USAID/GHANA COUNTRY DEVELOPMENT AND COOPERATING STRATEGY

CLIMATE RISK SCREENING

SUMMARY OF CLIMATE RISK SCREENING

Introduction

The climate risk screening process for USAID/Ghana CDCS entails two main steps: 1) how the Mission's Development Objectives (DOs) may be at risk from climate shocks and stresses, and how to potentially reduce the impacts of those risks; and 2) identify sources of greenhouse gas (GHG) emissions in Ghana, and ways USAID/Ghana's programming can limit emissions. Given that the climate risks have been analyzed at the strategy level (i.e., the CDCS level), more detailed analyses will be required at both the project and activity levels for some programmatic areas. The purpose of the climate risk screening was to identify and prioritize climate risks that should be considered in order to promote resilience in development programming and ensure the effectiveness of USAID's investments. This climate risk assessment is not a full climate vulnerability assessment. However, the screening process helped identify potential programmatic areas that may require further assessment when designing projects and activities and those programmatic areas that are at a low risk from climate requiring no further analysis and consideration at later stages of the program cycle.

Climate Risk Screening Method

For the climate risk screening process, USAID/Ghana in consultation with the Africa Bureau Climate Integration Lead (CIL) and the West African Regional Environment team worked closely to engage with all three Development Objective teams in the Mission to complete the climate risk screening tool in February-March 2020.

The technical basis of the assessment was partly informed by the Ghana Climate Risk Profile developed by USAID, Ghana's GHG Factsheet from USAID, World Resources Institute Climate Analysis Indicator Tool, Ghana's Third National Communication Report to the United Nations Framework Convention on Climate Change (UNFCCC), Ghana's Fourth National Greenhouse Gas Inventory Report as well as other technical documents developed by academics. This information was complemented by the knowledge and expertise of USAID/Ghana technical staff.

In-person consultation with the technical teams ensured that the assessment incorporated their expert perceptions of the climate risks to the DOs, helped identify areas where climate may need to be considered further in current and future programs, and understood the importance of climate risk management. USAID/Ghana adopted a participatory approach for the assessment which helped identify areas for potential collaboration between technical teams to address broad climate risks (e.g., drought and flooding) and areas where adaptation efforts by one technical team could exacerbate challenges faced by another team.

Climate Change in Ghana

The Table below is a summarized analysis of historical and future climate conditions in Ghana as stated in the Ghana Climate Risk Profile:

Sector impacts and vulnerabilities to climate change in Ghana is a major concern. The agriculture sector is likely the most sensitive to climate change. The sector relies on small, rainfed plots that are highly vulnerable to the impacts of climate change. Erratic precipitation patterns have severe consequences on production, as only 2 percent of the country's irrigation potential has been tapped (Ghana Climate Risk Profile, 2017). Variable precipitation, especially during the rainy season, makes rainfed agriculture difficult to rely upon.

The fisheries sector forms an important part of the Ghanaian diet and economy contributes to about 40-60 percent of the protein intake (*ibid*). The decline in the fisheries sector productivity from climate variability and overfishing forces Ghana to spend over $200 million per year on seafood imports to satisfy domestic demand[1] [2].

Climate change is expected to increase the risks and impacts associated with vector- and waterborne diseases, which are already prevalent in Ghana. According to the Ghana Climate Risk Profile, access to improved sanitation in Ghana is low. Severe flooding has led to several recent cholera outbreaks – the worst of which occurred in 2014, with nearly 15,000 cases reported across 8 regions in Ghana. Malaria, which affects 50 percent of children in Ghana, is likely to increase in the short term due to increasing temperatures and flooding.[3]

For water resources, about 25 percent of the population does not have access to clean water, and declining rainfall levels, drought and rising temperatures are straining available water resources amidst increased demand from high rates of urbanization and industrialization.[4] For further sector specific analysis please refer to the Ghana Climate Risk Profile (https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_Climate%20Change%20Risk%20Profile%20-%20Ghana.pdf).

At the CDCS level it is important to investigate how climate risks extend across sectors and can have secondary impacts. For example, education objectives can be negatively impacted by droughts that affect school attendance as a result of low-income levels and the need for greater household labor. Similarly, low incomes, and subsistent nature of households and livelihoods could decrease the willingness to consume nutritious foods or a decreased ability to participate in civic duties. It is therefore important that the CDCS considers adaptation measures to reduce risk in sensitive sectors of the Ghanaian economy.

