needs remain vast, amid very high levels of food insecurity, and poverty reduction has slowed in recent years due to multiple compound shocks, including the COVID-19 pandemic, Russia's invasion of Ukraine and resulting high global food and energy prices, an extended drought, and the conflict in the Tigray, region and more recently Amhara, region. In addition to heightened social fragility, such shocks have exacerbated macroeconomic fragility. Growth has fallen to about 6 percent annually; this will not be sufficient for Ethiopia to achieve its appropriately ambitious development goals, including reducing extreme poverty, which still stands at almost a quarter of the population.

Climate shocks are magnifying these challenges to growth and development. The cumulative effects of the ongoing drought — the most severe in the last 40 years with six consecutive failed or poor rainy seasons — have been devastating for people in the arid pastoral areas of Ethiopia. Simultaneously, flooding has damaged infrastructure and disrupted livelihoods in other parts of the country. Climate change in the coming decades could reduce the productivity of the agriculture sector, which currently employs about two-thirds of Ethiopia's workforce, including the most vulnerable groups in the population. By threatening food security, climate change will also likely worsen conflict within and across regions. Higher temperatures and changes in rainfall patterns could also exacerbate the incidence of diseases such as malaria and dengue, which along with likely adverse effects of heat stress will reduce labor productivity and the prospects of human capital accumulation, both critical to sustaining growth. Climate change could also damage energy, transport, and digital infrastructure needed to support the structural transformation of the economy to industry and manufacturing.

The Government of Ethiopia (GoE) has laid out an ambitious agenda to address these challenges with a focus on diversifying the economy and making it more resilient including to climate shocks. The 10 Years National Development Plan (10YNDP) defined ambitious development targets consistent with achieving a growth rate of 10 percent annually that would also help to reduce extreme poverty to 7 percent by 2030. The 2019 Home Grown Economic Reform Agenda (HGERA) identifies reforms to restore macro stability, promote private sector investment and raise productivity in key sectors. To address the threats posed by climate change, Ethiopia has articulated a Climate Resilient Green Economy (CRGE) strategy, establishing itself as a leader on climate action. The GoE has signaled its strong commitment to adaptation and has set ambitious mitigation targets, as articulated in its updated Nationally Determined Contribution (NDC) in 2021 and the Long-Term Low Emissions Development Strategy (LT-LEDS) in 2023.

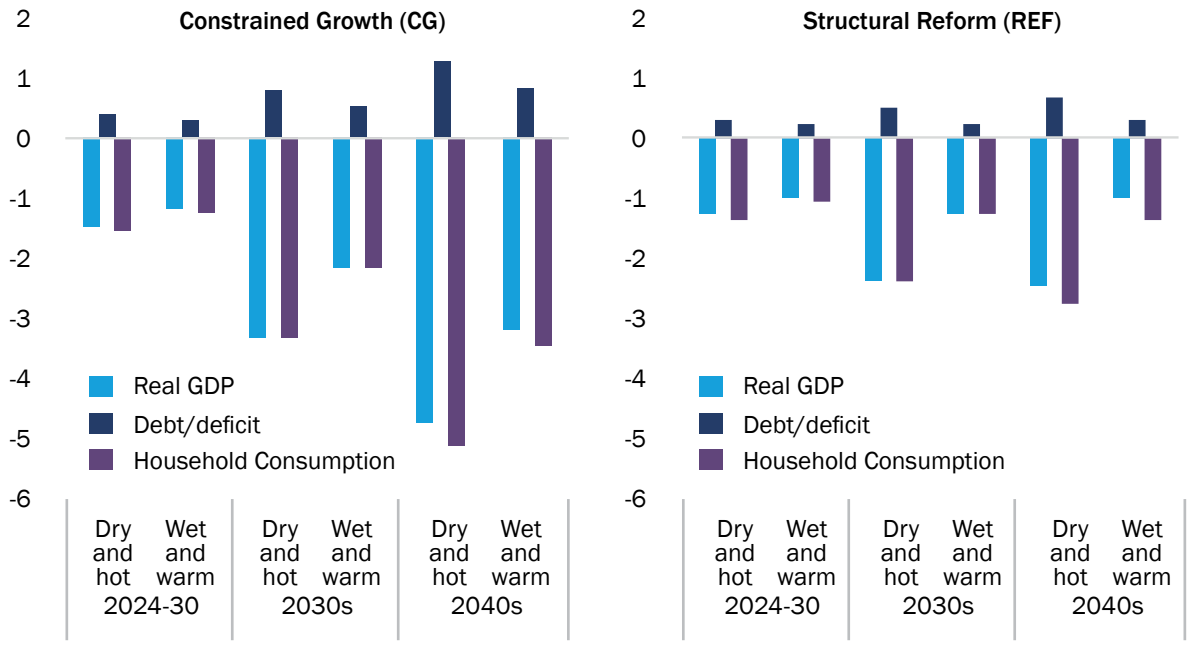
The Ethiopia Country Climate and Development Report (CCDR) aims to support Ethiopia's plans to achieve its development goals within the context of a changing climate. By quantifying the likely economic impacts of climate change on the economy between now and 2050, the report highlights the measures that the GoE needs to prioritize to prepare for these impacts and adapt to them most effectively, with a particular focus on actions that should be taken throughout the remainder of this decade. Opportunities for low-carbon growth as a co-benefit of development programs are also examined.

