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Report Highlights:

The impacts of climate change are beginning to manifest on the entire globe and particularly on developing countries like Ghana. The country is vulnerable to rising sea levels, droughts, increasing temperatures and erratic rainfall which adversely impacts infrastructure, hydropower production, food security and coastal and agricultural livelihoods. To address these challenges, Ghana will need to rely on international donors to fund climate change interventions as the current economic climate in the country will not allow for Ghana to self-fund activities to address climate change.

Introduction

Africa is one of the smallest contributors to greenhouse gas emissions but suffers the most from the impacts of climate change. Since climate change directly influences temperature and precipitation, the African agriculture sector is unmistakably the most vulnerable segment of the African economy to deal with this challenge. Most, if not all countries on the continent have experienced widespread losses and damages such as water shortages, reduced food production, and reduced economic growth due to this global problem. According to the Intergovernmental Panel on Climate Change (IPCC), increases in global warming between 1.5° to 2.0° degrees Celsius (C) will cause severe environmental shocks throughout the continent that will ultimately increase poverty, reduce food production, and increase food insecurity. The World Bank's recent Country and Climate Development Report estimates that at least one million more people could fall into poverty due to climate related disasters and that income for poor households could be reduced by up to 40 percent by 2050 if urgent climate actions are not taken.

West Africa in particular, has been identified as a climate-change hotspot since the region is experiencing rapid population growth (2.8 percent per year) in an environment with shrinking natural resources. Temperature increases in the region are projected to rise and areas within 15 degrees of the equator are projected to experience an increase in longer and more frequent heat waves. In many countries within West Africa, especially Ghana, climate variability and irregular weather patterns are exacerbating food insecurity and affecting the rural economy at different points along the agriculture value chain, from on farm productivity to off-farm issues ranging from policy to trade.

Ghana is experiencing changes in temperature, rainfall patterns, and increased frequency and intensity of extreme weather events such as floods, droughts, and storms. These impacts have significant implications for the country's economy, food security, and the livelihoods of its people. To address these challenges, appropriate action to adopt an integrated approach to agriculture and environmental management, increase risk preparedness, promote sustainable energy production, modernize transport systems, and build more resilient infrastructure systems will be required. The World Bank estimates that the yearly cost to fund and maintain interventions like the ones mentioned above will be approximately \$2 billion a year¹.

Currently, Ghana is dealing with an economic recession and is seeking an IMF financing program worth approximately \$3 billion to lift itself out of its economic trouble. Rising inflation, which reached 52.8 percent in February, coupled with the rapid depreciation of the Ghanaian Cedi (an estimated 55 percent to the U.S. dollar in 2022), along with global supply chain constraints and fiscal deficits have affected Ghana's economic outlook. Russia's invasion of Ukraine worsened these strains, causing food and gas price hikes. The cost of fertilizer, now in short supply, has tripled. After fervently rejecting the notion of turning to the IMF for support, the GOG announced that they would be seeking assistance to alleviate

¹ World Bank Group (2023) Country Climate Development Report: <https://www.worldbank.org/en/news/press-release/2022/11/01/ghana-can-turn-climate-challenges-into-opportunities-for-resilient-and-sustainable-growth-says-new-world-bank-group-report>

the economic hardships the country is currently facing. For Ghana to self-fund interventions that address climate change is not realistic.

Ghanaian Agricultural Production & Impacts from Climate Change

Ghana has two broad ecological zones, the Forest Zone, which covers 30 percent of the southern region, and the Northern Savannah Ecological Zone, which covers the remaining 70 percent of the country. More than 55 percent of the country's land area is dedicated to agriculture, 18 percent is considered arable while 14 percent is used as pasture.

The Ghanaian agriculture sector is dominated by smallholder family farms that are predominantly rain fed and therefore sensitive to changes with the climate. Erratic precipitation patterns have severe consequences on productivity as only 2 percent of the country's irrigation potential is in use. An estimated 80 percent of farms are rain-fed, with few functioning irrigation systems. Most of these are small farms with an average size of less than 1.2 hectares.

