INITIAL ENVIRONMENTAL EXAMINATION

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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 IEE also documents the results of the Climate Risk Management process in accordance with USAID policy (specifically, ADS 201mal).

This IEE is a critical element of USAID's mandatory environmental review and compliance process meant to achieve environmentally sound design and implementation. Potential environmental impacts should be addressed through formal environmental mitigation and monitoring plans (EMMPs) and/or Environmental Assessments (EAs), if needed.

AORs/CORs and IPs: How to Use this Development Objective IEE:

For Activities Listed in this IEE:

For each activity in your project and using Table 2, identify the intervention category to which it belongs. *NOTE: Intervention categories are generally organized by sector, so if your project contains activities in a single sector, they are likely to be found in only one or two of the intervention categories.*

Go to Section 4.1 to find the determination that applies to the intervention category.

Draft and implement an EMMP for each activity that includes the intervention categories associated with your activity that receive a Negative Determination with Conditions. This EMMP must include the Environmental Impacts identified in Section 3 and expand upon the Mitigation Measures addressed in Section 5.3 The EMMP must also address compliance with all general implementation conditions contained in Section 5.1.

Repeat 1-3 for each activity in your project. If any activity is not included, please consult the MEO.

1.2 ACTIVITY OVERVIEW

USAID/Kenya's Health Office portfolio is positioned to improve the health outcomes of Kenyans by continuing the implementation of evidence-based interventions to increase access to high-impact HIV/AIDS, tuberculosis, malaria, maternal and child health, family planning, reproductive health, and routine immunization services. Additionally, activities will provide sustainable improvements to governance, supply chain, human resources, financing, and service delivery.

This IEE addresses the following USAID/Kenya Health System Strengthening Office activities:

1. USAID Health Governance and Strategic Partnerships (UHGSP)
2. USAID Health Financing, Analytics and Social Protection Systems for Health (UHFASPSFH)

3. USAID Private Sector Engagement in Health Service and Systems Strengthening (UPSEIHSSS)
4. USAID Health Products and Technologies Systems (UHPATS)
5. USAID Human Resources for Health, Quality Management, and Community Health Systems (UHRFHQMACHS)
6. Afya Ugavi
7. HealthIT
8. Kenya Health Partnerships for Quality Services (KHPQS) includes:
    a. USAID 4BetterHealth Activities
    b. USAID 4theChild Activities
    c. USAID Boresha Jamii ("Improving Communities") Activities
    d. USAID Fahari Ya Jamii ("Pride Communities") Activities
    e. USAID Imarisha Jamii ("Strengthening Communities") Activities
    f. USAID Nuru Ya Mtoto ("Star of the Child") Activities
    g. USAID Stawisha Pwani ("Developing the Coast") Activities
    h. USAID Tujenge Jamii ("Building Communities") Activities
    i. USAID Tujitegemee ("Rely on Ourselves") Activities
    j. USAID Tumikia Mtoto ("Serving a Child) Activities
    k. USAID Dumisha Afya ("Maintain Health") Activities
    l. Ampath Uzima ("Life") Activities
    m. USAID Jamii Tekelezi ("Implementing with Communities") Activities
9. Kenya Malaria Vector Control

1.3 ACTIVITY DESCRIPTION

The Intervention Categories analyzed in this document are to be undertaken by USAID/Kenya under the Country Development Cooperation Strategy (CDCS 2020-2025). As a result of the CDCS' multi-sectoral approach to achieve results in Kenya's challenging operational environment, the interventions listed within this IEE align with the CDCS.

TABLE 2: DEFINED INTERVENTION AND SUB-INTERVENTION CATEGORIES, AND ILLUSTRATIVE ACTIONS

Intervention Category	Sub-interventions	Illustrative Actions	Kenya Mission Activities
Intervention Category 1: Direct Support to Healthcare Worker/Workforce Training; Strengthening And Development	**Sub-intervention 1.1:** Provide capacity building to frontline health workers	• Provide training on case management (diagnosis and treatment) to doctors, nurses, laboratory scientists, and other health care and front line workers • Train pharmacists, data managers, and lab technicians to ensure laboratory quality assurance and performance standards • Capacity building of social workers, clinical staff, and civil society organizations	• KHPQS • UHRFHQMACHS

Intervention Category	Sub-interventions	Illustrative Actions	Kenya Mission Activities
	Sub-intervention 1.2: Provide technical assistance and training for health promotion activities	• Mobilize and train support groups to provide community-based and psychosocial support for HIV and TB patients to adhere to treatment • Train parents and caregivers caring for children with HIV • Train Community Health Volunteers and Community Health Assistants on various RMNCAH technical modules including WASH to improve maternal, child health and nutrition outcomes. • Strengthen the connections between health service personnel and communities	• KHPQS • UHRFHQM ACHS
	Sub-intervention 1.3: Orphans and Vulnerable Children training and support	• Creation and use of ''safe spaces'' • Life skills training • Entrepreneurship/employment training • Community service/civic engagement • Education and health referrals	• KHPQS
	Sub-intervention 1.4: Strengthen human resource quality management systems	• Strengthen Human Resource for health management systems • Improve quality management systems	• UHRFHQM ACHS
	Sub - intervention 1.5: Strengthen Quality of Care for health services	• Strengthen Quality of Care for health services • Institutionalize Quality of Care for maternal, child health, Nutrition, WASH in health institutions and communities.	KHPQS Other USAID centrally funded mechanisms
Intervention Category 2: Direct Procurement of Commodities & Strengthening of Commodities, Logistics & Equipment, Non-pharmaceuticals, and Diagnostic Systems	**Sub-intervention 2.1:** Capacity building to support critical policy and strategy reforms to supply chain management	• Capacity building program for a supply chain professionals' association to advocate for policy reform, monitor and mitigate supply chain risks, and identify and manage fiduciary risk	• UHPATS • Afya Ugavi
	Sub-intervention 2.2: Improve commodity (i.e., pharmaceutical and non-pharmaceutical) and medical equipment procurement and supply chain management strategies to ensure	• Forecast and quantify national commodity needs and procure medicines, medical equipment, non- pharmaceuticals and diagnostics • Hold workshops in commodities management and assess the performance of supply chains • Improve supply chain management, strengthen logistics management information systems,	• Afya Ugavi • UHPATS • KHPQS

Intervention Category	Sub-interventions	Illustrative Actions	Kenya Mission Activities
	availability of health products	and support provincial health departments to improve the availability of medicines ● Establish oversight of community transport chains for biological samples from community health facilities to diagnostic sites ● Increase the availability of RMNCAH equipment and develop the capacity of health care workers on the use	
	Sub-intervention 2.3: Improve the quality of and access to essential health commodities	● Increase access to and appropriate use of essential health commodities, in coordination with supply chain investments ● Increase the availability of quality, affordable contraceptive commodities ● Monitor the availability of contraceptives and undertake scenario planning in anticipation of potential procurement delays ● Support community management and oversight of essential health commodities	● UHPATS ● Afya Ugavi
Intervention Category 3: Direct and Capacity Building Support for Health Service Delivery, Excluding Commodity & Medical Equipment Procurement/ Supply Chain Strengthening	**Sub-intervention 3.1:** Expand access to and use of malaria, maternal, newborn, and child health, nutrition, and family planning and reproductive health services	● Identify and address care-seeking barriers, including gender-related barriers ● Improve access and quality along the continuum of care for maternal and child health services ● Support the scale-up of high impact health interventions	● UHPATS ● KHPQS
	Sub-intervention 3.2: Support the provision of health services delivery	● Provision of ongoing preventative, primary, and limited secondary health-care services delivery for malaria, maternal and child health, nutrition, family planning and reproductive health, and TB ● Increase capacity to plan, implement, and monitor health service delivery at the provincial, zonal, and facility levels ● Provide technical assistance in ongoing monitoring of quality assurance standards and governance-related business operation compliance as it relates to health care service delivery and management	● UHPATS ● KHPQS