Key Findings

Climate change will impose large, and spatially varied, costs on the economy and people

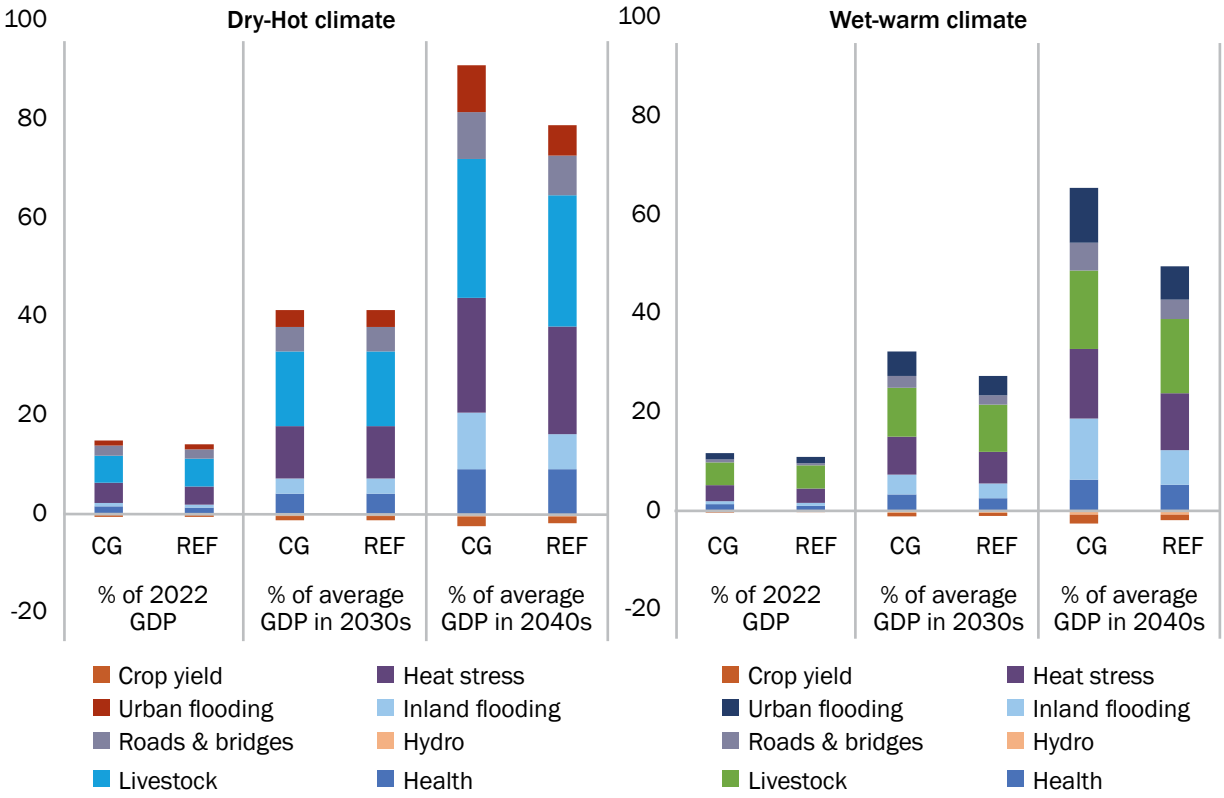
The modeling analysis done for the CCDR establishes that climate change will impost large costs on the economy and costs will increase rapidly after 2030. The analysis establishes the first set of quantitative estimates of the impact of climate change on Ethiopia's economy and shows that adverse impacts of climate change will materialize through several channels: more frequent and severe flooding; reduced crop and livestock yields; more variable hydropower production; infrastructure damage; and losses in human health and productivity. If current policies, characterized by a large state footprint on the economy and slow progress on structural reforms, are maintained, referred to as the Constrained Growth (CG) scenario, average annual losses to GDP and household consumption (relative to the baseline without a significant climate change impact) range from 1 to 1.5 percent annually in 2024-30, reaching the upper end of this range in the dry and hot climate scenario (Figure ES-1). Moreover, impacts rapidly increase from 2030 onwards, with average deviations from GDP and household consumption reaching as high as 5 percent during the 2040s. The corresponding cumulative economic loss rises from about 10 to 14 percent (of 2022 GDP) between 2023–30, to about 20 to 30 percent of average decadal GDP between 2030–40 and even more thereafter (Figure ES-2). The largest losses stem from reductions in livestock yields and from heat stress on labor productivity, followed by impacts on roads and bridges and from inland flooding. Reflecting the uncertainty of climate change impacts, magnitude of impacts will also depend on whether the resulting climate is wet and warm or dry and hot, with the adverse impacts being larger in the latter.