To address climate risks effectively requires operative government systems with the flexibility to adapt to shocks and stressors. The poorest communities are often the most impacted by these shocks with little absorptive, adaptive and transformative capacities. Working across DOs, and sectors, to build resilience to beneficiaries will be key to climate resilient programming. The CDCS integrates cross-sectoral work throughout DOs. Vulnerable groups such as women and youth are often the most affected by climate change. As a result, strategies to improve climate resilience at the project level should consider how gender and youth influence vulnerability.

RISK SCREENING ANALYSIS

USAID/Ghana's CDCS is focused on a self-reliant Ghana through accelerated and sustained economic growth, quality services delivered with increased accountability, and sustainable development accelerated in northern Ghana. This screening focused on an integrated approach across sectors that aligned with the CDCS's DOs and Intermediate Results. To address climate risks in some cases, such as understanding the link between climate change and infectious diseases, more information is needed to have a better understanding of the nature of such a relationship. In other instances, such as having the government be responsive to shocks, requires a flexible and strong policy, and funding environment. Lastly, the screening process identified opportunities of working closely with the private sector to identify ways to engage businesses and public actors to diversify products to increase climate resilience. This screening identified areas where climate risks may occur at the project level and should be considered during project and activity design and implementation.

The CDCS climate risk analysis will support projects and activity designs to take advantage of identified steps and opportunities to address climate risks, in order to improve the resilience of social, economic and environmental systems. Some of these measures include:

1. Integrating climate risk into projects and activities that are high risk to ensure that awareness on climate variability and its impact are incorporated in project and activity designs.
2. Solicitations for moderate or high-risk projects and activities will include language to address climate risks.

3. Projects and activity designs should take a multi-sectoral view and consider sequencing, layering, and integrating multiple resilience approaches into a coherent package of risk management and adaptive strategies, tailored to the CDCS zone of influence.
4. Support research development of drought, disease and pest tolerant varieties to reduce vulnerability in the agricultural market system- which will mitigate risk for households.
5. Projects and activities should identify stakeholders and leverage resources to address climate related challenges.

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[1] FAO AQUASTAT. 2014.

[2] World Health Organization. 2014. WHO Provides Technical Support to Fight Cholera Outbreak in Ghana.

[3]Netherlands Commission for Environmental Assessment. 2015

[4] CIA. 2016. The World Factbook

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Intermediate Result	Climate Risks	Risk Rating	How Risks are Addressed in Strategy	Next Steps	Accepted Risk and Opportunities
1.1 Government strengthens the enabling environment for equitable, sustainable growth	Demands on government to address national issues arising from natural disasters (e.g., flooding, drought, earthquakes, etc.) affect availability of resources required to create the needed enabling environment for sustainable and equitable growth.	Low	Program implementation should adopt participatory planning and budgeting, and support citizens' advocacy to strengthen the enabling environment for equitable and sustainable growth. USAID program implementation will support citizens' advocacy efforts to have the Government of Ghana adopt a stronger approach to climate variability and environmental sustainability.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs. Solicitations for moderate or high-risk projects and activities will include language to address climate risks. Projects and activities should identify stakeholders, leverage resources, to address climate related challenges.	**Opportunity:** Understand how climate change and variability limit equitable and sustainable growth and integrate the information into programming as it is beneficial. Projects and activities to share lessons and information on how to address climate risks.

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solicia1.2 Businesses expand through efficient, productive practices	Increased investment uncertainty due to potential market volatility resulting from climate variability. Climate risks associated with business actions are: 1. *Agriculture-based businesses* - pest infestation and severe weather changes, flood, drought, and sporadic rainfall may reduce production, increase the costs of raw materials such as natural resources, labor and other inputs. Processing and storage may also be affected by water quality and availability. 2. Reduced trade and investment in agriculture due to prolonged drought. *3. Non-agric related businesses* - increased frequency and intensity of precipitation may disrupt power supply and	Low to Moderate	Increase availability and access to finance and insurance instruments to address climate risks. Analyze climate information to determine vulnerabilities and risks to key economic sectors and consider climate risk management options for economic sectors. Improving resilience of service delivery to climate shocks include ensuring that programs coordinate and respond to the needs of business actors and stakeholders.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	**Opportunity:** Engage with businesses on how their services may be impacted by climate shocks and stressors. **Accepted risk:** Supply chain systems and infrastructure will be disrupted. Mitigation measures within the mandate/capacity of USAID will be identified and implemented for projects and activities.