Intervention Category	Sub-interventions	Illustrative Actions	Kenya Mission Activities
	Sub-intervention 3.3: Improve TB detection, treatment, and prevention programs	● Support local organizations in implementing locally generated solutions to improve TB diagnosis, treatment, and prevention services ● Strengthen linkages between patients and health services through systematic screening of key populations and implementation of community-based care models ● Build capacity of to effectively lead, plan, manage, coordinate, monitor and evaluate comprehensive TB programs	● UHPATS ● KHPQS
	Sub-intervention 3.4: Improve provision of and demand for quality HIV/AIDS, RMNCAH, Nutrition and WASH health care services	● Increased HIV testing and treatment access adherence, including enrollment in antiretroviral therapy and support services ● Improve ANC attendance, skilled birth, postnatal care, immunization, Nutrition and WASH services ● Improve and strengthen institutionalization of Infection Prevention and Waste management services ● Strengthen clinical and community Quality of Care for RMNCAH, Nutrition and WASH health services ● Improve identification of patients through health and social service referral systems, including strengthening community-facility referral linkages ● Address TB/HIV co-infection through increased access to testing and TB prevention services ● Improve the efficiency of laboratory functions for more readily accessible diagnostics	● UHPATS ● KHPQS
Intervention Category 4: Social Marketing, Education, & Behavior Change Communication	**Sub-intervention 4.1:** Support strategic leadership, coordination, and participatory social and behavior change (SBC) interventions	● Implement evidence-based concepts to inform specific behaviors to address, messages, and the appropriate targeted population	● KHPQS
	Sub-intervention 4.2: Support	● Focus on community engagement to increase demand for HIV/AIDS,	● KHPQS

Intervention Category	Sub-interventions	Illustrative Actions	Kenya Mission Activities
	community and private sector participation in SBC interventions	RMNCAH, Nutrition and WASH services ● Support SBC activities to foster the adoption of healthy behaviors ● Expand communications efforts to include vaccination and countering misinformation ● Improve the quality of information delivered about the importance of childhood vaccinations	
Intervention Category 5: Policy and Strategy Development and Assistance	**Sub-intervention 5.1:** Identify critical policy and strategy reforms to support, excluding supply chain management	● Promote advocacy to advance essential population rights in Kenya ● Address critical gaps in the implementation of HIV and TB national strategies and guidelines	● UHGSP ● UHFASPSFH ● UPSEIHSSS
	Sub-intervention 5.2: Engage with, and provide technical assistance to the Government of Kenya and other relevant stakeholders	● Support the Government of Kenya in establishing policies that mitigate the HIV-epidemic impact, Maternal and Child health and Nutrition ● Provide programmatic, technical, and operational support and capacity building to the government and civil society organizations ● Capacity building of civil society organizations to monitor the availability of essential medicines and effectively advocate for program improvements	● UHGSP ● UHFASPSFH ● UPSEIHSSS ● MCGL ● M-RITE ● Breakthrough Action
Intervention Category 6: Studies, Surveys/ Public Health Surveillance and other Data-Gathering Assessments and Analysis, Models, and Capacity Building in Support of All Areas Above	**Sub-intervention 6.1:** Conduct public health surveillance activities and studies that include collection of biological samples	● Data collection for monitoring and evaluating HIV/AIDS, TB, and malaria programs ● Provide technical assistance for biomarker data collection ● Strengthen disease diagnosis networks and surveillance systems to improve the detection of multi- and ultra- drug-resistant TB ● Strengthen data collection for monitoring, polio disease surveillance and stool testing for polio diagnosis ● Carry out entomological and epidemiological monitoring to better understand the distribution/behavior of malaria vectors and patterns of insecticide resistance	● KHPQS ● HealthIT ● Afya Ugavi ● PMI Kinga Malaria ● WHO Polio ● Core Group Polio

Intervention Category	Sub-interventions	Illustrative Actions	Kenya Mission Activities
	Sub-intervention 6.2: Strengthen information management systems and quality and use of data for planning and decision making	• Conduct independent impact evaluation (monitoring, evaluation data analysis, and use) to investigate the effectiveness of integrated health project outcomes • Conduct needs assessments, evaluations, gender analyses, and other information-gathering efforts to inform the design, monitoring, and evaluation of programs • Development of capacity both in human and institutions at both the national and county levels • Strengthen quality data, surveillance and monitoring, and evaluation at community levels to refine services and document unmet target needs	• KHPQS • HealthIT • PMI Measure Malaria
	Sub-intervention 6.3: Conduct demographic and health surveys	• Technical assistance to implement demographic and health surveys, including data collection, analysis, and dissemination	• KHPQS • HealthIT
Intervention Category 7: Technical Assistance to Malaria Vector Control	**Sub-intervention 7.1:** Insecticidal-Treated Nets (ITN) and/or Long-lasting Insecticidal Nets Distribution **Sub- intervention 7.2**: Provide procurement, distribution/delivery, storage, application, and waste disposal associated with World Health Organization Pre-Qualified (WHO/PQ) and/or U.S. Environmental Protection Agency (USEPA)-approved PMI/Malaria control insecticides, services such as IRS.	• Distribute ITNs through mass campaigns, including continuous distribution in antenatal care and childcare clinics • Conduct durability monitoring and entomological surveillance to inform decision-making • Strengthen malaria prevention activities at the community, household, and facility levels, including SBCC on acceptance of vector control interventions, including ITN • Support for PMI Indoor Residual Spraying (IRS) campaigns	• Afya Ugavi • PMI Kinga malaria • Impact malaria • Malaria Vector Control

Intervention Category	Sub-interventions	Illustrative Actions	Kenya Mission Activities
Intervention Category 8: Small Scale Construction or Rehabilitation of Health Infrastructure (<10,000 sq. ft)	**Sub-intervention 8.1:** Construction of small-scale facilities and/or limited refurbishment at existing facilities with costing less than $250,00.00 and/or not disturbing an area equal to less than 1,000m^2	• Renovations/ Construction of WASH stations and/or facilities • Support limited rehabilitation and/or expansion of health facilities for WASH, malaria, and supply chain assistance projects • Refurbishment or construction of IRS waste pits	• KHPQS • Afya Ugavi
Intervention Category 9: Resource/ Financial Mobilization	**Sub-intervention 9.1:** Transfer of resources to promote health strengthening efforts	• Distribute cash transfers to highly vulnerable households • Provide economic strengthening to orphans and vulnerable children (OVC) and their families • Conduct economic strengthening of key populations (KPs) and their families	• KHPQS
	Sub-intervention 9.2: Improve budgeting and financial management systems	• Creation of a pooled insurance and financing model	• KHPQS

Will this project/activity involve construction[3] as defined by ADS 201 and 303? Yes ☒ No ☐

Renovation and/or cosmetic improvements to health-related facilities (i.e., storerooms, offices, laboratories, healthcare facilities, hospitals HCWM facilities, waste pits, WASH, foundations, etc.). Small scale activities will only involve a total disturbed area equal to or less than 1,000m2. Small scale activities are defined as those involving a total disturbed area equal to or less than 1,000m^2

[3] **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)

Geography. Kenya is located in East Africa, with 536 km of coastline along the Indian Ocean. It shares borders with Ethiopia and Somalia to the north and northeast, South Sudan and Uganda to the west, and Tanzania to the south. The total area of the country is around 580,000 sq km.



