INITIAL ENVIRONMENTAL EXAMINATION

PROJECT/ACTIVITY DATA

Project/Activity Name:	Mozambique Agriculture (AG) Portfolio Initial Environmental Examination (IEE)
Geographic Location(s) (Country/Region)**:**	Zambézia and Nampula Provinces; Nacala Corridor
Amendment (Yes/No), if Yes indicate # (1, 2...):	No
Implementation Start/End Date (FY or M/D/Y)**:**	FY21 – FY27
If Amended, specify New End Date:	
Solicitation/Contract/Award Number(s):	TBD
Implementing Partner(s):	TBD
Bureau Tracking ID:	Mozambique AG IEE https://ecd.usaid.gov/document.php?doc_id=53237
Tracking ID of Related RCE/IEE (if any)**:**	**Agriculture, Trade and Business (ATB) Portfolio IEE -** Approved 9/7/2012 http://ecd.usaid.gov/document.php?doc_id=38709 **Agriculture, Environment and Business (AEB) Portfolio IEE,** Amendment 1 - Approved 9/30/15 http://ecd.usaid.gov/repository/pdf/45346.pdf **Agriculture, Environment and Business (AEB) Portfolio IEE,** Amendment 2 - Approved 12/21/2015 http://ecd.usaid.gov/repository/pdf/45911.pdf **Agriculture, Environment and Business (AEB) Portfolio IEE,** Amendment 3 - Approved 9/30/2016 https://ecd.usaid.gov/document.php?doc_id=49091 **Agriculture, Environment and Business (AEB) Portfolio IEE,** Amendment 4 – Approved 3/05/2019 https://ecd.usaid.gov/document.php?doc_id=51889
Tracking ID of Other, Related Analyses:	Mozambique Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) – January 2017/January 2022[1] http://ecd.usaid.gov/document.php?doc_id=50452

[1] Implementing Partners that procure or use pesticides (as defined by USAID) must ensure in consultations with their A/COR and Mozambique Mission MEO availability of a current and duly approved PERSUAP.

ORGANIZATIONAL/ADMINISTRATIVE DATA

Implementing Operating Unit(s): (e.g., Mission or Bureau or Office)	USAID/Mozambique Mission: Agriculture, Environment, and Business Office, and Integrated Health Office for Nutrition components
Other Affected Operating Unit(s):	
Lead BEO Bureau:	AFR Bureau Environmental Officer (BEO)
Funding Account(s) (if available)**:**	Agriculture Funds: $54.5 million WASH Funds: $5 million Nutrition (GH) Funds: $4 million Biodiversity Funds: $3 million
Original Funding Amount:	$66.5 million USD
If Amended, specify funding amount:	
If Amended, specify new funding total:	
Prepared by:	ECOS
Date Prepared:	March 2021

ENVIRONMENTAL COMPLIANCE REVIEW DATA

Analysis Type:	☒Environmental Examination	☐Deferral
Environmental Determination(s):	☒Categorical Exclusion(s) ☒Negative ☐Positive ☐Deferred (per 22 CFR 216.3(a)(7)(iv)	
IEE Expiration Date (if applicable)**:**	Dec 31, 2026	
Additional Analyses/Reporting Required:	EMMP	
Climate Risks Identified (#):	Low ___2__ Moderate ___29___ High __13_	
Climate Risks Addressed (#):	Low ___2__ Moderate ___29__ High ___13__	

THRESHOLD DETERMINATION AND SUMMARY OF FINDINGS

PROJECT ACTIVITY SUMMARY

The Mozambique Agriculture (AG) Portfolio aims to support broad-based economic growth in key areas targeted by USAID's programs by increasing the productivity and profitability of agriculture and agribusinesses; promoting inclusive economic growth and regional and global trade; improving nutrition and food security outcomes for target populations; improving employment opportunities for youth and women; promoting private investments and investment in nature-based tourism; improving community-based coastal resources management; and strengthening the ability of communities to withstand and bounce back from shocks and stresses.

The geographic locations targeted under the project include the provinces of Zambézia, Nampula, and the Nacala Corridor, which is located primarily in Nampula Province.

ENVIRONMENTAL DETERMINATIONS

Upon approval of this document, the determinations become affirmed, per Agency regulations (22 CFR 216).

TABLE 1: ENVIRONMENTAL DETERMINATIONS

Projects/Activities	Categorical Exclusion Citation (if applicable)	Negative Determination	Positive Determination [2]	Deferral [3]
Intervention Category 1: Policy Development and Support	§216.2(c)(2)(i) §216.2(c)(2)(viii)	☐	☐	☐
Intervention Category 2: Capacity Building and Trainings		☒	☐	☐
Intervention Category 3: Support for Access to Finance and Insurance	§216.2(c)(2)(i) §216.2(c)(2)(viii) §216.2(c)(2)(x)	☐	☐	☐
Intervention Category 4: Provision of Grants		☒	☐	☐
Intervention Category 5: Support for Institutional and Organizational Management	§216.2(c)(2)(i) §216.2(c)(2)(iii)	☐	☐	☐
Intervention Category 6: Nutrition Related Assistance		☒	☐	☐
Intervention Category 7: Crop Production, Post-harvest Storage, Transport, and Food Processing		☒	☐	☐

[2] Positive Determinations require preparation of a Scoping Statement and Environmental Assessment.
[3] Deferrals must be cleared through an Amendment to this IEE prior to implementation of any deferred activities.

Intervention Category 8: Livestock and Poultry Production		☒	☐	☐
Intervention Category 9: Integrated Agricultural Systems		☒	☐	☐
Intervention Category 10: Irrigation, Water, Sanitation, and Hygiene (WASH), and Water Harvesting		☒	☐	☐
Intervention Category 11: Marine and Coastal Livelihoods and Management, and Tourism		☒	☐	☐

CLIMATE RISK MANAGEMENT

Mozambique's vulnerability to climate change is a function of its location and geography: large areas of the country are exposed to tropical cyclones, droughts (every three to four years on average), and river/coastal storm surge flooding. More than 60 percent of the population lives in low-lying coastal areas where intense storms from the Indian Ocean and sea level rise put infrastructure, coastal agriculture, key ecosystems, and fisheries at risk. Increased frequency and severity of intense storms, droughts, and floods are likely to exacerbate the country's development challenges.[4]

A Climate Risk Management (CRM) screening is required per the Mandatory Reference for ADS Chapter 201: Climate Risks Management for USAID Projects and Activities.[5] At the time of drafting the project-level CRM for the AG Portfolio, some activity details were still under development and the specific scopes of work for activities, including the location, duration, and other parameters determined by the availability of funding, had yet to be defined. An activity-level CRM is intended to provide a more detailed review based on available information and leveraging the project-level CRM included within this IEE, to help inform design and approach of the activity for addressing climate risks.

The project-level CRM noted **Low**, **Moderate**, and **High** climate risks of sub-activities under the AG Portfolio. The CRM Summary Table is attached in Annex 1.

BEO SPECIFIED CONDITIONS OF APPROVAL

The environmental determinations in this IEE are contingent upon full implementation of the general implementation and monitoring requirements, as well as ADS 204 and other relevant requirements. Where applicable, for construction activities refer to USAID Implementation of

[4] USAID, *Climate Risk Profile: Mozambique,* (2018), Retrieved from ClimateLinks: https://www.climatelinks.org/resources/climate-risk-profile-mozambique
[5] USAID, *Climate Risk Management for USAID Projects and Activities,* (2017): https://www.usaid.gov/ads/policy/200/201mal

Construction Activities, a mandatory reference for ADS Chapters 303[6] and to ADS 303, Grants and Cooperative Agreements to Non-Governmental Organizations[7] (See Chapter 5 of this IEE).

The negative determinations recommended in this IEE are contingent on full implementation of specified conditions and a set of general monitoring and implementation requirements specified in this "BEO Conditions" section as well as Section 5 of the IEE.

New activities and those revised to incorporate a change in scope or nature will require an IEE amendment to identify and address potential environmental impacts. This condition is mentioned again in Section 7 of this IEE.

Any intervention categories not specifically assessed in this document will need to be approved by the BEO in an amendment.

WASH Conditions

As there are WASH activities covered under this IEE, the AFR BEO requires that a water quality assurance plan (WQAP) is prepared according to the WQAP Template (https://www.usaid.gov/environmental-procedures/environmental-compliance-esdm-program-cycle/special-compliance-topics/water):

- Complete a WQAP for WASH-related activities under this IEE, and request and receive AFR BEO review and approval of WQAP.
- Clearly link the WQAP to this IEE.
- The review results should be written and on record in the Signing Statement of the WQAP.

Reporting Conditions

The AFR BEO requests that the activity managers (AMs)/ Agreement/Contract Officers Representatives (A/CORs) provide access to the Regional Environmental Advisor (REA) and to the AFR BEO Team to review (not approve) the Environmental Mitigation and Monitoring Plans/Reports (EMMPs/EMMRs) that will be written to implement the findings of this IEE. These should be uploaded into the appropriate sub-folder(s) of this Google Drive folder: https://drive.google.com/drive/folders/1q7HGMzgopJ-MuKxkQEJ4GSPp9R7Qzv-5?usp=sharing

This will facilitate access by all parties who need these documents, including the Mozambique Mission ("Mission") Environmental Officer and the AOR/COR. This will allow the REA and the BEO Team to spot-check and review these documents to confirm that the mitigations seem appropriate and are cognizant of the specific design of the activities.

COVID-19 Condition

In order to reduce COVID-19 transmission during implementation of these activities, USAID managers must:

[6] USAID, "USAID Implementation of Construction Activities," 2020: https://www.usaid.gov/ads/policy/300/303maw

[7] USAID, "Grants and Cooperative Agreements to Non-Governmental Organizations," 2021: https://www.usaid.gov/ads/policy/300/303

- Ensure that all activities addressed by this IEE adhere to current, applicable COVID-19 guidelines. Refer to the AFR COVID-19 PIEE (available at https://ecd.usaid.gov/document.php?doc_id=52754) for links to U.S. and international guidance on appropriate measures to reduce COVID-19 transmission. Such measures may include, but are not limited to social distancing, use of personal protective equipment, limiting the size of gatherings and travel, and effective disinfection.
- Share with the partner:
    - Applicable COVID-19 guidance from the USAID Mission or U.S. Embassy;
    - Applicable COVID-19 guidance from local authorities;
    - The following Agency-wide "COVID-19 GUIDANCE FOR IMPLEMENTING PARTNERS" page on the USAID website: https://www.usaid.gov/work-usaid/resources-for-partners/covid-19-guidance-implementing-partners.
- Ensure that partners have appropriate training, authorization, and resources to meet the expectations of the applicable guidance while implementing these activities.

For all gatherings, the three measures will be respected as per the Ministry of Health instructions:

- Wearing face masks, Washing hands, and Social distancing.
- People will be informed about ways to prevent COVID-19 transmission over the course of the intervention, including where appropriate, training staff and beneficiaries on social distancing, PPE use, and disinfection.
- The implementation will follow local COVID-19 regulations on the size of gatherings and travel advisories, which are updated every 15 days by the Government of Rwanda and the Ministry of Health based on regular health assessments.
- This Activity will ensure that all the health directives regarding COVID-19 prevention by USAID and the Government of Rwanda are met.

Construction

- NDwC for construction of new or rehabilitated facilities in which the total surface area disturbed is 1000 m2 (10,000 sq ft) or less and there are no complicating factors, as defined:
    - No complicating factors. The site:
        - is not within 30m of a permanent or seasonal stream or water body,
        - will not involve displacement of existing settlement/inhabitants,
        - has an average slope of less than 5%,
        - is not heavily forested or not in an otherwise undisturbed local ecosystem, and
        - is not in a protected area.
    - Sites violating one or more of these criteria are subject to additional determinations and conditions.

- Construction sites bigger than 1,000 sq m (10,000 sq ft) or more than $250,000 requires the A/COR and MEO to jointly consult with the AFR BEO for next steps. No implementation is allowed until the AFR BEO conditions are fully met.

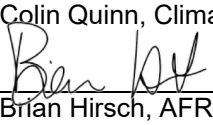
IMPLEMENTATION

In accordance with 22 CFR 216 and Agency policy, the conditions and requirements of this document become mandatory upon approval. This includes the relevant limitations, conditions and requirements in this document as stated in Sections 3, 4, and 5 of the IEE and any BEO Specified Conditions of Approval.

USAID APPROVAL OF INITIAL ENVIRONMENTAL EXAMINATION

PROJECT/ACTIVITY NAME: Mozambique Agriculture, Environment and Business (AEB) Portfolio

Bureau Tracking ID: https://ecd.usaid.gov/document.php?doc_id=53237

Approval:	Cleared Jennifer Adams, Mission Director	04/20/2021 Date
Clearance:	Cleared Martin McLaughlin, Deputy Mission Director	04/20/2021 Date
Clearance:	Cleared Jessie Snaza, AEB Agriculture Team Leader	04/16/2021 Date
Clearance:	Cleared Mary Hobbs, Agriculture, Environmental and Business (AEB) Office Director	04/16/2021 Date
Clearance:	Cleared Kristin Ray, Program Office (PRO) Office Director	04/15/2021 Date
Clearance:	Cleared Eduardo Langa, Mission Environmental Officer and Climate Integration Lead	04/13/2021 Date
Clearance:	Cleared Michael Weaver, Regional Environmental Advisor	03/29/2021 Date
Clearance:	Cleared Eric Davis, Regional Legal Officer [*optional*]	04/19/2021 Date
Clearance:	Cleared Colin Quinn, Climate Integration Lead, Africa Bureau	05/11/2021 Date
Concurrence:	 Brian Hirsch, AFR Bureau Environmental Officer	05/12/2021 Date
Concurrence:	**Cleared** **William Thomas** RFS Bureau Environmental Officer	05/18/2021 Date

DISTRIBUTION:

- USAID/Mozambique Agriculture, Business and Environment (AEB) A/CORs and Activity Managers;
- USAID/Mozambique Office of Acquisition and Assistance (OAA);
- USAID/Mozambique Program Office (PRO);
- USAID/Mozambique Office of Education Democracy and Governance (EDG);
- USAID/Mozambique Integrated Health Office (IHO).
- AFR BEO

INITIAL ENVIRONMENTAL EXAMINATION

CONTENTS

1.0 PROJECT/ACTIVITY DESCRIPTION

1.1 PURPOSE OF THE IEE

The purpose of this document, in accordance with Title 22, Code of Federal Regulations, Part 216 (22 CFR 216), is to provide a preliminary review of the reasonably foreseeable effects on the environment of the USAID intervention described herein and recommend determinations and, as appropriate, conditions, for these activities. Upon approval, these determinations become affirmed, and specified conditions become mandatory obligations of implementation. This Initial Environmental Examination (IEE) also documents the results of the Climate Risk Management (CRM) process in accordance with USAID policy (specifically, Automated Directives System [ADS] 201mal).

This IEE provides an analysis of the USAID/Mozambique AG Portfolio activities and is a critical element of USAID's mandatory environmental review and compliance process meant to achieve environmentally sound design and implementation. Mitigations as specified herein must be incorporated in formal environmental mitigation and monitoring plans (EMMPs) as specified herein.

The environmental analysis and minimum mandatory conditions within this IEE are based on similar activities across the USAID Mozambique portfolio. This IEE, in accordance with 22CFR216, addresses current and proposed activities of the USAID/Mozambique Agriculture (AG) portfolio within the framework of the Country Development Cooperation Strategy for Mozambique.

1.2 PROJECT OVERVIEW

On September 7, 2012 the AFR BEO approved the IEE for USAID/Mozambique's Agriculture, Trade, and Business portfolio. This IEE was amended in September 2015 (Amendment 1) to accommodate a variety of program changes, including an extension in time, increase in project cost estimate, and the addition of new activities. Further development of some of the Biodiversity and Tourism program activities by the USAID Mission led to a subsequent AEB Amendment 2, issued in December 2015, specifically to address changes by describing new activities and providing more detail and planned interventions. Amendment 2 also integrated the US Global Food Security Presidential Initiative "Feed the Future" (FTF) and the Economic Growth under Policy Reform Program, resulting in the new designation "Economic Growth and US Global Food Security Presidential Initiative," or Economic Growth and FTF. Amendment 3, issued in December 31, 2016, replaced the previous amendment in its entirety and applied to new AEB procurements with an expanded geography. Amendment 4 to the original AEB IEE extended the expiration date by four years to December 31, 2022 and aligned the IEE with the Economic Growth and Feed the Future PAD ending March 1, 2022.

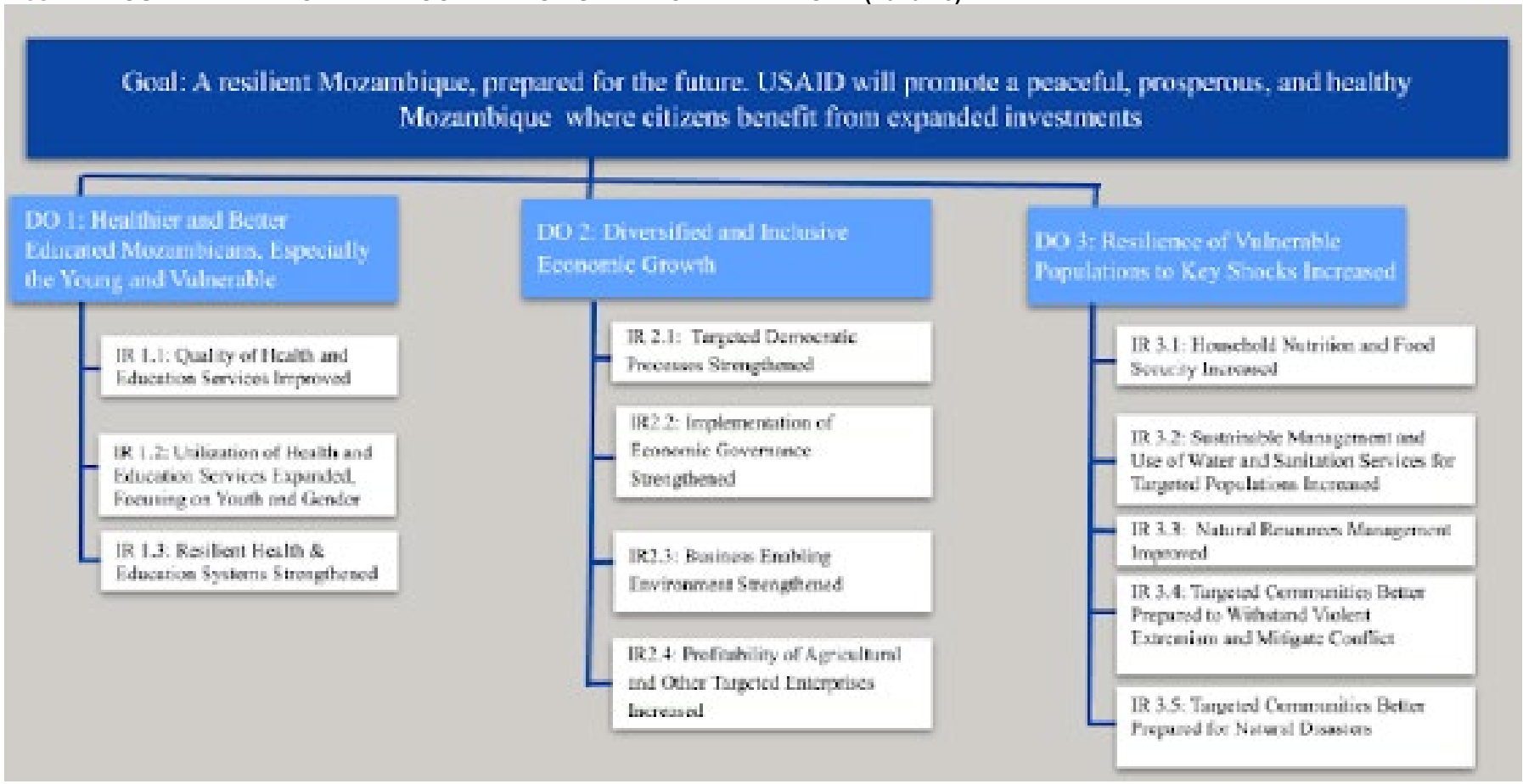
Based on the 2014 - 2020 Country Development Cooperation Strategy (CDCS) for Mozambique, the Mission refined the Economic Growth and FTF PAD by establishing Development Objective (DO) 2, *Resilient Economic Growth Accelerated*. With the addition of resilience as a key consideration, the Food for Peace Development and Food Security Activities (DFSA) integrates three strategic objectives of the Global Food Security Strategy (GFSS). These activities align with CDCS sub-purposes 1 and 2, while expanding the scope of activities to include factors necessary for increased resilience, in line with the GFSS.

Since the development of the Economic Growth and FTF PAD, the USAID FTF Results Framework moved into a new phase guided by the GFSS (2017 - 2021), which identified *Strengthened Resilience Among People and Systems* as a strategic objective. Given Mozambique's designation as a Resilience Focus Country and the Agency's prioritization of Resilience, the AEB Office have designed the new planned activities to support the GFSS.

Additionally, USAID/Mozambique drafted a new Country Development Cooperation Strategy (2020-25), approved in late 2020. All activities under the AG IEE fall under Development Objective 2 (Diversified and Inclusive Economic Growth), and Development Objective 3 (Resilience of Vulnerable Populations to Key Shocks Increased) (see Figure 1).

This AG IEE excludes the cyclone recovery activities, other WASH, and Biodiversity activities which have separate IEEs and Results Frameworks that were approved in the Cyclone Recovery Decision Memo signed by the Mission Director (May 24, 2020), the WASH PAD and accompanying IEE, and the BIOTOUR PAD and accompanying IEE.

FIGURE 1. COUNTRY DEVELOPMENT COOPERATION STRATEGY FRAMEWORK (2020-25)



1.3 ACTIVITY DESCRIPTION

Mozambique achieved significant economic growth between 2000 and 2015, with real GDP growth rates averaging 7 percent, among the highest on the continent. Since then, its economic performance has experienced a sharp reversal, with a slowdown in economic growth, a worsening of the government's fiscal position, and raising debt levels.[8] This has been driven primarily by falling global commodity prices, the impact of the El Niño drought in 2016, and spiraling debt. Moreover, Mozambique was heavily affected in 2019 by two tropical cyclones, Idai and Kenneth, that resulted in significant loss of life and widespread damage to crops and infrastructure.[9] The global pandemic presents a further setback for the country's economic prospects. While Mozambique is endowed with extensive fertile land, abundant water resources, favorable climate, unique cultural and ecological assets, relatively low-cost labor, and proximity to major markets, it remains one of the poorest countries in the world.

With a population of approximately 30 million, of which 63 percent live in rural areas and 60 percent live along the coastline, livelihoods in Mozambique depend to a large extent on natural resources, such as rain-fed agriculture and fishing.[10, 11] Approximately 80 percent of the population derives their living from agriculture,[12] which (combined with fisheries and forestry economic activity), contributed only 26 percent of Gross Domestic Product (GDP) in 2019 according to World Bank data. Thus, agriculture and fisheries are the key sectors in the country's development strategy that focuses on poverty alleviation. These priorities are also reflected in the Government of Mozambique's Five-Year Government Program (PQG), which represents the operational instrument through which Mozambique's long-term development strategy (ENDE) for the period 2015-2035 is implemented. The 2020-2024 PQG defines the following as its central objective:

Adopt a more diversified and competitive economy, intensifying the productive sectors with the potential to increase income generation and create more job opportunities, especially for young people.

In pursuit of this objective, the PQG includes the following relevant strategic focuses:

- Agricultural Production: Investing in its transformation and modernization, especially in the way of organizing production and marketing, involving the private sector, and selecting strategic crops, in order to accelerate household income, create jobs and improve food and nutritional self-sufficiency.
- Fisheries and Aquaculture: Strengthen the development of artisanal fisheries and enhance industrial fishing, creating more job opportunities for Mozambicans, in particular for young people, and contributing directly to improving the population's quality of life with a view to combating hunger, poverty, and malnutrition;

[8] World Bank, "The World Bank in Mozambique," July 1, 2020, https://www.worldbank.org/en/country/mozambique/overview.
[9] UNDP, "About Mozambique," 2021, https://www.mz.undp.org/content/mozambique/en/home/countryinfo.html.
[10] World Bank Group, "Mozambique," 2021, https://data.worldbank.org/country/mozambique?view=chart.
[11] UNDP, "About Mozambique," 2021.
[12] FAO, "Mozambique," 2021, http://www.fao.org/in-action/epic/countries/moz/en/#:~:text=Agriculture%2C%20fisheries%20and%20forestry%20in,their%20primary%20source%20of%20income.

- Tourism: Establish links with the other economic sectors through the search for goods and services, as a way of raising the potential in generating income and creating job opportunities, and promoting leisure, business, and historical-cultural tourism.

The AG Portfolio aims to support broad-based economic growth in key areas targeted by USAID's programs by increasing the productivity and profitability of agriculture and agribusinesses; promoting inclusive economic growth and regional and global trade through a better business environment and access to markets; improving nutrition and food security outcomes for target populations; improving employment opportunities for youth and women; promoting private investments and investment in nature-based tourism; improving community-based coastal resources management; and strengthening communities ability to withstand and bounce back from shocks and stresses.

Activities approved under the AG Portfolio will include the following interventions:

Integrated Agricultural Resilience (RESINA). Integrated Agriculture Resilience activities will be undertaken in the provinces of ZambeziaZambézia and Nampula. The activities will combine agriculture, water supply, sanitation, and hygiene (WASH), and nutrition funding to take a food systems approach to address the key pillars of food security (access, availability, and utilization), and to target root causes of undernutrition. Working on both supply and demand sides of the equation and looking for system level changes to drive desired behavior change, the activity will build key competencies towards resilience, diversify income, and accumulate assets at the local and district levels. For example, planting leguminous crops as inter-cropping will be promoted to increase nitrogen in soils, improve productivity of other crops, and to rehabilitate soil. Activities will also promote practices such as mulching, composting, and low-till / no-till farming, as appropriate.

WASH interventions will encourage resiliency through multiple use systems (MUS) of water for household consumption and agriculture. Activities will include drip irrigation systems for household gardens; clean water for improved nutrition and health impacts; and potentially micro water catchment systems (e.g., in-ground and above-ground water tanks).

This activity will include training and technical assistance for adult and youth agribusiness and agricultural services including organizing networks between youth groups and partnering with local schools. Trainings will also be provided in both technical agriculture best practices and business, such as small-scale poultry and livestock production. Livestock and poultry interventions will be at the household level, with a focus on supplementing household diets with protein (eggs, poultry, small ruminants). Direct purchases of poultry and livestock will not be included, however supporting households with financial aid and technical assistance is planned.

Other activities will include connecting farmers to micro-credit institutions and providing competitive grants to seed companies, women, and youth for small-scale food processing and transport technology adoption.

Key anticipated outcomes form these interventions will include increased productivity of key crops; improved access to markets; increased access to economic opportunities;

increased dietary diversity; increased accumulation of productive and economic assets; and increased access to WASH services.

Markets Systems Development (PREMIER). Markets Systems Development activities focus on building the capacity and resilience of local systems within the Nacala Corridor (an area that traverses central Nampula Province, and includes northern parts of Zambézia Province, and potentially southern parts of Niassa and Cabo Delgado Provinces), leveraging the incentives and resources of the private sector, ensuring the beneficial inclusion of the poor, and stimulating change and innovation that will continue to grow beyond the life of the project. The market systems approach has three core principles: i) aligning incentives; ii) increasing cooperation and competition; and iii) catalyzing investment and leveraging the investments of USAID and other donors.

The activity will focus on national, provincial, and regional opportunities to increase adoption of improved technologies, reduce post-harvest losses, introduce and diversify food processing (especially for fortified foods), improve business organization, and managerial skills through trainings for firms and farmers that will increase the competitiveness and profitability of agribusiness.

Key anticipated outcomes from these interventions include improved function of markets to deliver agriculture products and services to the last mile; increased productivity of targeted agricultural enterprises; and increased employment and job opportunities for youth.

Resilient Coastal Communities: These activities will support sustainable livelihoods in coastal areas of Zambézia and Nampula with a focus on opportunities for youth and women. Planned activities include coastal and marine biodiversity conservation (e.g., mangroves and fisheries management) and agriculture investments to increase incomes, improve diets, and create jobs in the agriculture, fisheries, and tourism sectors.

This activity will include organizing fisheries off-take agreements, supporting the development of naturally occurring crab beds, and community management and training for potential for sustainable oyster and prawn beds and practices.

Sustainable mangrove management activities will be focused on helping community awareness around conservation of mangroves, crab fattening operations (in naturally occurring crab beds), and sourcing of non-timber products. Mangrove activities will be focused on supporting natural regeneration rather than replanting.

Agriculture activities will include training and support for climate smart agricultural practices, introduction and improved management of tree crops, and diversification of household diets.

Tourism activities may include training youth for employment in the hospitality industry by linking small agriculture producers to local hotels (e.g., as snorkeling guides) or encouraging entrepreneurship in the tourism sector. There is also the potential for marine ecotourism promotion at point during the life of the program.

Key anticipated outcomes from these interventions include increased social bonding; increased incomes; strengthened employment capacities; improved nutrition/diets; and

community co-management of coastal and marine protected areas (e.g., coral reefs, seagrasses, mangroves).

The actions planned or anticipated under this activity are assigned to Intervention Categories to allow for flexibility in assessing environmental, social, and climate risks and establishing appropriate environmental threshold determinations. Intervention Categories are provided in Table 2. As noted in Section 5, actions not covered by this IEE will require an amendment prior to implementation.