Figure ES-1. Annual average deviations from CG and REF baselines



Source: World Bank MANAGE simulations. Note: The chart shows the combined average annual impacts from various channels (hydro, crop yields, livestock yield, flooding, infrastructure, health and labor productivity) on real GDP, debt/deficit (percent of GDP) and household consumption relative to CG and REF baselines. Hot and Wet (SSP 2–4.5) scenarios only contain flooding, while Hot and Dry SSP (3–7.0) only include drought.

Figure ES-2. Cumulative economic losses by impact channel



Source: World Bank MANAGE simulations. Note: The chart shows the loss from 6 different channels of climate impact relative to CG and REF baselines. The losses are cumulated by decade over the periods 2023-30, 2031-40, and 2041-50 and shown as percent of GDP in 2022, average GDP during the 2030s, and average GDP during the 2040s respectively. A discount rate of 6 percent was used to discount future losses.

Poverty will also increase due to the impacts of climate change in the absence of macroeconomic and structural reforms. The analysis done for the CCDR shows that climate change will lead to larger increases in poverty over the next 25 years if structural reforms are not implemented. For instance, poverty under the CG scenario would increase by between 0.5 and 1.7 percentage points by 2050, with the larger increase corresponding to the hot and dry climate scenario. At the upper end, this would be equivalent to an additional 3.7 million people living below the poverty line due to climate change impacts. In contrast, in the reform scenario (REF), with implementation of structural reforms, the increase in poverty would be much smaller -- between 0.1 and 1 percent.

The impacts of climate change are spatially varied, with larger impacts on agriculture and livestock in the lowlands. Unlike the highlands, which have been targeted by government programs to address erosion during the 1980s, Ethiopia's lowlands are under much greater threat from erosion due to increased rainfall due to climate change. By 2050, the resulting land degradation could reduce crop yields from 1 to 5 percent for different crops as nutrients are washed away with soils. Losses from climate change for livestock production are also likely to be higher in the lowlands. For instance, the Afar region, which contains the northeastern lowlands, is expected to see cattle milk production decreases of between 13 and 25 percent in the 2040s in a scenario without reforms, compared to the average decrease of between 6 and 11 percent nationally. Similarly, cattle meat production will be affected more in the lowlands, with decreases of between 4 and 14 percent in the Afar region, more than double what is expected nationally. For goat meat, of which the Afar region is the largest producer in the country, declines of between 6 and 21 percent are likely, compared to declines nationally of between 5 and 13 percent.