Mount Kenya, located in the Kenyan Highlands, is the highest point in the country and the second-highest point in Africa at 5,199 m. Mount Kenya National Park is also listed as a UNESCO World Heritage Site. Kenya is home to low plains in the east along the Indian Ocean, rising to highlands in the center of the country divided by the Great Rift Valley, a 6,000 km trench running from northern Syria to central Mozambique. A fertile plateau lies to the west of the country. Kenya has a population of almost 45 million people, 3.4 million of which live in the capital city of Nairobi, located in the central highlands. Mombasa, located on the southeastern coast of Kenya, is the second-largest city by population, at almost 1 million. [4]

Climate. Due to its location along the Rift Valley and various other landforms, Kenya's variable climate brings frequent droughts, floods, and uneven rainfall. The climate in Kenya ranges from tropical along the coast to dry in the interior. Average annual rainfall is about 630 mm, ranging from less than

[4] U.S. Central Intelligence Agency World Factbook. Accessed via the Internet 28 July, 2014 at: https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html

200 mm in northern Kenya to 1800 mm on Mt. Kenya.[5] Long rains occur from March to June and short rains from October to November. [6]

Ecological zones. Kenya has diverse ecological zones and habitats, including lowlands and mountain forests, wooded and open grasslands, semi-arid scrubland, dry woodlands, inland aquatic, and coastal and marine ecosystems. Wetlands are essential in Kenya's economy, affecting agriculture, livestock production, hydroelectric power, fisheries, and tourism. The marine waters and mangrove areas along the coast are rich in biodiversity and allow locals to fish, although Lake Victoria produces 90% of Kenya's total catch. Forests are even more significant, supporting agriculture, tourism, and watershed functions. Kenyan forests are also home to some of the highest levels of biodiversity in the country.[7]

Soil. The soil type in Kenya varies significantly due to topography and variable rainfall. Soils in Western Kenya are mainly acrisols, cambisols, and mixtures and are leached with iron and aluminum oxides. Young nitosol and andosol soils of volcanic origin are located in the central highlands, while coastal soils are generally coarse and low in organic matter and include arenosols, luvisols, and acrisols. Soils in arid and semi-arid areas include vertisols, gleysols, and phaeozems and contain pockets of sodicity and salinity. Soils in these areas are characterized by low fertility and vulnerability to erosion. In the coastal provinces, soil salinity is widespread along the Lake Baringo basin in the Rift Valley and the Tavetta division. [8]

Water resources & Irrigation. Kenya is a water-scarce country where demand exceeds renewable freshwater sources. Total renewable water resources totaled 30.7 billion m^3/year in 2008.[9] Of this total, 30.2 billion m^3/year is surface water, and 3.5 billion m^3/year is groundwater (most overlap with surface water). Kenya has 9 lakes; most are saline besides Victoria, Naivasha, and Baringo. Additionally, lakes Nakura and Naivasha are designated as Ramsar sites as wetlands of international importance for biodiversity conservation. Kenya has 5 main drainage areas: Lake Victoria, the Rift Valley and inland lakes, Athi River and coast, Tana River, and Ewaso Ng'iro River, the largest, covering 36.3% of the country.[10] Hydropower accounts for around 61% of Kenya's electricity demand at 677.3MW, whereas potential hydroelectric totals 6,000MW. The largest hydropower station is Gitaru, at 225 MW. [11]

Agriculture is the largest source of water withdrawal, at 79.2%. Kenya's irrigation potential is estimated at 353,060 ha, with over 50% from the Nile basin (Lake Victoria).[12] While 16% of the land has medium to high potential for irrigation, less than 10% is used, totaling only 2% of total arable land. Smallholder and commercial/private schemes dominate irrigation development; seventy-five percent of Kenya's agricultural output is produced on small-scale farms. A significant obstacle to the expansion of irrigation is the rising cost of modern irrigation projects. Due to a lack of investment, the amount of irrigated land in Kenya hasn't changed for 30 years.

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[5] Food and Agriculture Organization of the United Nations. Accessed via the Internet 28 July, 2014 at: http://www.fao.org/nr/water/aquastat/countries_regions/kenya/index.stm
[6] Water for Agriculture and Energy in Africa: the Challenges of Climate Change Conference. Accessed via the Internet 28 July, 2014 at: http://www.sirtewaterandenergy.org/docs/reports/Kenya-Draft2.pdf
[7] Convention on Biological Diversity. Accessed via the Internet 28 July, 2014 at: http://www.cbd.int/countries/profile/default.shtml?country=ke#facts
[8] Food and Agriculture Organization of the United Nations. Accessed via the Internet 28 July, 2014 at: http://www.fao.org/nr/water/aquastat/countries_regions/kenya/index.stm
[9] United Nations Environment Programme. Accessed via the Internet 28 July, 2014 at: http://www.unep.org/dewa/Portals/67/pdf/Kenya.pdf
[10] Food and Agriculture Organization of the United Nations. Accessed via the Internet 28 July, 2014 at: http://www.fao.org/nr/water/aquastat/countries_regions/kenya/index.stm
[11] Water for Agriculture and Energy in Africa: the Challenges of Climate Change Conference. Accessed via the Internet 28 July, 2014 at: http://www.sirtewaterandenergy.org/docs/reports/Kenya-Draft2.pdf
[12] Food and Agriculture Organization of the United Nations. Accessed via the Internet 28 July, 2014 at: http://www.fao.org/nr/water/aquastat/countries_regions/kenya/index.stm

Consequently, Kenyans depend heavily on rainfed agriculture, contributing to 80% of the nation's employment. [13] The main irrigated crops are rice, maize, sugarcane, vegetables, bananas, citrus, coffee, tea, cotton, and flowers. [14]

Biodiversity. Kenya's vast biodiversity is due to its long evolutionary history, variable climate, and habitat and ecosystem diversity. The Kenya Wildlife Service (KWS) manages the protected areas in Kenya, home to important biodiversity sites; however, 70% of Kenya's biodiversity falls outside these protected areas. Kenya hosts five critical hot spots of biodiversity and 61 important bird areas. There are 7000 plants, 25,000 invertebrates, 1,133 birds, 315 mammals, 191 reptiles, 180 freshwater fish, 692 marine and brackish fish, 88 amphibians, and 2,000 species of fungi and bacteria in Kenya. Fourteen of Kenya's mammalian species are endemic to the country, which is famous for its large mammals like the African elephant, black rhino, leopard, buffalo, and African lion. According to the IUCN report, endangered and threatened species in Kenya include 103 species of bird, 51 mammals, eight amphibians and reptiles, and 26 fish. [15]