TABLE 2: INTERVENTION CATEGORIES AND SUB-ACTIVITIES

Intervention Category 1: Policy Development and Support
1.1 Support for development and promulgation of food fortification policies
1.2 Support for development and promulgation of business and finance enabling policies
Intervention Category 2: Capacity Building and Trainings
2.1 Capacity building, awareness building, and training activities that do not have direct impacts on the environment
2.1.1 Training adults and youth in entrepreneurship, business organization and management, financial management, marketing, information systems, and other classroom or distance training (e.g., farming as a business)
2.1.2 Training firms and individuals how to become investment ready, how to seek funds, how to borrow funds, and how to manage borrowed funds
2.2 Capacity building and training activities that may have direct and/or indirect impacts on the environment
2.2.1 Hands-on practical trainings and demonstrations for adults and youth including through local schools and universities and internships, vocational training, and apprenticeship in agribusiness and agricultural services delivery including: o Crop production (e.g., good agricultural practices, integrated soil management, irrigation/integrated water management, integrated pest management, crop management, and other issues) o Livestock production (e.g., livestock management, livestock nutrition) o Aquaculture (marine and fresh water) o Mixed farming systems/agroforestry o Post-harvest practices (harvesting, logistics, storage, pest control) o Food processing (technologies and processes, new products development, food safety, quality control) o Ecotourism/hospitality
Intervention Category 3: Support for Access to Finance and Insurance
3.1 Support for establishment of Village Savings and Loans groups
3.2 Development and strengthening of linkages to micro-credit institutions
3.3 Support to private sector for developing weather indexed insurance for farmers
3.4 Support and development of linkages to investments, donors, and programs for improving food security including food fortification
Intervention Category 4: Provision of Grants
4.1 Provision of grants that may include the following: o Grants for development of indexed insurance products for farmers o Grants for women and youth owned agricultural enterprises o Grants for household-level livestock for consumption and income o Competitive matching grants to improve and diversify business services, with a focus on food systems o Challenge fund to identify solutions for addressing soil fertility, agriculture extension, input supply, and last mile transport needs o Small competitive grants for young entrepreneurs
Intervention Category 5: Support for Institutional and Organizational Management

5.1 Support for networking and networks development, organization, and association building; establishing and strengthening partnerships; development of market and community linkages and similar activities that include meetings and information transfer
5.2 Assessments, evaluations, studies, and data gathering and processing activities including performance monitoring and evaluation activities
Intervention Category 6: Nutrition Related Assistance
6.1 Support for food processing R&D and marketing of products (e.g., fortified flours, corn/soy blend, soy for human consumption)
6.2 Support for establishment and dissemination of food safety and fortification standards
Intervention Category 7: Crop Production, Post-harvest Storage, Transport, and Food Processing
7.1 Crop Production
7.1.1 Provision of technical and financial support for crop production activities including land preparation, soil fertility management, and planting
7.1.2 Provision of technical and financial support and agricultural extension services for improved access, production and use of agricultural inputs including: o Seed o Fertilizer o Pesticides o Agricultural technology o Irrigation
7.1.2.1 Activities addressing introduction and use of certified seed including community-based seed production
7.1.2.2 Activities addressing soil fertility management
7.1.2.3 Activities addressing integrated pest management
7.1.2.4 Introduction of agricultural technology (e.g., equipment, machinery)
7.2 Post-harvest Storage, Transport, and Food Processing
7.2.1 Support for small scale food processing of nutritious products including implementation and enforcement of food fortification policies
7.2.2 Development of food quality and safety standards
Intervention Category 8: Livestock and Poultry Production
8.1 Financing and support for livestock and poultry farming, training, linking to input suppliers
8.2 Support for marketing of animal products
Intervention Category 9: Integrated Agricultural Systems
9.1 Encourage and promote crop diversification and farming systems that are inclusive - crop, livestock, forestry
Intervention Category 10: Irrigation, Water, Sanitation, and Hygiene (WASH), and Water Harvesting
10.1 Technical and financial assistance for development of Multiple Use Water Systems (MUS) for domestic use and irrigation
10.2 Technical assistance for development of hand washing stations and latrines
10.3 Support for and introduction of water harvesting technologies
Intervention Category 11: Marine and Coastal Livelihoods and Management, and Tourism
11.1 Marine and Coastal Livelihoods
11.1.1 Support for establishing of fisheries no take zones (NTZs)
11.1.2 Support for development of crab fattening
11.1.3 Support for development and production of non-timber forest products from mangroves
11.1.4 Support for sustainable oyster harvesting
11.2 Marine and Coastal Management
11.2.1 Support for mangrove forest management
11.2.2 Support for community coastal management and organization of Beach Management Units, community co-management of coastal and marine protected areas (e.g., coral reefs, seagrasses, mangroves)
11.2.3 Support integrated coastal zone management at the regional scale (e.g., marine spatial

planning, marine tenure, and protected area management)
11.3 Tourism
11.3.1 Youth-focused marine and coastal tourism skills development
11.3.2 Tourism promotion, with a focus on marine ecotourism promotion
11.3.3 Linking fisheries and other producers with restaurants

Will this project/activity involve construction[13] as defined by ADS 201 and 303? Yes ☒ No ☐

Substantial construction activities are not planned under the AG Portfolio. However, small-scale construction may be required for WASH activities such as washing stations, latrines, and multiple-use water systems (i.e., water resource systems which tap and store water and distributes it to households in small communities to meet both domestic and household agricultural needs).

[13] Construction, as defined by ADS 201 and 303, includes: construction, alteration, or repair (including dredging and excavation) of buildings, structures, or other real property and includes, without limitation, improvements, renovation, alteration, and refurbishment. The term includes, without limitation, roads, power plants, buildings, bridges, water treatment facilities, and vertical structures. In the box below, describe any construction planned for this project/activity. Refer to ADS 201maw for required Construction Risk Management procedures.

2.0 BASELINE ENVIRONMENTAL INFORMATION

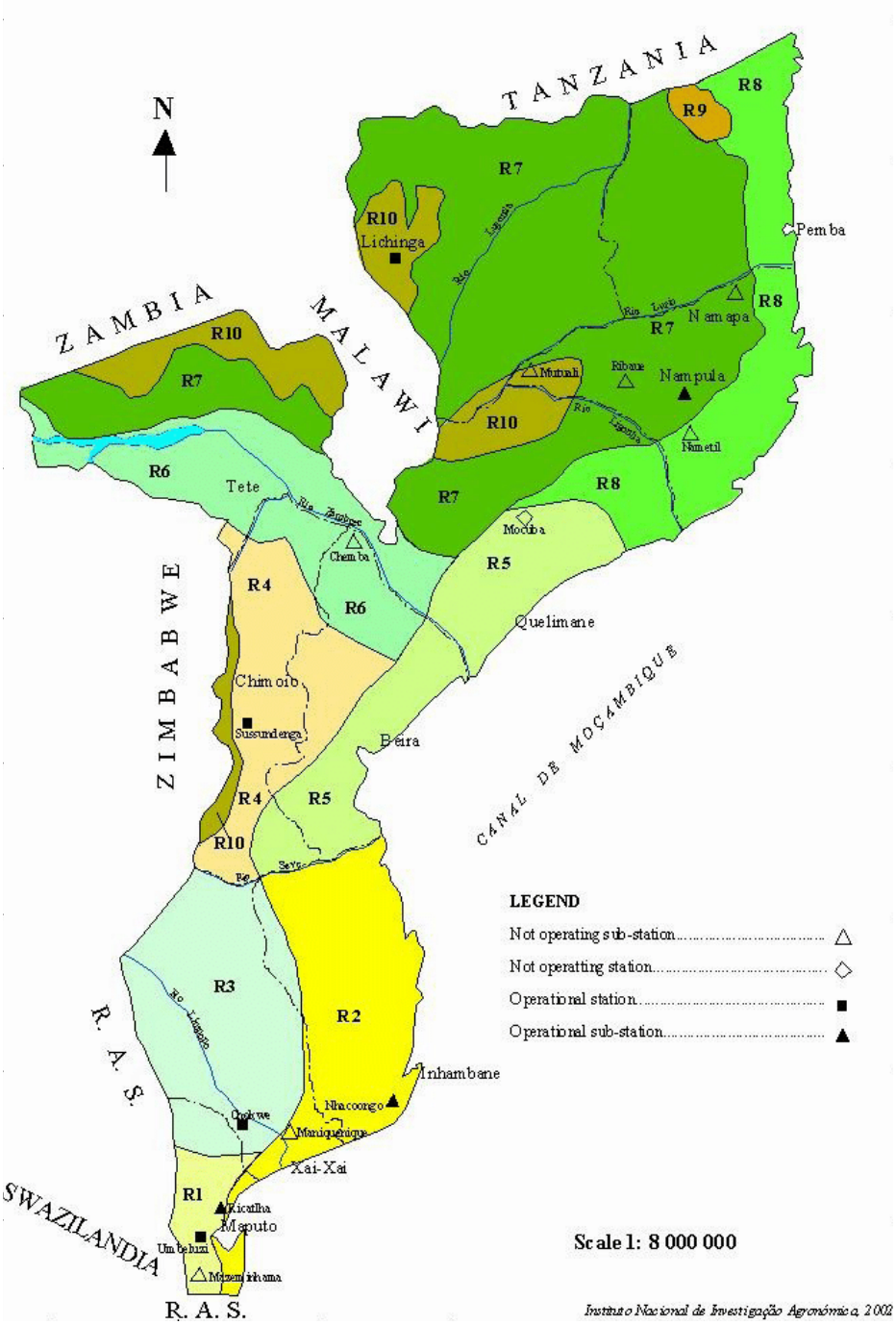
2.1 LOCATIONS AFFECTED AND ENVIRONMENTAL CONTEXT (ENVIRONMENT, PHYSICAL, CLIMATE, SOCIAL, THREATENED AND ENDANGERED SPECIES)

Mozambique is located on the south-east coast of Africa and occupies an area of 786,380 km^2.[14] It has borders to the North with the Republic of Tanzania, to the West with Malawi, Zambia, and Zimbabwe, to the South with eSwatini and the Republic of South Africa. The East is bordered by a 2,470 km long coastal line along the Indian Ocean.

The agro-ecological zones in Mozambique can be broadly divided into three macro-agro-ecological zones: North (Niassa, Cabo Delgado, and Nampula), Central (Zambézia, Tete, Manica, and Sofala) and South (Inhambane, Gaza, and Maputo). These macro-agro-ecological zones are based on climate, vegetation, altitude, soils, and farming systems.[15] These three macrozones are composed of 10 diverse agroecological zones that are pictured in Figure 2 and described in Table 3 below.[16] Agriculture is practiced in all zones, with the exception of highly arid regions in the south and southwest part of Gaza province, which are only suitable for livestock.[17]

[14] World Bank Open Data, "Land area (sq.km) – Mozambique," Accessed January 29, 2021, https://data.worldbank.org/indicator/AG.LND.TOTL.K2?locations=MZ.
[15] FAO (Food and Agriculture Organization [of the UN])/WFP (World Food Programme), *Crop and Food Security Assessment Mission to Mozambique,* Rome, 2010, FAPWFP.
[16] Ministério da Agricultura e Segurança Alimentar. *Anuário de Estatísticas Agrárias 2015.* Maputo: República de Moçambique, 2015.
[17] Kilara C Suit and Vikas Choudhary, "Mozambique Agricultural Sector Risk Assessment: Risk Prioritization," *Agriculture global practice technical assistance paper*; (Washington, DC.: World Bank, 2015), https://openknowledge.worldbank.org/handle/10986/22748.

FIGURE 2: AGROECOLOGICAL ZONES



Source: Instituto Nacional de Investigação Agronómica (2002) / Ministério da Agricultura e Segurança Alimentar (2015)

Note: Research stations are indicated on the map according to symbols provided in the legend

TABLE 3: AGROECOLOGICAL ZONES

R1	Located in the southern region of Mozambique and comprises the interior of Maputo Province (Matutuine, Magude, Moamba, Namaacha, and Boane). The Zone is characterized by alluvial and basaltic soils and is generally flat. Rains are concentrated in the period October / November to March.
R2	Located in the southern region of Mozambique and comprises the coastal strip of Maputo (Marracuene and Manhiça), Gaza (Bilene-Macia, Chibuto, and Manjacaze) and nearly all of

	Inhambane Province (Zavala, Inharrime, Panda, Jangamo, Homoíne, Inhambane, Maxixe, Morrumbene, Funhalouro, Massinga, Vilanculo, Inhassoro, and Govuro) up to the Save River. This zone is characterized by a large predominance of sandy soils, interspersed with hydromorphic soils. The main rivers in this area include Limpopo, Inharrime, Govuro, and Save. In most of the Zone, the rainy season runs from November to March, but coastal zones typically see rains in October.
R3	Located in the southern region of Mozambique and comprises the entire central and northern part of Gaza Province (Chokwé, Guijá, Chigubo, Chicualacuala, Massingir, and Massangena) and a narrow strip to the west of Inhambane Province (Mabote) and extends to the Save River. Soils are relatively poor and can have high salinity. The zone's main rivers include Limpopo, Olifants, Changane, and Save. It is one of the driest areas in Mozambique. The lowest rainfall values in the country are recorded in this area in Pafuri, Gaza Province.
R4	Located in the central region of Mozambique and comprises almost all of the Province of Manica (Machaze, Mossurize, Manica, Gondola, Chimoio, Macossa, and Sussundenga) and about a fifth of the central and interior part of Sofala Province (Maringue, Chibabava, and Gorongosa). The main types of soils in this area are Ferras soils and Lito soils (thin soils, with original material not decomposed at small depths). The Save river, on the southern border, and the Buzi, Pungwe and Mavuzi rivers, pass through this area. The climate characteristics of this zone are mild temperatures.
R5	Located in the central region of Mozambique and comprises the low-lying regions of Sofala (Machanga, Buzi, Nhamatanda, Muanza, Cheringoma, and Marromeu) and Zambézia (Mopeia, Chinde, Inhassunge, Quelimane, Nicoadala, Namacurra, Maganja da Costa, and Mocuba) near the coast with the Indian Ocean, and extends to Pebane. In general, the soils have a clayey texture, with poor drainage. In the highlands, the soils have a light texture. In areas close to the coast where the topography is flat and where sea water infiltration occurs, the soils can have high salinity. The months of December to March are the rainiest.
R6	Located in the central region of Mozambique and includes the northern districts of Sofala (Caia and Chemba) and Manica (Tambara and Guro), the southern districts of Zambézia (Mopeia and Morrumbala) and the southern districts of Tete Province. The most prevalent soils in this area are the Luvisols. The average annual precipitation varies between 400 and 700 mm and is concentrated between the months of November to March.
R7	Comprises the areas with medium altitude of the Provinces of Zambézia (Alto Molocué, Lugela, Ile, Gilé, and Namarroi), Nampula (Murrupula, Nampula-Rapale, Ribaué, Lalaua, Mecuburi, and Muecate), Tete (Moatize and Chiuta), Cabo Delgado (Namuno, Balamae Montepuez) and Niassa (Mecanhelas, Cuamba, Maúa, Majune, Mecula, Marrupa, Mavago, Lago, N'gauma, Metarica, Nipepe, and Muembe). The altitude of this Zone varies between 200 to 1,000 meters. The topography of the region is relatively flat and undulating. The main types of soils are Feral soils, Lixisols, and Luvisols. Soil fertility is moderate to good. Rains occur between November and March / April.
R8	Comprises the coastal coast that stretches from Pebane, in the Province of Zambézia to Quionga, in the Province of Cabo Delgado. Comprises the districts of Moma, Mogovolas, Angoche, Mongincual, Meconta, Monapo, Mossuril, Erati, Nacala-Velha, Nacala-Porto, Ilha de Moçambique, and Memba (Nampula Province), Chiúre, Acuabe, Mecufi, Pemba-Metuge, Quissanga, Meluco, Macomia, Muidumbe, Mocímboa da Praia Nangade e Palma (Cabo Delgado Province), and Pebane (Zambézia Province). The main types of soils are Luvisolos, Cambisolos, and Arenossolos. Rains occur between the months of November to April / May.
R9	Comprises the Mueda plateau and part of the Macomia district. The zone's altitude is over 200 meters. No major rivers cross the area, although small streams are present. In terms of the geology of this area, it is almost exclusively comprised of metamorphic rocks. The soils characteristic of this zone are classified as Phaeosem. Rains occur in the period between December and March / May.
R10	Is dispersed in the north and central regions of Mozambique and includes areas with altitudes above 1000 meters, namely the plateaus of Lichinga, in the Province of Niassa, Angónia, Machanga Marávia, and Tsangano, in the Province of Tete, Gurué and Milange, in Province of Zambézia, and Serra Choa and Espungabera, in the Province of Manica. Ferral soils predominate in this area, and in general, the pH is low due to high agricultural activity. The average annual rainfall is over 1,200 mm and can exceed 2,400 mm in the highlands of Zambézia.

Each of Mozambique's 10 provinces is divided into districts which are sub-divided into administrative posts and localities. The government structures are represented down to the local level. Below the local authority is the community, which in most cases is headed by community leaders (with traditional authority).

Climate

Mozambique has a tropical to sub-tropical climate and experiences two seasons: a cool and dry season from April to September and a hot and humid season between October and March. Average annual temperatures in warmer regions of Mozambique range from 20 to 27°C, and in cooler regions average annual temperatures range from 15 to 25°C. The wet season in Mozambique lasts from November to April, bringing around 150 to 300 mm of rainfall per month in the north and 50 to 150 mm per month in the south.

Mozambique is vulnerable to climate change[18] due to its geographical location in the intertropical convergence zone and downstream of shared river basins, its long coastline, and the existence of large areas with altitude below sea level. The country's vulnerability to climate change is increased by its low adaptive capacity, poverty, and weaknesses in its infrastructure and social services.[19]

The effects of climate change can be seen in changes in temperature and precipitation patterns, sea-level rises, and the increase in the frequency and intensity of extreme climatic events, such as droughts, floods, and tropical cyclones, which affect different regions of the country every year. These events result in the loss of human lives, crops, livestock, and wildlife; the destruction of social and economic infrastructure; increased dependency on international support; food price increases; harm to human health and the environment; and the destruction of ecosystems.[20]

Projected changes for climate in Mozambique include:[21,22]

- Average temperature increase of 1°C in the next 20 years; more marked temperature increases in the interior, southern and coastal areas.
- Increase in the number of days exceeding 35°C.
- Decrease in the number of nights below 25°C.
- Increase in intensity of rainfall events and cyclones.

[18] In this document, the term "climate change" refers to both climate variability and climate change. "Climate variability" refers to variations in climate (including the normal highs and lows, wet and dry periods, hot and cool periods and extremes) and can refer to month-to-month variability, year-to-year variability, and even decadal scale variability. "Climate change" refers to those variations as well as persistent change in climate over decades or longer (USAID, "Climate-Resilient Development: A Framework for Understanding and Addressing Climate Change", 2014).
[19] Ministry of Land, Environment and Rural Development, "6th National Report on the Implementation of Convention on Biological Diversity in Mozambique," 2019.
[20] "National Climate Change Adaptation and Mitigation Strategy", Approved during the 39th Session of the Council of Ministers, Maputo, 13th November 2012.
[21] USAID, "Mozambique Climate Vulnerability Profile," January 2013, https://www.climatelinks.org/resources/mozambique-climate-vulnerability-profile.
[22] USAID, "Climate Risk Profile: Mozambique," July 2018, https://www.climatelinks.org/resources/climate-risk-profile-mozambique.

- No statistically significant rainfall changes, but likely continuation of delayed start and earlier end to the rainy season in the north.
- Increase in droughts for central and southern regions; more floods during rainy seasons.
- Additional sea level rise of 13–56 cm by 2090.

Natural Resources

Mozambique is rich in natural resources. About 70 percent of the territory of Mozambique is covered with vegetation, including 51 percent forests (40.6 million hectares) and 19 percent of the other types of woody vegetation.[23] There are 25 major rivers with permanent flow of water, the most important being the Zambezi River and several inland bodies of water and floodplains. The FAO estimates that Mozambique has 36 million hectares (ha) of cultivable land, but only one-tenth is suitable for crop production, of which 12 percent is being used. Mozambique possesses sites of high biodiversity importance, such as the Gorongosa Mountain, the Archipelago of Quirimbas, and the Chimanimani Massif.

Agriculture Sector

Agriculture continues to be the mainstay of Mozambique's economy, contributing about a quarter of its GDP and employing approximately 80 percent of its labor force.[24] Smallholder farmers account for the vast majority of this sector's production, with some 3.2 million smallholder farmers accounting for 95 percent of the country's agricultural production. Roughly 400 commercial farmers produce the remaining 5 percent.[25]

Animal production plays a fundamental role in the lives and nutrition of the rural population, particularly poultry and small ruminants (e.g., sheep and goats). In urban areas, beef and poultry provide more than 80 percent of the meat supply to formal outlets.[26]

Difficult access to credit and markets, low use of improved inputs, and the dominance of rain-fed agriculture make the sector vulnerable to shocks. Chronic food insecurity is exacerbated by climate shocks and natural disasters such as floods, droughts, and cyclones.

In March and April 2019, Southern Africa was hit by two subsequent cyclones, Idai and Kenneth, that resulted in significant loss and damages, and close to 2.2 million people in need of urgent assistance in Mozambique alone. The UN estimates that Cyclone Idai and subsequent flooding destroyed more than $773 million in buildings, infrastructure, and crops (at least 715,378 hectares of cultivated land were flooded[27]). The loss of crops, livestock, stored food, and seed supply not only restricted the ability of households to meet their food and other basic needs, but it also caused losses in agricultural wage labor and therefore income.

---

[23] Nhancale, B., Mananze, S., Dista, N., Nhantumbo, I., & Macqueen, D., *Small and medium forest enterprises in Mozambique.* (London: International Institute for Environment and Development, 2009).
[24] USAID, "Agriculture and Food Security," January 21 2021, https://www.usaid.gov/mozambique/agriculture-and-food-security.
[25] FAO, "Mozambique at a glance," 2021, http://www.fao.org/mozambique/fao-in-mozambique/mozambique-at-a-glance/en/.
[26] Ibid.
[27] National Institute for Disaster Management (INGC), "Press Release: Mozambique Cyclone Idai Post Disaster Needs Assessment, as cited by Post Cyclone Idai Cabinet for Reconstruction," *Government of Mozambique*, (Beira, Mozambique, 2019).

The country has the potential to play a role in regional food security and international markets given its geographic location between landlocked countries and access to ocean ports. Improving agricultural productivity and ensuring access to food are top priorities for the country's leaders.[28]

Marine Fisheries Sector

Mozambique is endowed with fairly rich fisheries resources, both marine and freshwater. The marine waters cover an area of about 100,000 km^2 with an exclusive economic zone (EEZ) of 200 nautical miles.[29] The main fishing areas are located at the Sofala Bank, Inhambane, Vilankulos, Chiluane, and Beira. The most productive marine fishing areas lie in front of the main rivers draining into the sea (most notably the Sofala Bank and Maputo Bay).

The most important marine species include:

- Crustacean (prawns, deep water shrimp, crayfish, lobsters, and crabs)
- Marine finfish (demersal and pelagic species mainly grouper, snapper, emperor and sea bream also high migratory tuna species of yellow fin, big eye and albacore, swordfish, and shark)
- Cephalopods and Mollusks (squid, octopus, sea cucumbers, bivalves)

Most of the fishing is carried out by the artisanal/small-scale segment, working along the whole coast. Industrial fishing is carried out especially in the central part of the country (Sofala Bank), mainly through joint ventures between the Government of Mozambique and foreign fishing companies, which target especially shallow-water shrimp. There is also a national fishery targeting shrimps. In addition to 1,400 motorized vessels, a large number of non-motorized boats (45,000) are used in marine and inland fishing.[30]

Total capture production in 2017 was around 329,320 tons with about 232,300 tons from marine fisheries and the balance from inland water production. Most of fish caught is sun-dried and traded at the regional level in Mozambique and neighboring inland countries. In 2017 imports of fish and fishery products were valued at $74 million and exports at $42.2 million.[31]

[28] USAID. (2021, January 21). *Agriculture and Food Security*. Retrieved from USAID Mozambique: https://www.usaid.gov/mozambique/agriculture-and-food-security
[29] Food and Agriculture Organization of the United Nations. *National Fishery Sector Overview, The Republic of Mozambique.* (Rome: FAO, 2007).
[30] FAO, "Fishery and Aquaculture Country Profiles, The Republic of Mozambique," April 2019, http://www.fao.org/fishery/facp/MOZ/en
[31] Ibid.

Artisanal fisheries are extremely important to food security and nutrition in Mozambique.[32, 33, 34, 35, 36] Fish provide almost 40 percent of dietary animal protein in the country, and around 85 percent of the annual catch is produced by small-scale fishers and consumed locally.[37, 38] Artisanal fisheries employ an estimated 334,000 people and there are a significant number of women involved in fishing with small seines, on foot, and picking of seafood (particularly clams), especially in the protected areas of the coast. [39, 40]

Overfishing and destructive fishing techniques are leading to declining fish catches and degraded ecosystems, while the rapid and uncontrolled expansion of artisanal fisheries is threatening the sustainability of Mozambique's fisheries sector.[41]

Marine Ecosystems

Coral reefs, seagrass meadows, sandy and rocky shores, and estuaries are found along Mozambique's coastline. Coral reefs cover an area of about 1,860 km^2. These are mainly fringing reefs and are found almost continuously in northern Mozambique as far south as the Primeiras and Segundas islands, and more sporadically farther south.[42, 43]

Mangroves cover about 357,000 hectares,[44] with major mangrove areas located along the coast of central Mozambique, centered on the Zambezi River Delta. Maputo Bay is the largest

[32] Benkenstein, A., "Small-Scale Fisheries in a Modernizing Economy," *South African Institute of International Affairs (SAIIA)*, August 2013. https://www.africaportal.org/documents/10818/saia_rpt_13__benkenstein_20130911.pdf
[33] USAID, "The Importance of Wild Fisheries for Local Food Security: Mozambique," 2015.
[34] USAID, "Fishing for Food Security: The Importance of Wild Fisheries for Food Security and Nutrition," April 2016, https://www.agrilinks.org/sites/default/files/resource/files/pa00m1t3.pdf
[35] USAID, "The Role of Wild-Caught Fisheries in African Development," *DAI BRIDGE Project*, May 2018.
[36] USAID, "Integrating Food Security and Wild Caught Fisheries Management in USAID Programming, "2018.
[37] Benkenstein, 2013.
[38] USAID, 2015.
[39] DAI, *Mozambique Biodiversity and Tropical Forestry Analysis*, (Washington: USAID, 2019).
[40] FAO, April 2019.
[41] World Bank, "Boosting Fisheries in Mozambique," March 19, 2019, https://www.worldbank.org/en/news/video/2019/03/19/boosting-fisheries-in-mozambique
[42] Pereira, Marcos A.M., Alice Massungue, Boris Atanassov, Carlos Litulo, Filipa Carreira, Isabel Marques Da Silva, Jess Williams, et al., "Mozambique Marine Ecosystems Review," *Biodinâmica/Centro Terra Viva*, 2014, https://www.researchgate.net/publication/271510319_Mozambique_marine_ecosystems_review
[43] Obura D. et al., "Coral reef status report for the Western Indian Ocean*," Global Coral Reef Monitoring Network*, page 171, 2017, https://www.icriforum.org/wp-content/uploads/2019/12/COI%20REEF%20LR%20F2.compressed.pdf
[44] Ministry of Land, Environment and Rural Development, "6th National Report on the Implementation of Convention on Biological Diversity in Mozambique," 2019.

mangrove area in southern Mozambique and in the north, there are sizable mangrove areas in Pemba Bay and Quirimbas National Park, and around Angoche.[45, 46, 47]

There are nine mangrove species in Mozambique and households derive both direct income from mangrove products (timber, building poles and fuelwood) and benefit from indirect mangrove ecosystem services (spawning, breeding grounds for fish, and erosion protection). In coastal zones, intact mangroves provide an important hydrological ecosystem service by blocking saltwater intrusion into coastal aquifers. Coastal communities often depend on groundwater wells for drinking water and sanitation, and saline drinking water can cause diarrhea, especially in children.[48] Mangroves are also an important nursery area for larval and juvenile fish and crustaceans, and therefore contribute to food security and nutrition.

Major threats to mangroves include over exploitation for firewood and clearing of mangroves for solar salt production. Potential threats to mangroves include oil pollution and uncontrolled coastal development and industrial development along the coast. The rate of mangrove deforestation is estimated as 1,821 hectares a year and is highest in Maputo and Beira.[49]

Cyclones Idai and Kenneth, with gusty winds ranging from 180 to 220 km/h accompanied by heavy rainfall, caused significant social and economic impacts. Around Beira where coastal damage was the worst, two important mangrove systems were impacted: the Chiveve River, (known as Beira's 'lung'), which drains waste and rainwater through several urban and suburban neighborhoods on its way to the sea, and the Nhangau mangroves, managed and largely protected by community organizations.[50] Damages to the mangroves included defoliation and breakage as well as sedimentation. A rapid mangrove damage assessment as part of the 2019 Mozambique Cyclone Idai Post Disaster Needs Assessment estimated that around 2,500 ha of mangroves in the area around Beira were impacted, but the extent of detailed damages and losses were difficult to determine due to inaccessibility, the inherent challenges in an immediate calculation of disruptions to ecosystems services, and the delayed effects of disasters at this scale (e.g., die-back of mangroves 9 months-1 year after impact).