The impacts of climate change on poverty and their spatial differentiation could worsen social tensions and raise the risk of conflict. Climate change will worsen poverty both by increasing the number of poor and because the poor will be disproportionately exposed to climate impacts, and lack the resources to cope with them. Spatially differentiated impacts on agriculture and livestock production will increase regional inequality and risk fraying the social fabric even further, including by increasing migration, and inter-group conflict over resources like water and pastureland, especially in the lowland areas. And these pressures will add to the strains already felt across Ethiopia by its large population of internally displaced persons from years of political conflict and drought.

Structural reforms strengthen resilience to climate change and yield mitigation co-benefits

The adverse impacts of climate change on growth will be lower if macroeconomic stabilization and structural reforms are undertaken. If significant reforms are undertaken (as captured by the REF scenario in Figure ES-1), the average annual losses in GDP and household consumption relative to the baseline without climate change are closer to 1 percent annually in 2024-2030 even in the dry and hot climate scenario, versus close to 1.5 percent in the CG scenario. This gap in losses between the two scenarios widens considerably in the two decades that follow.

Structural reforms will enhance resilience and reduce the cost of adapting to climate change. Agriculture provides one example. Without reforms in agricultural policies, Ethiopia will continue to need significant imports of agricultural commodities to meet domestic demand. With reforms, however, agricultural output will likely increase significantly even with climate change so that production would outstrip demand by the end of the decade and yield a significant increase in marketable/exportable surplus from 2030 onwards. Climate change, moreover, due to improved growing conditions for some crops, helps to increase these surpluses (relative to demand), particularly after 2040, from 20 percent to 25 percent. Another example is provided by infrastructure, such as roads and bridges. In a scenario without structural reform measures, additional repair and maintenance costs of US$755 million for roads and bridges would be incurred between 2041 and 2050 to offset the impacts of climate change. However, these costs would fall by over a sixth if structural reform measures are implemented. A final example is that of impact of climate change on diseases. Higher temperatures and greater precipitation would increase malaria and dengue transmissibility by 2050. Mortality and morbidity due to dengue, in particular, would rise by as much as 50 percent without any complementary reforms in health policies. However, if those health sector reforms are implemented these impacts are much less severe, with mortality and morbidity rising by only 14 percent by 2050.

Investments in sustainable land management and to improve the productivity of the livestock sector, as part of Ethiopia's development plans and reform agenda, also produce mitigation co-benefits. Investment in sustainable land management programs will build resilience to climate change while reducing carbon emissions. The highest carbon storage and sequestration rates are seen in the forested regions in the southwest and south-central area of the country covering parts of Gambella, Oromia and the Southern Nations, Nationalities, and Peoples' (SNNPR) regions. Since these areas are also those estimated to have among the highest land use change and forestry (LUCF) emissions rates, investing in land restoration and management in these locations will yield carbon credits. Similarly, productivity improvements in the livestock sector would decrease GHG emission intensity factors, so as to result in lower emissions than the 2030 NDC target of 180 $MtCO_2e$. Increased yields with reduced headcounts result in emissions under the REF scenario being 10 percent lower than those under the CG scenario without reform. Additional productivity measures, such as oilseed feeding and manure management, could further reduce GHG emissions by up to 40 percent.

Structural reforms alone will not suffice; additional measures will be needed to adapt, including a greater shift away from center, state-driven development

Accelerating the implementation of structural reforms will help to strengthen resilience, but additional measures will be needed to adapt to climate change. Such measures will consist of both additional policies as well as incremental investments aimed not at increasing productivity *per se* but rather at reducing the costs associated with climate change impacts. For instance, in managing water resources, adaptation to the adverse effects of climate change due to changes in precipitation and its variability could include actions aimed at increasing the efficiency and safety of existing water storage systems, using integrated watershed management, and increasing groundwater recharge. Similarly, setting priorities for agricultural research and development based on forecasts of how climate change will affect different crop varieties and livestock breeds in the future is an example of adaptation in the agriculture and livestock sectors. Investments that promote adaptation to climate change will be especially important for transport and energy infrastructure. Proactive adaptation measures, such as increased road base strength and paving of unpaved roads, could help avoid disruptions in service delivery. Given Ethiopia's dependence on hydropower, adaptation should focus on addressing the increased variability of generation that will result from changes in precipitation patterns. And the resilience to climate-induced damage to electricity infrastructure will need to be improved.