Climate Change. Kenya's 2010 National Climate Change Response Strategy (NCCRS) concluded that "evidence of climate change in Kenya is unmistakable." Notable changes include erratic rainfall, extreme weather events, droughts during the rainy season, and extreme flooding. Climactic trends reported by the NCCRS include general warming of land locations (besides the coastal zone) and less cold extreme temperatures in the arid and semi-arid lands.[16] Climate change is already responsible for melting 11 Mt. Kenya glaciers and the resulting decline in water levels in the Athi and Tana Rivers. Kenya's significant forests are also at risk, as their distribution is determined by rainfall. Climatic conditions also influence forest fires, which recently damaged the Mount Kenya Forest in early 2012. Local environmental degradation also exacerbates climate change issues. Deforestation, pollution, overgrazing, and habitat loss are significant challenges in Kenya; forest cover has decreased from 12% in the 1960s to just 6% in 2013.

Climate change in Kenya has also had socioeconomic impacts. Prolonged droughts, receding lake levels, and frost in productive agricultural areas, among other impacts, have forced communities to migrate to other areas, leading to conflicts over natural resources. In addition, Kenya's economy relies heavily on climate-sensitive sectors such as agriculture, tourism, and energy. Kenya depends on rain-fed agriculture for food, meaning pastoral and marginal agricultural areas are especially vulnerable to drought. The tourism industry is based on wildlife populations greatly affected by climate change, while the hydropower sector (contributing to 50% of Kenya's energy production) is likewise impacted by droughts and erratic rainfall. In general, extreme climatic events could end up costing Kenya's economy US$500 million/year from factors such as loss of crops and livestock, forest fires, fisheries damage, and reduced hydropower potential. [17]

Kenya's National Climate Change Action Plan 2013-2017 (NCCAP) [18] was developed to implement the NCCRS and help Kenya reach its long-term development goals, including a secure environment. The "low carbon climate-resilient development pathway" outlined in the

[13] Irrigation Potential and Investment Return in Kenya. Accessed via the Internet 28 July, 2014 at: http://www.sciencedirect.com./science/article/pii/S0306919214000712?np=y
[14] Water for Agriculture and Energy in Africa: the Challenges of Climate Change Conference. Accessed via the Internet 28 July, 2014 at: http://www.sirtewaterandenergy.org/docs/reports/Kenya-Draft2.pdf
[15] Kenya State of the Environment and Outlook 2010, National Environmental Management Authority (NEMA), Kenya
[16] The NCCRS notes that a major variable to these observations is urbanization, which could also be an indicator of these observed trends.
[17] http://cdkn.org/wp-content/uploads/2013/03/Kenya-National-Climate-Change-Action-Plan.pdf
[18] See the full Climate Change Action Plan here: http://cdkn.org/wp-content/uploads/2013/03/Kenya-National-Climate-Change-Action-Plan.pdf

NCCAP describes strategies Kenya can use to contribute to efforts to reduce greenhouse gas emissions.

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

The Kenya Health Office Portfolio may be responsible for waste management and, accordingly, will manage such waste in accordance with the appropriate national standards. However, where national requirements on waste management associated with solid and equipment do not exist, the awardee will select vendors who comply with International Organization for Standardization (ISO) and WHO standards and best practices (e.g., WHO "Safe Management of Wastes from Healthcare Activities"), and the USAID Sector Environmental Guidelines.

A summary of potentially applicable standards, guidelines, and useful references are provided below for developing the EMMP and updating the Kenya Health Office Portfolio integrated WMP. In addition, other references for waste management are identified in Section 4 as specific conditions of the activities."

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

- Organization for Economic Cooperation and Development (OECD) Council on the Decision on the control of Transboundary Movements of Wastes

USAID Resources and References

- USAID. Sector Environmental Guidelines
    - Solid Waste
    - Healthcare Waste
    - Healthcare Facilities
    - Construction
- USAID. Integrated Waste Management Plan

Other International References and Standards

- Safe Management of wastes from health-care activities (Note: Where national requirements on proper waste management do not exist, WHO's "Safe Management of Wastes from Healthcare Activities" handbook is the internationally-recognized standard used by the Bureau for Global Health

2.3 THREATENED AND ENDANGERED SPECIES

The activities proposed include work in already developed areas, clinical settings, and existing infrastructure. Therefore, the activities are not likely to adversely impact threatened and endangered species, or their critical habitat. Activity level actions that include construction or infrastructure improvements should be assessed for the presence of threatened or endangered species, or their critical habitat. Any activity that may adversely impact threatened or

endangered species or their critical habitat may not proceed without an Environmental Assessment.

2.4 COUNTRY/MINISTRY/MUNICIPALITY ENVIRONMENTAL CAPACITY ANALYSIS (AS APPROPRIATE)

Kenya's Environmental Management and Coordination Act (EMCA), established in 1999, provides the legal and institutional framework for environmental management and provisions for environmental protection and conservation. EMCA established the National Environmental Council for environmental policy formulation and national environmental goal-setting, Provincial and District Environment Committees(which are likely to change to County Environmental Committees with devolution) to help decentralize environmental management and enable local communities, a Public Complaints Committee to provide administrative mechanisms for addressing environmental harm, and the National Environment Management Authority (NEMA) as the primary governmental instrument for implementing environmental policies. NEMA has authority for supervision and coordination of all environmental matters and acts as the government's main instrument for the implementation of environmental policies. Kenya is also party to international agreements, including biodiversity, climate change, desertification, endangered species, and hazardous waste.

Kenya's Environmental Impact Assessment (EIA) regulations require that all projects likely to have a negative environmental impact, or those for which the EMCA requires an EIA, produce an EIA, which must be approved before implementation. Similarly, licensing authorities cannot issue trading, commercial, or development permits or licenses for any projects with likely negative impacts or ECMA EIA requirements that do not have an approved EIA. The EIA act lists projects that must produce an EIA (along with those that are generally likely to have adverse environmental impacts); this list includes urban development projects, projects using water resources, forestry and agriculture activities, processing and manufacturing industry projects, electrical infrastructure projects, fuel management projects, natural conservation area projects, and significant biotechnology developments (including GMO testing). The Act also lays out the EIA process and environmental issues to consider.

The Environmental Management and Coordination Act (EMCA) of 1999 is an Act of Parliament to establish an appropriate legal and institutional framework for the management of the environment. EMCA outlines the rights and responsibilities of all Kenyan citizens in the protection and assurance of a clean and healthy environment. In addition, EMCA guides resources monitoring, access rights, reporting requirements, mitigation, compensation, and restoration activities, and the regulatory and management structures responsible for safeguarding Kenya's natural resources. This Act created the National Environmental Management Authority (NEMA) as the administrative body tasked with implementing the EMCA 1999.