The agriculture sector plays an important role in the Ghanaian economy and provides employment for about 45 percent of the labor force on a formal and informal basis. Agriculture accounts for almost 20 percent of GDP and almost half of export earnings. Among the leading agricultural food crops harvested are cassava, corn, yam, peanuts, and sorghum while commercial crops include cocoa, palm oil, rubber, sugar cane, cotton, and tobacco. Ghana is the world's second-largest cocoa producer and exporter behind neighboring Côte d'Ivoire. These two countries alone account for over two-thirds of the world's cocoa supply.

Rising temperatures are projected to lower yields in major staple crops, for example, cassava yields are projected to fall by 29.6 percent by 2080 and corn yields by 7 percent by 2050². Rising temperatures are also likely to increase the presence of pests and diseases which can also lead to crop failure and reduced yields. Suitable areas for cocoa production, mainly along the coast, are also decreasing due to temperature increase, floods, soil salinization and continued coastal erosion.

Additionally, yield losses may become more severe as the likelihood of inconsistent rainfall and the length of growing seasons shorten. Reduced rainfall will shorten growing seasons and bring on the desertification of agricultural land brought about by unsustainable farming practices such as limited crop rotation and poor soil management that further inhibit production.

Agriculture and livestock, two of the sectors most impacted by weather-related threats, constitute the foundation of Ghana's economy and a major employer of the economically active population³. Climate change is already affecting Ghana's water resources as damage and flood exposure is projected to result in damages worth \$160 million annually⁴.

² USAID (2017). Climate Change Risk Profile – Ghana. URL: https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_Climate%20Change%20Risk%20Profile%20-%20Ghana.pdf

³ GFDRR (2019). Ghana, Country Context. URL: <https://www.gfdr.org/en/ghana>

⁴ UNISDR (2018). Disaster Risk Profile – Ghana. URL: <http://africa.cimafoundation.org/documents/869>

Ghana's fisheries sector is also a major local industry for the economy and Ghanaian diet. The fisheries sector includes oceanic fishing and inland freshwater fisheries in Lake Volta, Lake Botsumtwi and other reservoirs. Rising sea surface temperatures will continue to alter the migratory patterns and reproductive cycles of key species such as anchovies, sardines, tilapia, and catfish⁵. A decline in the fisheries productivity because of climate change (along with overfishing) has forced Ghana to substantially increase seafood imports to satisfy local demand.

Actions taken by the Government to address Climate Change

One of the key initiatives the Ghanaian government has taken to address these challenges, was to develop a National Climate Change Policy (NCCP) in 2013. This policy aims to integrate climate change issues into all aspects of national development planning and decision-making. The policy also outlines strategies for building resilience to climate change and reducing greenhouse gas emissions. The NCCP complements the Climate Change Master Plan, which provides a roadmap for implementing the policy. To achieve the goals outlined in the NCCP, the government has developed a range of initiatives such as promoting renewable energy, improving energy efficiency, and implementing sustainable land use practices. For instance, the government has launched the Renewable Energy Master Plan, which aims to increase the share of renewable energy in the country's energy mix to 20 percent by 2030.

Ghana has also been implementing adaptation measures to build resilience to the impacts of climate change. The country has developed a National Adaptation Strategy and Action Plan, which outlines measures such as improving water management, promoting climate-smart agriculture, and enhancing early warning systems for extreme weather events. The government has also been implementing a range of community-based adaptation projects, which aim to build the resilience of vulnerable communities to climate change. Additionally, Ghana is a member of the Green Climate Fund, a program aimed at supporting the implementation of climate change mitigation and adaptation initiatives focusing on building resilience of vulnerable communities.