By complementing structural reforms, adaptation measures can further reduce the damages imposed by climate change. Repair and maintenance costs associated with damage to roads and bridges can be reduced both by reforms and by additional measures to adapt to climate change. As noted, reforms alone would reduce these costs by about a sixth relative to their levels with no sectoral reforms. The combination of reforms with adaptation measures, such as paving and better road construction, would reduce these costs by another 20 percent. Similarly, adaptation measures, such as enforcing better design and engineering standards for new infrastructure, could reduce the capital losses from climate change induced flooding in Addis Ababa by 90 percent.

Design of Ethiopia's policies to address climate change impacts will also have to account for inherent uncertainties in climate impacts. Although climate change projections point to a rise in mean annual temperature over time, the precise temperature increases differ by scenario. Moreover, although rainfall variability will be higher, there is no clear trend for mean annual precipitation levels along with high uncertainty across scenarios. Along with the spatial variation in these impacts, these projections imply that climate change impacts across Ethiopia are difficult to predict even into the rest of this decade, let alone over the next quarter century. The first implication of greater uncertainty is that private actors will need to play a more significant role in adapting to climate change. In a situation in which the precise effects of climate change will become known only over time, the role of public policy should be to provide the framework and incentives within which private enterprises, farmers and consumers can make decisions about adaptation. As circumstances change and uncertainties about climate change are resolved, the framework can be modified to reflect these changes and decentralized private actors can adjust their decisions accordingly. The second implication is that local governments need to be encouraged even more so that tailored responses can be undertaken across different parts of Ethiopia. Given the diversity of climate change impacts across the country, the response will need to reflect local conditions. This means that local governments, which currently have limited resources, capabilities and responsibilities, will need to play a much larger role both in designing responses and, even more importantly, in implementing them.

Setting Priorities

Given Ethiopia's resource and capacity constraints, it is critical that actions to strengthen climate resilience be prioritized. Ethiopia's climate-related challenges are only one of several the country faces in achieving its development goals. In addressing these challenges, whether macroeconomic, structural, social, or climate-related, it has limited resources and implementation capacity that it can marshal. It is critical, therefore, that actions aimed at climate resilience be chosen to target the most significant impacts of climate change while also addressing other challenges. Three broad priority areas emerge.

Priority 1: Accelerate implementation of structural reforms and promote social safety net programs

Macroeconomic stabilization and structural reforms will yield both development benefits and strengthen climate resilience. Ethiopia's current economic situation features serious macroeconomic imbalances, few jobs, and widespread poverty, insecurity and vulnerability. Without addressing the causes of these problems through a program of macroeconomic stabilization and structural reforms, it will be difficult to undertake actions to build climate resilience. By spurring the currently stalled structural transformation of the Ethiopian economy and transition to a market economy, these reforms will help make progress towards inclusive growth and poverty reduction.

Ethiopia's social safety set programs will need to be reformed to be responsive to climate shocks. Of particular importance, given the large adverse impacts of climate change on the poorest and the most vulnerable in society, are reforms to Ethiopia's social safety net system. Ethiopia's existing social safety net programs already support adaptive capacity at the household level. Nevertheless, the stresses from climate change imply that these programs will need to be strengthened. Key priorities are included in table ES-1 below:

Table ES-1: Priorities to accelerate macroeconomic stabilization and structural reforms		Sector
1.1	Addressing the overvaluation of the exchange rate and product and factor market distortions, removing regulatory, logistical and export barriers and accelerating accession to the WTO; Deepening financial intermediation in the economy; Reducing financial repression; Advance SOE reform to level the playing field for the private sector. Expand the fiscal envelope through tax policy and administration measures as well as continued fuel and utility tariff reforms.	*Cross-cutting*
1.2	Ensuring the adequacy and sustainability in the financing of these programs; Developing digital systems for social protection programs; Expanding coverage to include a larger portion of the rural and urban poor and vulnerable; Better targeting to ensure the protection of those most in need; Better coordination with humanitarian assistance programs to enhance responsiveness to shocks.	*Cross-cutting*

Priority 2: Invest in climate-resilient infrastructure

Ethiopia must address its considerable infrastructure needs in ways that recognize the likelihood and impacts of climate change. Among the most significant impacts of climate change will be damage to existing infrastructure and disruptions to the provision of infrastructure services. Such disruptions and damage, whether to transport, power or telecommunication systems, will lead to large and sustained economic losses. In addition, Ethiopia has a large infrastructure deficit, which will need to be filled for development aspirations to be met.