- Specific regulations outlined by EMCA of importance to this sub-award include:
- Environmental Management and Coordination (Water Quality) Regulations, 2006
- Environmental Management and Coordination (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006.
- Environmental Management and Coordination (Waste Management Regulations), 2006
- Environmental Management and Coordination (Wetlands, River Banks, Lake Shores, and Sea Shore Management) Regulation, 2009
- Environmental (Impact Assessment and Audit) Regulations, 2003.

Kenya's Environmental Management and Coordination (Water Quality) Regulations were finalized in 2006. These Regulations are to ensure that all-natural water sources are protected. They apply to drinking water and water used for industrial, agricultural, recreational, and other *purposes (http://www.elaw.org/assets/pdf/ke.WaterQualityReg.pdf).* This regulation has set standards for the quality of wastewater discharged into the environment, providing the parameters to be regulated in each sector.

In accordance with EMCA, the Minister for Environment and Natural Resources created water quality regulations that define water quality standards for domestic, industrial, agricultural, and recreational use. The regulations set forth measures to prevent water pollution and include standards for the maximum allowable levels of substances in the water to protect drinking water sources. The regulations require NEMA to maintain water quality monitoring records for domestic water sources twice a year. For industrial water use and discharge, standards are defined for maximum allowable limits of substances in the effluent to be discharged into the environment.[19][1] http://www.nema.go.ke/images/documents/water_quality_regulations.pdf

Kenya has a National Health Care Waste Management Plan (2008-2012), and the EMCA has provisions to regulate effluent and hazardous waste. These regulations require that any owner or operator of a trade or industry that discharges effluents, waste, or other pollutants into the environment apply for an effluent discharge and waste disposal license from NEMA. NEMA considers the effects of these pollutants on the quality of water courses and local water requirements before approving licenses.[20]

In an additional effort to manage the potential risk from HCW, Kenya has made progress with the completion of a short-term National Health Care Waste Management Plan 2008-2012[21] (Kenya Ministry of Health, undated), long-term National Health Care Waste Management Plan 2006-2015 (World Bank, 2007), National Guidelines on Medical Waste Management, Injection Safety and Medical Waste Management Policy[22], the formalization of a National Steering Committee and Working Group on Health Care Waste (HCW) Management, approval of the Environmental Sanitation and Hygiene Policy,[23] and formation of an Inter-Sectoral Working Group on health care waste management.[24]

EMCA outlines a process for which air quality standards should be developed. The Standards and Enforcement Review Committee is responsible for advising NEMA on establishing criteria and procedures for measuring air quality, which is currently in draft form.[25] This includes ambient, occupational, and emission standards for various sources and criteria for reducing existing sources of air pollution and greenhouse gases. Owners of operators of trades that emit substances likely to cause air pollution must apply for a license from NEMA, which will consider the effect of emission on air quality and require the applicant to submit an EIA, as necessary. [26]

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[19][1] See complete water quality regulations here: http://www.nema.go.ke/images/documents/water_quality_regulations.pdf

[20] ibid

[21] Available online at: http://nascop.or.ke/library/PEP/National%20Health%20Care%20Waste%20Management%20Plan%20for%20Kenya%202008-2012%20a.pdf\

[22] Available online at: http://www.path.org/files/Kenya-NationalPolicyoninjection.pdf.

[23] Available online at: http://docs.watsan.net/Scanned_PDF_Files/Class_Code_8_Countries/824-KE07-19289.pdf.

[24] Paragraph pulled directly from Health Care Waste Management Costing Analyst for USG-Supported Health Care Facilities in Kenya, April 2014

[25] http://www.nema.go.ke/index.php?option=com_content&view=article&id=141&Itemid=493

[26] Kenya Environmental Management and Coordination Act, 1999

3.0 ANALYSIS OF POTENTIAL ENVIRONMENTAL RISK

As set out in section 1.3, for the purpose of environmental review, current and anticipated activities in the USAID/Kenya Health System Strengthening Office portfolio are grouped into the following intervention categories:

Intervention Category 1	Direct Support to Healthcare Worker/Workforce Training; Strengthening & Development
Intervention Category 2	Direct Procurement of Commodities & Strengthening of Commodities, Logistics & Equipment, Non-pharmaceuticals and Diagnostic Systems
Intervention Category 3	Direct and Capacity Building Support for Health Service Delivery, Excluding Commodity Procurement/ Supply Chain Strengthening
Intervention Category 4.	Social Marketing, Education, & Behavior Change Communication
Intervention Category 5.	Policy and Strategy Development and Assistance
Intervention Category 6.	Studies, Surveys/ Public Health Surveillance and other Data-Gathering Assessments and Analysis, Models, and Capacity Building in Support of All Areas Above
Intervention Category 7.	Technical Assistance to Malaria Vector Control
Intervention Category 8.	Small Scale Construction or Rehabilitation of Health Infrastructure (<10,000 sq. ft)
Intervention Category 9.	Resource/ Financial Mobilization

Each category contains several entailed activities. In section 3.2, the entailed activities are described, and their potential impacts analyzed. On this basis, Recommended Determinations are made. In many cases, Negative Determinations entail conditions. Upon approval of his IEE, implementation of these conditions becomes mandatory.

3.1 ADVERSE IMPACTS OF HEALTH CARE SERVICE DELIVERY DUE TO FAILURE TO PROPERLY MANAGE RESULTING WASTES

This section is a general discussion and analysis of waste-related impacts of health care activities. It is referenced at several points in the analyses of the specific interventions categories that follow in section 3.2. It supports this subsequent analysis; no recommended determinations are attached specifically to this section.

Although healthcare activities provide many important benefits to communities, they can also unintentionally do harm via poor management of the wastes they generate. These wastes generally fall into two major categories in terms of public health risk and recommended methods of disposal.[27]

- ***Non-Hazardous or General*** healthcare waste, similar or identical to domestic waste, including materials such as packaging or unwanted paper. This waste is generally harmless and needs no special handling; 75-90 percent of waste generated by

[27] World Health Organization (WHO). 2014. "Safe management of wastes from health-care activities". https://apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf?sequence=1

healthcare facilities falls into this category, and it can be burned, with subsequent proper ash management, or taken to the landfill without any additional treatment.

- ***Hazardous*** healthcare wastes make up the remaining 10-25 percent of healthcare facility waste. Hazardous waste must be specially managed and disposed of to prevent adverse impacts on human health and the environment. Hazardous healthcare waste includes a variety of streams or types including sharps, rapids test kits, infectious waste, pathological waste, pharmaceutical waste, cytotoxic waste, chemical waste, and radioactive waste. All blood and bodily fluids are potentially infectious.

Pharmaceutical wastes and medical supplies, including condoms: Pharmaceutical drugs including vaccines have specific storage time and temperature requirements, and may expire or lose efficacy before they are used, particularly in remote areas where demand is low and/or infrequent. Pharmaceutical waste may also accumulate due to inadequacies in stock management and distribution and/or lack of a routing system of disposal.

The effects of pharmaceutical waste on the environment are different from conventional pollutants. Drugs are designed to interact within the body at low concentrations to elicit specific biological effects in humans, and which may also cause biological responses in other organisms. There are many drug classes of concern, including antibiotics, antimicrobials, antidepressants, and estrogenic steroids. Their main pathway into the environment is through household use and excretion, and through the disposal of unused or expired pharmaceuticals.