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	distribution networks; transportation infrastructure may be damaged making markets, healthcare and educational facilities inaccessible. Business consulting service delivery interrupted due to climate shocks and stressors such as flooding. Gender inequalities exacerbated due to livelihood impacts from climate shocks that affect women's livelihoods more severely.				
1.3 Healthy, skilled citizens contribute to economic growth	Climate stressors (i.e. droughts, floods, pest/disease attacks, etc.), may lead to acute and extreme food insecurity. This may potentially result in acute or chronic nutrition insecurity with implications on the health of citizens and their livelihoods. Challenge in assessing	Moderate	USAID programs will support citizens to advocate for the government to deliver quality services equitably e.g. health and educational facilities, good roads and other social amenities.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	**Opportunity**: Local authorities to prioritize capacity strengthening needs in climate change, risk communication and early warning systems in their medium-term development plans. Local authorities to equip targeted health workers to address potential climate related health risks; collaborate and coordinate with donors working on climate variability activities within the zone of influence.

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	health centers during extreme weather events such as flooding/increased precipitation, storms etc. Road and health infrastructure may be destroyed and medical supplies and citizens accessibility to health facilities disrupted.		USAID programs will help citizens to adopt sustainable and climate resilient initiatives such as renewable energy (to industrial and agricultural production processes) and climate-smart agricultural practices. Improved food storage techniques and a greater emphasis on food processing will allow citizens to consume their food over a longer period, thus smoothing out food consumption and sale patterns and mitigating against climate-induced hunger.	USAID should take a multi-sectoral view and consider sequencing, layering, and integrating multiple resilience approaches into a coherent package of risk management and adaptive strategies, tailored to the zone of influence. Support for outreach services and health facility mapping to improve access to remote areas.	

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	Climatic conditions characterized by dry winds, dust storms, low humidity and cold nights considerably diminishes the local immunity of the pharynx thereby increasing the risk of meningitis[1] Prolonged drought conditions may affect water availability and quality, causing citizens to be exposed to water-borne diseases and other associated illnesses.	High	Continuous integration between agriculture, nutrition and health sectors at the strategy, project and activity levels to monitor and adapt programming to be responsive to climate risks. This integration of these sectors will encourage an expanded program for disease surveillance, immunization and general management of diseases effectively. USAID programs and activities will support citizens to adopt improved nutrition, sanitation and hygiene practices through the WASH program. This program will increase access to quality water and improve hygiene conditions of citizens, helping mitigate the risks of exposure to	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	

[1] Climate Change and Cerebrospinal Meningitis in the Ghanaian Meningitis Belt
Samuel Nii Ardey Codjoe, Vivian Adams Nabie Int J Environ Res Public Health. 2014 Jul; 11(7): 6923–6939. Published online 2014 Jul 7. doi: 10.3390/ijerph110706923

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			water-borne diseases.		
	Poor weather conditions like heat and heavy rains contributing to food scarcity and less consumption of nutritious foods especially among women and children.	High	The strategy has a focus on vulnerable citizens' response to shocks. Interventions will focus on resilient activities for e.g. vocational skills to enable citizens to adapt to shocks through economically viable means to improve their livelihood. Use a multi sectoral nutrition approach to improve nutrition and to save lives, build resilience, increase economic productivity, and advance development.		

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DO 2: Quality services delivered with accountability					
Intermediate Result	Climate Risks	Risk Rating	How Risks are Addressed in Strategy	Next Steps	Accepted Risk and Opportunities
2.1 National government leads policy implementation for efficient service delivery	Policies may not be implementable due to challenges from climate shocks. Extreme weather conditions can decrease livelihoods and consequently decrease tax revenues resulting in decreases in the government's ability to implement policies.	Low	Continuous and active engagement with the government of Ghana institutions (Ministries, Departments and Agencies), private sector partners and communities to clearly identify roles and responsibilities for efficient service delivery, considering potential climate risks/shocks. Close monitoring to identify significant climate changes that may need to be addressed in the design of projects and activities to mitigate the impact of climate variability.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	Opportunity: Integrate climate resilience into sector specific policies as relevant.
2.2 Local authorities manage policy	Extreme weather conditions can affect	Low	Close monitoring and observation to identify	Projects and activities are required to conduct	**Opportunity:** Local authorities to prioritize