Protected Areas

There are currently 58 conservation areas in Mozambique according to the World Conservation Monitoring Center, including: 8 national parks; 14 forest reserves; 4 national reserves; 2 buffer zones; 1 special reserve; 1 sanctuary; 2 environment protection areas, 20 conservation areas

[45] Barbosa FMA, Cuambe CC, Bandeira SO, "Status and distribution of mangroves in Mozambique," *South African Journal of Botany* 67 (2001):393–398.
[46] Ferreira M.A, Andrade F, Bandeira S.O, Cardoso P, Mendes RN, Paula J., "Analysis of cover change (1995–2005) of Tanzania/Mozambique trans-boundary mangroves using Landsat imagery," *Aquatic Conservation: Marine and Freshwater Ecosystems,* 19 (2009): S38–S45.
[47] Macamo, C., J. Adams, H. Mabilana, S. Bandeira, and V. Machava, "Spatial dynamics and structure of human disturbed mangrove forests in contrasting coastal communities in eastern Africa" *Wetlands*, 38 (2018):509–523.
[48] DAI, "Mozambique Biodiversity and Tropical Forestry Analysis," (Washington: USAID, 2019).
[49] Barbosa et al, 2001.
[50] Post Cyclone Idai Cabinet for Reconstruction, "Mozambique Cyclone Idai Post Disaster Needs Assessment," *Government of Mozambique*, (Beira, Mozambique, 2019).

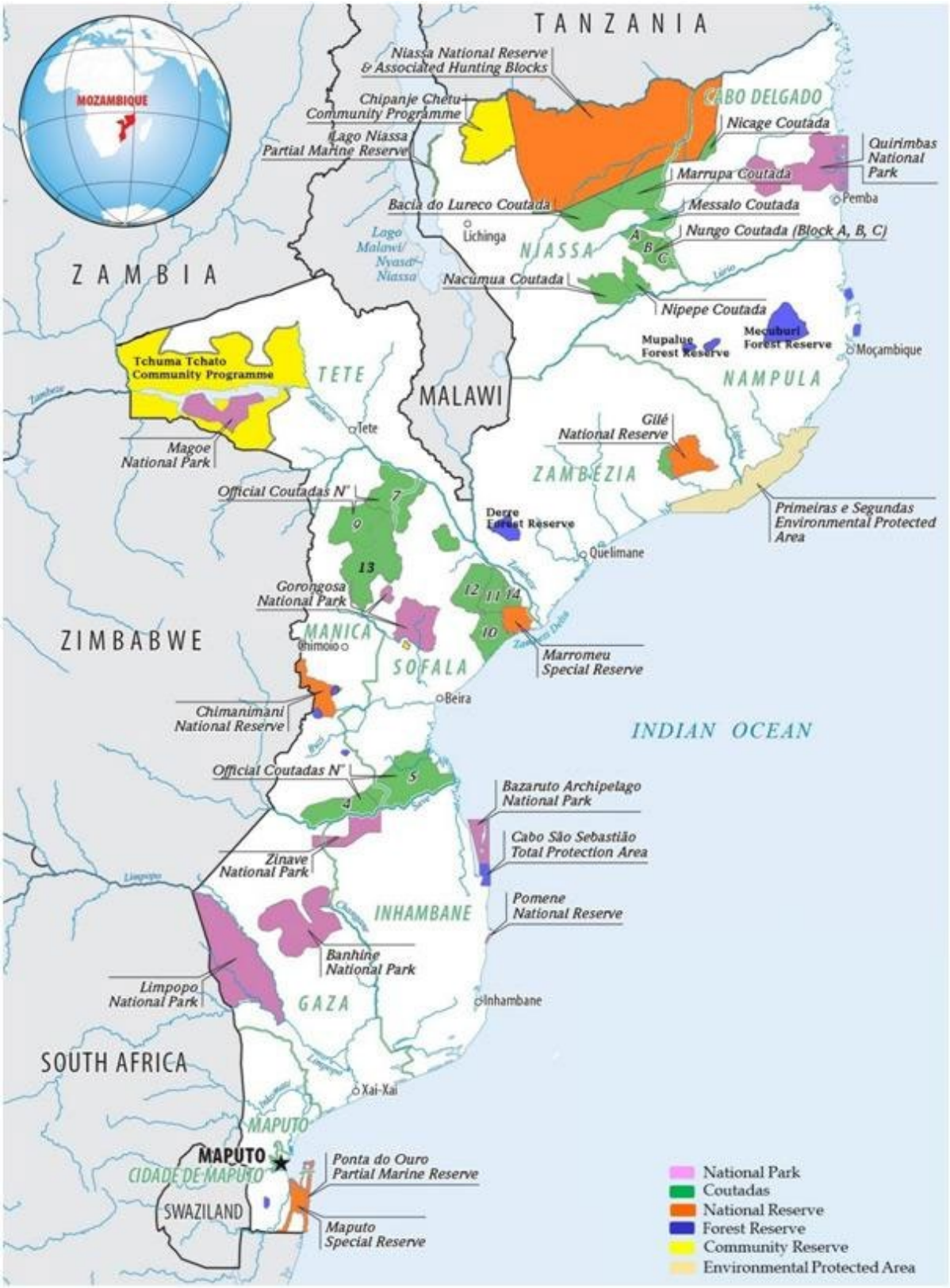
managed for sport hunting (referred to as *coutadas*); 3 community conservation areas; and 1 ecological park.[51]

Mozambique currently has 2 sites designated as Wetlands of International Importance (Ramsar Sites), with a surface area of 4,534,872 hectares (Zambezi Delta and Lake Niassa, including its coastal zone).[52]

Data from the World Conservation Monitoring Center currently estimate that conservation areas cover 233,249 km^2, or around 29.5 percent, of Mozambique's land surface, but only 12,326 km^2, or 2.15 percent, of its national marine territory.[53] See Figure 3 for a map of conservation areas in Mozambique.

[51] UNEP-WCMC, "Protected Area Profile for Mozambique from the World Database of Protected Areas," February 2021: www.protectedplanet.net
[52] The Ramsar Convention Secretariat, "Mozambique Ramsar Sites," 2014: https://www.ramsar.org/wetland/mozambique
[53] UNEP-WCMC, 2021.

FIGURE 3: MAP OF CONSERVATION AREAS OF MOZAMBIQUE



Source: Biofund.org.mz (2019)

Intervention Zone and Specific Locations of Activities

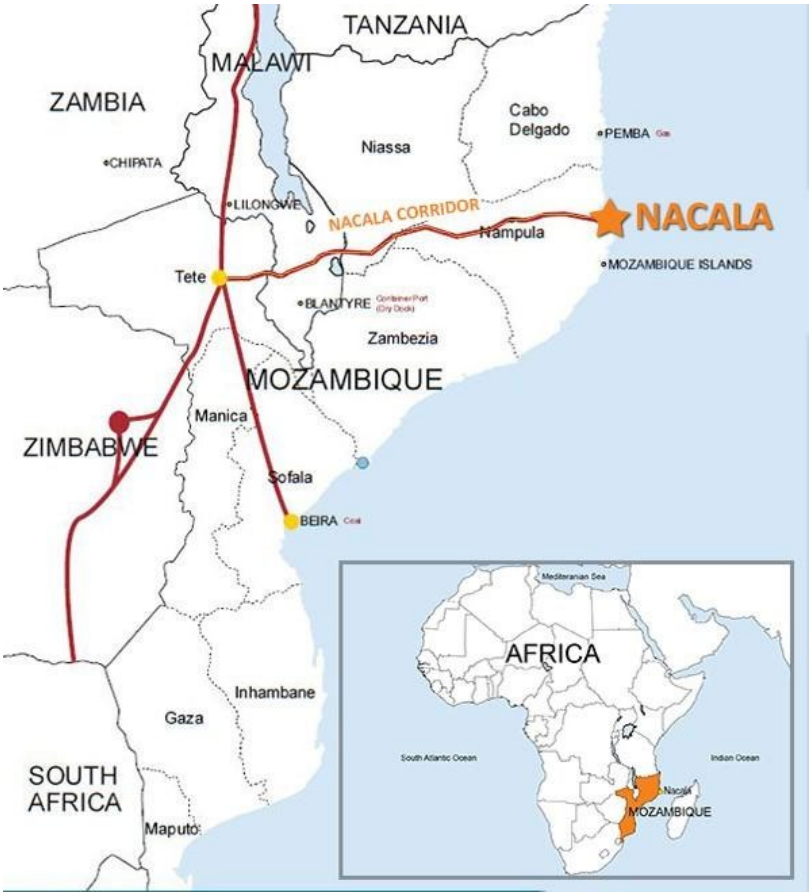
The geographic locations targeted under the project include the Zambézia and Nampula provinces and areas of the Nacala Corridor (see Figure 4 below for a map of Mozambique's provinces and Figure 5 for a map of the Nacala Corridor). The Nacala Corridor lies in the Northern Region of Mozambique running across the provinces of Tete, Zambézia, Niassa, Nampula, and Cabo Delgado, and was historically an international railway system as an export route from Malawi to Nacala Port between the 1970s and 1990s. AG Portfolio activities within the Nacala Corridor are planned in central Nampula Province, northern parts of Zambézia Province, and potentially southern parts of Niassa and Cabo Delgado Provinces.

The exact location of anticipated activities within these provinces and the Nacala Corridor has not been identified yet. In some cases, program components will be focused geographically, such as the marine and coastal livelihoods and management, and tourism activities. In other cases, the determinations and recommendations made in this IEE are applicable wherever these programs are implemented in the future (particularly training, capacity building programs, and support for access to finance and insurance). No program activities will be undertaken within protected areas.

FIGURE 4: MOZAMBIQUE PROVINCES

Source: Mapsland.com

FIGURE 5: NACALA CORRIDOR



Source: Parque Comercial de Nacala, 2014[54]

2.2 APPLICABLE AND APPROPRIATE PARTNER COUNTRY AND OTHER INTERNATIONAL STANDARDS (E.G., WHO), ENVIRONMENTAL AND SOCIAL LAWS, POLICIES, AND REGULATIONS

Actions of the implementer will be subject to the law, policies, and regulations of Mozambique as well as international conventions and agreements.

Government of Mozambique Policy, Legal, and Administrative Framework

The Constitution of the Republic of Mozambique requires the State to ensure:[55]

i. the promotion of initiatives to ensure ecological balance and environmental preservation; and
ii. the implementation of policies to prevent and control pollution and integrate environmental concerns in all sectoral policies so as to guarantee the citizen the right to live in a balanced environment supported by sustainable development (Article 117º).

[54] https://www.gica.global/initiative/nacala-corridor *Image Credit: Parque Comercial de Nacala, 2014. Available from:* http://nacala.co/about-nacala/#.
[55] Constitute Project, "Mozambique's Constitution of 2004 with Amendments through 2007," Retrieved from Mozambique 2004 (rev. 2007), 2012: https://www.constituteproject.org/constitution/Mozambique_2007.pdf?lang=en

The 1995 National Environment Policy in Mozambique, Resolution nº 5/95, establishes the basis of all environmental legislation in the country. According to Article 2.1, the main objective of this policy is to ensure sustainable development in order to maintain an acceptable balance between socioeconomic development and environmental protection. To achieve this objective, the policy must ensure, among other requirements, the management of natural resources in the country and the environment in general to preserve their functional capacity and production for present and future generations.

The 1997 Environmental Law (Law no 20/97) sets the environmental foundations for the policy and institutional framework for environmental management in Mozambique. The Law establishes the scope, institutions, and appropriate management tools to deal with environmental management issues.

The Ministry of Land and Environment (MTA) is the main government entity with the responsibility for coordination and management of government actions related to the environment at all government levels (national, provincial, district).

National EIA Requirements

The Environmental Impact Assessment (EIA) is recognized to be a vital procedure for effective development planning and is therefore a centerpiece for environmental protection in the country. Mozambique's EIA is regulated by the Decree 54/2015 of 31 December, which revokes Decree 45/2004 of 29 September and 42/2008 of 4 November.[56]

The establishment EIA categories include the following:

Category A⁺: Subject to a full Environmental Impact Assessment – Including independent review by Specialists

This Category is assigned to projects which due to their complexity, location or irreversibility and magnitude of their potential impacts, require a high level of environmental and social scrutiny as well as being subject to a full environmental impact assessment (EIA). In this case, the EIA process is supervised by independent specialists with proven experience in the subject matter.

Examples include:

a) Physical and economic displacement of families outside the pre-defined resettlement process under the Regulation for Resettlement Process Resulting from Economic Activities;
b) Activities located in biodiversity areas of high value, such as:
    - Habitat of significant importance for critically endangered or threatened species as per the national or international legislation;
    - Habitats of significant importance for endemic species;
    - Habitat of significant importance for protected species at national level;
    - Habitats with adequate conditions for the existence of significant concentrated migratory species;
    - Areas associated with key evolutive processes such as mangroves.

[56] Netherlands Commission for Environmental Assessment, *Mozambique EIA profile*, (Utrecht: NCEA, 2020).

c) Activities irreversible potential impacts prior to application of any mitigation measure, in areas where anthropogenic actions have not substantially altered the native ecological functions and the species composition of the area.
d) Activities that are located in conservation and protection areas and respective buffer zones, except those activities proposed by the entity managing the conservation area, when proposed activities are to improve site's management.

Category A: Subject to a full Environmental Impact Assessment

Examples include:

- Areas and ecosystems meriting special protection under national or international law such as: coral reefs; mangroves; native forest; small islands; areas at risk of imminent erosion including dunes; areas exposed to desertification; protected areas; marshland; areas with flora, fauna or ecosystems on the verge of extinction; unique areas or ecosystems; areas of cultural, archaeological or historical importance; sources of rivers and other water supplies.
- Areas of high development where conflicts exist as to the use and distribution of resources.
- Areas near water courses or areas used as water sources by the community.
- Infrastructure activities that include:
    - Any activity requiring population resettlement;
    - Urban land allocation or development exceeding 20 ha;
    - Tourism establishments outside urban areas or in areas without urban; plans, with capacity of more than 150 beds or of more than 10ha; or
    - Road and rail bridges of more than 100 m in length.

Category B: May be subject to a Simplified Environmental Assessment

Activities in this category differ from those in Category A principally in respect of the scale of their impacts. These are activities which do not generally affect human populations or environmentally sensitive areas. Any negative impacts they may have are for a short duration, lower intensity, smaller scale, and magnitude than those classified as Category A and few of their impacts are irreversible. The impacts which result from these activities allow the definition and application of relatively simple mitigation measures and therefore only require a Simplified Environmental Study (EAS). This category includes those activities which do not fall within Categories A and C.

Examples include:

- Projects similar to Category A but smaller in scale of impacts and with impacts of short duration, lower intensity. Only requiring and EAS.

Category C: Subject to the norms of good environmental management

These are activities which do not normally require an EIA or EAS since their negative impacts are negligible, insignificant, minimal, or non-existent. There are no irreversible impacts in this category and the positive impacts are clearly greater or more significant than the negative ones.

Examples include:

- Vehicle maintenance, Irrigation schemes between 50-100 ha; hotels, motels, and guesthouses in cities or towns.

Other environmental and social legislation relevant to the project

In addition to the national environmental legislation and EIA process described above, the following laws are relevant to the project:[57]

- Environmental auditing and inspection
  - The Decree on Environmental Auditing (Decree nº 25/2011, of 15th de June).
  - The Decree on Environmental Inspection (Decree nº 11/2006 of 15th June)
- Solid Waste Management
  - Regulations on the Management of Hazardous Wastes (Decree nº 83/2014)
  - Regulation on Urban Waste Management (Decree nº 94 / 2014)
- Water Resources
  - Water Law (Law nº 16/91 of 3 August)
  - Regulation on water licensing and concession (Decree nº 46/2007).
  - Regulation of public systems of water supply and wastewater disposal (Decree nº. 30/2003 of 1 July)
- Coastal Management
  - Regulation for the Prevention of Pollution and Marine and Coastal Environment Protection (Decree nº 45/2006 of 30 November)
- Land use Planning
  - Land Use Planning Law (Law nº 19/2007 of 18th July)
  - Land use planning Law Regulation (Decree no 23/2008, of 1st of June
  - Directive for expropriation for land use planning purposes- Ministry Diploma nº 181/2010 of 3rd November.
- Forestry and Wildlife – MTA oversees Forestry and Wildlife management through the National Directorate of Forestry
  - Forestry and wildlife law (Law nº 10, of 7th July 1999)
  - Forestry and Wildlife Law Regulation (Decree nº 12/2002, de 6 de June)
- Conservation areas – MTA is responsible for Conservation areas through ANAC (National Authority for Conservation Areas)
  - Conservation and Biodiversity Law (Law nº 16/2014, revised in 2017) establishes provides for the legal establishment of Conservation Area Management Boards (CGAC), Conservation Law Regulation -Decree Nr. 89/2017.

3.0 ANALYSIS OF POTENTIAL ENVIRONMENTAL RISK

Table 4 below describes potential adverse environment, social, and climate impacts of the anticipated interventions.

All activities undertaken that require face-to-face communications may be impacted by the spread of communicable diseases such as COVID-19. Therefore, USAID Managers and partners must follow the BEO Specified Conditions of Approval regarding COVID-19 (see Threshold Determination and Summary of Findings above) in order to reduce the potential for transmission during implementation of AG activities.

TABLE 4. POTENTIAL IMPACTS – AG PORTFOLIO

[57] Ministry of Land and Environmental (MTA), "Environmental and Social Management Framework (ESMF)," *Land Administration Project Interventions (LAPI),* (Maputo: Republic of Mozambique, n.d.).

Intervention Category/Sub-Activity	Potential environmental and social impacts
Intervention Category 1: Policy Development and Support	
1.1. Support for development and promulgation of food fortification policies	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
1.2 Support for development and promulgation of business and finance enabling policies	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
Intervention Category 2: Capacity Building and Trainings	
2.1 Capacity building, awareness building, and training activities that do not have direct impacts on the environment	
2.1.1 Training adults and youth in entrepreneurship, business organization and management, financial management, marketing, information systems, and other classroom or distance training (e.g., farming as a business)	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
2.1.2 Training firms and individuals how to become investment ready, how to seek funds, how to borrow funds, and how to manage borrowed funds	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
2.2 Capacity building and training activities that may have direct and/or indirect impacts on the environment	
2.2.1 Hands-on practical trainings and demonstrations for adults and youth including through local schools and universities and internships, vocational training, and apprenticeship in agribusiness and agricultural services delivery including: o Crop production (e.g., good agricultural practices, integrated soil management, irrigation/integrated water management, integrated pest management, crop management, and other issues) o Livestock production (e.g., livestock management, livestock nutrition) o Aquaculture (marine and fresh water) o Mixed farming systems/agroforestry o Post-harvest practices (harvesting, logistics, storage, pest control) o Food processing (technologies and processes, new products development, food safety, quality control)	Adverse direct impacts associated with practical hands- on demonstrations and vocational training will depend on the nature of the training provided. This could include the generation of waste which can have a serious negative impact on both public health and economic development. Inappropriate solid waste management may result in negative impacts such as increased disease transmission or other threats to public health, contamination of groundwater and surface water, greenhouse gas emissions and other air pollution, damage to ecosystems, and injury to people with access to inappropriately designed landfills. Adverse indirect impacts may include those associated with occupational risks and potentially placing vocational trainees in enterprises operating under conditions of substandard social and environmental industry practices. Climate-related changes that adversely affect the industries in which vocational is being provided may reduce the effectiveness of vocational trainings. Potential impacts associated with hands-on practical training on crop production; integrated pest management; post-harvest storage, transport, and food processing; livestock and poultry production; integrated agricultural systems; and WASH and water harvesting are covered in their respective intervention categories below.

Ecotourism / hospitality	
Intervention Category 3: Support for Access to Finance and Insurance	
3.1 Support for establishment of Village Savings and Loans groups	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
3.2 Development and strengthening of linkages to micro-credit institutions	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
3.3 Support to private sector for developing weather indexed insurance for farmers	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
3.4. Support and development of linkages to investments, donors, and programs for improving food security including food fortification	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
Intervention Category 4: Provision of Grants	
4.1 Provision of grants that may include the following: o Grants for development of indexed insurance products for farmers o Grants for women and youth owned agricultural enterprises o Grants for household-level livestock for consumption and income o Competitive matching grants to improve and diversify business services, with a focus on food systems o Challenge fund to identify solutions for addressing soil fertility, agriculture extension, input supply, and last mile transport needs o Small competitive grants for young entrepreneurs	While the provision of grants itself has no direct environmental impact, the use of grant money can potentially have cumulative and indirect environmental and social impacts. The extent and types of impacts depends on the scale and complexity of the operation, as well as the sector and its geographic location. Examples of potential environmental impacts from micro and small businesses and other enterprises that are recipients of grants include: ● Improper use of chemicals ● Inadequate treatment or disposal of waste ● Uncontrolled emissions ● Competition for diminishing resources and space among increasing number of microenterprises ● Production techniques that make intensive use of non-renewable resources ● Increases in land under cultivation ● Shifting cultivation into more marginal lands ● Increase vegetation clearance ● Increased overexploitation of natural resources Potential social impacts include reinforcing or worsening existing social inequalities by dispersing grants disproportionately to historically advantaged groups or along certain racial, ethnic, religious, gender, class, ability, or sexual orientation lines.
Intervention Category 5: Support for Institutional and Organizational Management	
5.1 Support for networking and networks development, organization, and association building; establishing and strengthening partnerships; development of market and community linkages and similar activities that include meetings and information transfer	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
5.2 Assessments, evaluations, studies, and data gathering and processing activities including	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.

performance monitoring and evaluation activities	
Intervention Category 6: Nutrition Related Assistance	
6.1 Support for food processing R&D and marketing of products (e.g., fortified flours, corn/soy blend, soy for human consumption)	Potential impacts of research, promotion, and marketing of food products are mostly those associated with related facilities and laboratories such as generation of liquid and solid waste, use of hazardous chemicals, emissions, and consumption of water and energy. Risks associated with new products development that may include food safety and lack of proper labeling.
6.2 Support for establishment and dissemination of food safety and fortification standards	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
Intervention Category 7: Crop Production, Post-harvest Storage, Transport, and Food Processing	
7.1 Crop Production	
7.1.1 Provision of technical and financial support for crop production activities including land preparation, soil fertility management, and planting See Section 7.1.2 for activities supporting agricultural inputs	Activities that directly or indirectly support intensification of agricultural production may contribute to the following adverse impacts: **Land conversion.** Clearing of land for agricultural production can contribute to change and fragmentation of landscape, to altering microclimates at forest edges, and to isolating animal populations. Agricultural actions can lead to encroachment into marginal lands, such as hills, wetlands, shallow lakes, and protected areas, and to land degradation. **Loss of natural habitat and biodiversity.** Land conversion can adversely affect natural habitats with impacts on all live organisms and biodiversity. **Loss of vegetation.** Where agricultural lands are expanded, vegetative strips may be destroyed. Agricultural crop production that requires land expansion may require clearing of forests or brush or conversion of grasslands. Clearing of pristine or fully-grown forest and utilizing grasslands for agricultural production can result in increased erosion, loss of biodiversity, decreased rainwater infiltration into aquifers, increased soil temperatures, and reduced buffering against floods and droughts. **Introduction of non-native species.** Unconsidered introduction of crop, mono-cropping, agroforestry and cover crops, hedges, and windbreaks, riparian buffers, and other intentionally introduced non-native species that are new to a given ecological zone, present risks that the species will become disruptive or invasive. Introduced exotic species may spread diseases, out-compete native species for resources, become feral, become pests, or interbreed with native species. **Soil erosion.** Crop production practices can be the direct cause of soil erosion as well as exacerbate water and wind erosion. As the soil erodes it absorbs less water and the excess runs off. This runoff removes the fertile topsoil

	necessary for crop production and can have serious off-site consequences, including gully formation, landslides, siltation and sedimentation of water bodies, downstream flooding, and damage to productive infrastructure. **Siltation of water bodies.** Eroded topsoil is carried by runoff into water bodies. Once in the slower-moving water, the soil settles, altering the terrain, water depth and water clarity, potentially causing harm to fish and bottom-dwelling populations. Siltation can intensify downstream flooding by reducing channel capacity and can also fill the upstream areas behind a dam. Siltation may then require repeated dredging that is an expensive process with its own potential environmental impacts. Siltation in wetlands and coastal areas can reduce productivity and marine populations. Large-scale siltation impairs shipping and river transport, flood control, the efficiency of dams, fisheries and aquaculture, urban sewage treatment, and drinking water supplies. **Reduction in soil fertility.** Soil fertility is dependent on three major nutrients (nitrogen, phosphorous and potassium), various trace elements, and organic matter content. A productive soil contains sufficient quantities of each of these elements, which are slowly removed by repeated cropping without adding fertilizers; leaching due to rainfall; short fallow periods; and burning of crop residues. The subsequent decline in soil fertility often occurs in conjunction with soil erosion, with each problem exacerbating the other. **Reductions in surface & groundwater quantity.** Excess extraction of water for irrigation from shallow or deep wells, or from river diversion can reduce the quantity of surface or groundwater, with adverse impacts on ecosystems, downstream users, and other users of the aquifer. **Pollution and reduction in surface and ground water quality.** Use of agricultural inputs including toxic substances has impact on all live organisms including on people's health, and impacts soil, air, and water. Incorrectly applied agrochemicals, fertilizers, manures, and pesticides and sediment can migrate from a farmer's field to local water sources, causing environmental harm and adversely affecting human health and actions. Moreover, such reductions in water quality can impact other uses of water or water bodies, such as drinking water, sanitation, fishing, aquaculture, recreation and tourism, and other farms. **Social impacts.** Crop production systems have social impacts that may particularly affect women and children. These may include labor issues such as an underpaid or underrepresented labor force, land ownership, water use issues, and related conflicts. **Worker health and safety.** Agricultural workers face occupational health and safety risks, including physical

	injuries and exposure to agricultural chemicals. **Impacts of agriculture on climate change.** Agriculture is one of the largest contributors to greenhouse gas emissions, including emissions derived from agricultural soils (i.e., application of excessive nitrogen fertilizers, decomposition of organic material, and use of fossil fuels). **Consequences of climate change on agricultural activities.** Increased temperatures and rainfall variability as well as increased intensity, duration, and/or frequency of extreme climate-related events such as droughts and floods may increase the prevalence and/or change the distribution range of pests and disease. This could negatively impact crops and seed germination, alter effectiveness of agricultural inputs (e.g., require increased pesticide inputs) and reduce food and nutritional security due to crop failures and food shortages. These factors may also reduce the availability of water for irrigation and crop production, drive the conversion of new lands for agricultural production (destroying or fragmenting natural habitats in the process), increase rates of soil degradation and/or desertification, and reduce populations of pollinating insects (threatening agricultural resilience and crop productivity). Furthermore, increases in extreme climate events such as heatwaves and flooding may reduce agricultural yields or otherwise damage agricultural livelihoods. For example, these factors could result in land degradation, crop failure, and increase gendered practices in agriculture, limiting alternative livelihood options for women and youth.
7.1.2 Provision of technical and financial support and agricultural extension services for improved access, production and use of agricultural inputs including: o Seed (see 7.1.2.1) o Fertilizer (see 7.1.2.2) o Pesticides (see 7.1.2.3) o Agricultural technology (see 7.1.2.4) o Irrigation (covered under Multiple-Use Systems, see 10.1) See Section 7.1.1 for general crop production activities	USAID agricultural production activities and/or activities by beneficiaries may lead to both direct and indirect agricultural intensification and introduction or increase in use of agricultural inputs, including seed, fertilizer, pesticides, and other inputs. Agricultural intensification allows farmers to obtain greater yields per unit of land and time, but it also requires higher amounts of external agricultural inputs and technologies. Agricultural technologies and inputs have adverse impacts on ecosystem services such as soil fertility, water quality, biodiversity, air quality, and climate.
7.1.2.1 Activities addressing introduction and use of certified seed including community-based seed production	**Lack of access to quality planting materials.** According to the World Resources Institute, breeding of improved crops is generally credited for half of all historical yield gains. However, growers often use or purchase poor quality seed and planting materials from uncertified sources. Using low quality seed and planting materials can have a negative effect on crop yield and waste agricultural inputs. Seedborne fungal pathogens

	can cause important diseases of crops. **Introduction of new seeds and planting materials.** Caution must be exercised when introducing non-native seeds and plant materials. Introduction of invasive species adversely impacts the environment, can displace or destroy native plants and insects, and damage crops. **Breeding high input seed**. Modern high-performance seed varieties are often bred for high input systems placing increased demand on water, energy, fertilizer, and pesticides.
7.1.2.2 Activities addressing soil fertility management	Soil fertility management activities commonly use organic and inorganic amendments and fertilizers, impact of which varies depending on the type and methods of application. **Surface water and groundwater contamination.** Over-application or organic and inorganic amendments and fertilizers can lead to runoff into surface waters or leaching into groundwater particularly in sandy soils. The discharge of fertilizers into waterways may also lead to simulated rapid growth of photosynthetic plankton and algae which decompose and deplete oxygen causing death of aquatic species such as fish. **Human health hazards.** Exposure to fertilizer fumes may cause irritation to the eyes, nose and respiratory tract, inhalation or ingestion of some pesticides may be poisonous, and touching some fertilizers may cause skin irritation. Improperly stored fertilizer can be a health hazard. Phosphorous fertilizers also commonly contain cadmium which is toxic to humans. Children exposed to water with high levels of nitrates contained in fertilizers may develop blue-baby syndrome or methemoglobinemia. **Fertilizer burn.** Excessive application of fertilizer is not only wasteful but can result in fertilizer burn, usually by excess nitrogen salts. **Greenhouse gas emissions**. Fertilizers contribute to greenhouse gas emissions as soil microbes in areas of application produce nitrous oxide. Manure used as fertilizer also releases gases. **Acidification.** Nitrogen fertilizers can contribute to soil acidification that can cause loses in productivity. Note that some fertilizers have dual action as pesticides.
7.1.2.3 Activities addressing integrated pest management	Integrated pest management (IPM) is an environmentally sensitive approach to pest management that uses current, comprehensive information on the life cycles of pests and their interaction with the environment. IPM takes advantage of all appropriate pest management options including, but not limited to, the judicious use of pesticides.[58]