Effects on aquatic life are a major concern in disposal of pharmaceuticals. A wide range of pharmaceuticals has been discovered in fresh and marine waters globally, and even in small quantities some of these compounds have the potential to cause harm to aquatic life.

Additional health risks related to disposal include burning pharmaceuticals and plastic medical supplies (including new or used condoms) at low temperatures or in open containers, which results in the release of toxic pollutants into the air. Inefficient and insecure sorting and disposal may allow drugs beyond their expiry date to be diverted for resale to the public.[28]

Potentially infectious wastes: Improper training, handling, storage, and disposal of the waste generated in health care facilities or activities can spread disease through several mechanisms. Transmission of disease through infectious waste is the greatest and most immediate threat from healthcare waste. If waste is not treated in a way that destroys the pathogenic organisms, dangerous quantities of microscopic disease-causing agents—viruses, bacteria, parasites, or fungi—will be present in the waste. These agents can enter the body through punctures and other breaks in the skin, mucus membranes in the mouth, by being inhaled into the lungs, being swallowed, or being transmitted by a vector organism. Those who come in direct contact with the waste are at greatest risk. Examples include healthcare workers, cleaning staff, patients, visitors, waste collectors, disposal site staff, waste pickers, substance abuses, and those who knowingly or unknowingly use "recycled" contaminated syringes and needles. Although sharps pose an inherent physical hazard of cuts and punctures, the much greater threat comes from sharps that are also infectious waste. Healthcare workers, waste handlers, waste-pickers, substance abuses, and others who handle sharps have become infected with HIV and/or hepatitis B and C viruses through pricks or reuse of syringes/needles.

[28] USAID. 2019. “Sector Environmental Guidelines – Healthcare Waste”. https://www.usaid.gov/sites/default/files/documents/1864/FINAL_HCW_SEG_508_12.02.19.pdf

Contamination of water supply from untreated healthcare waste can also have devastating effects. If infectious stools or bodily fluids are not treated before being disposed of, they can create and extend epidemics.[29]

3.2 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS PER INTERVENTION CATEGORY

INTERVENTION CATEGORY 1: Direct Support to Healthcare Worker/Workforce Training; Strengthening & Development

TABLE 3A. POTENTIAL IMPACTS – CATEGORY 1

Sub-intervention	Potential environmental and social impacts
Sub-intervention 1.1: Provide capacity building to frontline health workers and the community	Environmental Impacts • Capacity building and training interventions are likely to have negligible foreseeable direct impacts on the environment. However, in cases where training involves the generation of wastes (e.g., blood sampling, swabs, cultures), it could result in disease transmission and, if not properly contained, lead to negative impacts on water quality and community health. Social Impacts • While training is expected to support significant public health benefits, this intervention could exacerbate inequities in health service access if issues related to gender equity or the needs of vulnerable populations are not considered in the development of training materials or during training exercises. • Training materials must also consider the health and safety of healthcare workers involved in handling hazardous wastes, as this oversight can lead to increased occupational hazards.
Sub-intervention 1.2: Provide technical assistance and training for health promotion activities	
Sub-intervention 1.3: Orphans and Vulnerable Children training and support	Negligible adverse environmental or social impacts are associated with this sub-intervention.
Sub-intervention 1.4: Strengthen human resource quality management systems	Negligible adverse environmental or social impacts are associated with this sub-intervention.

INTERVENTION CATEGORY 2: Direct Procurement of Commodities & Strengthening of Commodities, Logistics & Equipment, Non-pharmaceuticals and Diagnostic Systems

TABLE 3B. POTENTIAL IMPACTS – CATEGORY 2

Sub-intervention	Potential environmental and social impacts
Sub-intervention 2.1: Capacity building to support critical policy and strategy reforms to supply chain management	Environmental Impacts • In-country supply chains result in increased procurement, use, and disposal of healthcare commodities and supplies.
Sub-intervention 2.2: Improve commodity (i.e., pharmaceutical	

[29] USAID. 2019. "Sector Environmental Guidelines – Healthcare Waste". https://www.usaid.gov/sites/default/files/documents/1864/FINAL_HCW_SEG_508_12.02.19.pdf

and non-pharmaceutical) and medical equipment procurement and supply chain management strategies to ensure availability of health products	● Many procured commodities inevitably end up as waste (e.g., test kits, etc.), generate waste as a consequence of their use (e.g., vaccines, pharmaceuticals), or have the potential to end up as waste due to spoilage or expiration (i.e., all pharmaceuticals). Improper disposal of potentially infectious and pharmaceutical wastes has potentially significant adverse impacts, as discussed in section 3.1.
Sub-intervention 2.3: Improve the quality of and access to essential health commodities	

INTERVENTION CATEGORY 3: DIRECT AND CAPACITY BUILDING SUPPORT FOR HEALTH SERVICE DELIVERY, EXCLUDING COMMODITY PROCUREMENT/ SUPPLY CHAIN STRENGTHENING

TABLE 3C. POTENTIAL IMPACTS – CATEGORY 3

Sub-intervention	Potential environmental and social impacts
Sub-intervention 3.1: Expand access to and use of malaria, maternal, newborn, and child health, nutrition, and family planning and reproductive health services	Environmental Impacts ● While improved healthcare service delivery and systems strengthening is expected to support the achievement of significant public health benefits, they will also result in increased generation of healthcare waste (e.g., blood samples, sharps, and medicines). ● While increased uptake of detection, testing, and treatment interventions for HIV and TB are expected to support achievement of significant public health benefits, they also result in increased generation of healthcare waste. Social Impacts ● While improvement to access and quality of health care services are expected to support achievement of significant public health benefits, this intervention could exacerbate inequities in health service access if issues related to gender equity or the needs of vulnerable populations are not considered. ● Improving the access and quality of health care services may lead to increased occupational hazards for healthcare workers involved in handling hazardous wastes.
Sub-intervention 3.2: Support the provision of health services delivery	
Sub-intervention 3.3: Improve TB detection, treatment, and prevention programs	
Sub-intervention 3.4: Improve provision of and demand for quality HIV/AIDS health care services	

INTERVENTION CATEGORY 4: SOCIAL MARKETING, EDUCATION, & BEHAVIOR CHANGE COMMUNICATION

TABLE 3D. POTENTIAL IMPACTS – CATEGORY 4

Sub-intervention	Potential environmental and social impacts
Sub-intervention 4.1: Support strategic leadership, coordination, and participatory social and behavior change (SBC) interventions	Negligible adverse environmental or social impacts are associated with this sub-intervention.
Sub-intervention 4.2: Support community and private sector participation in SBC interventions	Negligible adverse environmental or social impacts are associated with this sub-intervention.