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implementation for efficient service delivery	systems (e.g. monitoring to manage policy implementation for service delivery). Extreme weather conditions can decrease livelihoods and consequently decrease tax revenues resulting in decreases in the government's ability to implement policies.		significant climate changes that may need to be addressed to mitigate impact of climate change.	climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	capacity strengthening needs in climate variability, risk communication and early warning systems in their medium-term development plans.
2.3 Service providers adhere to national quality standards	Extreme weather conditions can impact service providers' ability to deliver quality standards (e.g. reduced pupils' attendance in extreme weather conditions; low percentage of educators attending school daily).	Moderate	Strengthen public and private sector service providers' capacity to coordinate, collaborate and compete in delivering quality standards. Improve the service providers' ability to mitigate and adapt to extreme weather events.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	Integrate climate resilience into sector specific policies as appropriate to ensure adherence to standards during service delivery.
2.4 Citizens demand responsive governance	Extreme climate shocks may exacerbate food insecurity and service delivery, disrupting citizen's (especially marginalized and vulnerable populations) participation, engagement	Low	N/A	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project	**Opportunity:** Engage local authorities and communities on the impact of climate shocks and stressors on governance.

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	and demand for responsive governance.			and activity designs.	Increase citizen demand for better governance around mitigating the impacts of climate change on livelihoods.

DO 3: Sustainable development accelerated in northern Ghana					
Intermediate Result	Climate Risks	Risk Rating	How Risks are Addressed in Strategy	Next Steps	Accepted Risk and Opportunities

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3.1 Government improves equitable delivery of quality services in health, education and agriculture	Perennial and consistent periods of droughts can challenge the government and service providers' ability to deliver services equitably. For instance, prolonged drought conditions may hamper agriculture extension services. Lack of water at health facilities can strain infection prevention protocols in health facilities and water and sanitation infrastructure may not function optimally. Floods may impede the movement of people, goods and services, destroy infrastructure, equipment and supplies (health, education, agriculture) provided by government, thereby disrupting the provision of quality services. Damaged facilities such as schools, hospitals/clinics are often left unrepaired for months, thus affecting the delivery of quality services.	High	Strengthen the government's capacity to allocate resources and meet the priority needs in health, education and agriculture and to improve water, sanitation and energy services.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	**Opportunity:** Integrate climate resilience into sector specific policies as relevant.

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	Erratic rainfall poses a challenge for the government to effectively and efficiently plan the timeliness of service delivery (health, education and agriculture).				
3.2 Private sector increases investment	Risks of flooding or other natural disasters may impact facilities or supplies needed by the private sector to conduct business (e.g. consistent electric/water supplies). Natural disaster forces schools/hospitals/etc. (especially privately owned/managed) or other privately owned facilities such as storage facilities to be repurposed to help communities respond to disaster, which could limit use by the private sector to generate business/income. Increase in frequency and intensity of extreme weather, creating a more	High	Support for the government to ensure adequate regulations and policies that guarantee materials, structures, and supplies are suitable for fluctuating environmental scenarios. Explore partnerships with the government, private sector, civil society, and communities to develop and implement strategies that increase resilience to climate shocks and to implement disaster risk reduction approaches. Work with the policy and regulatory environment to examine policies that can increase access to finance.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	**Opportunity**: Work collaboratively with all actors (government, private sector and communities) to identify climate risks/impacts.

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	difficult business enabling and regulatory environment. Communities, particularly women and small businesses, have decreased access to capital due to climate shocks requiring resources to be used for essential needs. Sporadic rainfall (either no rain, or too much rain) results in destruction of community livelihoods and impacts the market system.				

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3.3 Citizens adopt improved practices to advance their well-being and resilience	Increased temperatures may result in low crop yields, post-harvest losses and less availability of nutritious crops, exacerbating health and education challenges. Extreme weather events may result in the occurrence and spread of infectious diseases. This may result in reduced nutrition and less opportunities for business growth and expansion, less educational opportunities e.g. children not attending school, etc. Climatic conditions characterized by dry winds, dust storms, low humidity and cold nights considerably diminishes the local immunity of the pharynx thereby increasing the risk of meningitis.	Moderate to High	Promote joint sectoral climate resilience strategies. Promote diversification of income that will improve resilience as households with different sources of income are more able to absorb shocks and stresses.	Projects and activities are required to conduct climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs. Support research development of drought, disease and pest tolerant varieties to reduce vulnerability in the agricultural market system- which will mitigate risk for households.	**Accepted risk:** Reduced access to health and educational facilities and services (e.g. schools used as shelter during extreme weather events.) **Accepted risk:** Subsistence- oriented and low-income households affected by extreme weather events are unable to afford and sustain improved practices. This may result in food and nutrition insecurity depending on the severity of the event.
3.4 Citizens sustain peaceful communities	Increased risk of climate-related disasters	High	Support the government to ensure conflict	Projects and activities are required to conduct	**Accepted risk:** Schools and clinics used as