[58] United States Environmental Protection Agency "Integrated Pest Management (IPM) Principles," April 2019: https://www.epa.gov/safepestcontrol/integrated-pest-management-ipm-principles

	The use of pesticides can result in serious implications to human health and contamination of the environment. Pesticides can directly harm humans and other life forms and cause indirect adverse effects when they are released into the environment. Pesticide poisoning can cause deaths and chronic diseases. The high-risk groups exposed to pesticides include agricultural farm workers, but pesticides also affect agricultural food consumers and the public. that is exposed to pesticides in the environment, for example, through inadequate notification of pesticide application. AG Portfolio activities will potentially include the procurement and use of pesticides by the IPs as part of their IPM strategies and systems. There is also the potential that IPM training and capacity building activities for beneficiary farmers related to the lifecycle of pesticides handling will include some or all of the following topics: procurement, transport, mixing, application, storage, and disposal, as well as general training in safe pesticide use (potentially including use of artisanal chemicals and pesticides).
7.1.2.4 Introduction of agricultural technology (e.g., equipment, machinery)	Impacts of introducing agricultural machinery such as mechanical plows, trucks, and harvesting and processing equipment will depend on the nature of the equipment. In addition to the positive transformative roles that replacement of manual labor can affect, it may also have some adverse impacts such as facilitating agricultural land expansion, increased soil erosion, compaction and siltation, use of fossil fuels and resulting soil, water and air pollution, occupational health and safety risks, and social impacts such as modification of the workforce composition.
7.2 Post-harvest Storage, Transport, and Food Processing	
7.2.1 Support for small scale food processing of nutritious products including implementation and enforcement of food fortification policies	The impacts of food processing activities will depend on the specific nature and scale of the activities. In general, while each small enterprise may not impact the environment significantly, cumulatively, adverse impacts of an industry can become significant. **Agribusiness enterprises.** Agribusiness enterprises, particularly agricultural processing, can be sources of significant cumulative adverse environmental impacts. Various food processing, handling, storing, and packaging operations create wastes of different quality and quantity, which, if not treated, could lead to increasing disposal problems and severe pollution problems. Additionally, if not recovered by appropriate technologies for upgrading, bioconversion and reutilization, food processing wastes can represent a loss of valuable biomass and nutrients. **Solid waste generation.** Food processing will likely result in the generation of organic wastes and potentially inorganic wastes. Hulls from shelling or off-casts from milling are solid wastes that must be handled appropriately. Additionally, spoiled products may need to be disposed, in which case, the

	spoiled products could be hazardous for human or animal consumption (e.g., spoiled seafood). **Liquid waste generation.** Liquid wastes from food washing and processing contain significant quantities of organic and inorganic matter. These wastes if improperly disposed can generate standing water that will become a breeding ground for disease vectors and when reaching groundwater and surface water can create pockets of pollution. The impact on the water will depend on wastewater characteristics that usually greatly vary, but generally water pollution can result in changes in water pH and temperature, increased nitrogen and phosphorus load that leads to eutrophication, and more long-term problems because of organic compounds and heavy metals that are discharged. **Energy and water consumption.** Processing, storage, and transportation of agricultural produce requires energy, and all energy consumption has impact on the environment. Equipment such as pumps that are of poor quality have lower energy efficiency. Food processing may compete for limited water resources. **Air, odor, and noise pollution.** Food processing, storage and transportation can become sources of noise, odor, and air pollution. **Industrial and warehouse pesticide use.** Pesticides are used in food industry for protecting structures and stored commodities. As stated above, use of pesticides can result in serious health implications to humans and contamination of the environment. Fumigation used for control of stored commodities if not done correctly can result in very serious health implications and even fatalities. **Food fortification.** Benefits of food fortification has been debated in developing countries notably questioning the high levels of supplied vitamins and micronutrients, their bioavailability in fortified foods, and the risks of their potential interactions with medication and over the counter supplements. However, in populations suffering from malnutrition, the benefits of food fortification are considered likely to significantly outweigh the risks. **Worker health and safety.** Post-harvest food processors are exposed to numerous safety and health hazards that may include heat exposure, falls, musculoskeletal injuries, hazardous equipment and machinery, unsanitary conditions, pesticides, and many others.[59] **Social impacts**. Food processing activities may contribute to

[59] For occupational health and safety risks for agricultural operations refer to the United States Department of Labor, Occupational Safety & Health Administration website available here: https://www.osha.gov/agricultural-operations

	conflicts such as control over use of resources such as land and water, nuisance issues such as smells and improper waste disposal, and labor issues such as an underpaid or underrepresented labor force. **Impacts of food processing on climate change.** Converting produce from the farm into final products, transport, packaging, and retail all require energy and contribute to emissions that facilitate climate change. **Consequences of climate change on food processing activities.** Increased temperatures and rainfall variability as well as increased intensity, duration, and/or frequency of extreme climate-related events such as droughts and floods may negatively impact facilities and warehouses used in post-harvest storage and processing, reducing yields, and potentially disrupting the agricultural supply chain. Furthermore, increased extreme climate events such as heatwaves and flooding may reduce agricultural yields or otherwise damage agricultural livelihoods. For example, these factors could result in land degradation, crop failure, and increase gendered practices in agriculture, limiting alternative livelihood options for women and youth. **Impacts related to agricultural production.** The environmental and social impact of agricultural products processing is inextricably linked to agricultural production. For impacts of livestock production see 8.1.
7.2.2 Development of food quality and safety standards	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
Intervention Category 8: Livestock and Poultry Production	
8.1 Financing and support for livestock and poultry farming, training, linking to input suppliers	Direct and indirect environmental and social impacts of production of small ruminants and poultry will depend on farming systems and methods and the scale of production. In general, support and intensification of production of small ruminants and poultry is associated with the following adverse impacts: **Land degradation.** Small ruminants' production can result in overgrazing and use of marginal lands, soil erosion and compaction, land degradation and diversification, and loss of natural habitats resulting in losses of biodiversity. **Loss of biodiversity.** Breed has a strong influence on disease susceptibility and disease management. An uncontrolled introduction of new breeds may result in loss of genetic diversity in livestock species and subsequent susceptibility to disease outbreaks. **Water pollution.** Contamination may occur if nutrients from manure enter the water table because they are either improperly used or disposed of. Animal manures transported from fields, pens, or feedlots into water bodies through rainfall, runoff or irrigation can pollute local drinking water sources and

	spread human and animal diseases. Water pollution can also be associated with improper disposal of veterinary drugs or pesticides. **Improperly handled animal carcasses.** Improperly handled animal carcasses of dead animals are a source of water pollution and can contaminate wells and surface water. They can also be a source of transmission of disease, breeding ground for pests, and source of air and odor pollution. **Animal transmitted diseases.** A zoonotic disease is an infectious disease that is transmitted between species from animals to humans (or from humans to animals). Animal transmitted diseases such as Brucellosis, Giardiasis, and Ringworm (Dermatophytosis) that are transmitted from animals to people are widespread in Africa. Animal mobility through transhumance could also be a factor in the spread of disease if the animals are not vaccinated. **Facilitate spread of invasive species.** Many herbaceous species spread easily through animal hair. Thus, the movement of animals through transhumance could also be a factor in the spread of these invasive species. **Air pollution and climate change.** Livestock production can increase greenhouse gas emissions from enteric fermentation, from livestock manure and burning of animal carcasses. **Impacts associated with pesticide and veterinary drug use.** Livestock and poultry production may require using veterinary drugs and vaccines against dieses and pesticides for control of external parasites such as ticks, bots, flies, mites, lice, and other livestock pests. The use of pesticides can lead to direct adverse effects on animal and human health as well as indirect effects to all non-target organisms through contaminated ecosystems when pesticides are released into the environment. Pesticides can affect consumers of animal products such as meat and dairy if withholding period after pesticide treatment of animals is not observed. **Consequences of climate change on livestock and poultry production.** Changing climatic conditions (e.g., shifting precipitation patterns, increased temperatures, increased frequency/severity of storms, etc.) may have adverse impacts on the productivity of livestock production. The reduced availability of grazing land due to climate-related land degradation or desertification may contribute to these processes through overgrazing or otherwise reduce land productivity. Additionally, the changing climate conditions may increase the prevalence of parasites and diseases that affect livestock, reduce water availability for livestock, and decrease the amount of quality forage for grazing livestock. Furthermore, increases in extreme climate events may have differential impacts for women and marginalized populations,

	increasing gendered practices in pastoralism and limiting alternative livelihoods for vulnerable populations like women and children. **Social impacts.** When policies do not consistently address the land tenure issue for farmers and pastoralists, livestock keepers may potentially increase animal stock beyond land carrying capacity, thus contributing to enhanced competition for resources, and eventually, to conflicts. Due to the nature of livestock and poultry farming, there is also the potential for social impacts resulting from odor, noise, traffic disturbances, livestock incursion into crops, watering points or protected areas, and unsightly land and facilities used for animal production and housing. Potential sources of odor nuisance include animal effluent (containing urine, dung, wash water, residual food products (e.g., milk) and waste feed, dairy manure, poultry litter (a mix of manure, water, spilled feed, feathers, and bedding material), renderings, and other wastes from livestock finishing operations. Dust emissions may originate from the feed, bedding material, and from the animal activities. The larger dust particles fall out of the atmosphere quickly after initial release and therefore tend to be deposited in close proximity to the source of emission. It is therefore unlikely for dust to cause long-term or widespread changes to local air quality. Its deposition may however result in complaints of nuisance through amenity loss or perceived damage caused (e.g., dust on a vehicle). The primary noise sources during operation of livestock and poultry farms are assumed to be mechanical services equipment and vehicular traffic. The movement of animals and equipment in support farm activities also has the potential to cause traffic disturbances. Animals may also wonder into neighboring fields, water sources, or adjacent protected areas causing damage and becoming a source of conflict. Visual impacts during the operation phase will mainly result from on-site buildings and farm facilities, traffic, and lighting on site.
8.2 Support for marketing of animal products These activities apply to smallholder farmers. A smallholder farm is widely defined as a family-owned enterprise that produces crops or livestock	The impact of support for marketing of animal products will depend on the nature and scale of implemented activities. In general, support for marketing of animal products is associated with the following adverse impacts: **Generation of waste.** Impact of direct or indirect support for processing of animal products will depend on the nature of the products and processes. Generally, the impact of animal product processing such as animal slaughtering, milk or egg production activities have significant impact on the environment is generation of waste and the associated pollution and contamination. The animal processing waste

on 2 hectares or less.[60]	products may occur as wastewater, solid material, volatile compounds, or gasses that are discharged into the air. **Impact on water.** The discharge of biodegradable organic materials into waterway can drive excess algae growth, create low oxygen dead zone that will suffocate fish and other aquatic life, and create public health hazards through discharge of pathogens. **Impact on soil and air.** Solid waste generated by animal processing, if not properly handled and disposed of, may decompose generating odors, release toxins and pathogens, breed vectors of disease, contaminate soil and release greenhouse gases. **Impacts on public health.** Exposure to animal products through processing and consumption is associated with risks of zoonotic diseases. Drugs and pesticides can persist in animal-derived foods and present potential food safety risks. **Impacts related to livestock production.** The environmental and social impact of animal products processing is inextricably linked to animal production. For impacts of animal production see 8.1. For development of market and community linkages activities see 5.1. For technical assistance, training, and support for development of egg production see 9.1. For provision of grants see 4.1.
Intervention Category 9: Integrated Agricultural Systems	
9.1 Encourage and promote crop diversification and farming systems that are inclusive - crop, livestock, forestry	The environmental and social impacts of a mixed farming system will depend on the nature and scale of the system. Some impacts of each system may include those associated with its crop and livestock production which are addressed by other sections of this IEE. In general, impacts include the following: **Lower adoption rates.** Although usually considered more environmentally sustainable, the diversity of mixed farming system sometimes increases farming complexity. The mixed farming system aims to increase efficiency and self-sufficiency by limiting external inputs, but as a result, it is also limiting specialization in production. Where mixed farming systems

[60] A more articulated and comprehensive definition is presented in the Report of the High Level panel of Experts on Food Security and Nutrition according (Committee on World Food Security (CFS), 2013) to which a small farm is *"..an agricultural holding run by a family using mostly (or only) their own labour and deriving from that work a large but variable share of its income, in kind or in cash. The family relies on its agricultural activities for at least part of the food consumed – be it through self-provision, non-monetary exchanges or market exchanges. The family members also engage in activities other than farming, locally or through migration. The holding relies on family labour with limited reliance on temporary hired labour, but may be engaged in labour exchanges within the neighbourhood or a wider kinship framework".*

	integration and increases in efficiency are not successfully achieved, mixed farming system may result in lower profitability than a specialized system and lower adoption rates. **Lack of traditional knowledge.** Where mixed agriculture is not traditional, a lack of knowledge on innovative use of local resources and managing alternative crops can result in slow adoption rates. **Low cooperation among farmers.** Mixed farming sometimes requires willingness for cooperation and may lead to conflicts over use of land and other natural resources. **Consequences of climate change on mixed farming systems.** Increased temperatures and rainfall variability as well as increased intensity, duration, and/or frequency of extreme climate-related events such as droughts and floods may increase the prevalence and/or change the distribution range of pests and disease. This could negatively impact crops and seed germination, alter effectiveness of agricultural inputs (e.g., require increased pesticide inputs) and reduce food and nutritional security due to crop failures and food shortages. An increase in extreme climate events such as heatwaves and flooding may also reduce agricultural yields or otherwise damage agricultural livelihoods. For example, these factors could result in land degradation, crop failure, and increased gendered practices in agriculture, limiting alternative livelihood options for women and youth. Furthermore, the impacts of climate change (e.g., changes in temperature and rainfall variability, the amount of carbon dioxide in the air) may alter the productivity and distribution of forests and disproportionately impact certain species, possibly inhibiting the success of integrated agricultural systems in general and agroforestry systems in particular. Similarly, these climate impacts could increase stress on surface water resources, increase salinization and/or siltation of these resources through processes such as erosion, or otherwise contribute to biodiversity loss in aquatic ecosystems.
Intervention Category 10: Irrigation, Water, Sanitation, and Hygiene (WASH), and Water Harvesting	
10.1 Technical and financial assistance for development of MUS for domestic use and irrigation Scale of MUS activities depends on the level of water access as defined by variables such as water quality and quantity, reliability of supply, and distance. Using characteristics of access, the following constitutes as **small, medium, and large-scale**	Because MUS incorporates both domestic and productive uses, the impacts of MUS will depend on the nature and scale of the system, the system location, the sources of water and water availability, construction needs, types of water use, ability of parties to the MUS to negotiate and meet competing demands, both at household and watershed level, and management of the MUS implementation. Adverse environmental and social impacts of MUS are possible at the planning, design, construction, and operations and management stages.

MUS in this IEE[61]: **Small-scale**: A MUS with capacity to service less than 500 people with 5-100 liters per capita per day. **Medium scale**: A MUS with capacity to service between 501 and 3,300 people with 100 and 200 liters per capita per day. **Large-scale**: A MUS with capacity to service more than 3,300 people, and or provide more than 200 liters per capita per day. **Large-scale MUS activities are not planned under the AG Portfolio and are not covered by this IEE.**	In general, at the planning and design stage impacts maybe associated with: ● **Resistance or slow adoption of an alternative water use model.** When introducing MUS in areas where this approach has not been applied before, implementers may not be getting interest at the level of providers and users due to complexities of explaining the objectives, the context, and setting expectations and conditions for use. ● **Faulty planning or design.** For an optimal design of MUS, implementers must rely on the situational assessment of water resources, water infrastructure, optimal water demand, and barriers to accessing water services. Data and information for such assessment may be difficult to obtain and strategies and plans based on this assessment may result in system design that further complicates adoption. Unplanned uses may result in system breakdowns, resource inefficiencies, poor cost-recovery, and conflicts. At the construction stage, impacts of MUS will depend on the nature, scale, and location of construction. ● **Construction of MUS.** MUS may require sinking of boreholes, digging wells and canals, establishing piping systems and extensions, building storage tanks, livestock troughs and crossings, or other structures that may need to be constructed for the MUS. Environmental and social impacts of construction will depend on the water source and the type of the system being constructed. Construction and associated earthworks may be responsible for a variety of environmental and social impacts depending on the nature, scale and location of the system being constructed. Impacts associated with use of the MUS will depend on the types of uses and whether the system achieved integration,

[61] MUS scale is based on a modified version of the MUS 'water services ladder' concept (a-c) and the drinking water definitions established under the US EPA Safe Drinking Water Act (SDWA) (d):

a. Renwick, M. et al., *Multiple Use Water Services for the Poor: Assessing the State of Knowledge*, (Arlington, VA: Winrock International, 2007).
b. van Koppen, B., Smits, S., Penning de Vries, F., Mikhail, M. and Boelee, E. "Climbing the Water Ladder: Multiple-Use Water Services for Poverty Reduction, Technical Report 52," (Delft: IRC International Water and Sanitation Centre, International Water Management Institute and CPWF, 2009).
c. van Koppen, B.; Smits, S.; Rumbaitis del Rio, C. and Thomas, J., *Scaling up multiple use water services: Accountability in public water sector performance for health and wealth*, (Rugby: Practical Action Publishing, 2014).
d. United States Environmental Protection Agency, "Small Drinking Water System Variances," January 2020: https://www.epa.gov/sdwa/small-drinking-water-system-variances

	synergy and equity for users and stakeholders. Potential impacts include: ● **Impact of water consumption.** Sufficient water must be available to support MUS. Freshwater consumption can have environmental and social impacts on human health, ecosystem quality, and sustainable availability of water resources. ● **Downstream impacts of quantity and quality.** Diverting water for domestic, agricultural, industrial, and other uses will have an impact on downstream users and ecosystems, including wetlands, mangroves, and coastal estuaries. This can potentially affect the quality (through increased concentration of pollutants) and quantity of water and ground water levels. ● **Public health risks.** Health risks may be associated with poor water drainage. For example, a lack of maintenance of water supply systems may result in leaks which causes stagnant water, creating adequate conditions for waterborne diseases, and proliferation of malaria causing mosquitoes ● **Impacts associated with water use for potable need.** A public source of water that is intended for multiple uses in addition to potable water may not be protected from possible contamination and pollution. ● **Impacts associated with water use for irrigation.** Where MUS is used for irrigation, the environmental and social impacts of crop irrigation will depend on multiple factors including the irrigated area, topography, shape of field, location, climate, irrigation method, water quality, crops irrigated, type of soil, availability and the source of water, alternative water sources, and competing uses. In general, irrigation may be associated with water mismanagement and resulting water loses, changes to the soil structure and quality, waterlogging, agricultural runoff and resulting pollution, increased sedimentation into adjacent water sources, increased leaching of pollutants, and standing water that breeds vectors of disease. ● **Impacts associated with water use for watering animals.** Farm animals defecate in or around water sources. If animals are watered at the MUS, pollutants and pathogens from their feces and urine can leach or spread to the drinking water. Livestock can also cause physical impacts, for example through soil erosion and destroying surrounding vegetation. ● **Impacts associated with water use for small business (e.g., food processing, other needs.** Contaminated runoff from the site may pollute nearby water and land. **Social impacts.** Adequacy of the water resource and potential stress on scarce water resources, unresolved water

	rights issues, unwillingness to pay for water, potential for inadequate or inequitable distribution can aggravate stresses, tensions, and conflicts. MUS requires enforceable formal and informal rules to allocate water among competing uses and users and as such, planning, design and successful implementation and management of MUS requires capacity. The larger the complexity of the system and the desired scale, the greater is the need for capacity for management of the system.[62] **Consequences of climate change on MUS.** Reduced quality and/or availability or surface and groundwater resources as a result of climate change can lead to increased competition over water resources (e.g., for irrigation, livestock), increasing the risk of conflict and reducing total potable water availability. Marginalized and vulnerable populations may experience exacerbated inequalities from climate-related impacts to water resource availability and access. Climate-related impacts could also lead to damage or premature deterioration of water supply and irrigation infrastructure (e.g., wells, pumps), disrupt services, and/or increase maintenance and repair costs.
10.2 Technical assistance for development of hand washing stations and latrines	Adverse impacts of pit latrines and handwashing stations may be associated with their design, construction, and maintenance. **Water pollution.** Improperly designed or poorly sighted latrines may contribute to ground and surface water contamination. **Disease transmission.** Latrines can be the source of odor, become breeding grounds for insects, and facilitate transmission of diseases. Lack of sanitary supplies, and water and soap for handwashing can increase transmission. Standing water pools around water stations can be grounds for breeding vectors of disease. **Material sourcing and construction.** Latrines and washing stations are commonly small structures, but cumulatively their construction may impact the environment through use of natural resources and increased erosion. For example, use of burnt brick poses particular concerns as it relates to deforestation. Construction might also utilize timber or stones and sand from local streams which can cause erosion, deforestation, and sedimentation of streams. **Social impacts.** There are implications for safety and privacy in constructions of latrines. **Consequences of climate change on development of hand washing stations and latrines.** Increased temperatures and variability in rainfall, as well as increased

[62] Winrock International, “Multiple Use Water Services for the Poor: Assessing the State of Knowledge,” December 2007: https://winrock.org/document/multiple-use-water-services-for-the-poor-assessing-the-state-of-knowledge/.

	intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may cause damage or premature deterioration to irrigation equipment (e.g., wells, pumps), disrupt services, and/or increase maintenance and repair costs. Additionally, these changes may increase runoff into surface or groundwater resources, decreasing water quality and yielding increased treatment requirements.
10.3 Support for and introduction of water harvesting technologies	Improving water harvesting can improve agricultural production by making water available during the time of dry periods. However, some adverse environmental and social impacts need to be considered. **Impacts on downstream users.** Rainwater collection can, depending on its scale, have adverse hydrological impacts on communities downstream if too much water is stored or diverted. The environmental and hydrological impacts of small reservoirs can be minor, however, large water harvesting systems can have negative effects on runoff and groundwater levels, which in turn can affect ecosystem dynamics and downstream users of the water source. **Water quality and vector breeding.** Surface storage of water in tanks, small ponds and reservoirs, particularly where such water is harvested from poor water quality runoff, can lead to several issues, such as parasite/vector breeding (e.g., mosquitos) where the water is still-standing or algal blooms where the collected water is rich in nutrients. Despite the poor aesthetic and microbial quality of such waters, it may be used for drinking when other water points are not accessible. Collected water may require treatment before direct use. **Harvested water loss.** Depending on the system design and the underlying conditions under which it is stored, harvested water can be lost due to evaporation or seepage. **Consequences of climate change on introduction of water harvesting technologies.** Reduced quality and/or availability or surface and groundwater resources as a result of climate change can lead to increased competition over water resources (e.g., for irrigation, livestock), increasing the risk of conflict and reducing total potable water availability. Marginalized and vulnerable populations may experience exacerbated inequalities from climate-related impacts to water resource availability and access. Furthermore, climate-related impacts could lead to damage or premature deterioration of water supply and irrigation infrastructure (e.g., wells, pumps), disrupt services, and/or increase maintenance and repair costs. Additionally, these changes may increase runoff into surface or groundwater resources, decreasing water quality and yielding increased treatment requirements. **Social impacts.** Where societies have traditionally successfully relied on rain-fed agriculture, impacts of

	population growth and climate change have not been integrated into local cultural practices further exacerbating constraints such as access to finance, and equipment, materials and labor needed for introduction of water harvesting technologies.
Intervention Category 11: Marine and Coastal Livelihoods and Management, and Tourism	
11.1 Marine and Coastal Livelihoods	
11.1.1 Support for establishing of fisheries no take zones (NTZs)	Weak compliance around gear and spatial restrictions can undermine the success of NTZs. The establishment of protected no-take zone areas may also face conflicts associated with the implementation and enforcement measures. Such conflicts may generate costs, prevent progress, make cooperation between stakeholders difficult and may render the no-take zones ineffective. **Consequences of climate change on establishment of NTZs.** Warming of sea surface temperatures, ocean acidification, and unpredictable rainfall and flooding may increase salinity of water, disease distribution and prevalence, and locations able to support aquaculture fisheries and may lead to an overall decline in fish diversity. Additionally, increased temperatures and variability in rainfall as well as increased extreme climate-related events such as storms may lead to direct impacts on fisherfolk health and safety (e.g., increased risk of capsizing). Increased extreme climate events such as flooding and heat waves may also result in land degradation, crop failure, and increased gendered labor practices in marine livelihoods, limiting alternative livelihood options for women and youth.
11.1.2 Support for development of crab fattening	The impacts will depend on the scale of the activity and the techniques employed, however in general there is a low risk of environmental degradation from most forms of crab culture. Crab fattening is unlikely to cause significant environmental issues such as pollution. However, indirect impact may be increased harvest levels that may cause stock depletion and resulting impacts on biodiversity. See 11.1.1 for consequences of climate change on crab fattening activities.
11.1.3 Support for development and production of non-timber forest products from mangroves	The impact of this activity will depend on the nature and scale of the activity and the types of products that will be supported. In general, support for sustainable mangrove-based small-scale non-timber forest product livelihoods is unlikely to have significant adverse impacts. However, activities that require extensive use of leaves, bark, or mangrove wood or overharvesting of plants, fish or crustaceans on a larger scale may be in conflict with the conservation and sustainability of mangrove ecosystems. **Climate Impacts.** Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may increase salinization and/or siltation of water resources through processes such as erosion or otherwise contribute to biodiversity loss in aquatic ecosystems.

11.1.4 Support for sustainable oyster harvesting	Harvesting oysters from their natural habitat may result in overharvesting. Disease and habitat loss can also threaten the oyster population. Support to communities for management of resources and sustainable take-off should provide positive benefits to the communities and the environment. Where activities provide support for oyster farming, their impacts will depend on the specific location and the nature of activities. In general, oyster farming is associated with environmental disturbances such as physical impacts associated with farming structures and farm operations as well as removal of nutrients from water and competing with other organism for nutrients. See 11.1.1 for consequences of climate change on oyster harvesting activities.
11.2 Marine and Coastal Management	
11.2.1 Support for mangrove forest management	Deterioration of mangrove forests has a very detrimental impact on the environment. Conserving existing mangrove forest is often more effective than planting new forests.[63] Preservation and management of mangrove forests by law can be impacted by the limited capacity for enforcement. **Climate Risks.** Changing climatic conditions (e.g., increased temperatures, shifting precipitation patterns) may reduce or disrupt ecosystem services. Additionally, increased extreme climate events increased gendered labor practices in marine livelihoods, limiting alternative livelihood options for women and youth.
11.2.2 Support for community coastal management and organization of Beach Management Units, community co-management of coastal and marine protected areas (e.g., coral reefs, seagrasses, mangroves)	Preservation and management of marine and coastal ecosystems by law can be impacted by the limited capacity for enforcement. **Climate Risks.** Changing climatic conditions (e.g., increased temperatures, shifting precipitation patterns) may reduce or disrupt ecosystem services. Additionally, increased extreme climate events increased gendered labor practices in marine livelihoods, limiting alternative livelihood options for women and youth.
11.2.3 Support integrated coastal zone management at the regional scale (e.g., marine spatial planning, marine tenure, and protected area management)	Preservation and management of marine and coastal ecosystems by law can be impacted by the limited capacity for enforcement. **Climate Risks.** Changing climatic conditions (e.g., increased temperatures, shifting precipitation patterns) may reduce or disrupt ecosystem services. Additionally, increased extreme climate events increased gendered labor practices in marine livelihoods, limiting alternative livelihood options for women and youth.

[63] Norman C. Duke and Klaus Schmitt, "Mangrove Management, Assessment, and Monitoring, *Tropical Forestry Handbook*, 2015: https://link.springer.com/referenceworkentry/10.1007%2F978-3-642-41554-8_126-1.

11.3 Tourism	
11.3.1 Youth-focused marine and coastal tourism skills development	Negligible adverse environmental impacts associated with this sub-activity are foreseeable.
11.3.2 Tourism promotion, with a focus on Marine ecotourism promotion	There are potential indirect negative impacts from tourism promotion including facilitating and leading to rising consumption and pressure on land, water, and energy resources; destruction of landscapes from construction of new infrastructure; increased waste generation; alteration of ecosystems; disturbance of fauna and local people (for example, by noise); introduction of exotic species of animals and plants; loss of local social identity, associations, values, artistic and cultural character, activities and heritage; an increase in the rate and spread of communicable diseases; and the increase in the prices of goods and services for locals.
11.3.3 Linking fisheries and other producers with restaurants	Activities that develop supply chain linkages between restaurants, retailers, suppliers, processors etc. using unsustainable and or illegal fishing practices could contribute to further reductions of fish stocks. Overfishing of the marine environment contributes to a reduction in fish stock and catches, often leading to declining income and employment, especially in rural areas.

4.0 ENVIRONMENTAL DETERMINATIONS

4.1 RECOMMENDED ENVIRONMENTAL DETERMINATIONS

The following table presents the recommended determinations based on the environmental analysis conducted. Upon approval, these determinations become affirmed, per 22 CFR 216. Specified conditions, detailed in Section 5, become mandatory obligations of implementation, per ADS 204.