INTERVENTION CATEGORY 5: POLICY AND STRATEGY DEVELOPMENT AND ASSISTANCE

TABLE 3E. POTENTIAL IMPACTS – CATEGORY 5

Sub-intervention	Potential environmental and social impacts
Sub-intervention 5.1: Identify critical policy and strategy reforms to support, excluding supply chain management	Negligible adverse environmental or social impacts are associated with this sub-intervention.
Sub-intervention 5.2: Engage with, and provide technical assistance to the Government of Kenya and other relevant stakeholders	

INTERVENTION CATEGORY 6: STUDIES, SURVEYS/ PUBLIC HEALTH SURVEILLANCE AND OTHER DATA-GATHERING ASSESSMENTS AND ANALYSIS, MODELS, AND CAPACITY BUILDING IN SUPPORT OF ALL AREAS ABOVE

TABLE 3F. POTENTIAL IMPACTS – CATEGORY 6

Sub-intervention	Potential environmental and social impacts
Sub-intervention 6.1: Conduct public health surveillance activities and studies that include the collection of biological samples	Environmental Impacts ● Entomological surveillance and collection of biological samples for testing and research purposes in laboratory settings require equipment, chemical reagents, and surveillance supplies that have the potential to cause adverse health and environmental impacts if not properly managed. These materials require special care and management to minimize their expiration and/or damage. Social Impacts ● Entomological surveillance and collection of biological samples for testing and research purposes in laboratory settings may lead to increased occupational hazards for workers involved in handling hazardous wastes.
Sub-intervention 6.2: Strengthen information management systems and quality and use of data for planning and decision making	Negligible adverse environmental or social impacts are associated with this sub-intervention.
Sub-intervention 6.3: Conduct demographic and health surveys	Negligible adverse environmental or social impacts are associated with this sub-intervention.

INTERVENTION CATEGORY 7: TECHNICAL ASSISTANCE TO MALARIA VECTOR CONTROL

TABLE 3G. POTENTIAL IMPACTS – CATEGORY 7

Sub-intervention	Potential environmental and social impacts

Sub-intervention 7.1: Insecticidal-Treated Nets (ITN) and/or Long-Lasting Insecticidal Nets Distribution	The potential adverse impacts of ITN distribution and use are well-documented by USAID's Programmatic Environmental Assessment for Integrated Vector Management Programs for Malaria Vector Control (2017). They are significant and include health impacts on households and users, particularly women; environmental damage; contamination of water supplies, and harm to aquatic species due to insecticide exposure and improper use and/or disposal of ITNs, among other impacts. Adverse impacts to land, water, and/or sensitive ecosystems may occur if pesticide-treated nets are improperly handled during storage, distribution, and use can be released into the environment. Pesticide-treated nets also need to be properly used to prevent theft and misuse incidents (i.e., nets used for non-public health purposes such as fishing), leading to impacts on human health and environmental impacts to water and/or sensitive ecosystems.
Sub- intervention 7.2: Provide procurement, distribution/delivery, storage, application, and waste disposal associated with World Health Organization Pre-Qualified (WHO/PQ) and/or U.S. Environmental Protection Agency (USEPA)-approved PMI/Malaria control insecticides, services such as IRS.	The potential adverse impacts of IRS campaigns and use are well-documented by USAID's Programmatic Environmental Assessment for Integrated Vector Management Programs for Malaria Vector Control (2017). They are significant and include health impacts on households and users, particularly women; environmental damage; contamination of water supplies, and harm to aquatic species due to insecticide exposure, among other impacts. Adverse impacts to land, water, and/or sensitive ecosystems may occur if IRS equipment are improperly handled during storage, distribution, and use can be released into the environment. IRS also needs to be properly used to prevent theft and misuse incidents that lead to human health and environmental impacts on water and/or sensitive ecosystems.

INTERVENTION CATEGORY 8: SMALL SCALE CONSTRUCTION OR REHABILITATION OF HEALTH INFRASTRUCTURE (<10,000 SQ. FT)

TABLE 3H. POTENTIAL IMPACTS – CATEGORY 8

Sub-intervention	Potential environmental and social impacts
Sub-intervention 8.1: Construction of small-scale facilities and/or limited refurbishment at existing facilities, defined [redacted] costing less tha [redacted] d/or total disturbed area equal to or less than 1,000m^2	In general, the potential impacts of facilities construction and operation larger than **1,000m^2** but less than **10,000m^2**, are controllable with basic good design and operating practices. However, the precise nature of the potential impacts—and the appropriate design and operating practices to mitigate them—are highly dependent both on location and the specific characteristics of the infrastructure. This requires a site-specific, design-specific assessment of potential adverse impacts and the efficacy of available mitigation measures. Construction itself has a well-known set of potential adverse impacts, which spans across nearly all types of construction and rehabilitation. Experience shows that these impacts are controllable below the level of significance with basic good

	construction management practices, including occupational safety and health practices. ● Disturbance to existing landscape/habitat. Construction typically necessitates clearing, grading, trenching and other activities that can result in near-complete disturbance to the pre-existing landscape/habitat within the plot or right-of-way. If the plot or right-of-way contains or is adjacent to a permanent or seasonal stream/water body, grading and leveling can disrupt local drainage. ● Sedimentation/fouling of surface waters. Runoff from cleared ground or materials stockpiles during construction can result in sedimentation/fouling of surface waters, particularly if the site is located in close proximity to a stream or water body. ● Standing water. Construction may result in standing water on-site, which readily becomes breeding habitat for mosquitoes and other disease vectors; this is of concern as malaria is endemic in much of Malawi. ● Occupational and community health and safety hazards. The construction process and construction sites present a number of hazards: fall and crush injuries, hazards from hand or power tools and equipment used in construction, and exposure to hazardous substances, such as solvents in paint, cement dust, etc. ● Increased Air and Noise Pollution can result during construction or rehabilitation from the actions of construction equipment and workers. ● Adverse impacts of materials sourcing. Construction requires a set of materials often procured locally: timber, fill, sand and gravel, bricks. Unmanaged extraction of these materials can have adverse effects on the environment. For example, stream bed mining of sand or gravel can increase sedimentation and disturb sensitive ecosystems; purchase of timber from unmanaged or illegal concessions helps drive deforestation. ● Energy use for construction, maintenance, and operations of water extraction, supply, and distribution and/or wastewater treatment infrastructure can increase greenhouse gas emissions, exacerbating the impacts of climate change. Environmental Impacts ● Removal of vegetation and trees and disturbance and fragmentation of existing landscape/habitat. ● Destabilization of existing topographic and geographic features such as contribution to land/mudslides. ● Deterioration of local habitats, particularly those of endangered species. ● Increased erosion and sedimentation and pollution (e.g., oil, fuel, cement, and other substances) of surface waters. ● Generation of solid waste. ● Use of water and energy and other natural resources.

	● Accidental leaks/spills of oil/fuel from vehicles, machinery, and storage tanks can pollute groundwater and surface waters. ● Groundwater hydrology and quality if the site may need to be drained to provide suitable conditions for the engineering works to occur. ● Soil contamination from previous land use may be disturbed during construction works, causing pollutants such as heavy metals to enter ground and surface waters. Social Impacts ● Increase in vectors of disease. ● Occupational and public health and safety hazards. ● Land tenure, eminent domain, and resettlement. ● Increased light and noise pollution. ● Noise and vibration emissions resulting from the use of machinery and equipment and vehicle circulation. ● Release of air pollutants including NO_2, SO_2, Particulate Matter (PM)10 and PM2.5 from vehicle circulation. ● Changes in local landscape and changes to the scenic attributes of the landscape, during construction phases can impact quality of life for nearby communities, as well as land/property prices.