Three sets of actions are needed with regard to infrastructure. First, existing infrastructure needs to be managed so that it is more resilient to climate-change related shocks. For instance, for power infrastructure, system preparedness and resiliency plans should be developed to respond to natural hazards, and load dispatch systems modernized to reduce the risk of blackouts. For roads, strategic maintenance plans should be developed and executed to address the backlog of maintenance. In addition, although the recently approved Public Investment Management Guidelines prepared by the Ministry of Planning and Development (MoPD) require the assessment of climate change risks, these considerations also need to be incorporated into the management of public assets and the asset registers maintained by public bodies need to record critical or at-risk infrastructure/assets. Second, new infrastructure needs to be designed in ways that are less vulnerable to climate change. For instance, integrated watershed management should be used to increase groundwater recharge and reduce siltation in reservoirs and dams. And for electricity generation, the mix should be diversified over time by adding solar, wind and geothermal sources. Finally, the GoE should consider policy reforms to promote climate action in public investment and procurement. For one, climate co-benefits of green public procurement have not yet been explored. Assigning weights to green bids and expenditures would build resilience in public procurement frameworks. Amendments to the Environmental Impact Assessment Proclamation, as well as sector-specific guideline revisions, to explicitly require public and private project proponents to consider the GHG impacts of these projects and their resilience to climate change, is another key reform.

Table ES-2: Measures to cope with climate vulnerability in key infrastructure sectors		Sector
2.1	Investments in a combination of grey (technical) and green (nature-based) solutions are essential to mitigate urban disaster risks such as flooding, landslides, and heat stress	*Urban*
2.2	Diversify electricity generation mix—through investments in solar, wind, and geothermal; Construct regional power interconnections to enable electricity trade to balance demand-supply variations	*Energy and Extractives*
2.3	The backlog of maintenance activities is exposing Ethiopia's transport infrastructure to climate risks, and strategic maintenance plans need to be sufficiently budgeted and executed; Invest in an integrated multimodal transport network to improve the redundancy of the network and ensure uninterrupted movement of people and goods	*Transport*
2.4	Increase the efficiency and safety of existing storage and increase the spectrum of multipurpose storage	*Water*
2.5	**Health:** Upgrade the country's health care infrastructure to support more systemic climate change resilience; **Education:** Build schools and other education facilities to higher design standards to cope with the impacts of climate change	*Social Services*
2.6	Ensure diversity in connectivity routes and co-building fiber optic cables alongside other infrastructure (e.g., power lines or roads)	*Digital/ Communication*

Priority 3: Support greater decentralization of climate response

Structural reforms will encourage adaptation to climate change by different private actors. Specifically, the shift to a private sector–led market economy and the removal of distortions mean that firms will reallocate resources and investments in response to price signals and towards activities and sectors that offer the highest returns. They will also be able to respond appropriately to risks, including those due to climate change. Ethiopia should continue reforms to liberalize the banking sector and deepen insurance and capital markets. Policy interventions should also focus on expanding access to finance and insurance options for the agriculture sector, given its importance to the economy and vulnerability to climate change.

Additional measures will be needed to promote adaptation to climate change by the private sector. To further incentivize greater private sector participation in the climate agenda, it will be necessary to improve coordination, better align priorities, and enhance accountability across public agencies by strengthening the relevant regulatory frameworks and directives as stipulated in the Administrative Procedure Proclamation (1183/2020). Building on the recent update of the PPP framework, it will be important for the GoE to maintain transparency and ensure a level playing field in all transactions, and to monitor and incorporate related contingent liability risks into its fiscal risk statement. Developing a green finance taxonomy and strategy is needed to address key barriers to green finance in relation to high perceived risks, large financing needs, and long tenors. De-risking instruments such as guarantees and credit enhancements will increase access to finance for renewable energy infrastructure. Over the medium term, the central bank should also move to integrate climate-related financial risks into its supervision frameworks, while the Ethiopian Accounting Standard Board should implement the upcoming IFRS S2 on climate-related disclosure.