TABLE 5: ENVIRONMENTAL DETERMINATIONS

Projects/Activities	Categorical Exclusion Citation (if applicable)	Negative Determination	Positive Determination [64]	Deferral [65]
Intervention Category 1: Policy Development and Support				
1.1. Support for development and promulgation of food fortification policies	§216.2(c)(2)(i) §216.2(c)(2)(viii)	☐	☐	☐
1.2 Support for development and promulgation of business and finance enabling policies	§216.2(c)(2)(i)	☐	☐	☐
Intervention Category 2: Capacity Building and Trainings				
2.1 Capacity building, awareness building, and training activities that do not have direct impacts on the environment				

[64] Positive Determinations require preparation of a Scoping Statement and Environmental Assessment.
[65] Deferrals must be cleared through an Amendment to this IEE prior to implementation of any deferred activities.

2.1.1 Training adults and youth in entrepreneurship, business organization and management, financial management, marketing, information systems, and other classroom or distance training (e.g., farming as a business)	§216.2(c)(2)(i)	☐	☐	☐
2.1.2 Training firms and individuals how to become investment ready, how to seek funds, how to borrow funds, and how to manage borrowed funds	§216.2(c)(2)(i)	☐	☐	☐
2.2 Capacity building and training activities that may have direct and/or indirect impacts on the environment				
2.2.1 Hands-on practical trainings and demonstrations for adults and youth including through local schools and universities and internships, vocational training, and apprenticeship in agribusiness and agricultural services delivery		☒	☐	☐
Intervention Category 3: Support for Access to Finance and Insurance				
3.1 Support for establishment of Village Savings and Loans groups	§216.2(c)(2)(i) §216.2(c)(2)(x)	☐	☐	☐
3.2 Development and strengthening of linkages to micro-credit institutions	§216.2(c)(2)(i) §216.2(c)(2)(x)	☐	☐	☐
3.3 Support to private sector for developing weather indexed insurance for farmers	§216.2(c)(2)(i) §216.2(c)(2)(x)	☐	☐	☐
3.4. Support and development of linkages to investments, donors, and programs for improving food security including food fortification	§216.2(c)(2)(i) §216.2(c)(2)(viii)	☐	☐	☐
Intervention Category 4: Provision of Grants				
4.1 Provision of grants that may include the following:		☒	☐	☐

○ Grants for development of indexed insurance products for farmers ○ Grants for women and youth owned agricultural enterprises ○ Grants for household-level livestock for consumption and income ○ Competitive matching grants to improve and diversify business services, with a focus on food systems ○ Challenge fund to identify solutions for addressing soil fertility, agriculture extension, input supply, and last mile transport needs ○ Small competitive grants for young entrepreneurs				
Intervention Category 5: Support for Institutional and Organizational Management				
5.1 Support for networking and networks development, organization, and association building; establishing and strengthening partnerships; development of market and community linkages and similar activities that include meetings and information transfer	§216.2(c)(2)(i)	☐	☐	☐
5.2 Assessments, evaluations, studies, and data gathering and processing activities including performance monitoring and evaluation activities	§216.2(c)(2)(iii)	☐	☐	☐
Intervention Category 6: Nutrition Related Assistance				
6.1 Support for food processing R&D and marketing of products (e.g., fortified flours, corn/soy blend, soy for human consumption)		☒	☐	☐

6.2 Support for establishment and dissemination of food safety and fortification standards	§216.2(c)(2)(i) §216.2(c)(2)(viii)	☐	☐	☐
Intervention Category 7: Crop Production, Post-harvest Storage, Transport, and Food Processing				
7.1 Crop Production				
7.1.1 Provision of technical and financial support for crop production activities including land preparation, soil fertility management, and planting		☒	☐	☐
7.1.2 Provision of technical and financial support and agricultural extension services for improved access, production and use of agricultural inputs including: ○ Seed ○ Fertilizer ○ Pesticides ○ Agricultural technology ○ Irrigation		☒	☐	☐
7.1.2.1 Activities addressing introduction and use of certified seed including community-based seed production		☒	☐	☐
7.1.2.2 Activities addressing soil fertility management		☒	☐	☐
7.1.2.3 Activities addressing integrated pest management		☒	☐	☐
7.1.2.4 Introduction of agricultural technology (e.g., equipment, machinery)		☒	☐	☐
7.2 Post-harvest Storage, Transport, and Food Processing				
7.2.1 Support for small scale food processing of nutritious products		☒	☐	☐

including implementation and enforcement of food fortification policies				
7.2.2 Development of food quality and safety standards	§216.2(c)(2)(i)	☐	☐	☐
Intervention Category 8: Livestock and Poultry Production				
8.1 Financing and support for livestock and poultry farming, training, linking to input suppliers		☒	☐	☐
8.2 Support for marketing of animal products		☒	☐	☐
Intervention Category 9: Integrated Agricultural Systems				
9.1 Encourage and promote crop diversification and farming systems that are inclusive - crop, livestock, forestry		☒	☐	☐
Intervention Category 10: Irrigation, Water, Sanitation, and Hygiene (WASH), and Water Harvesting				
10.1 Technical and financial assistance for development of MUS for domestic use and irrigation		☒	☐	☐
10.2 Technical assistance for development of hand washing stations and latrines		☒	☐	☐
10.3 Support for and introduction of water harvesting technologies		☒	☐	☐
Intervention Category 11: Marine and Coastal Livelihoods and Management, and Tourism				
11.1 Marine and Coastal Livelihoods				
11.1.1 Support for establishing of fisheries no take zones (NTZs)		☒	☐	☐
11.1.2 Support for development of crab fattening		☒	☐	☐
11.1.3 Support for development and production of non-timber forest products from mangroves		☒	☐	☐
11.1.4 Support for sustainable oyster harvesting		☒	☐	☐
11.2 Marine and Coastal Management				
11.2.1 Support for mangrove forest		☒	☐	☐

management				
11.2.2 Support for community coastal management and organization of Beach Management Units, community co-management of coastal and marine protected areas (e.g., coral reefs, seagrasses, mangroves)	§216.2(c)(2)(i)	☐	☐	☐
11.2.3 Support integrated coastal zone management at the regional scale (e.g., marine spatial planning, marine tenure, and protected area management)	§216.2(c)(2)(i)	☐	☐	☐
11.3 Tourism				
11.3.1 Youth-focused marine and coastal tourism skills development	§216.2(c)(2)(i)	☐	☐	☐
11.3.2 Tourism promotion, with a focus on Marine ecotourism promotion		☒	☐	☐
11.3.3 Linking fisheries and other producers with restaurants		☒	☐	☐

4.2 CLIMATE RISK MANAGEMENT

General Background

This section summarizes the methodology used and findings of the CRM Screening required by and conducted in accordance with ADS 201mal "Climate Risks Management for USAID Projects and Activities"[66] and documented in the CRM screening table provided as Annex 1 to this IEE.

Note: Because specific scopes of work for activities, including the location, duration, and other parameters have yet to be defined, this analysis must be reviewed and revised as appropriate during development of activity-specific CRM screening and management plans.

Climate Risk Screening Process

Given that specific activity-level geographies, climate conditions, adaptive capacity, and other key characteristics that can shape climate risk are not yet defined at this level of analysis, the screening provided here focuses on risks that can be broadly applied for a specific type of

[66] USAID, "Climate Risk Management for USAID Projects and Activities," https://www.usaid.gov/ads/policy/200/201mal

activity at the country level. The intention of this CRM analysis is to capture the climate risks that could affect activity types and provide a framework to guide climate risk screening, assessment, and management of activities' potential impacts when additional information becomes available. Climate risks were identified using the environmental review categories (see Table 5).

The CRM screening table, which is the suggested tool to complete CRM screening and can be found on climatelinks.org[67], includes information on adaptive capacity; opportunities related to climate risk management; climate risk management options; information on how climate risks are addressed in the activity; and the next steps for activity implementation.

Summary of Key Climate Risks

As documented in the CRM screening table, a range of potential climate risks exist including both acute (event-driven) and chronic (long-term shifts) climate hazards. The climate risk impacts identified in the table are not intended to be exhaustive or definitive, but rather to broadly illustrate relevant potential climate impacts that can negatively affect the proposed development actions. Considering the unknown scopes of work for activities, a precautionary approach was adopted when assigning a climate risk rating for each activity type.

Key climate change risks identified include the following:[68, 69]

- Much of the population is vulnerable to climate change impacts due to their concentration in low-lying coastal areas, reliance on local natural resources (e.g., agriculture and fisheries) for their livelihoods, and the country's non-resilient infrastructure.
- Alternating flood and drought events have the potential to affect the ability of farmers and fishermen to consistently grow crops and fish, which will likely impact food security, malnutrition, and sustainable incomes.
- Sea level rise and associated saltwater intrusion could affect the availability of aquaculture, the viability of the coastal mangrove systems, and contaminate already stressed water supplies.
- Droughts, flooding, and greater temperatures will negatively impact human health and forest ecosystems.
- Extreme events—namely, tropical cyclones—will affect already weak infrastructure and damage or destroy coastal ecosystems and livelihoods.

Recommendations

Specific actions and strategies to address climate change risks that are included in project design are documented in the CRM screening table (See Annex 1). In addition, the table provides further actions and strategies for addressing climate risks and opportunities during activity implementation ("Further Analysis") as well as higher-level opportunities to support both

[67] USAID, "Climate Risk Screening & Management Tools," January 2017, https://www.climatelinks.org/resources/climate-risk-screening-management-tool
[68] USAID, "Mozambique Climate Vulnerability Profile," January 2013: https://www.climatelinks.org/resources/mozambique-climate-vulnerability-profile
[69] USAID, "Climate Risk Profile: Mozambique," July 2018: https://www.climatelinks.org/resources/climate-risk-profile-mozambique

the activity and broader development objectives ("Opportunities to Strengthen Climate Resilience").

General activity-level recommendations include:

- Integrate national resilience and adaptation objectives into AG Portfolio activity design and implementation. Climate risks will be specifically addressed in all AG Portfolio activity design documents. It is recommended that climate risks and strategies identified by the host government, including those in Mozambique's National Strategy for Adaptation and Mitigation to Climate Change (2013-2025), are integrated into activity design and implementation.
- Support and strengthen coordination within and among government institutions. To be effective, climate change adaptation needs to be mainstreamed across multiple sectors and greater policy coherence is essential. AG Portfolio activities include policy development initiatives and will support a range of sectors including agricultural production, fisheries, financial services, tourism, public sector, and research and development. This provides USAID opportunities to support coordination and communication within and among government institutions and increase government capacity to plan for and respond to impacts from climate change.
- Coordinate activity planning and implementation with bilateral and multilateral donors. A number of donors are taking the initiative to mainstream resilience and adaptation into their operations in Mozambique by raising the policy profile of climate change, building capacity on climate change and adaptation planning, informing climate change policies, and research on climate impacts, vulnerability, and adaptation. AG Portfolio activities will be most effective at building broad-based resilience and adaptive capacity to climate change impacts if they avoid gaps and duplications.
- Conduct gender analyses to better understand the different capacities and vulnerabilities and support decision makers to design adaptation options that are gender inclusive and transformative. The inclusion of women as a target beneficiary under the AG Portfolio activity will strengthen women's empowerment and representation in local governance units; promote women's empowerment in agriculture; improve women's capacities and resources to withstand recurring shocks and stresses; and increase women's access to capital and social capital. It is recommended to build specific objectives on gender equality and women's empowerment into activity plans and budgets as well as policy work. Appropriate women's rights organizations and female community leaders should also be considered when selecting partners.

Key Resources and References

There are many important resources that Implementing Partners (IPs) can consult when developing the EMMP and CRM documents.

- A critical resource used in identifying and assessing the climate risks is USAID's Climate Risk Screening and Management Tool for strategy, project, and activity design.
- IPs are advised to consult previous EMMPs and CRMs to research common environmental concerns and solutions among health activities globally. IPs can utilize the USAID Environmental Compliance Database to search for USAID-approved EMMPs and CRMs.
- For technical guidance on environmentally sound design and management for USAID development activities, consult the USAID Sector Environmental Guidelines.

- The USAID Environmental Procedures and Climate Risk Management website provides links to detailed guidance and best-practice considerations for CRM to address climate impacts and improve the effectiveness and sustainability of USAID's efforts.
- The USAID Environmental Compliance Budgeting Toolkit provides IPs with guidance on how to identify costs for environmental management tasks described in the EMMP and CRM.
- Climatelinks is a global knowledge portal for those working at the intersection of climate change and international development. The Mozambique Climate Vulnerability Profile should be consulted.

5.0 CONDITIONS AND MITIGATION MEASURES

5.1 CONDITIONS

The environmental determinations in this IEE are contingent upon full implementation of the following general implementation and monitoring requirements, as well as ADS 204 and other relevant requirements. Where applicable, for construction activities refer to USAID Implementation of Construction Activities, a mandatory reference for ADS Chapters 303 and to ADS 303, Grants and Cooperative Agreements to Non-Governmental Organizations.

5.1.1 During Solicitations:

5.1.1.1 The design team, in coordination with the A/CO, will ensure solicitations include environmental compliance requirements and evaluation criteria. A/CO will ensure technical and cost proposal requirements include approach, staffing, and budget sufficient for complying with the terms of this IEE.

5.1.1.2 Awards: The A/COR, in coordination with the A/CO, will ensure all awards and sub-awards, include environmental compliance requirements.

5.1.2 During Post-Award:

5.1.2.1 Post-Award Briefings: The A/COR and/or the cognizant environmental officer(s) (e.g., MEO, REA, BEO) will provide post-award briefings for the IP on environmental compliance responsibilities.

5.1.2.2 Workplans and Budgeting: The A/COR will ensure the IP integrates environmental compliance requirements in work plans and budgets to comply with requirements, including EMMP implementation and monitoring.

5.1.2.3 Staffing: The A/COR, in coordination with the IP, will ensure all awards have staffing capacity to implement environmental compliance requirements.

5.1.2.4 Records Management: The A/COR will maintain environmental compliance documents in the official project/activity file and upload records to the designated USAID environmental compliance database system.

5.1.2.5 Host Country Environmental Compliance: The A/COR will ensure the IP complies with applicable and appropriate host country environmental requirements unless otherwise directed in writing by USAID. However, in the case of a conflict

between the host country and USAID requirements, the more stringent shall govern.

5.1.2.6 Work Plan Review: The A/COR will ensure the IP verifies, at least annually or when activities are added or modified, that activities remain with the scope of the IEE. Activities outside of the scope of the IEE cannot be implemented until the IEE is amended.

5.1.2.7 IEE Amendment: If new activities are introduced or other changes to the scope of this IEE occur, an IEE Amendment will be required.

5.1.2.8 USAID Monitoring Oversight: The A/COR or designee, with the support of the cognizant environmental officer(s) (e.g., MEO, REA, BEO), will ensure monitoring of compliance with established requirements (e.g., by desktop reviews, site visits, etc.).

5.1.2.9 Environmental Compliance Mitigation and Monitoring Plan: The A/COR will ensure the IP develops, obtains approval for, and implements Environmental Mitigation and Monitoring Plans (EMMPs) that are responsive to the stipulated environmental compliance requirements.

5.1.2.10 Environmental Compliance Reporting: The A/COR will ensure the IP includes environmental compliance in regular project/activity reports, using indicators as appropriate; develops and submits the Environmental Mitigation and Monitoring Reports (EMMRs); and completes and submits a Record of Compliance (RoC) describing their implementation of EMMP requirements in conjunction with the final EMMR or at the close of sub activities (as applicable). And where required by Bureaus or Missions, ensure the IP prepares a closeout plan consistent with contract documentation for A/COR review and approval that outlines responsibilities for end-of-project operation, the transition of other operational responsibilities, and final EMMR with lessons learned.

5.1.2.11 Corrective Action: When noncompliance or unforeseen impacts are identified, IPs notify the A/COR, place a hold on activities, take corrective action, and report on the effectiveness of corrective actions. The A/COR initiates the corrective action process and ensures the IP completes and documents their activities. Where required by Bureaus or Missions, ensure Record of Compliance is completed.

5.1.2.12 Water Quality Assurance Plan: The A/COR will ensure the IP develops, implements, and reports on a Water Quality Assurance Plan (WQAP) for any drinking water interventions. The WQAP should be approved by USAID prior to implementation of drinking water work.

5.1.2.13 Engineering Consultation: The A/COR will coordinate a consultation with the USAID Regional Engineer and the IP prior to embarking on any construction work.

5.2 AGENCY CONDITIONS

5.2.1 Sub-award Screening: The A/COR will ensure the IP uses an adequate environmental screening tool to screen any sub-award applications and to aid in the development of EMMPs.

5.2.2 Programmatic IEEs (PIEE): PIEEs stipulate requirements for additional environmental examination of new or country specific projects/activities. The A/COR of any project/activity being implemented under a PIEE will ensure appropriate reviews are conducted, typically through a Supplemental IEE, and approved by the cognizant BEO.

5.2.3 Supplemental IEEs (SIEEs): An SIEE will be prepared for any new project/activity being planned which fall under a PIEE. The SIEE will provide more thorough analysis of the planned activities, additional geographic context, and baseline conditions as well as specific mitigation and monitoring requirements.

5.2.4 Other Supplemental Analyses: The A/COR will ensure supplemental environmental analyses that are called for in the IEE are completed and documented.

5.2.5 Resolution of Deferrals: If a deferral of the environmental threshold determination was issued, the A/COR will ensure that the appropriate 22CFR216 environmental analysis and documentation is completed and approved by the BEO before the subject activities are implemented.

5.2.6 Positive Determination: If a Positive Determination threshold determination was made, the A/COR will ensure a Scoping Statement, and if required an Environmental Assessment (EA), is completed and approved by the BEO before the subject activities are implemented.

5.2.7 Compliance with human subject research requirements: The AM, A/COR shall assure that the IP and sub-awardees, -grantees, and -contractors demonstrate completion of all requirements for ethics review and adequate medical monitoring of human subjects who participate in research trials carried out through this IEE and ensure appropriate records are maintained. All documentation demonstrating completion of required review and approval of human subject trials must be in place prior to initiating any trials and cover the period of performance of the trial as described in the research protocol.

5.3 MITIGATION MEASURES

The mitigation measures presented in this section are the minimum required based on available information at the time of this IEE and the environmental analysis in Section 4. EMMPs required by 5.1.2.1 above must implement these measures fully. It is recommended that consideration be given to public health issues such as outbreaks of communicable diseases (e.g., outbreak of COVID-19) when relevant to the planned activity.

TABLE 6. MINIMUM MITIGATION MEASURES

Intervention Category/Sub-Activity	Mitigation Measures
Intervention Category 1: Policy Development and Support	
1.1. Support for development and promulgation of food fortification policies	This activity is CatEx.

1.2 Support for development and promulgation of business and finance enabling policies	This activity is CatEx.
Intervention Category 2: Capacity Building and Trainings	
2.1 Capacity building, awareness building, and training activities that do not have direct impacts on the environment	
2.1.1 Training adults and youth in entrepreneurship, business organization and management, financial management, marketing, information systems, and other classroom or distance training (e.g., farming as a business)	This activity is CatEx.
2.1.2 Training firms and individuals how to become investment ready, how to seek funds, how to borrow funds, and how to manage borrowed funds	This activity is CatEx.
2.2 Capacity building and training activities that may have direct and/or indirect impacts on the environment	
2.2.1 Hands-on practical trainings and demonstrations for adults and youth including through local schools and universities and internships, vocational training, and apprenticeship in agribusiness and agricultural services delivery including: ○ Crop production (e.g., good agricultural practices, integrated soil management, irrigation/integrated water management, integrated pest management, crop management, and other issues) ○ Livestock production (e.g., livestock management, livestock nutrition) ○ Aquaculture (marine and fresh water) ○ Mixed farming systems/agroforestry ○ Post-harvest practices (harvesting, logistics, storage, pest control) ○ Food processing (technologies and processes, new products development, food safety, quality control) Ecotourism / hospitality	**Negative Determination** subject to the following **conditions:** Awareness of workplace hazards, standards of occupational health and safety, and the requirement for development of the safety culture in the workplace must be integrated into vocational training curriculum. Environmental education, that includes consideration for sector specific adverse impacts and mitigations, must be included as part of the vocational study curriculum. Plans for waste management and disposal will be developed detailing proper handling of non-hazardous and hazardous waste according to national legislation and international best practice. Mandatory reference: USAID Sector Environmental Guidelines: Solid Waste (2018). For relevant sectors see mandatory references for USAID Sector Environmental Guidelines and Resources at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/sector-environmental-guidelines-resources **Climate Risk Mitigation:** ● Identify the technical and research organizations in place to support training programs along the agriculture value chain for responding to climate impacts. ● Design trainings and associated materials to be responsive to changing conditions and to incorporate climate resilience across various conditions. ● Integrate social protections for marginalized

	populations into training efforts.
Intervention Category 3: Support for Access to Finance and Insurance	
3.1 Support for establishment of Village Savings and Loans groups	This activity is CatEx.
3.2 Development and strengthening of linkages to micro-credit institutions	This activity is CatEx.
3.3 Support to private sector for developing weather indexed insurance for farmers	This activity is CatEx.
3.4. Support and development of linkages to investments, donors, and programs for improving food security including food fortification	This activity is CatEx.
Intervention Category 4: Provision of Grants	
4.1 Provision of grants that may include the following: o Grants for development of indexed insurance products for farmers o Grants for women and youth owned agricultural enterprises o Grants for household-level livestock for consumption and income o Competitive matching grants to improve and diversify business services, with a focus on food systems o Challenge fund to identify solutions for addressing soil fertility, agriculture extension, input supply, and last mile transport needs o Small competitive grants for young entrepreneurs	**Negative Determination** subject to the following **conditions**: Grant solicitations will establish criteria for meeting environmental compliance requirements and include appropriate evaluation criteria. IPs providing grants will ensure integration of environmental compliance responsibilities in grants' contracts. IP will utilize the Africa Bureau Environmental Review Form and Instructions provided in Annex 2 to screen sub-grant applications and assist grantees with establishing baseline conditions and screening for activity specific impacts. IPs will assist grantees with developing EMMPs to ensure environmental, health, and safety safeguards are adequately programmed, and will ensure that grant recipients report on EMMP implementation by review of the EMMPs and periodic unscheduled field visits where appropriate.
Intervention Category 5: Support for Institutional and Organizational Management	
5.1 Support for networking and networks development, organization, and association building; establishing and strengthening partnerships; development of market and community linkages and similar activities that include meetings and information transfer	This activity is CatEx.
5.2 Assessments, evaluations, studies, and data gathering and processing activities including performance monitoring and evaluation activities	This activity is CatEx.
Intervention Category 6: Nutrition Related Assistance	
6.1 Support for food processing R&D and marketing of products (e.g., fortified flours, corn/soy blend, soy for	**Negative Determination** subject to the following **conditions**: Where applicable, R&D facilities and laboratories will have

human consumption)	Standard Operating Procedures (SOPs) that incorporate sound environmental management including minimization of air emissions, management of water discharges, management of solid waste and safe handling of hazardous waste. Marketing of products will address food safety and where appropriate proper labeling of food products.
6.2 Support for establishment and dissemination of food safety and fortification standards	This activity is CatEx.
Intervention Category 7: Crop Production, Post-harvest Storage, Transport, and Food Processing	
7.1 Crop Production	
7.1.1 Provision of technical and financial support for crop production activities including land preparation, soil fertility management, and planting See Section 7.1.2 for activities supporting agricultural inputs	**Negative Determination** subject to the following **conditions**: **Minimize land conversion.** Agricultural crop production activities will aim to increase crop production without expanding agricultural land and not at the expense of the traditional fallow. This will be achieved through increased productivity and boosting outputs from land that is already under production. To protect natural ecosystems, the activities will aim to limit shifting cultivation. **Preserve vegetation and natural habitats.** Crop production activities will aim to preserve and where possible increase vegetative strips that offer significant ecosystem benefits to farm systems especially in reducing wind speeds, serving as a barrier to pests, capturing overspray of pesticides, creating buffer to surface water systems to capture fertilizer, pesticides, and irrigated water runoff among others. **Follow USAID biodiversity policy.** IPs have the responsibility for ensuring that "U.S. development of assistance programs do not lead to the introduction of invasive species." An "invasive" species (also known as an alien, exotic, injurious, introduced or naturalized, non-native, nonindigenous, nuisance, or noxious species) refers to an organism that is introduced into an environment where it is not native. However, not all non-native species are invasive or harmful. Where there are concerns of introduction of non-native species into local environments, IPs will refer to USAID biodiversity policy guidelines available at: https://www.usaid.gov/biodiversity/policy. **Prevent soil erosion and siltation into water bodies.** The techniques for controlling soil erosion will depend on the type of soil, topography, climatic conditions, and other factors, however in general these will include: ● Crop rotation ● Conservation tillage ● Contour farming ● Strip farming ● Terrace farming ● Grass waterways ● Diversion structures

- Creation of buffer zones between crop field s and waterways

Introduce and promote integrated soil fertility management (ISFM). Agricultural activities will aim to replace continuous soil nutrient mining with appropriately managed use of fertilizer, organic inputs and improved seed and plant materials, combined with introducing knowledge on how to adapt these practices to local conditions.

Introduce and promote integrated water resources management (IWRM). Activities that promote irrigation, particularly those that aim to move from rain-fed agriculture to irrigated agriculture will promote effective and efficient use of water for optimal production and yields, with consideration for impacts on other water users, including water users downstream. Where appropriate, a situation analysis that considers water rights, water needs, appropriate irrigation systems and water capacity assessment should be conducted.

Introduce and promote Integrated Crop Management (ICM). Agricultural projects should aim to adopt approaches that incorporate land, soil, seed, and plant materials management and cropping and crop protection strategies that contribute to sustainability and resilience to climate change.

Mitigation of social impacts. Where appropriate, through their crosscutting activities, agricultural activities will sensitize communities and their disadvantaged members to their legal land rights and help build civil society oversight. Where deemed warranted situation specific social impact assessments will be conducted.

Adopt climate-friendly farming. Climate-friendly farming is environmentally sustainable farming that applies ecological principles and techniques to agricultural systems and practices as described by ICM above.