The country has ratified the Paris Agreement on Climate Change and has been actively participating in international climate negotiations. Ghana is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Paris Agreement and has submitted its revised nationally determined contributions (NDCs), committing to action both on adaptation to climate change and reducing greenhouse gas emissions (30 percent by 2030). Ghana does not have comprehensive climate change legislation, but rather piecemeal laws, regulations, and policies across various sectors. Furthermore, Ghana's NDC targets are not enshrined in law. To implement the 47 NDC measures by 2030, Ghana will need to invest between \$9.3 and \$15.5 billion. Ghana is also working with the World Bank to join the national climate-smart agricultural investment plan (CSAIP). The national plan prioritizes a set of 12 investments and actions needed to boost crop resilience and enhance yields. The Agriculture Innovation Mission for Climate (AIM4C) was launched at COP 26 and is another initiative Ghana

⁵ IFPRI (2012). Ghana – Strategy Support Program, climate change, agriculture, and food crop production in Ghana. URL: <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/127134/filename/127345.pdf>

supports to address climate change in the agricultural space, however, Ghana has not been active with AIM4C to date due to limited resources.

Key Ghanaian Institutions addressing Climate Change

Several institutions are responsible for addressing climate change in Ghana. These include the Ministry of Environment, Science, Technology, and Innovation (MESTI), the Environmental Protection Agency (EPA), the Ministry of Finance (MoF), the National Development Planning Commission (NDPC) and the Ministry of Energy (MoE). MESTI is Ghana's lead agency for climate change coordination and implementation. MESTI's portfolio is very broad and climate change is only a small part of what falls into the ministry's purview. MESTI receives technical support from the EPA, which also hosts the focal point to the UNFCCC, and coordinates Ghana's participation in international processes.

Several Ministries, Departments and Agencies (MDA) have established climate change focal units. For example, the National Resources, Environment and Climate Change (NREC) Unit at the MoF oversees and coordinates climate finance in Ghana. The Climate Change Unit at the Forestry Commission serves as the national Reducing Emissions from Deforestation and forest Degradation (REDD+) Secretariat while at the Energy Commission, the Renewable Energy, Energy Efficiency, and Climate Change Divisions oversee climate change issues in the energy sector.

Climate Change Trends in Ghana

Ghana will continue to get warmer with mean temperatures projected to increase by 1.0°C to 3.0°C, by 2050 and by 2.3°C to 5.3°C by end of the century. Projected warming will likely occur faster in the drier northern areas than the coastal regions⁶. The Agriculture, Forestry, and Other Land Use (AFOLU) sector is the largest contributor to GHG emissions, responsible for 54.4 percent of total emissions in 2016, followed by the energy (35.6 percent) and waste (7.5 percent) sectors. Rainfall in Ghana is inconstant and will continue to be so throughout the century. However, periods of heavy rainfall are expected to increase in some areas and decrease in others.

Paying for Climate Change

Climate change is a global issue that requires collective action from all countries to address its impacts. While Ghana has shown a strong commitment to addressing these challenges through policy and action, the country has conveyed to major donors, the need for additional financial assistance to address this issue. Ghana received \$776.5 million from international donors from 2013 to 2017⁷ to address climate change. The three largest providers of climate change funding to Ghana are the European Union (EU), the African Development Bank (AfDB) and the United States Government. These funds predominantly targeted mitigation activities and was distributed across 405 projects in the country. An estimated 30

⁶ IFPRI (2012). Ghana – Strategy Support Program, climate change, agriculture, and food crop production in Ghana. URL: <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/127134/filename/127345.pdf>

⁷ Civic Response. (2020). *Climate Finance Adaptation Study Report: Ghana*. <https://careclimatechange.org/wp-content/uploads/2021/01/Ghana-Climate-Adaptation-Finance-Tracking.pdf>

percent of the funds in this period came in the form of loans. Ghana also receives financing from the Green Climate Fund to implement four projects in the North of the country. However, these funding sources are insufficient to address all the climate change needs in the country. In addition to the current economic situation in the country, Ghana is not expected to be in a position to raise public investment to fund the interventions needed to address the impacts of climate change in the country.

Attachments:

No Attachments.

End of report