Subnational governments need to be supported to play a larger role in formulating and implementing policies to address climate change impacts. Because national and sectoral strategies on climate often do not assign roles explicitly to regions and woredas, strategic capacity for climate change at subnational levels is very low. Moreover, since regions have limited finances, subnational governments do not play a significant role in addressing climate change. And yet much of the implementation of climate interventions needs to be at the local level. To encourage climate action at the subnational level, ways of facilitating inclusive regional representation in federal-level governance and institutional coordination structures should be explored as part of the MoPD's ongoing review of the climate change governance and institutional coordination structure. The federal government should also consider how specific conditional grants could be used to support climate responses at lower levels of government. Subnational budgets and climate change project-specific transfers from the federal level are the main sources of climate finance at subnational levels. Climate change considerations are not used to determine the size of the block grants to regions, and nor are regions' differential climate change expenditure needs considered in determining regions' share in federal block grants. Finally, ongoing efforts to mainstream the climate agenda at the subnational level should be strengthened through capacity-building support and leveraging the woreda climate risk profiles and processes initiated by the Ethiopian Disaster Risk Management Commission (EDRMC).

In strengthening adaptive capacity to climate impacts, the priority should be on the lowlands. Incomes in the lowlands are particularly vulnerable to climate change impacts, while these areas are also home to some of the most vulnerable households in the country, including a substantial number that practice pastoralism. The impact of climate change on the livestock sector could be particularly severe for poor families who tend to use livestock as their primary saving mechanism, thereby increasing poverty. Actions to strengthen adaptive capacity should, therefore, center on the resources on which people in the lowlands depend the most as seen in Table ES-3 below. Investments in sustainable land management could reduce crop yield losses due to climate change related erosion by half. And targeting these investments in areas with the greatest potential to improve ecosystem services reduces these losses even further - by nearly 90 percent. These investments should be accompanied by expansion of rural land registration in the pastoral lowlands, to incorporate pastoralists' rights and strengthen their customary land administration institutions grounded in a localized understanding of political economy and fragility dynamics. Targeted adaptation measures should also aim at raising and sustaining the productivity of the livestock economy. Focus on reducing climate change impacts on the production of cattle milk, and goat and sheep meat.

Table ES-3: Measures to increase adaptive capacity to climate impacts in key sectors		Sector
3.1	Invest in sustainable land management; target investments in high-potential areas to improve ecosystem services; expand rural land registration in the pastoral lowlands	*LUFC*
3.2	Promote conservation agriculture; substitute pasture losses with imported feed; implement heat abatement measures (e.g., sprinklers and fans) in commercial cattle dairy farming	*Agriculture*

Financing Climate Action

Climate investment needs are significant and occur in the context of significant resource shortages. Bottom-up sectoral climate investment needs estimated in the CCDR to support adaptation and mitigation over and above baseline investments, cost about US$27.6 billion until 2050 (NPV, cumulative terms) in agriculture, livestock, sustainable land management, urban infrastructure, roads and bridges and water storage (Table ES-3). This is equivalent to 3.6 percent of cumulative GDP until 2050, but investments will have to be frontloaded if the worst impacts of climate change are to be protected against. Meanwhile, as the CCDR documents, while it is difficult to fully ascertain the volumes of climate finance being mobilized by Ethiopia, these are estimated to be in the range of about $0.6 to 3.2 billion per year with indications that these are declining. Domestic mobilization of resources is also limited in general; at 7 percent, Ethiopia's tax-to-GDP ratio is insufficient to fund essential spending, let alone drive an acceleration in growth through productive investments or finance climate investments. Meanwhile concessional ODA flows have fallen in recent years and access to global capital markets is limited by debt vulnerabilities.