Mandatory References:

- Sector Environmental Guideline: Crop Production, available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-crop-production/pdf

- Environmentally Sound Design (ESD) Sector Environmental Guidelines Small-Scale Dryland Agriculture (2014) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-dryland-agriculture/pdf

Climate Risk Mitigation (applies to all sub-activities under Intervention Category 7):

	● Determine how climate change impacts can impact the supply and storage of harvests. ● Identify activities to address risks to food distribution programs. ● When developing new crop varieties, consider future climate conditions (e.g., temperature, precipitation patterns and groundwater availability, types of potential pests and diseases) that might occur where crops will be planted; once locations are identified, monitor crop varieties to assess their adaptability to climate conditions.
7.1.2 Provision of technical and financial support and agricultural extension services for improved access, production and use of agricultural inputs including: ○ Seed (see 7.1.2.1) ○ Fertilizer (see 7.1.2.2) ○ Pesticides (see 7.1.2.3) ○ Agricultural technology (see7.1.2.4) ○ Irrigation (covered under Multiple-Use Systems, see 10.1) See Section 7.1.1 for general crop production activities	**Negative Determination** subject to the following **conditions**: IPs that procure or use pesticides (as defined by USAID) must ensure in consultations with their A/COR and Mozambique Mission MEO availability of a current and duly approved PERSUAP.[70] IPs must comply with Mozambique PERSUAP. The procurement or promotion of, or training in use of pesticides will be in accordance with Mozambique Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) that was completed pursuant to 22CFR Regulation 216.3 (b)—USAID pesticide procedures — and duly approved, available at: http://ecd.usaid.gov/document.php?doc_id=50452 **Mandatory Reference:** ● Sector Environmental Guideline: Crop Production (2019) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-crop-production/pdf
7.1.2.1 Activities addressing introduction and use of certified seed including community-based seed production	**Negative Determination** subject to the following **conditions**: **Procure from or establish reputable seed producers.** Activities will aim to ensure that farmers are directed to purchase seed stock from a reputable seed dealer who has proper cleaning, handling, and storage facilities, or will aim to support to establish such reputable sources. **Ensure seed labeling.** Seeds recommended to farmers should be labeled for germination percent, crop seed, weed seed and inert matter content, and the date of germination test. **Follow USAID biodiversity policy.** Do not introduce invasive species (see 7.1.1). Consider long-term implications of introducing new seed and plant materials. **Focus plant breeding programs on low input sustainable agriculture.** In addition to focusing plant breeding programs on higher productivity, breeding programs should focus on

[70] At the time this IEE was completed, the USAID Mozambique Mission's PERSUAP was valid through January 2022. This IEE will need an approved PERSUAP through FY27.

	developing and promoting genotypes adapted to specific agricultural environments and lower inputs requirement.
7.1.2.2 Activities addressing soil fertility management.	**Negative Determination** subject to the following **conditions**: **Follow best practices.** The provision/distribution, promotion of, and training in use of fertilizers must conform to best practices and norms of the Integrated Soil Fertility Management (ISFM) (see 7.1.1). Activities will emphasize and fully integrate information on the environmental risks associated with fertilizer use and best management practices to mitigate these risks. This information should at a minimum consistent with the risks and best practices outlined in the FAO International Code of Conduct for the sustainable use and management of fertilizers. **Introduce appropriate safeguards.** Activities will develop and implement appropriate safeguards to protect human health and the local ecosystems based on toxicological and environmental data for the proposed fertilizers or soil amendments. Such safeguards will address safe fertilizer product storage, transportation, handling, and application, including the use of appropriate PPE, clean-up of spills, and where necessary proper disposal. **Mandatory reference:** The International Code of Conduct for sustainable use and management of fertilizers, FAO, 2019 available at: http://www.fao.org/3/ca5253en/CA5253EN.pdf
7.1.2.3 Activities addressing integrated pest management	**Negative Determination** subject to the following **conditions**: **Implement IPM.** Activities addressing pest management will focus on integrated pest management, an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques that may include chemical pesticides. **Mandatory Reference:** ● Sector Environmental Guideline: Integrated Pest Management (2009) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-ipm/pdf **Comply with Mozambique PERSUAP.**[71] The procurement or promotion of, or training in use of pesticides will be in accordance with Mozambique Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) that was completed pursuant to 22CFR Regulation 216.3 (b)—USAID pesticide procedures— and duly approved, available at: http://ecd.usaid.gov/document.php?doc_id=50452
7.1.2.4 Introduction of	**Negative Determination** subject to the following **conditions**:

[71] Implementing Partners that procure or use pesticides (as defined by USAID) must ensure in consultations with their A/COR and Mozambique Mission MEO availability of a current and duly approved PERSUAP.

agricultural technology (e.g., equipment, machinery)	All introductions of new technologies and machinery must be screened for environmental and social impacts over the lifetime use of equipment assessing its potential impacts on air, water, and soil pollution, labor safety and sustainability. Where appropriate, activities will provide training in use of newly introduced technologies/machinery, including training for provision of adequate machinery maintenance and will ensure availability of spare parts for continued operations of introduced machinery.
7.2 Post-harvest Storage, Transport, and Food Processing	
7.2.1 Support for small scale food processing of nutritious products including implementation and enforcement of food fortification policies	**Negative Determination** subject to the following **conditions:** **Conduct screening.** All introductions of post-harvest technologies and use of machinery must be screened for environmental and social impacts over the lifetime use of equipment assessing its potential impacts on air, water, and soil pollution, labor safety and sustainability. **Develop waste management plan.** All post-harvest and food processing actions where waste is generated will have a waste management plan for appropriate handling, management and disposal of waste addressing as appropriate air, soil, water, and odor pollution from waste including and where appropriate plans for disease vector control. **Develop resource conservation plan.** Development and support of value chains based on natural products will incorporate cleaner production and waste energy and water minimization best practices. **Ensure employee safety.** Ensuring employee health and safety and addressing identified adverse social impacts will be integrated into development and support of value chains based on natural products. **Mandatory Reference:** ● Support for micro and small-scale processing enterprises will follow guidelines outlined by the "Food processing resource efficient and cleaner production briefing and resource guide for micro & small enterprises": https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/mse-food-processing/pdf **Comply with Mozambique PERSUAP.** The procurement or promotion of, or training in use of pesticides, will be in accordance with Mozambique Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) that was completed pursuant to 22CFR Regulation 216.3 (b)—USAID pesticide

	procedures— and duly approved, available at: http://ecd.usaid.gov/document.php?doc_id=50452
7.2.2 Development of food quality and safety standards	This activity is CatEx.
Intervention Category 8: Livestock and Poultry Production	
8.1 Financing and support for livestock and poultry farming, training, linking to input suppliers.	**Negative Determination** subject to the following **conditions**: **Assess carrying capacity of ecosystems.** Where scale up is anticipated, livestock production and increased diversity of livestock holdings must be accompanied by assessments of carrying capacity of rangeland, impact on biodiversity, soil health, feed requirements and forage production, availability of water resources, access to veterinary services, waste management capacity, GHG considerations and social impacts, including potential conflicts over access to private or communal natural resources. The assessment results will provide input for the planning of interventions. **Integrate sustainable livestock management.** IPs engaged in actions of intensification of livestock production or leading to intensification of livestock production will integrate their actions with actions aimed at improved rangeland management, feed management, and water resources management. **Comply with Mozambique PERSUAP.** Where support is provided for farmers' use of pesticides, the procurement or promotion of, or training in use of pesticides, will be in accordance with Mozambique Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) that was completed pursuant to 22CFR Regulation 216.3 (b)—USAID pesticide procedures— and duly approved, available at: http://ecd.usaid.gov/document.php?doc_id=50452 **Ensure water protection.** The IPs will implement water access management options for protection of drinking water sources and riparian protection (e.g., use of alternative water sources, herding, fencing, proper disposal of veterinary drugs and pesticides, manure disposal, carcasses disposal). **Follow USAID biodiversity policy.** No new breeds will be introduced without careful review and coordination by a trained specialist and in consultation with relevant Government ministries and institutions as required by host country regulations. **Integrated practices aimed at minimizing greenhouse emissions.** The project will introduce practices aimed at minimizing GHG emissions (e.g., improved animal nutrition, manure management, pasture management). **Engage stakeholders for conflict prevention.** IPs will conduct a consultation with stakeholders prior to initiation of livestock intensification or fodder production involving shared community resources.

	Minimize public nuisances. Suitable sites for location of livestock and poultry farms should be selected away from sensitive receptors and population centers. Where appropriate, animals should be tied or fenced in. The following practices should be promoted and implemented where practicable: maintain clean and tidy farm sites, cleaning up spillages rapidly; maintain and clean farm vehicles to reduce vehicle odors; cover wastes when transporting; limit noisy activities to the least noise- sensitive times of the day (week days between 7am and 10pm); avoid or effectively control potentially adverse operation effects on existing landscape character and visual receptors where possible (e.g., mitigation planting of local tree species to reduce the landscape and visual impacts); dispose of animal carcasses in accordance with local regulations; bedding from cleaning of the sheds should be regularly collected; and manure should be collected daily and carted away to a dedicated storage area. **Mandatory References:** The awardee/IPs engaged in livestock production actions will follow best practices and assure implementation of environmental mitigation and monitoring conditions specified in the following: ● USAID Sectoral Guideline for Livestock (2015) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-livestock/pdf; ● Environmentally Sound Design (ESD) Sector Environmental Guidelines Small-Scale Dryland Agriculture (2014) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-dryland-agriculture/pdf **Climate Risk Mitigation (applies to all sub-activities under Intervention Category 8):** ● When selecting breeds for livestock training, consider future climate conditions (e.g., temperature, precipitation patterns and groundwater availability, types of potential pests and diseases) that might occur where husbandry will occur; once locations are identified, monitor selected species to assess their adaptability to climate conditions. ● Improve fodder storage/banking strategies Improve access to insurance.
8.2 Support for marketing of animal products These activities apply to smallholder farmers.	**Negative Determination** subject to the following **conditions**: **Conduct activities screening.** All introductions of activities providing support for marketing animal products must be screened for environmental and social impacts assessing its potential impacts on air, water, and soil pollution, human

A smallholder farm is widely defined as a family-owned enterprise that produces crops or livestock on 2 hectares or less.	health and food safety and sustainability. **Plan for waste management and disposal.** Activities engaged in direct support for animal product processing such as butchering, fish, eggs, tallow, milk processing or other animal products processing activities will develop a waste management plan detailing proper handling of animal byproducts and generated animal waste. **Address employee and public health and safety.** Where appropriate, activities shell identify potential drivers of zoonotic disease, raise awareness of disease transmission risks, and propose prevention methods. Where livestock producers use veterinary drugs or pesticides, activities will build awareness about adequate observance of the withdrawal period. **Mitigation of impacts associated with animal production** is addressed in Section 8.1. **Mandatory References:** The awardee/IPs engaged in actions related to support of marketing of animal products will follow best practices and assure implementation of environmental mitigation and monitoring conditions specified in: ● USAID Sectoral Guideline for Livestock (2015) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-livestock/pdf ● Environmentally Sound Design (ESD) Sector Environmental Guidelines Small-Scale Dryland Agriculture (2014) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-dryland-agriculture/pdf
Intervention Category 9: Integrated Agricultural Systems	
9.1 Encourage and promote crop diversification and farming systems that are inclusive - crop, livestock, forestry	**Negative Determination** subject to the following **conditions**: Where appropriate, consideration should be given to development of assessments and plans in collaboration with local stakeholders that address potential constraints and opportunities for diversification of farming systems. **Mandatory references**: ● USAID Sectoral Guideline for Livestock (2015) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-livestock/pdf ● Environmentally Sound Design (ESD) Sector Environmental Guidelines Small-Scale Dryland Agriculture (2014) available at:

	https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-dryland-agriculture/pdf ● Sector Environmental Guideline: Crop Production, available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-crop-production/pdf ● Sector Environmental Guideline: Forestry (2015) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-forestry/pdf
Intervention Category 10: Irrigation, Water, Sanitation, and Hygiene (WASH), and Water Harvesting	
10.1 Technical and financial assistance for development of MUS for domestic use and irrigation Scale of MUS activities depends on the level of water access as defined by variables such as water quality and quantity, reliability of supply, and distance. Using characteristics of access, the following constitutes as **small, medium, and large-scale MUS** in this IEE: **Small-scale**: A MUS with capacity to service less than 500 people with 5-100 liters per capita per day. **Medium scale**: A MUS with capacity to service between 501 and 3,300 people with 100 and 200 liters per capita per day. **Large-scale**: A MUS with capacity to service more than 3,300 people, and or provide more than 200 liters per capita per day. **Large-scale MUS activities are not planned under the AG Portfolio IEE and not covered by this IEE.**	**Negative Determination** for **small and medium-scale** MUS activities subject to the following **conditions**: **Screening of all activities.** All introductions of activities providing support and technical assistance for development, construction or management of MUS must be screened for environmental and social impacts, including the potential for impacts on air, water, and soil pollution, human health, and biodiversity. Potential risks that may influence sustainability of multiple-use services and mitigation measures must be identified. **MUS planning and design.** The following considerations will be integrated as appropriate: ● Where engaging in planning and design of MUS activities, the awardees will undertake a critical assessment and an engineering survey to identify key criteria for successful implementation, parameters of optimal design, and will evaluate communities' readiness for MUS. ● The planning process will consider the capacity of land and water resources and their seasonal water variability to support MUS for the number of users, optimum scale of the scheme, and potential impacts on the local and surrounding communities and the watershed ecosystems. ● Due to relatively limited documentation available on long-term sustainability of multiple-use services and the current prevalence of single use approaches, pilot implementation activities should include carefully designed monitoring and evaluation programs to further assess the capacity for and the sustainability of multiple-use services. **Social impacts of MUS.** The following considerations will be integrated as appropriate: ● The MUS activities should be planned and managed with community participation in the context of overall

regional development plans, including both the upland catchment areas and the catchment areas downstream.
- Where systems were not traditionally designed for MUS, activities should include an assessment of community social networks and existing conflicts over water use to inform the selection and design processes and conduct a social survey to assess existing and potential inequities in water use.
- MUS activities must consider the role of the community in construction and management of the system and mechanisms for potential conflicts resolution.
- MUS should support development of linkages between water users, community water organizations and local government agencies for enhanced synergy of resources use and service distribution and consider means for development of institutional support to systems in which inequities in water distribution cannot be fixed by technological intervention.

Construction of MUS. All awardees/IPs engaged in construction of MUS infrastructure will ensure environmentally sound design by skilled professionals and actionable mitigation at every phase of construction, as provided in USAID Sectoral Guidelines for Water Supply and Sanitation.

Infrastructure must be properly sited and located away (up slope and at least 50 meters) from sources of contamination, such as latrines or poorly drained areas which receive contaminated run-off and away from other sources of abstraction.

Mandatory Reference:

- Sector Environmental Guidelines: Construction, available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-construction/pdf

Addressing public health and safety - Potable water use

- Prior to drinking water provision, the project will prepare and receive approval for a Water Quality Assurance Plan (WQAP). The WQAP will be prepared in consultation with the cognizant AOR/COR and/or Activity Manager. Its purpose is to ensure that all new and rehabilitated USAID-funded sources of drinking water provide water that is safe for human consumption. The completed WQAP must be approved by the AOR/COR and/or Activity Manager, the MEO, and the REA.
- Among the water quality tests which must be performed are tests for the presence of arsenic. Any

USAID supported action engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. The USAID managing team must assure that the standards and testing procedures described in the following documents are met: Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa.

- Once approved, the WQAP must be implemented in full, and for the duration of drinking water actions. Implementation must include testing of water prior to making the supply point available to beneficiaries. The WQAP constitutes a key element of the project's EMMP. As with all other elements of the EMMP, project budgets, workplans, and staffing plans must provide for its full implementation. For guidelines and template for preparation of WQAP, please see: https://www.usaid.gov/environmental-procedures/environmental-compliance-esdm-program-cycle/special-compliance-topics/water/wqap-lac-guidance-note

Water uses for irrigation. The awardee/IPs engaged in water availability for agriculture and upgrading and/or introducing small-scale irrigation technologies will follow best practices and assure implementation of environmental mitigation and monitoring conditions specified in USAID Sectoral Guidelines forhttps://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-dryland-agriculture/pdf .

The following considerations will be integrated as appropriate in developing irrigation projects:

- locating the irrigation project on the site where negative impacts are minimized;
- improving the efficiency of existing projects and restoring degraded croplands to use rather than establishing a new irrigation project;
- developing small-scale, individually owned irrigation systems as an alternative to large-scale, publicly-owned and managed schemes;
- using micro-irrigation systems to decrease the risk of waterlogging, erosion and inefficient water use;
- emphasizing water conservation through improved irrigation techniques; training farmers in water management.
- using treated wastewater, where appropriate, to make more water available to other users;

Water quality will be tested on the annual basis, however in locations where water quality tends to be low, more frequent testing should be conducted. Water testing parameters must include pH, turbidity, salinity, dissolved oxygen, nutrients,

	total coliforms, and specific ion toxicity. **Preventing water pollution and breeding of vectors of disease.** Water pollution from can be by direct discharge, runoff, sedimentation and/or seepage of pollutants to surface or ground water. Consideration must be given during the system design and operation and management to mitigation of particulate or dissolved pollution and pathogen contamination. The design, operations and management of the system must minimize creation of pools of stagnant water, particularly in areas with poor drainage through appropriate engineering controls. Water uses such as livestock watering, laundry, washing of household utensils and various tools of trade must be integrated into MUS so as not to contaminate water and soil. **Medium-scale MUS.** Upstream designated uses and water quality criteria must ensure the attainment and maintenance of downstream water quality standard. For an MUS with capacity to service between 501 and 3,300 people with 100 and 200 liters per capita per day, downstream water quantity and quality assessments will be undertaken to identify potential threats to local water resources, including current and future uses, and needs of the neighboring communities. The assessment should include an analysis of: ● intended use ● size and scale of associated construction needs ● supply capacity and user demands on the groundwater ● siting surveys ● development of an operation and maintenance plan Assessments must be developed and cleared by USAID MEO prior to commencing the action. **Mandatory Reference:** Sector Environmental Guidelines: Water Supply and Sanitation, available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-water-supply/pdf Good-practice design standards must be implemented for new construction and rehabilitation works, generally consistent with USAID's Sector Environmental Guidelines: Water Supply & Sanitation:https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-water-supply/pdf. The COVID-19 virus has not been detected in drinking-water supplies or via sewerage systems with or without wastewater treatment. Based on current evidence, the risk to water supplies and sanitation systems is low. is low; however, additional references are provided by WHO that should be

	considered for WASH activities. See WHO Water, Sanitation, Hygiene and Waste Management for COVID-19: https://www.who.int/publications-detail/water-sanitation-hygiene-and-waste-management-for-covid-19 These standards must be specified in the EMMP. ● For water supply, these activities must include siting of new wells away from groundwater contamination sources (e.g. latrines, cesspits, dumps) (generally at least 15-30m), exclusion of livestock from water points, and prevention of standing water at water supply points. ● For latrines, they must include provisions to prevent contamination of water supplies, appropriate choice of latrine type given local environmental conditions (e.g. pit latrines are rarely suitable in locations where the water table is high), provision of hand wash stations, and development and implementation of a system for ongoing latrine cleaning and maintenance ● Capacity-building in equipment/system maintenance must be co-programmed with construction/installation of small-scale water supply and sanitation infrastructure. As there are WASH activities covered under this IEE, the AFR BEO requires that a water quality assurance plan (WQAP) is prepared according to the WQAP Template (https://www.usaid.gov/environmental-procedures/environmental-compliance-esdm-program-cycle/special-compliance-topics/water): ○ Complete a WQAP for WASH-related activities under this IEE, and request and receive AFR BEO review and approval of WQAP. ○ Clearly link the WQAP to this IEE. ○ The review results should be written and on record in the Signing Statement of the WQAP. **Climate Risk Mitigation (applies to all sub-activities under Intervention Category 10):** ● Design WASH services to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions. ● Ensure climate risks to water supply and access are considered and managed as part of activity design. ● Ensure that measures are taken to consider the health of workers and others involved in construction, including designated resting periods, shaded areas, and ample water supply.
10.2 Technical assistance for development of hand washing stations and latrines	**Negative Determination** subject to the following **conditions**: At a minimum, latrines and wash stations construction and rehabilitation will:

Ensure proper design, siting, construction, and maintenance to help safeguard the environment from contamination with human waste by avoiding discharge of chemical and microbial contaminants into the ground and surface waters.

Prevent water pollution, contamination and spread of disease through the following actions:

- When siting latrines, consider type of soil, distance from water sources, depth of ground water, and terrain. Locate pit latrines at least 30 meters away from any water sources, the bottom of any latrine must be at least 1.5 meters above the water table. The distances may be increased for fissured rocks and limestone but are sufficient in fine-grained soils.
- Drainage or spillage from the latrine must not run towards any surface water source or shallow groundwater source.
- Consider impacts of heavy rains and flooding and, where necessary, in flooded or high-water table environments building elevated toilets or septic tanks to prevent overflowing and contamination of the environment.
- Ensure that latrines are properly equipped, emptied, and maintained.
- Ensure that latrines are properly decommissioned, and do not leave pits open

Ensure that latrines are equipped with handwashing. To improve hygiene and to minimize spread of disease at a minimum the following actions will be taken:

- Handwashing stations must be designed for effective use and located close to latrine facilities (within 1.5 meters of the latrine exit) to avoid the possibility of contamination
- Where stagnant water is generated, treatment appropriate to climate and type of soil will be selected. Standing wastewater generated due to poor drainage from handwashing may need to be addressed by building a soak pit to facilitate percolation of water into the ground. In hot and dry season evaporation or use of wastewater for irrigation should be considered.
- Technologies and locations of handwashing stations will be appropriate for the local context including availability of materials, water, and soap.

Integrate gender, social, and cultural considerations. The following actions should be considered:

- Prior to latrine and handwashing construction, adequate attention must be paid to identifying and addressing social barriers to using latrines and to

	handwashing habits. Key hygiene behaviors and factors such as cultural perceptions, distance to the latrine, safety to users and community participation in cleaning and maintenance of the latrine should be addressed. ● Where the population has not traditionally used toilets, it may be necessary to conduct a concerted education/promotion campaign to encourage their use and to create a demand for more toilets to be constructed. ● Where the population does not have proper hygiene habits, it may be necessary to conduct a concerted education/promotion campaign to create awareness about health benefits of handwashing particularly after use or maintenance of a latrine. ● Prior to construction of handwashing station, adequate attention must be paid to identifying and addressing key hygiene behaviors. ● Where water provided for handwashing is generally not fit for human consumption, communities must be informed, and children must receive clear warning. **Mandatory References:** Construction and rehabilitation of latrines and handwashing stations actions will follow best practices and assure implementation of any environmental mitigation and monitoring conditions specified in: ● USAID Sector Environmental Guideline: Water Supply and Sanitation (2017) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-water-supply/pdf ● USAID Sector Environmental Guideline: Construction (2017) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-construction/pdf
10.3 Support for and introduction of water harvesting technologies	**Negative Determination** subject to the following **conditions**: **Conduct screening of activities.** All activities providing support and technical assistance for introduction of water harvesting must be screened for environmental and social impacts, including for impacts upscaling of small pilot activities can potentially have on ecosystems and human health. **Consider broader implications.** Water resource management activities should be implemented within an integrated (or adaptive) water resources management framework. As such, water harvesting solutions should take into consideration benefits and tradeoffs associated with altered patterns of water use where appropriate, an issues assessment should be conducted, with the aim of taking into consideration the broader implications of the planned

activities, weighing up the associated benefits and tradeoffs, identifying potential unintended consequences and potential adverse environmental and social impacts.

Coordinate with local governments and local communities. While the GoM encourages harvesting of rainwater to minimize the impact of shortage of water in communities, local regulations regarding water harvesting may need to be taken into consideration.

Address water quality and safety. Because harvested and standing water can harbor organic and inorganic pollutants measures need to be implemented to ensure the harvested water quality. These measures may include, but not limited to:

- Using water only for non-potable needs (e.g., agriculture)
- Installing fences to block animals from drinking and polluting the pond or the reservoir.
- Installing Point-of-Use treatment system
- Disinfect water (e.g., chlorination)
- Covering collection tanks and barrels

Where using for potable needs conduct mandatory water testing. While it may not be practical for beneficiaries to test harvested water before use, where water harvesting practices are being introduced, conduct testing of water to establish a water quality baseline, particularly where harvested water is intended for potable uses and watering of edible garden crops. Consider developing subsequent water testing recommendations in collaboration with local government and local communities.

Addressing public health and safety - Potable water use. The following measures will be undertaken:

- Prior to drinking water provision, the project will prepare and receive approval for a Water Quality Assurance Plan (WQAP). The WQAP will be prepared in consultation with the cognizant AOR/COR and/or Activity Manager. Its purpose is to ensure that all new and rehabilitated USAID-funded sources of drinking water provide water that is safe for human consumption. The completed WQAP must be approved by the AOR/COR and/or Activity Manager, the MEO, and the REA.
- Among the water quality tests which must be performed are tests for the presence of arsenic. Any USAID supported action engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. The USAID managing team must assure that the standards and testing procedures described in the following documents are met: Guidelines for Determining the Arsenic Content of Ground Water in

	USAID-Sponsored Well Programs in Sub-Saharan Africa. ● Once approved, the WQAP must be implemented in full, and for the duration of drinking water actions. Implementation must include testing of water prior to making the supply point available to beneficiaries. The WQAP constitutes a key element of the project's EMMP. As with all other elements of the EMMP, project budgets, workplans, and staffing plans must provide for its full implementation. For guidelines and template for preparation of WQAP, please see: https://www.usaid.gov/environmental-procedures/environmental-compliance-esdm-program-cycle/special-compliance-topics/water/wqap-lac-guidance-note **Consider participatory approach.** Where appropriate, engage communities. Working collaboratively with local communities (e.g., created or existing Water User Associations) and affected and affiliated stakeholders, both with common and with competing interests can facilitate mitigation of adverse environmental and social impacts. Engaging communities in the situation assessments, planning, design, construction, and operations stage will facilitate introduction of activities aiming to affect social and environmental changes. **Mandatory Reference** for activities engaged in introduction of water harvest technologies mandatory references are: ● Sector Environmental Guidelines: Water Supply and Sanitation, available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-water-supply/pdf **Recommended Reference:** ● United Nations, Department of Economic and Social Affairs (NDESA): Integrated Water Resource Management (IWRM), available at: https://www.un.org/waterforlifedecade/iwrm.shtml#:~:text=It%20states%3A%20'IWRM%20is%20a,the%20sustainability%20of%20vital%20ecosystems.
Intervention Category 11: Marine and Coastal Livelihoods and Management, and Tourism	
11.1 Marine and Coastal Livelihoods	
11.1.1 Support for establishing of fisheries no take zones (NTZs)	**Negative Determination** subject to the following **conditions**: Stakeholder engagement and collaboration should be an integral part of this activity. Information and data that shows the NTZ ability to enhance local fisheries should be shared with the fishermen and other stakeholders and they must be included in the decision-making process. **Mandatory Reference:**

	• Sector Environmental Guideline: Community Based Natural Resource Management (2009), available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-cbnrm/pdf
11.1.2 Support for development of crab fattening	**Negative Determination** subject to the following **conditions**: Where appropriate, consideration should be given to development of assessments and plans in collaboration with local stakeholders that address harvest levels and potential constraints such as disease, shortage of stocking materials, or insufficient technical knowledge. **Mandatory references**: • Sector Environmental Guideline: Wild Caught Fisheries and Aquaculture (2018) available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-fisheries/pdf • Sector Environmental Guideline: Community Based Natural Resource Management (2009), available at: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-cbnrm/pdf **Recommended reference:** • FAO Fisheries and Aquaculture technical paper and practical on Mud crab aquaculture: http://www.fao.org/3/ba0110e/ba0110e00.htm
11.1.3 Support for development and production of non-timber forest products from mangroves	**Negative Determination** subject to the following **conditions**: Where appropriate, consideration should be given to development of integrated mangrove management plans with stakeholder participation to accommodate local cultural and economic needs of the local communities. **Mandatory Reference:** • Sector Environmental Guideline: Community Based Natural Resource Management (2009), available at: https://www.usaid.gov/sites/default/files/documents/1860/SectorEnvironmentalGuidelines_CBNRM_2003.pdf
11.1.4 Support for sustainable oyster harvesting	**Negative Determination** subject to the following **conditions**: Where appropriate, consideration should be given to development of science-based resource management plans with stakeholder participation to accommodate local cultural and economic needs of the local communities. **Mandatory Reference:**

	• Sector Environmental Guideline: Community Based Natural Resource Management (2009), available at: https://www.usaid.gov/sites/default/files/documents/1860/SectorEnvironmentalGuidelines_CBNRM_2003.pdf
11.2 Marine and Coastal Management	
11.2.1 Support for mangrove forest management	**Negative Determination** subject to the following **conditions**: Assessment of the status of mangrove forests is essential for better conservation planning and management. Traditional and community-based forest management practices are emerging as appropriate alternatives to state control and institutional arrangement for ensuring sustainable management of forest resources. **Recommended reference:** • Food and Agriculture Organization of the United Nations (FAO) at: http://www.fao.org/sustainable-forest-management/toolbox/tools/tool-detail/en/c/230988/
11.2.2 Support for community coastal management and organization of Beach Management Units, community co-management of coastal and marine protected areas (e.g., coral reefs, seagrasses, mangroves)	This activity is CatEx.
11.2.3 Support integrated coastal zone management at the regional scale (e.g., marine spatial planning, marine tenure, and protected area management)	This activity is CatEx.
11.3 Tourism	
11.3.1 Youth-focused marine and coastal tourism skills development	This activity is CatEx.
11.3.2 Tourism promotion, with a focus on Marine ecotourism promotion	**Negative Determination** subject to the following **conditions**: Sustainable tourism development maximizes the net contribution of tourism to a destination in terms of maintaining or improving economic, social-cultural, and environmental conditions. IPs promoting tourism under the AG activity should consider ways to support the following[72]: • Optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.

[72] *Making Tourism More Sustainable - A Guide for Policy Makers*, UNEP and UNWTO, 2005, p.11-12

	● Respect for socio-cultural authenticity of host communities, conserving their built and living cultural heritage and traditional values, and contributing to inter-cultural understanding and tolerance. ● Ensuring viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are equitably distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation. At all levels, it is important for a wide range of relevant stakeholders to be engaged in the process of tourism promotion. **Recommended reference:** ● European Commission, Joint Research Centre, Best Environmental Management Practice in the Tourism Sector, available at: https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/best-environmental-management-practice-tourism-sector
11.3.3 Linking fisheries and other producers with restaurants	**Negative Determination** subject to the following **conditions**: Partnerships between supply chain actors — including retailers, food services and restaurants, processors, and distributors – offer an opportunity to transition to more sustainable seafood systems by leveraging market power and creating market-based incentives for implementing new sustainable fishery and aquaculture practices. Considerations should be given to the development of procurement guidelines for restaurants to ensure that their suppliers are implementing best available practices – regardless of the practices of the broader sector. Guidelines should include information on the importance of working with suppliers who have in place sustainability standards for the prevention of illegal fishing and overfishing, and the reduction of bycatch and habitat destruction. Procurement guidelines should also inform restaurants about the most sustainable fish species to purchase and eat. To the extent possible, measures should be taken to improve transparency and traceability all along the seafood supply chain that can support more informed choices. **Recommended reference:** ● WWF, Southern African Sustainable Seafood Initiative (SASSI), available at: http://wwfsassi.co.za/

6.0 LIMITATIONS OF THIS INITIAL ENVIRONMENTAL EXAMINATION

The determinations recommended in this document apply only to projects/activities and sub-activities described herein. Other projects/activities that may arise must be documented in either a separate IEE, an IEE amendment if the activities are within the same project/activity, or other type of environmental compliance document and shall be subject to an environmental analysis within the appropriate documents listed above.

Other than projects/activities determined to have a Positive Threshold Determination, it is confirmed that the projects/activities described herein do not involve actions normally having a significant effect on the environment, including those described in 22 CFR 216.2(d).

In addition, other than projects/activities determined to have a Positive Threshold Determination and/or a pesticide management plan (PERSUAP), it is confirmed that the projects/activities described herein do not involve any actions listed below. Any of the following actions would require additional environmental analyses and environmental determinations:

- Support project preparation, project feasibility studies, or engineering design for activities listed in §216.2(d)(1);
- Affect endangered and threatened species or their critical habitats per §216.5, FAA 118, FAA 119;
- Provide support to extractive industries (e.g., mining and quarrying) per FAA 117;
- Promote timber harvesting per FAA 117 and 118;
- Lead to new construction, reconstruction, rehabilitation, or renovation work per §216.2(b)(1);
- Support agro-processing or industrial enterprises per §216.1(b)(4);
- Provide support for regulatory permitting per §216.1(b)(2);
- Lead to privatization of industrial facilities or infrastructure with heavily polluted property per §216.1(b)(4);
- Research, testing, or use of genetically engineered organisms per §216.1(b)(1), ADS 211;
- Assist the procurement (including payment in kind, donations, guarantees of credit) or use (including handling, transport, fuel for transport, storage, mixing, loading, application, clean-up of spray equipment, and disposal) of pesticides or activities involving procurement, transport, use, storage, or disposal of toxic materials. Pesticides cover all insecticides, fungicides, rodenticides, etc. covered under the Federal Insecticide, Fungicide, and Rodenticide Act per §216.2(e) and §216.3(b).