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	will tend to exacerbate existing inequalities experienced by marginalized populations (e.g., increase vulnerability of women and children to violence and abuse during and after disasters). Increased temperatures resulting in loss/failure of nutritious crops, and fisheries production, exacerbating health and educational challenges in youth. Poor weather conditions like heat and heavy rains contributing to food scarcity and less consumption of nutritious foods especially among women and children. Prolong drought periods dry up rivers and water sources for communal and household use, limiting access and security to water resources, a conflict trigger between farmers and pastoralists.		mitigation policies and regulations are integrated in all sectors. Increase awareness about how climate change can exacerbate conflict; build the capacity of the government to recognize these stressors and how to mitigate their impact. Engage policy and regulatory actors to advance policies on evidence-based research in agriculture, health, energy and education.	climate risk management screening. This will ensure that awareness on climate variability and its impact are incorporated in project and activity designs.	shelter during extreme weather events including flooding, resulting in short/long term closure of schools and other service delivery facilities.

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	Infectious disease distribution and occurrence changed due to increases in temperature and changes in rainfall patterns.				

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• What are the major sources of greenhouse gas (GHG) emissions? • How has the distribution and composition of the GHG emissions profile changed over time historically, and how is the profile expected to change in the future considering the major emitting sectors and/or sources? • How are the sectors and sources that contribute to GHG emissions contributing to the growth and development of the economy and to meeting development objectives? • What climate change mitigation or low-emission development plans, targets, commitments and priorities have the government (national, state, and local) articulated?	• In 2014 Ghana was responsible for 38.57 million tons of CO_2e of GHG emissions, or 0.071 % of world total. • Per capita Ghanaians produced 1.43 tons of CO_2e of GHG emissions. Worldwide is 6.73 tons of CO_2e per capita. • Energy generation and production has been the leading contributor of GHG emission between 1990 and 2019, contributing about 43.58%. The contribution of energy generation to GHG emission has more than tripled. • Agriculture was the second most significant emitting sector, at 23.83%. Agriculture emissions more than doubled from 1990 to 2014. • Land-use change and forestry (LUCF) accounted for 21.5% of the country's total emissions. LUCF emissions decreased by -59.90% between 1990 and 2014, driven primarily by changes in forest land. • Ghana has committed to cross sectoral reduction in emissions in its National Determined Contribution to the United Nations Framework Convention on Climate Change.
• Which of these sectors is USAID planning to program in? • What opportunities exist to reduce emissions in each DO, IR, or sector? • What opportunities exist to reduce emissions associated with USAID activities?	• USAID will continue to invest in clean energy, primarily through Power Africa. Through Power Africa, the U.S. Government (USG) will prioritize assistance to Ghana's energy sector by supporting least cost planning, competitive procurement, the use of natural gas for generation, and reforms in Ghana's utilities and regulators. With the National Renewable Energy Laboratory (NREL), USAID will assist utilities to protect power system stability in a manner that enables the use of Ghana's least-cost energy resources. USAID will also support private sector solutions for access to modern energy services in unelectrified communities. • USAID will develop sustainable landscape activities to promote conservation of forests, and sustainable livelihoods. This will contribute to the reduction of GHG emissions. These activities will be linked to DO1: Broad-based economic growth accelerated and sustained and IR 1.1: Government strengthens the enabling environment for equitable and sustainable growth.

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	• Many of the soil management and climate-smart agriculture techniques in the agricultural programs under DO 1 will help reduce GHG emissions.
• Does the strategy incorporate ways to reduce GHGs? Reference the page number in the strategy. Note in particular if the Goal, a DO, an IR, or sub-IR specifically incorporates mitigation.	Yes, see above. GHG mitigation will be addressed under DO1: Broad-based economic growth accelerated and sustained and IR 1.1: Government strengthens the enabling environment for equitable, sustainable growth.
• What are the next steps in project and/or activity design to reduce GHGs	Where appropriate, further analysis will be conducted at the project level to help identify opportunities for incorporating technologies and approaches geared towards GHG emission reduction as well as ways to capture these secondary benefits in a cost-effective manner.

Greenhouse Gas Mitigation