Table ES-3. Additional investment needs to support adaptation and mitigation (CRG) relative to REF (US$, NPV with 3% discount rate)			
	2024-30	**2031-40**	**2041-50**
Agriculture crops*	2,048	7,191	13,560
Livestock	237	1,035	1,135
Water storage	158	706	664
Sustainable land manager	1,547	589	288
Hydropower*	5,906	12,139	15,820
Urban flooding	19	348	1,058
Roads and bridges	1,846	2,579	3,136
Total	**4,912**	**9,142**	**13,603**
Memo: Clean cooking	1,060	1,890	1,585

*Source: World Bank, Industrial Economics. Notes: REF projects a dismantling of major macroeconomic, exchange rate and structural distortions in the economy. *Half of agriculture investments and all hydro investments are included in REF as part of planned sector reforms. Every other category shows the additional CRG investments on top of planned REF investments. Clean cooking costs are difficult to ascertain and given their magnitude represent major fiscal trade-offs and not included in overall investment costs or macro-simulations. For some investments, it is hard to distinguish the extra adaptation cost from the baseline investment cost (e.g., for a new bridge, that is also a stronger bridge able to withstand climate impacts).*

In the near term, the priority is to mobilize more domestic resources domestically and unlock access to grant/concessional resources through structural reforms. By expanding the role of the private sector in the economy, and complemented by tax reforms, structural policy reforms will help to grow the tax base and thus expand fiscal resources. Grant/concessional finance will, for the foreseeable future, remain the most important (and the cheapest) source of external finance for climate purposes. With multilateral resource envelopes hinging on performance-based allocation (PBA) formulas, Ethiopia must

implement stronger policies that underpin these. Given constrained public finances, it is important that public resources are used well to support climate action by building on existing initiatives of phasing out fossil fuel subsidies and rationalizing electricity tariffs, and targeted resource spending where vulnerabilities to climate impacts (e.g. among lowlands) is greatest or where climate co-benefits can be realized (e.g. green procurement and investment).

It is imperative to get financial resources flowing to the private sector. This will require reforms to improve financial sector stability and depth and strengthen the regulatory and supervisory framework and include addressing the nexus between SOEs and state-owned banks, the opening of the banking sector to foreign investment, establishment of deposit insurance; and increasing insurance market penetration. Ongoing reforms to develop capital markets will also provide an avenue for the issuance and exchange of climate finance instruments such as green bonds and support private capital mobilization over the medium term.

The National Bank of Ethiopia (NBE) should move to integrate climate-related financial risks in its prudential supervision. Like many other central banks globally, the NBE should begin to strengthen financial sector regulation to better manage climate-related and environmental physical and transition risks. It will help Ethiopia to develop a green finance taxonomy and strategy to address some of the key barriers to green finance in relation to high perceived risks, large financing needs, and long tenors and to develop de-risking instruments such as guarantees and credit enhancements. Given the agricultural sector's importance to growth, jobs and livelihoods, expanding access to finance through instruments such as factoring, warehouse receipts, and leasing; and access to insurance will help.

Innovative/blended financing flows need to be leveraged effectively over the medium term. Financing innovations such as structured-impact bonds, green/blue bonds, emission-reduction linked bonds, sustainability-linked bonds, and debt-for-nature swaps hold significant promise to attract investors with different risk profiles and investment horizons, potentially free up fiscal space, and reduce hurdle rates for privately funded climate investments. Ethiopia must strengthen capacities, including at the CRGE facility, to: i) mobilize, track, monitor and report domestic and external climate flows and their use; ii) publish climate expenditure information on budget, including as part of the Citizens' Budget, on outturn information, and on all appraisals of public investment projects; and iii) enforce transparency provisions in public procurement laws and regulations. Building public sector capacity to develop bankable projects, especially for adaptation, is also critical. Together with mechanisms to monitor investment projects, such capacity will help ensure that de-risking by the GoE will not lead to fiscal liabilities.

Finally, it will be necessary to address residual risks from climate change. To insure against climate risks, and better manage residual risks, Ethiopia must strengthen identification, risk reduction, preparedness, and climate disaster expenditure tracking and resilience measures, and develop a well-diversified disaster risk layering strategy. Droughts, floods, and related food insecurity are the primary drivers of disaster response costs in Ethiopia and carry significant fiscal costs. The dependency on external funding, especially humanitarian appeals, provides uncertain, insufficient, or delayed resources. Budget reallocations should be well-planned to minimize opportunity cost, and be ring-fenced and tightly regulated. Ethiopia should continue investments in Early Warning Systems and delivery mechanisms. The GoE needs to build financial protection at local levels and enable the private sector to take on more risk through contingency credit and insurance (for both public and private sectors). When broader market access is restored, Ethiopia should consider the incorporation of debt "pause clauses" in its debt instruments and participate in sovereign disaster risk insurance and risk pooling services.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