7.0 REVISIONS

Per 22 CFR 216.3(a)(9), when ongoing programs are revised to incorporate a change in scope or nature, an IEE amendment will be prepared to identify and address all environmental impacts. Per ADS 204, it is the responsibility of the USAID A/COR to keep the MEO/REA and BEO informed of any new information or changes in the activity or environmental impacts, requiring revision of this environmental analysis and environmental determination.

ATTACHMENTS:

Annex 1: Climate Risk Management Summary Table for Activity
Annex 2: Africa Bureau Environmental Review Form and Instructions

ANNEX 1. PROJECT CLIMATE RISK MANAGEMENT SUMMARY TABLE

Tasks/Defined or Illustrative Interventions	Climate Risks[73]	Adaptive Capacity	Risk Rating[74]	How Risks are Addressed[75]	Further Analysis	Opportunities to Strengthen Climate Resilience[76]
Intervention Category 1: Policy Development and Support ● 1.1: Support for development and promulgation of food fortification policies ● 1.2: Support for development and promulgation of business and finance enabling policies	Sea level rise, increased temperatures, and variability in rainfall, as well as increased intensity, duration, and/or frequency of extreme climate-related events such as droughts and floods may disrupt logistics networks to deploy staff and equipment, impede access routes, damage ecosystems and infrastructure, and reduce capacity necessary to implement activities (**applies to all AG Portfolio sub-activities**).	Capacity of institutions to support preparation for and response to climate impacts is limited. National and local planning, budgeting, and emergency response capabilities are limited and not robust or flexible enough to accommodate significant climate shocks. Capacity of institutions to use and integrate climate information into plans and programs is low.	High	Beyond the direct impact of improving economic growth, food security, and health conditions in the target areas, AG Portfolio activities will build broad-based resilience and adaptive capacity to climate change impacts in Mozambique. Climate risks are specifically addressed in all design documents given that this is one of the leading causes	Develop indicators to monitor inclusion of CRM considerations and measures into activity implementation (**applies to all AG Portfolio sub-activities**). Where appropriate, include specific language on climate risk screening and management in Scopes of Work, Sub-grantee agreements, Requests for Applications, and Requests for Interest	Support policy interventions that pay close attention to the ways in which people cover risks themselves (e.g., unregulated intrahousehold or community transfers, funeral societies, and rotating credit schemes) to understand where informal arrangements fall short, where and how markets fail, and thus what set of instruments is most likely to augment rather than displace or distort choices for reducing climate risks and impacts.

[73] List key risks related to the defined/illustrative interventions identified in the screening and additional assessment.

[74] Low/Moderate/High

[75] Describe how risks have been addressed in activity design and/or additional steps that will be taken in implementation. If you chose to accept the risk, briefly explain why.

[76] Describe opportunities to achieve multiple development objectives by integrating climate resilience or mitigation measures

		Institutions' access to relevant climate information and data is low.		of shocks and stresses that activities are designed to address.	(**applies to all AG Portfolio sub-activities**).	Use early warning systems to provide advanced information on climate risks to administrators and staff of. To address potential climate change threats during the planning and design process, consider creating natural disaster working groups and devising contingency plans for implementation. This creates opportunities to engage early with key stakeholders on a variety of issues and raise awareness among stakeholders about climate vulnerability and resilience.
	Increased flooding and heat stress may lead to direct impacts on human health, or otherwise increase the prevalence of water/food- and vector-borne disease, impacting the health of program administrators and participants (**applies to all AG Portfolio sub-activities**).		Moderate			
	Changing climate conditions may increase the risks of exposure to severe weather events during program activities, with differential impacts on women and other marginalized communities		Moderate		Incorporate climate assessment and risk management requirements (including consideration of inequitable impact on marginalized and vulnerable populations) in solicitations, as appropriate. Integrate social protections for marginalized	

					populations into training efforts.	
	Climate-related risks may impact the effectiveness of current agricultural policies and legal frameworks (e.g., by prioritizing crops that are likely to perform poorly under future climate scenarios).		Low		Include climate risk management measures in the activity EMMP. Design policy advocacy and technical assistance activities to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions.	
Tasks/Defined or Illustrative Interventions	**Climate Risks**	**Adaptive Capacity**	**Risk Rating**	**How Risks are Addressed**	**Further Analysis**	**Opportunities to Strengthen Climate Resilience**
Intervention Category 2: Capacity Building and Trainings 2.1: Capacity building, awareness building, and training activities that do not have direct impacts on the environment ● 2.1.1 Training adults and youth in entrepreneurship,	Climate-related risks may impact the effectiveness of current agricultural policies and legal frameworks (e.g., by prioritizing crops that are likely to perform poorly under future climate scenarios).	Training and other capacity building programs that incorporate climate-related information are limited. Information about climate change impacts on education, social services, and	High	Climate risks are specifically addressed in all design documents. Interventions will include a focus on climate smart agriculture interventions, including drip irrigation, forage	Include climate risk management measures in the activity EMMP (**applies to all sub-activities in Intervention Category 2**). Incorporate climate change information into	Training, education, and other capacity building activities should consider local customs and habits and include a disaster preparedness module. Efforts to improve response and

business organization and management, financial management, marketing, information systems, and other classroom or distance training (e.g., farming as a business) ● 2.1.2 Training firms and individuals how to become investment ready, how to seek funds, how to borrow funds, and how to manage borrowed funds 2.2: Capacity building and training activities that may have direct and/or indirect impacts on the environment ● 2.2.1 Hands-on practical trainings and demonstrations for adults and youth including through local schools and universities and internships, vocational training, and apprenticeship in agribusiness and agricultural services delivery including:		marginalized populations are not well incorporated into planning of education systems, social services, and emergency preparedness. The volatile security situation has displaced thousands from rural to urban areas, largely overstretching resilience capacities. Tens of thousands of Mozambicans remain in search of durable solutions to experienced impacts of recent cyclones.		and ground cover crops, soil fertility management, introduction of drought tolerant crops, and water management approaches.	strategic planning of resources and training. Identify and support the technical and research organizations in place to establish programs along the agriculture value chain, including climate-smart agriculture techniques, for responding to climate impacts.	planning for climate-related extreme events can translate to broader emergency preparedness and planning. Curricula incorporating climate change will help advance scientific knowledge and skills. As feasible, encourage polyculture to diversify agricultural income, reduce dependency on inputs such as nitrogen fertilizers, and reduce susceptibility to catastrophic losses from plans and diseases. Agroforestry techniques or other methods of climate-smart or regenerative agriculture can increase
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may negatively impact the productivity of pastoral livelihoods (e.g., reduced availability of grazing land due to land degradation or		Moderate		Design trainings and associated materials to be responsive to changing conditions and to incorporate climate resilience across various conditions. Integrate social protections for marginalized	

	desertification, increased prevalence of parasites and disease that affect livestock, reduced water availability for livestock).				populations into training efforts.	production while also enhancing carbon sequestration. Generate clean energy from biodigesters of agriculture byproducts, including animal manure and crop residues. Introduce native drought-resistant crops and promote adoption of breeds and grass varieties better adapted to climate changes.
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may decrease the productivity of aquacultural systems (e.g., through changes in the distribution/demography/structure of fish stocks, increased salinization/siltation of water resources, direct health impacts to fisherfolk).		High			
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may negatively impact crop production and yields (e.g., through		High			

	increased prevalence and/or distribution range of pests and disease, negative impacts to seed germination, reduced water availability, increased soil degradation and/or desertification).					
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may negatively impact the productivity of mixed farming and agroforestry systems (e.g., increased prevalence and/or distribution range of pests and disease, negative impacts to seed determination, altered productivity and distribution of forests, negative impacts to aquatic ecosystems, and impacts on ecosystem health).		High			

Tasks/Defined or Illustrative Interventions	Climate Risks	Adaptive Capacity	Risk Rating	How Risks are Addressed	Further Analysis	Opportunities to Strengthen Climate Resilience
Intervention Category 3: Support for Access to Finance and Insurance ● 3.1: Support for establishment of Village Savings and Loans groups ● 3.2: Development and strengthening of linkages to micro-credit institutions ● 3.3: Support to private sector for developing weather indexed insurance for farmers ● 3.4: Support and development of linkages to investments, donors, and programs for improving food security including food fortification	Increased climate variability may reduce willingness of financial institutions to provide competitive interest rates to small-scale producers due to increased uncertainty and the associated economic impact (e.g., reduced productivity of crops). Sea level rise, increased temperatures and variability in rainfall, as well as increased intensity, duration, and/or frequency of extreme climate-related events such as droughts or floods may lead to externalities that create unexpected economic costs (e.g., increase food demand and costs) at the household or village level.	Capacity of institutions and financial services to support preparation for and response to climate impacts is limited. The extent to which technical resources and organizations can train and support financial service providers to manage climate impacts on financial services is limited. There are not adequate financial resources to support key economic sectors in preparing for and responding to climate change impacts. A volatile security situation has displaced thousands from rural to urban areas, largely	Low High	Climate risks are specifically addressed in the activity documents.	Design resource/financial mobilization interventions to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions. Where possible, identify existing insurance mechanisms for climate Develop tailored insurance mechanisms for disaster affected households. disasters.	Where possible, support economic strengthening investments that support reductions in greenhouse gas emissions (e.g., through gardening/agriculture practices; changes in fuel or energy use; or changes to less GHG intensive products). Improve broader household economic resilience and livelihood outcomes through increased resilience to climate shocks. Efforts to improve response and planning for climate-related extreme events can translate to broader emergency

		overstretching capacities to provide social services to affected populations. Tens of thousands of Mozambicans remain in search of durable solutions to experienced impacts of recent cyclones				preparedness and planning. To address uncertainties posed by climate risks during implementation, IPs and other key stakeholders should prepare to manage activities adaptively and communicate frequently. Establishing promotion of contingency budgets reserved to addressed unexpected fund investments due to climate disasters for Village Savings and Loans.

Tasks/Defined or Illustrative Interventions	Climate Risks	Adaptive Capacity	Risk Rating	How Risks are Addressed	Further Analysis	Opportunities to Strengthen Climate Resilience
Intervention Category 4: Provision of Grants ● 4.1: Provision of grants that may include the following: ○ Grants for development of indexed insurance products for farmers ○ Grants for women and youth owned agricultural enterprises ○ Grants for household-level livestock for consumption and income ○ Competitive matching grants to improve and diversify business services, with a focus on food systems ○ Challenge fund to identify solutions for addressing soil fertility, agriculture extension, input supply, and last	Increased flooding and heat stress may lead to direct impacts on human health, or otherwise increase the prevalence of water/food- and vector-borne disease, impacting health and nutritional expenditures among grant recipients (decreasing income available for household/livelihood expenses). Climate risks and/or increased pest outbreaks may result in crop failures, decreasing the extent to which proposed interventions and grants are able to meet their objectives (e.g., increased resiliency against shocks among agriculturalists).	Information about climate change impacts on specific sectors are not well incorporated into grant-disbursing institutions. The volatile security situation has displaced thousands from rural to urban areas, largely overstretching resilience capacities. Tens of thousands of Mozambicans remain in search of durable solutions to experienced impacts of recent cyclones.	Moderate Moderate	Climate risks are specifically addressed in the activity document. Grants and financial instruments are specifically targeted to help build household and community assets to enable greater adaptation to extreme climate events. For all activities, and especially for coastal programs, organization around marine environment and mangrove conservation are designed to mitigate negative impacts from climate events,	Include climate risk management measures in the activity EMMP (**applies to all sub-activities in Intervention Category 4**). Design resource/financial mobilization interventions to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions. Assess the extent to which data from early warning systems can provide timely weather information to grant recipients	Efforts to improve response and planning for climate-related extreme events can translate to broader emergency preparedness and planning. To address uncertainties posed by climate risks during implementation, IPs and other key stakeholders should prepare to manage activities adaptively and communicate frequently. Promote adoption of climate smart techniques to enhance farmers' resilience and adaptation to climate change (e.g., water-saving techniques and

mile transport needs ○ Small competitive grants for young entrepreneurs				and to build adaptive capacity of beneficiaries	(especially farmers).	improved stress tolerant varieties).
Tasks/Defined or Illustrative Interventions	**Climate Risks**	**Adaptive Capacity**	**Risk Rating**		**Further Analysis**	**Opportunities to Strengthen Climate Resilience**
Intervention Category 5: Support for Institutional and Organizational Management ● 5.1: Support for networking and networks development, organization, and association building; establishing and strengthening partnerships; development of market and community linkages and similar activities that include meetings and information transfer ● 5.2: Assessments, evaluations, studies, and data gathering and processing activities including performance	Flooding and severe weather events could cause damage and destruction of communications hardware and software used to develop studies and carry out research analysis.	Capacity of institutions to support preparation for and response to climate impacts is limited. National and local planning, budgeting, and emergency response capabilities are limited and not robust or flexible enough to accommodate significant climate shocks. Capacity of institutions to use and integrate climate information into plans and programs is low.	High		Create new coalitions or better working relationships between stakeholder groups that have not been aligned or have been in competition.	To address uncertainties posed by climate risks during implementation, IPs and other key stakeholders should prepare to manage activities adaptively and communicate frequently. To address climate change threats during the planning and design process, consider creating natural disaster working groups and devising contingency plans for implementation. This creates opportunities to engage early with key stakeholders

monitoring and evaluation activities		Institutions' access to relevant climate information and data is low.				on a variety of issues and raise awareness among stakeholders about climate vulnerability and resilience.
Tasks/Defined or Illustrative Interventions	**Climate Risks**	**Adaptive Capacity**	**Risk Rating**	**How Risks are Addressed**	**Further Analysis**	**Opportunities to Strengthen Climate Resilience**
Intervention Category 6: Nutrition Related Assistance ● 6.1: Support for food processing R&D and marketing of products (e.g., fortified flours, corn/soy blend, soy for human consumption) ● 6.2: Support for establishment and dissemination of food safety and fortification standards	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may lead to increased strain to food and nutritional security through the following: ● an increase the prevalence and/or distribution range of pests and disease ● negatively impacts to crops and seed germination ● an increase of pathogenic, spoilage microorganisms, and enzymes affecting crop	High levels of poverty and low education/ literacy limit people's options for making agricultural activities more climate-resilient and finding alternative livelihoods. Because women often have less control over capitals, limited economic opportunities, and lack voice in decision making, these factors reduce women's capacity to adapt and overcome hazards.	Moderate	Climate risks are specifically addressed in the activity documents. Improving household nutrition and access to nutritious foods will mitigate adverse health consequences from climate related events. Crop diversification and introduction of nutritious crops (e.g., tree crops, Moringa, Orange flesh sweet potato) will help to	Include climate risk management measures in the activity EMMP (**applies to all sub-activities in Intervention Category 6**). Design food processing and marketing efforts to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions. Explore and test new	To address uncertainties posed by climate risks during implementation, IPs and other key stakeholders should prepare to manage activities adaptively and communicate frequently. To address climate change threats during the planning and design process, consider creating natural disaster working groups and devising contingency plans for implementation. This creates opportunities to

	products and red meat and poultry	National and local planning, budgeting, and emergency response capabilities are limited and not robust or flexible enough to accommodate significant climate shocks. Capacity of institutions to use and integrate climate information into plans and programs is low. Institutions' access to relevant climate information and data is low.		ensure stable and nutritious diets in the face of climate events.	advances in processing and packaging fruits, vegetables, meats, seafood, dairy, and egg products. These will enable availability, stability, and safety of food under changing climate conditions.	engage early with key stakeholders on a variety of issues and raise awareness among stakeholders about climate vulnerability and resilience.
	Increased climate extremes such as unpredictable rainfall and flooding and drought may reduce crop productivity, reducing food supplies, resulting in decreased quality and quantity of nutrient-rich foods and prioritization of calorie-rich foods that are lacking nutrients.		Moderate			

Tasks/Defined or Illustrative Interventions	Climate Risks	Adaptive Capacity	Risk Rating	How Risks are Addressed	Further Analysis	Opportunities to Strengthen Climate Resilience
Intervention Category 7: Crop Production, Post-harvest Storage, Transport, and Food Processing ● 7.1: Crop Production ○ 7.1.1 Provision of technical and financial support for crop production activities including land preparation, soil fertility management, and planting ○ 7.1.2 Provision of technical and financial support and agricultural extension services for improved access, production and use of agricultural inputs including seed, fertilizer, pesticides, agricultural technologies, and irrigation ● 7.2: Post-harvest Storage, Transport, and Food Processing	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may lead to the following: ● increased prevalence and/or distribution range of pests and disease ● alterations in effectiveness and use of agricultural inputs (e.g., increased use of pesticides) ● reduced food and nutritional security due to crop failures and food shortages ● increased prevalence of pathogenic, spoilage microorganisms, and enzymes affecting crop post-harvest storage,	High levels of poverty and low education/literacy limit people's options for making agricultural activities more climate-resilient and finding alternative livelihoods. Because women often have less control over capitals, limited economic opportunities, and lack voice in decision making, these factors reduce women's capacity to adapt and overcome hazards. Few agriculturalists can afford to invest in advanced agricultural technologies, and those who can are often located in areas more	High	Climate risks are specifically addressed in the activity documents. Interventions will include a focus on climate smart agriculture interventions, including drip irrigation, forage and ground cover crops, soil fertility management, introduction of drought tolerant crops, and water management approaches.	Include climate risk management measures in the activity EMMP (**applies to all sub-activities in Intervention Category 7**). Ensure timely communication of flood risks to administrators and staff. Design nutrition and resilience services to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions. Determine how climate change impacts can impact the supply and	To address potential climate change threats during the planning and design process, consider creating natural disaster working groups and devising contingency plans for implementation. This creates opportunities to engage early with key stakeholders on a variety of issues and raise awareness among stakeholders about climate vulnerability and resilience. Consider including climate change information and disaster preparedness in activities designed to strengthen crop supply and distribution, as well as information

○ 7.2.1 Support for small scale food processing of nutritious products including implementation and enforcement of food fortification policies ○ 7.2.2 Development of food quality and safety standards	transport, and food processing	vulnerable to floods that can overwhelm local capacities (e.g., along fertile soils along river banks and flood plains). National and local planning, budgeting, and emergency response capabilities are limited and not robust or flexible enough to accommodate significant climate shocks. Capacity of institutions to use and integrate climate information into plans and programs is low. Institutions' access to relevant climate information and data is low.			storage of harvests. Identify activities to address risks to food distribution programs. When developing new crop varieties, consider future climate conditions (e.g., temperature, precipitation patterns and groundwater availability, types of potential pests and diseases) that might occur where crops will be planted; once locations are identified, monitor crop varieties to assess their adaptability to climate conditions. Design agricultural trainings to be adaptable to changing	about how climate change risks can affect supply and demand. Strengthening infrastructure and logistics for transport networks to enhance resilience to climate change, while improving food and nutrition security.
	Increased extreme climate events such as flooding and heat waves may result in land degradation, crop failure, and increased gendered labor practices in agriculture, limiting alternative livelihood options for women and youth.		Moderate			
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may reduce water		Moderate			

	availability for irrigation or crop production.				climate conditions and to incorporate climate resilience across various conditions. Promote climate-smart agricultural techniques Promote adoption of climate smart techniques to enhance farmers' resilience and adaptation to climate change (e.g., water-saving techniques, improved stress tolerant varieties, and the use of Integrated Pest Management and organic fertilizers). Assess the extent to which data from early warning systems can provide timely	
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may drive the conversion of new lands for agricultural production, destroying/fragmenting natural habitat or otherwise increase rates of soil degradation and/or desertification.		Moderate			
	Climate change reduces biodiversity, such as by reducing the populations of pollinating insects, which can threaten agricultural resilience and crop productivity.		Moderate			
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may decrease crop		Moderate			

	yields or otherwise damage agricultural livelihoods.				weather information to farmers.	
Tasks/Defined or Illustrative Interventions	**Climate Risks**	**Adaptive Capacity**	**Risk Rating**	**How Risks are Addressed**	**Further Analysis**	**Opportunities to Strengthen Climate Resilience**
Intervention Category 8: Livestock and Poultry Production ● 8.1: Financing and support for livestock and poultry farming, training, linking to input suppliers ● 8.2: Support for marketing of animal products	Changing climatic conditions (e.g., shifting precipitation patterns, increased temperatures, increased frequency/severity of storms, etc.) may have adverse impacts on the productivity of livestock production from the following: ● increased prevalence of parasites and diseases that affect livestock ● reduced water availability ● reduced animal growth rates and yields from pastoralism (e.g., reduced fertility and milk production) ● reduced amount of quality forage for grazing livestock	High levels of poverty and low education/literacy limit people's options for making pastoral activities more climate-resilient and finding alternative livelihoods. National and local planning, budgeting, and emergency response capabilities are limited and not robust or flexible enough to accommodate significant climate shocks. Capacity of institutions to use and integrate climate information	Moderate	Climate risks are specifically addressed in the activity documents. Introduction of small scale/portable livestock is a dedicated strategy to diversify household assets and incomes to enable them to better respond to negative climate impacts. Application of multi-use small scale water systems for livestock, and management of livestock disease will be	Include climate risk management measures in the activity EMMP (**applies to all sub-activities in Intervention Category 8**). When selecting breeds for livestock training, consider future climate conditions (e.g., temperature, precipitation patterns and groundwater availability, types of potential pests and diseases) that might occur where husbandry will occur; once	Generate clean energy from biodigesters of agriculture byproducts, including animal manure and crop residues. Provide timely weather information to pastoralists using results of monitoring from early warning systems. Consider using low-methane-producing feeds for livestock.

	Reduced availability of grazing land due to climate-related land degradation or desertification from overgrazing.	into plans and programs is low. Institutions' access to relevant climate information and data is low.	Moderate	interventions included in these programs.	locations are identified, monitor selected species to assess their adaptability to climate conditions. Design livestock support to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions. Improve fodder storage/banking strategies Improve access to insurance. Assess the extent to which data from early warning systems can provide timely weather information to pastoralists.	
	Increased extreme climate events such as flooding and heat waves may result in land degradation, crop failure, and increased gendered labor practices in pastoralism, limiting alternative livelihood options for women and youth.		Moderate			

Tasks/Defined or Illustrative Interventions	Climate Risks	Adaptive Capacity	Risk Rating	How Risks are Addressed	Further Analysis	Opportunities to Strengthen Climate Resilience
Intervention Category 9: Integrated Agricultural Systems ● 9.1: Encourage and promote crop diversification and farming systems that are inclusive - crop, livestock, forestry	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may increase the prevalence and/or distribution range of pests and disease. This could increase the use of pesticides and reduce food and nutritional security due to crop failures and food shortages.	High levels of poverty and low education/literacy limit people's options for making agricultural activities more climate-resilient and finding alternative livelihoods. Because women often have less control over capitals, limited economic opportunities, and lack voice in decision making, these factors reduce women's capacity to adapt and overcome hazards. Few agriculturalists can afford to invest in advanced agricultural technologies, and those who can are often located in areas more vulnerable to floods	Moderate	Climate risks are specifically addressed in the activity documents. Interventions will include a focus on climate smart agriculture interventions, including drip irrigation, forage and ground cover crops, soil fertility management, introduction of drought tolerant crops, and water management approaches.	Include climate risk management measures in the activity EMMP **(applies to all sub-activities in Intervention Category 9).** Facilitate improved access to climate data. Develop indicators to monitor inclusion of CRM considerations and measures into activity implementation. Assess the extent to which data from early warning systems can provide information to farmers on river flow and	Promote adoption of breeds and grass varieties better adapted to climate change. To address potential climate change threats during the planning and design process, consider creating natural disaster working groups and devising contingency plans for implementation. This creates opportunities to engage early with key stakeholders on a variety of issues and raise awareness among stakeholders about climate vulnerability and resilience. Consider including climate change information and disaster preparedness in
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may increase the prevalence and/or distribution range of pests and disease, as well as negatively impact crops and seed germination, altering		Moderate			

	the effectiveness of agricultural inputs.	that can overwhelm local capacities (e.g., along fertile soils along riverbanks and flood plains). National and local planning, budgeting, and emergency response capabilities are limited and not robust or flexible enough to accommodate significant climate shocks. Capacity of institutions to use and integrate climate information into plans and programs is low. Institutions' access to relevant climate information and data is low.			sedimentation rates. Develop upstream water management strategy for dry season. Reduce dependency on ground water extraction for upstream irrigation. Explore the potential benefits of adaptive agriculture techniques (e.g., floating bed agriculture). Support processes for reliance policy coherence through a whole-of-government and whole-of-society approach. Strengthen data collection	activities designed to strengthen farming systems and distribution. Agroforestry techniques or other methods of climate-smart or regenerative agriculture can increase production while also enhancing carbon sequestration. Promote adoption of climate smart techniques to enhance farmers' resilience and adaptation to climate change (e.g., water-saving techniques, salt tolerant varieties, crab fattening). Support transboundary negotiation processes on water sharing. Support land use zoning and integrated
	Impacts of climate change (e.g., changes in temperature and variability in rainfall, the amount of carbon dioxide in the air) may alter the productivity and distribution of forests, possibly inhibiting the success off agroforestry systems.		Moderate			
	Changing climate conditions (e.g., increased temperatures, shifting precipitation patterns) may disproportionately impact certain species targeted for integrated agricultural systems.		Moderate			
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may increase salinization and/or siltation of water resources through processes such as erosion or otherwise contribute to		Moderate			

	biodiversity loss in aquatic ecosystems.				systems and capacities, in both the public and private sectors, to reflect multidimensional vulnerabilities in measurements of growth, poverty and natural resources. Support efforts to improve data availability and sharing arrangements by increasing collaboration among the national statistics offices, other government bodies, academia, local community associations, international intuitional organizations, and NGOs.	management of different systems.
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may place increased stress on surface water resources, limiting the effectiveness of aquacultural interventions to improve livelihoods.		Moderate			
	Increased extreme climate events such as flooding and heat waves may result in land degradation, crop failure, and increased gendered labor practices in agriculture, limiting alternative livelihood options for women and youth.		Moderate			

Tasks/Defined or Illustrative Interventions	Climate Risks	Adaptive Capacity	Risk Rating	How Risks are Addressed	Further Analysis	Opportunities to Strengthen Climate Resilience
Intervention Category 10: Irrigation, Water, Sanitation, and Hygiene (WASH), and Water Harvesting ● 10.1: Technical and financial assistance for development of Multiple-Use Systems or domestic use and irrigation ● 10.2: Technical assistance for development of hand washing stations and latrines ● 10.3: Support for and introduction of water harvesting technologies	Reduced water quality and/or availability can lead to increased competition over water resources (e.g., for irrigation, livestock), increasing risk of conflict and reducing potable water availability. Additionally, marginalized, and vulnerable populations may experience exacerbated inequalities from climate-related impacts to water resources availability and access.	Capacity of the infrastructure system to retain or restore service is low. National and local planning, budgeting and emergency response capabilities are limited and not robust or flexible enough to accommodate significant stresses on infrastructure from a changing climate. Capacity of institutions and civil society (e.g., water and irrigation service providers and utilities) to take action and to adjust to climate impacts on water and sanitation services is low. Capacity of institutions to use and integrate climate change	Moderate	For any construction activities, the engineer of record responsible for design will conduct a climate risk screening during the design process. Other climate risks are specifically addressed in the activity documents. Introduction of water management approaches at the micro-watershed, rainwater catchment, drip irrigation, etc. are included to mitigate the risk of water scarcity for household and productive uses.	Include climate risk management measures in the activity EMMP (**applies to all sub-activities in Intervention Category 10**). Design WASH services and infrastructure to be adaptable to changing climate conditions and to incorporate climate resilience across various conditions. Ensure climate risks to water supply and access are considered and managed as part of activity design. Ensure that measures are taken to consider the	Develop indicators to monitor inclusion of CRM considerations and measures into activity implementation. Include climate risk management measures in the activity EMMP. More resilient water infrastructure, management, and operations can increase broader energy efficiency and result in decreased GHG emissions. Improved governance for water management, including during climate extremes, can reduce competitions for and conflict over water resources.

	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may cause damage or premature deterioration to irrigation equipment (e.g., wells, pumps), disrupt services, and/or increase maintenance and repair costs.	information into plans and programs is low. Institution's access to relevant climate information and data is low.	Moderate		health of workers and others involved in construction, including designated resting periods, shaded areas, and ample water supply. Design structures to be resilient to changing climate conditions and to incorporate climate resilience across various conditions.	Use public concern about climate change as an opportunity to engage civil society and citizens, including marginalized populations, to increase their involvement in planning and local government.
	Climatic changes (e.g., increased changes in rainfall variability, increased frequency/severity of floods) may increase runoff into surface or groundwater resources, decreasing water quality and yielding increased treatment requirements.		Moderate			
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods		Moderate			

	may decrease availability of surface and groundwater sources for irrigation.					
Tasks/Defined or Illustrative Interventions	**Climate Risks**	**Adaptive Capacity**	**Risk Rating**	**How Risks are Addressed**	**Further Analysis**	**Opportunities to Strengthen Climate Resilience**
Intervention Category 11: Marine and Coastal Livelihoods and Management, and Tourism ● 11.1: Marine and Coastal Livelihoods ○ 11.1.1 Support for establishing of fisheries no take zones (NTZs) ○ 11.1.2 Support for development of crab fattening ○ 11.1.3 Support for development and production of non-timber forest products from mangroves ○ 11.1.4 Support for sustainable oyster harvesting ● 11.2: Marine and Coastal Management ○ 11.2.1 Support for mangrove forest management ○ 11.2.2 Support for community coastal	Changing climatic conditions (e.g., increased temperatures, ocean acidification) may lead to changes in the distribution, demography, and structure of fish stocks.	High levels of poverty and low education/literacy limit people's options for making marine and coastal livelihoods more climate-resilient and finding alternative livelihoods. National and local planning, budgeting, and emergency response capabilities are limited and not robust or flexible enough to accommodate significant climate shocks. Capacity of institutions to use and integrate climate information into plans and programs is low.	Moderate	Climate risks are specifically addressed in the activity document. The activity will promote enhanced conservation of fisheries through no off-take zones; conservation of mangroves for coastal protection and as habitats for renewable resources; use of crab fattening will lead to sustainable use; and management of habitats while not reducing over-use of naturally occurring species.	Include climate risk management measures in the activity EMMP (**applies to all sub-activities in Intervention Category 11**). Identify vulnerable households to coastal flooding. Conduct stakeholder mapping and analysis of climate change impact within each locality. A characterization of infrastructures and tourist attractions	Strengthening governance capacity to manage nature-based tourism. Develop indicators to monitor inclusion of CRM considerations and measures into activity implementation.
	Increased temperatures and variability in rainfall, as well as increased intensity, duration and/or frequency of extreme climate-related events such as droughts and floods may increase salinization and/or siltation of water resources through processes such as erosion or otherwise contribute to biodiversity loss in aquatic ecosystems.		Moderate			
	Changing climatic conditions (e.g., increased		High			

management and organization of Beach Management Units, community co-management of coastal and marine protected areas (e.g., coral reefs, seagrasses, mangroves) ○ 11.2.3 Support integrated coastal z one management at the regional scale (e.g., marine spatial planning, marine te nure, and protected area management) ● 11.3: Tourism ○ 11.3.1 Youth-focused marine and coastal tourism skills development ○ 11.3.2 Tourism promotion, with a focus on Marine ecotourism promotion ○ 11.3.3 Linking fisheries and other producers with restaurants	temperatures, shifting precipitation patterns) may reduce or disrupt ecosystem services.	Institutions' access to relevant climate information and data is low.		Some activities, especially harvesting of sustainable mangrove products, will specifically target women as active partners and beneficiaries	located within threatened areas should be undertaken to assess just how vulnerable these areas are and the severity of any potential impacts.	
	Increased temperatures and variability in rainfall as well as increased extreme climate-related events such as storms may lead to direct impacts on fisherfolk health and safety (e.g., increased risk of capsizing).		High			Protection and restoration of mangroves may help to maintain and restore this ecosystem function and thereby improve the health of coastal communities.
	Warming of sea surface temperatures, ocean acidification, and unpredictable rainfall and flooding may increase salinity of water, disease distribution and prevalence, and locations able to support aquaculture fisheries, and lead to an overall decline in fish diversity.		High			
	Decreasing agriculture yields may increase demand for fishing, increasing overfishing and illegal fishing activities.		Moderate			
	Increased extreme climate events such as flooding and heat waves may result in land and coastal		High			

	degradation and increased gendered labor practices in marine livelihoods, limiting alternative livelihood options for women and youth.					
	Increases in coastal flooding, erosion, and extreme events have the potential to cause damage to marine ecosystems, coastal communities, and infrastructure threatening the sustainability of coastal tourism and related livelihoods.		High			

ANNEX 2. AFRICA BUREAU ENVIRONMENTAL REVIEW FORM AND INSTRUCTIONS

Note to USAID Staff, Consultants & Partners Regarding the: Africa Bureau ENVIRONMENTAL REVIEW FORM & INSTRUCTIONS

Appropriate use:

1. The Environmental Review Form (ERF) can only be used when and as specifically authorized by the IEE or EA governing the project or program in question. For IEEs, this authorization is made in the form of a negative determination with conditions. *Authorized use of the ERF is limited to the specific class of activities enumerated in the determination.*
2. The BEO will not clear an IEE or EA that authorizes use of the ERF unless ALL of the following are true:
   a. **the general nature or potential scope of the activities for which the ERF will be used are known** at the time the IEE is written (e.g., small infrastructure rehabilitation, training, and outreach for a specified purpose, etc.).
   b. **these activities will be executed under a grant or subproject component of a parent project/program.** The ERF cannot be used in lieu of a request for categorical exclusion, IEE or IEE amendment when new activities/components are to be added to existing projects, programs or sector portfolios.
   c. of their general nature, **foreseeable adverse environmental impacts are small or easily controllable with BASIC MITIGATION TECHNIQUES that can BE SUCCESSFULLY IMPLEMEMENTED BY FIELD STAFF.**
   d. of their general nature, the **activities are NOT large-scale.**
   There is no formal AFR standard for "small-scale activities." Over time, AFR has developed some "rules of thumb" for activities that are BOTH small-scale AND pose very low risks of significant adverse impacts. These are used in the ERF itself: e.g., construction involving less than 10,000 sq ft total disturbed area and less than $200,000 total cost; road rehabilitation of less than 10km total length without change to alignment or right-of-way. Activities moderately larger than these "rules of thumb" are also small-scale but are treated by the ERF as being of moderate/unknown risk, thus requiring an environmental review report.
   What does "moderately larger" mean? What about activities for which there is no "rule of thumb" built into the ERF? Absolute physical scale and funding level, physical scale relative to the surrounding built environment, population affected, and number of locations affected are among the factors relevant to determining whether a class of activities is "small scale." The IEE must provide enough information for the BEO to assess whether the activities proposed for subproject review will be indeed be small scale within their implementation context.

Adaptation of the form:

1. Text in **UNDERLINE & BLUE HIGHLIGHT MUST** be customized to the particular project/mission.
2. Yellow highlighted text must be reviewed and then modified, deleted or retained, as appropriate.
3. Both the form AND instructions should be generally reviewed and modified to reflect the specific project/program and implementation context.
4. The adapted form and instructions must be appended to the Initial Environmental Examination for the overall project.
5. For NRM-oriented programs (especially those involving CBNRM, ecotourism, enterprises exploiting non-timber forest products, etc.) consider adaptation and use of the Supplemental Environmental Review Form for NRM sector activities.

Questions and Guidance:

General guidance on subproject review is available on the MEO Resource Center at www.encapafrica.org/meoEntry.htm. For specific questions, contact the Mission Environmental Officer or Regional Environmental Advisor. Good-practice examples of completed forms, environmental review reports and environmental management plans are available from USAID/AFR's ENCAP project: encapinfo@cadmusgroup.com; www.encapafrica.org.

Revision history:

Major update on 24 June 2010 to clarify appropriate use, revise Env Review Report structure, and update clearance requirements. Formatting and presentation revised 17 Jan 2005. Revised April 13, 2004, to include biosafety considerations and better reflect the Supplemental Environmental Review Form for NRM sector activities.

DELETE THIS PAGE BEFORE DISTRIBUTING THIS FORM

Instructions for environmental review of XXX Program Subprojects/Sub-grants

Note: *These instructions accompany the attached "Environmental Review Form for USAID/XXX Program/Project Activities" (ERF).* ***Follow, but DO NOT SUBMIT, these instructions.***

Who must submit the Environmental Review Form (ERF)?

ALL Implementing Partners seeking to implement [describe qualifying activities] under the XXX Program/Project must complete, sign and submit the ERF to [insert name & email of C/AOTR].

Authority: Use of the ERF for these activities is mandated by the governing Initial Environmental Examination (IEE) for the XXX Project/Program. The IEE can be downloaded at: *[insert URL]*.

No implementation without an approved ERF

The proposed activities cannot be implemented and no "irreversible commitment of resources" for these activities can be made until the ERF (including Environmental Review Report, if required, see Step 4, below) is cleared by the C/AOTR, the Mission Environmental Officer (MEO) and the Regional Environmental Advisor (REA).

NOTE: USAID may deny clearance to the ERF or may require modification and re-submission for clearance.

Environmental management requirements resulting from the ERF

If the ERF requires preparation of an Environmental Review Report (see Step 4, below), any environmental management measures specified in the approved Environmental Review Report MUST be implemented.

Situations in which additional environmental review is required.

If the ERF finds that one of more of the proposed activities has the potential to cause significant adverse environmental impacts, the activities must be redesigned or an IEE or full Environmental Assessment must be conducted and approved prior to implementation.

If USAID determines that the proposed activities are outside the scope of activities for which use of this form is authorized, the activities must be redesigned or an IEE or IEE Amendment will be required.

In either situation, USAID will confer with the partner to determine next steps. Note: If an IEE or EA is required, all environmental management measures specified in the IEE or EA must then be implemented.

Step 1. Provide requested "Applicant information" (Section A of the ERF)

Step 2. List all proposed activities

In Section B of the form, list all proposed activities.

Activities are a desired accomplishment or output: e.g., seedling production, road rehabilitation, school construction. Each activity has entailed *actions*—for example, road rehabilitation includes survey,

grading, culvert construction, compaction, etc. *Be aware of these entailed actions, but do NOT list them.*

List activities DESCRIPTIVELY. For example, “training” is not a sufficient activity listing. The listing must specify WHO is being trained, and in WHAT.

Step 3a. Screening: Identify low-risk and high-risk activities

For *each* activity you have listed in Section B of the form, refer to the list below to determine whether it is a listed low-risk or high-risk activity.
If an activity is specifically identified as “very low risk” or “high risk” in the list below, indicate this in the “screening result” column in Section B of the form.

Very low-risk activities (Activities with low potential for adverse biophysical or health impacts; including §216.2(c)(2))	**High-risk activities** (Activities with high potential for adverse biophysical or health impacts; including §216.2(d)(1))
Provision of education, technical assistance, or training. (Note that activities directly affecting the environment. do not qualify.)	**River basin development**
Community awareness initiatives.	**New lands development**
Controlled agricultural experimentation exclusively for the purpose of research and field evaluation confined to small areas (normally under 4 ha./10 acres). This must be carefully monitored and no protected or other sensitive environmental areas may be affected).	**Planned resettlement** of human populations .
Technical studies and analyses and other information generation activities not involving intrusive sampling of endangered species or critical habitats.	**Penetration road building, or rehabilitation** of roads (primary, secondary, some tertiary) over 10 km length, and any roads which may pass through or near relatively undegraded forest lands or other sensitive ecological areas
Document or information transfers.	**Substantial piped water supply and sewerage** construction.
Nutrition, health care or family planning, EXCEPT when (a) some included activities could directly affect the environment (construction, water supply systems, etc.) or (b) biohazardous (esp. HIV/AIDS) waste is handled or blood is tested.	**Major bore hole or water point construction.**
Small-scale construction. Construction or repair of facilities if total surface area to be disturbed is under 10,000 sq. ft. (approx. 1,000 sq. m.) (and when no protected or other sensitive environmental areas could be affected).	**Large-scale irrigation; Water management structures** such as dams and impoundments
Intermediate credit. Support for intermediate credit arrangements (when no significant	**Drainage of wetlands** or other permanently flooded areas. **Large-scale agricultural mechanization.**
	Agricultural land leveling.
	Procurement or use of <u>restricted use</u> pesticides, or wide-area application in non-emergency conditions under non-supervised conditions. (Consult MEO.)
	Light industrial plant production or processing (e.g., sawmill operation, agro-

biophysical environmental impact can reasonably be expected). **Maternal and child feeding** conducted under Title II of Public Law 480. **Title II Activities.** Food for development programs under Title III of P.L. 480, when no on-the-ground biophysical interventions are likely. **Capacity for development.** Studies or programs intended to develop the capability of recipients to engage in development planning. (Does NOT include activities directly affecting the environment) **Small-scale Natural Resource Management activities** for which the answer to ALL SUPPLEMENTAL SCREENING QUESTIONS (see *Natural Resources supplement*) is "NO."	industrial processing of forestry products, tanneries, cloth-dying operations). **High-risk and typically not funded by USAID:** **Actions affecting protected areas and species.** Actions determined likely to significantly degrade protected areas, such as introduction of exotic plants or animals. Actions determined likely to jeopardize threatened & endangered species or adversely modify their habitat (esp. wetlands, tropical forests) **Activities in forests, including:** ▪ **Conversion of forest lands** to rearing of livestock ▪ **Planned colonization of forest** lands ▪ **Procurement or use of timber harvesting equipment** ▪ **Commercial extraction of timber** ▪ **Construction of dams** or other water control structures that flood relatively undegraded forest lands ▪ **Construction, upgrading or maintenance of roads** that pass through relatively non-degraded forest lands. (Includes temporary haul roads for logging or other extractive industries)

(This list of activities is taken from the text of 22 CFR 216 and other applicable laws, regulations, and directives)

Step 3b: Identifying activities of unknown or moderate risk.

All activities NOT identified as "very low risk" or "very high risk" are considered to be of "unknown or moderate risk." Common examples of moderate-risk activities are given in the table below.

Check "moderate or unknown risk" under screening results in Section B of the form for ALL such activities.

Common examples of moderate-risk activities **CAUTION:** **If ANY of the activities listed in this table may adversely impact (1) protected areas, (2) other sensitive environmental areas, or (3) threatened and endangered species and their habitat, THEY ARE NOT MODERATE RISK. All such activities are HIGH RISK ACTIVITIES.**	
Small-scale agriculture, NRM, sanitation, etc. (You may wish to define what "small scale" means for each activity) **Agricultural experimentation.** Controlled and carefully monitored agricultural experimentation exclusively for the purpose of research and field evaluation of MORE than 4 ha.	**Sampling.** Technical studies and analyses or similar activities that could involve intrusive sampling, of endangered species or critical habitats. (Includes aerial sampling.) **Water provision/storage.** Construction or rehabilitation of small-scale water points or water storage devices for domestic or non-

NOTE Biotechnology/GMOs: No *biotechnology testing or release* of any kind are to take place within an assisted country until the host countries involved have drafted and *approved* a regulatory framework governing biotechnology and biosafety. All USAID-funded interventions which involve biotechnologies are to be informed by the ADS 211 series governing "Biosafety Procedures for Genetic Engineering Research". In particular this guidance details the required written approval procedures needed before transferring or releasing GE products to the field. **Medium-scale construction.** Construction or rehabilitation of facilities or structures in which the surface area to be disturbed exceeds 10,000 sq. ft (1000 sq meters) but funding level is $200,000 or less. (e.g., small warehouses, farm packing sheds, agricultural trading posts, produce market centers, and community training centers.) **Rural roads.** Construction or rehabilitation of rural roads meeting the following criteria: ▪ Length of road work is less than ~10 km ▪ No change in alignment or right of way ▪ Ecologically sensitive areas are at least 100 m away from the road and not affected by construction or changes in drainage. ▪ No protected areas or relatively undegraded forest are within 5 km of the road. **Title II & III Small-Scale Infrastructure.** Food for Development programs under Title II or III, involving small-scale infrastructure with the known potential to cause environmental harm (e.g., roads, bore holes). **Quantity imports of commodities such as fertilizers**	domestic use. Water points must be located where no protected or other sensitive environmental areas could be affected. **NOTE**: USAID guidance on water quality requires testing for arsenic, nitrates, nitrites and coliform bacteria. **Support for intermediate credit institutions** when indirect environmental harm conceivably could result. **Institutional support grants to NGOs/PVOs** when the activities of the organizations are known and may reasonably have adverse environmental impact. **Pesticides.** Small-scale use of USEPA-registered, least-toxic general-use pesticides. Use must be limited to NGO-supervised use by farmers, demonstration, training and education, or emergency assistance. **NOTE**: Environmental review (see step 5) must be carried out consistent with USAID Pesticide Procedures as required in Reg. 16 [22 CFR 216.3(b)(1)]. **Nutrition, health care or family planning**, if (a) some included activities could directly affect the environment (e.g., construction, supply systems, etc.) or (b) biohazardous healthcare waste (esp. HIV/AIDS) is produced, syringes are used, or blood is tested.

Step 4. Determine if you must write an Environmental Review Report

Examine the “screening results” as you have entered them in Table 1 of the form.

i. If ALL the activities are “very low risk,” then no further review is necessary. In Section C of the form, check the box labeled “very low risk activities.” Skip to Step 8 of these instructions.

ii. If ANY activities are “unknown or moderate risk,” you MUST complete an ENVIRONMENTAL REVIEW REPORT addressing these activities. Proceed to Step 5.

iii. If ANY activities are “high risk,” note that USAID’s regulations usually require a full environmental assessment study (EA). Because these activities are assumed to have a high

probability of causing significant, adverse environmental impacts, they are closely scrutinized. *Any* proposed high-risk activity should be discussed in advance with USAID. Activity re-design is often indicated.

In some cases, it is possible that reasonable, achievable mitigation and monitoring can reduce or eliminate likely impacts so that a full EA will not be required. If the applicant believes this to be the case, the Environmental Review Report must argue this case clearly and thoroughly. Proceed to Step 5.

Step 5. Write the Environmental Review Report, if required

The Environmental Review Report presents the environmental issues associated with the proposed activities. It also documents mitigation and monitoring commitments. Its purpose is to allow the applicant and USAID to evaluate the likely environmental impacts of the project.

For a single, moderate risk activity, the Environmental Review Report is typically a SHORT 4–5 page document. The Report will typically be longer for (1) multiple activities; (2) activities of high or unknown risk; and/or (3) when a number of impacts and mitigation measures are being identified and discussed.

The Environmental Review Report follows the outline below. Alternate outlines are acceptable, so long as all required information is covered.

A. **Summary of Proposal.** Very briefly summarize background, rationale and outputs/results expected. (Reference proposal, if appropriate).

B. **Description of Activities.** For all moderate and high-risk activities listed in Section B of the ERF, succinctly describe location, siting, surroundings (include a map, even a sketch map). Provide both quantitative and qualitative information about actions needed during all project phases and who will undertake them. (All of this information can be provided in a table). If various alternatives have been considered and rejected because the proposed activity is considered more environmentally sound, explain these.

C. **Site-specific Environmental Situation & Host Country Requirements.** Describe the environmental characteristics of the site(s) where the proposed activities will take place. Focus on site characteristics of concern—e.g., water supplies, animal habitat, steep slopes, etc. With regard to these critical characteristics, is the environmental situation at the site degrading, improving, or stable?

   Also note applicable host country environmental regulations and/or policies. (For example, does the project require host country environmental review or permitting? Building approval? Etc.)

   NOTE: provide site-specific information in this section, NOT country-level information. General information about country level conditions should already be contained in the IEE governing the XXX project/program.

D. **Environmental Issues, Mitigation Actions, and Findings. F**or ALL proposed activities

   i. Briefly note the potential environmental impacts or concerns presented by the proposed activities (if any). *For guidance, refer to Africa Bureau's Environmental Guidelines for Small-Scale Activities; available at www.encapafrica.org/egssaa.htm.*

      As per the *Small-Scale Guidelines*, consider direct, indirect and cumulative impacts across the activity lifecycle (i.e. impacts of site selection, construction, and operation, as well as any problems that might arise with abandoning, restoring or reusing the site at the end of the

anticipated life of the facility or activity). Note that "environment" includes air, water, geology, soils, vegetation, wildlife, aquatic resources, historic, archaeological or other cultural resources, people and their communities, land use, traffic, waste disposal, water supply, energy, etc.)

ii. Assess the extent to which these *potential* impacts and concerns are significant in the context of the specific activity design and site.

iii. Set out the mitigation actions to be employed to address these issues.

Mitigation actions are means taken to avoid, reduce or compensate for impacts. Mitigation measures must be reasonable and implementable by field staff. They should be consistent with the good practice guidance provided in Africa Bureau's Environmental Guidelines for Small-Scale Activities; (www.encapafrica.org/egssaa.htm.) Cite this or other guidance used for mitigation design.

iv. Reach one of three findings regarding the potential impacts:

a. Significant adverse impacts are very unlikely. Of its nature, the activity in question is very unlikely to result in significant, adverse environmental impacts. Special mitigation or monitoring is not required.
Note: this conclusion is rarely appropriate for high-risk activities.

b. With implementation of the specified mitigation and monitoring, significant adverse impacts are very unlikely.

c. Significant adverse impacts are possible. That is, it is not possible to rule out significant adverse environmental impacts even given reasonable, attainable mitigation and monitoring.

In this case, USAID and the partner will consult regarding next steps. If the activity is to go forward in its current form, additional analysis in the form of an IEE or EA will be required.

Format and structure of this section. Choose a format and structure that presents the necessary information clearly and succinctly.

Table formats can be used. In the example below, the proposed activity was construction of an institutional facility on a 7500m3 plot bisected by a seasonal stream providing drainage to the local area. One potential impact of the activity was reduction of or alteration to the drainage eco-service provided by the seasonal stream.

Issue or cause for concern	Analysis	Finding and conditions/mitigation actions
The seasonal stream running through the plot drains an area of at least 2 km^2 to the WNW. Diminution or alteration to this drainage "service" could result in increased	As indicated at left, this impact only arises if the drainage "service" provided by the seasonal stream is diminished or altered in some adverse manner. So long as compound design	Per analysis at left, this potential impact is not significant, so long as the following mitigations are implemented: 1. Total stream capacity cannot be diminished by the development of the compound. (Stream channel on average is 3m x 1m.)

upstream pooling & flooding during the rainy season, with associated property damage and increased breeding habitat for disease vectors.	maintains the existing service level and construction is managed without disruption to stream flow, actual adverse impact will be negligible or zero.	2. The stream must remain substantially in the same channel and cannot, e.g., be re-routed around the property. 3. If construction will result in an interruption to stream flow, provision must be made to provide a temporary bypass. Temporary damming of stream flow is not permissible. 4. Post-construction, the stream bed within the property, including point-of-entry (e.g., via culvert under perimeter wall) must be maintained free of obstructions to flow.

E. **Environmental Mitigation and Monitoring Plan (EMMP). S**et out how compliance with mitigation actions will be monitored/verified. This includes specifying WHO will be responsible for the various mitigation actions, and HOW implementation of the mitigation actions will be tracked/verified.

Also specify how you will report to USAID on the implementation of mitigation actions. (You are REQUIRED to provide your C/AOTR with sufficient information on the status of mitigation implementation for USAID to effectively fulfill its oversight and performance monitoring role.)

Again, choose a format and structure that presents the necessary information clearly and succinctly. EMMPs are typically in table format, and often include a compliance log or "monitoring record" section that records implementation status of the various mitigation actions. The EMMP with current monitoring log can then simply be submitted to the C/AOTR with the quarterly or 6-month project report, satisfying the environmental compliance reporting requirement.

The most basic EMMP format is

Mitigation action	Responsible Party	Monitoring/Verification Method	Monitoring Record (date, result, corrective actions taken, if any)

For additional EMMP formats and examples, see the ENCAP EMMP factsheet, available via www.encapafrica.org/meoEntry.htm

F. **Other Information**. Where possible and as appropriate, include photos of the site and surroundings; maps; and list the names of any reference materials or individuals consulted.

(Pictures and maps of the site can substantially reduce the written description required in parts B & C)

Step 6. Transcribe findings from the Environmental Review Report to the ERF

For each high-risk or unknown/moderate-risk activity, transcribe your finding from the environmental review report to the last column of Section B of the ERF.

Step 7. Sign certifications (Section C of former.)

Step 8. Submit form to USAID C/AOTR. Be sure to attach the Environmental Review Report, if any.

Environmental Review Form for XXX Program subprojects/subgrants

Follow, but do not submit, the attached instructions.

A. Applicant information

Organization	Parent grant or project
Individual contact and title	Address, phone & email (if available)
Proposed subproject /subgrant (brief description)	Amount of funding requested
	Period of performance
	Location(s) of proposed activities

B. Activities, screening results, and findings

Proposed activities (Provide DESCRIPTIVE listing. Continue on additional page if necessary)	**Screening result** (Step 3 of instructions)			**Findings** (Step 6 of instructions. Complete for all moderate/unknown and high-risk activities ONLY)		
	Very Low Risk	High-Risk*	Moderate or unknown risk*	Significant adverse impacts are very unlikely	With specified mitigation, significant adverse impacts are very unlikely	Significant Adverse impacts are possible
1.						
2.						
3.						
4.						
5.						
6.						
7.						

8.						

*These screening results require completion of an Environmental Review Report

C. Certification:

I, the undersigned, certify that:

1. The information on this form and accompanying environmental review report (if any) is correct and complete.
2. Implementation of these activities will not go forward until specific approval is received from the C/AOTR.
3. All mitigation and monitoring measures specified in the Environmental Review Report will be implemented in their entirety, and that staff charged with this implementation will have the authority, capacity and knowledge for successful implementation.

(Signature) _____ (Date) _____

(Print name) _____ (Title) _____

Note: if screening results for any activity are "high risk" or "moderate or unknown risk," this form is not complete unless accompanied by an environmental review report.

BELOW THIS LINE FOR USAID USE ONLY

Notes:
1. For clearance to be granted, the activity MUST be within the scope of the activities for which use of the ERF is authorized in the governing IEE. **Review IEE before signature.** If activities are outside this scope, deny clearance and provide explanation in comments section. The Partner, C/AOTR, MEO and REA must then confer regarding next steps: activity re-design, an IEE or EA.

2. Clearing an ERF containing one or more findings that **significant adverse impacts are possible** indicates agreement with the analysis and findings. It does NOT authorize activities for which "significant adverse impacts are possible" to go forward. It DOES authorize other activities to go forward. The Partner, C/AOTR, MEO and REA must then confer regarding next steps: activity re-design, an IEE or EA.

CLEARANCE RECORD

C/AOTR ¨ Clearance given ¨ Clearance denied	(print name)	(signature)	(date)
USAID/XXXX MEO ¨ Clearance given ¨ Clearance denied	(print name)	(signature)	(date)
Regional Env. Advisor (REA) ¨ Clearance given ¨ Clearance denied	(print name)	(signature)	(date)
Bureau Env. Officer (BEO)* ¨ Clearance given ¨ Clearance denied	(print name)	(signature)	(date)

C/AOTR, MEO and REA clearance is required. BEO clearance is required for all "high risk" screening results and for findings of "significant adverse impacts possible. The BEO may review"

Note:
If clearance is denied, comments must be provided to applicant
(use space below & attach sheets if necessary)

Note to individuals adapting the: * Supplemental Environmental Review Form for NRM Activities for use on a particular program/activity:

- This supplement is oriented around major resource/issue clusters and asks "leading questions" about the actual potential for unintended harmful impacts, especially of CBNRM/ ecotourism activities.
- **Underlined & blue** highlighted text MUST be modified to reflect project and mission name
- Questions should be modified to respond to the needs of individual projects. This is intended to be a "living" document subject to adaptation.

DELETE THIS PAGE BEFORE MODIFYING/DISTRIBUTING THIS FORM

Supplement to the Environmental Review Form for Natural Resources Activities

Additional Screening Criteria for Natural Resource Activities under XXX Program

Purpose

This is a supplement to the "Instructions for environmental review of XXX Program/Project activities." It is to be used for natural *resources-based activities*, including:

- Community-Based Natural Resource Management (CBNRM)
- Ecotourism
- Natural resources-based enterprise development with micro- and small enterprises

This supplement provides additional questions to ascertain whether these proposed activities should be categorized as "very low risk:"

- If the answers to ALL the questions that follow are "NO," then the proposed natural resource-based activity is considered "very low risk."
- If the answer to ANY question is "YES," the activity CANNOT be considered "very low risk."

Screening criteria

Will the activities…	YES	NO
Natural Resources		
Accelerate erosion by water or wind?		
Reduce soil fertility and/or permeability?		
Alter existing stream flow, reduce seasonal availability of water resources?		
Potentially contaminate surface water and groundwater supplies?		
Involve the extraction of renewable natural resources?		
Lead to unsustainable use of renewable natural resources such as forest products?		
Involve the extraction of non-renewable natural resources?		
Restrict customary access to natural resources?		
Reduce local air quality through generating dust, burning of wastes or using fossil fuels and other materials in improperly ventilated areas?		
Affect dry-season grazing areas and/or lead to restricted access to a common resource?		
Lead to unsustainable or unnecessarily high water extraction and/or wasteful use?		

Ecosystems and Biodiversity		
Drain wetlands, or be sited on floodplains?		
Harvest wetland plant materials or utilize sediments of bodies of water?		
Lead to the clearing of forestlands for agriculture, the over-harvesting of valuable forest species?		
Promote in-forest bee keeping?		
Lead to increased hunting, or the collection of animals or plant materials?		
Increase the risks to endangered or threatened species?		
Introduce new exotic species of plants or animals to the area?		
Lead to road construction or rehabilitation, or otherwise facilitate access to fragile areas (natural woodlands, wetlands, erosion-prone areas)?		
Cause disruption of wildlife migratory routes?		
Agricultural and Forestry Production		
Have an impact on existing or traditional agricultural production systems by reducing seed availability or reallocating land for other purposes?		
Lead to forest plantation harvesting without replanting, the burning of pastureland, or a reduction in fallow periods?		
Affect existing food storage capacities by reducing food inventories or encouraging the incidence of pests?		
Affect domestic livestock by reducing grazing areas, or creating conditions where livestock disease problems could be exacerbated?		
Involve the use of insecticides, herbicides and/or other pesticides?		
Community and Social Issues		
Have a negative impact on potable water supplies?		
Encourage domestic animal migration through natural areas?		
Change the existing land tenure system?		
Have a negative impact on culturally important sites in the community?		
Increase in-migration to the area?		
Create conditions that lead to a reduction in community health standards?		
Lead to the generation of non-biodegradable waste?		
Involve the relocation of the local community?		
Potentially cause or aggravate land-use conflicts?		