INTERVENTION CATEGORY 9: RESOURCE/ FINANCIAL MOBILIZATION

TABLE 3I. POTENTIAL IMPACTS – CATEGORY 9

Sub-intervention	Potential environmental and social impacts
Sub-intervention 9.1: Transfer of resources to promote health strengthening efforts	Negligible adverse environmental or social impacts are associated with this sub-intervention.
Sub-intervention 9.2: Improve budgeting and financial management systems	Negligible adverse environmental or social impacts are associated with this sub-intervention.

4.0 ENVIRONMENTAL DETERMINATIONS

4.1 RECOMMENDED ENVIRONMENTAL DETERMINATIONS

The following table summarizes 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 4: ENVIRONMENTAL DETERMINATIONS

Intervention Categories	Categorical Exclusion Citation (if applicable)	Negative Determination	Positive Determination [30]	Deferral [31]
Intervention Category 1: Direct Support to Healthcare Worker/Workforce Training; Strengthening And Development				
Sub-intervention 1.1: Provide capacity building to frontline health workers and the community		☒	☐	☐
Sub-intervention 1.2: Provide technical assistance and training for health promotion activities		☒	☐	☐
Sub-intervention 1.3: Orphans and Vulnerable Children training and support	§216.2(c)(2)(i),(iii),(viii)			
Sub-intervention 1.4: Strengthen human resource quality management systems	§216.2(c)(2)(i),(iii),(viii)			
Intervention Category 2: Direct Procurement of Commodities, Medical Equipment & Strengthening of Commodities, Logistics & Diagnostic Systems				
Sub-intervention 2.1: Capacity building to support critical policy and strategy reforms to supply chain management		☒	☐	☐
Sub-intervention 2.2: Improve commodity (i.e., pharmaceutical and non-pharmaceutical) and medical equipment procurement and supply chain management strategies to ensure availability of health products		☒	☐	☐

[30] Positive Determinations require preparation of a Scoping Statement and Environmental Assessment.

[31] Deferrals must be cleared through an Amendment to this IEE prior to implementation of any deferred activities.

Intervention Categories	Categorical Exclusion Citation (if applicable)	Negative Determination	Positive Determination [30]	Deferral [31]
Sub-intervention 2.3: Improve the quality of and access to essential health commodities		☒	☐	☐
Intervention Category 3: Direct and Capacity Building Support for Health Service Delivery and Water Sanitation and Hygiene (WASH), Excluding Commodity Procurement/ Supply Chain Strengthening				
Sub-intervention 3.1: Expand access to and use of malaria, maternal newborn and child health, nutrition, family planning and reproductive health services, WASH		☒	☐	☐
Sub-intervention 3.2: Support the provision of health services delivery		☒	☐	☐
Sub-intervention 3.3: Improve TB detection, treatment, and prevention programs		☒	☐	☐
Sub-intervention 3.4: Improve provision of and demand for quality HIV/AIDS, RMNCAH, Nutrition and WASH health services		☒	☐	☐
Intervention Category 4: Social Marketing, Education, & Behavior Change Communication				
Sub-intervention 4.1: Support strategic leadership, coordination, and participatory social and behavior change (SBC) interventions	§216.2(c)(2)(i),(v),(viii)	☐	☐	☐
Sub-intervention 4.2: Support community and private sector participation in SBC interventions	§216.2(c)(2)(i),(v),(viii)	☐	☐	☐
Intervention Category 5: Policy and Strategy Development and Assistance				
Sub-intervention 5.1: Identify critical policy and strategy reforms to support, excluding supply chain management	§216.2(c)(2)(i),(iii),(viii)	☐	☐	☐
Sub-intervention 5.2: Engage with, and provide technical assistance to the Government of Kenya and other relevant stakeholders	§216.2(c)(2)(i),(iii),(viii),	☐	☐	☐

Intervention Categories	Categorical Exclusion Citation (if applicable)	Negative Determination	Positive Determination [30]	Deferral [31]
Intervention Category 6: Studies, Surveys/ Public Health Surveillance and other Data-Gathering Assessments and Analysis, Models, and Capacity Building in Support of All Areas Above				
Sub-intervention 6.1: Conduct public health surveillance activities and studies that include the collection of biological samples		☒	☐	☐
Sub-intervention 6.2: Strengthen information management systems and quality and use of data for planning and decision making	§216.2(c)(2)(iii),(v),(viii), (xiv)	☐	☐	☐
Sub-intervention 6.3: Conduct demographic and health surveys	§216.2(c)(2)(iii),(viii),(xiv)	☐	☐	☐
Intervention Category 7: Technical Assistance to Malaria Vector Control				
Sub-intervention 7.1: Insecticidal-Treated Nets (ITN) and/or Long-lasting insecticidal nets (LLINs) Distribution (FMI, refer to BEO Specified Conditions of Approval and Table 5G. Summary of Mitigation Measures for Category 7)		☐	☒ *LLINs see BEO Specified Conditions	☐
Sub- intervention 7.2: Provide procurement, distribution/delivery, storage, application, and waste disposal associated with World Health Organization Pre-Qualified (WHO/PQ) and/or U.S. Environmental Protection Agency (USEPA)-approved PMI/Malaria control insecticides, services such as IRS.		☐	☒ *IRS w/ conditions met by IVM MCC PEA	☐
Intervention Category 8: Small Scale Construction or Rehabilitation of Health Infrastructure (<10,000 sq. ft)				
Sub-intervention 8.1: Construction of small-scale facilities and/or limited refurbishment at existing facilities with costing less than $250,00.00 and/or not disturbing an area equal to less than 1,000m^2		☒	☐	☐

Intervention Categories	Categorical Exclusion Citation (if applicable)	Negative Determination	Positive Determination [30]	Deferral [31]
Intervention Category 9: Resource/ Financial Mobilization				
Sub-intervention 9.1: Transfer of (cash) resources to promote health strengthening efforts	§216.2(c)(2)(v),(viii)	☐	☐	☐
Sub-intervention 9.2: Improve budgeting and financial management systems	§216.2(c)(2)(v),(viii),(xiv)	☐	☐	☐

4.2 CLIMATE RISK MANAGEMENT

The Climate Risk Management (CRM) screening identifies climate-related risks to activities that should be addressed to enhance resilience and safeguard activity development objectives. This screening is part of implementing the Reference for ADS Chapter 201 "Climate Risks Management for USAID Projects and Activities."[32]

This section summarizes the methodology used and findings of the screening, in accordance with ADS 201mal. The project design team, in consultation with the CIL, considered the potential impact of climate risks/stressors (changing precipitation patterns, rising temperature, floods, droughts, fires, landslides, etc.) on the sustainability and performance of the activities through the CRM screening. The Mission will share CRM results with partners and include climate risk considerations in solicitations and work plan development when appropriate (see Annex 1 for the complete CRM table).

As described in USAID (2018), Kenya is projected to experience the following changes in climate by mid-century:

- Increased annual average temperatures of 1.2 to 2.2°C with warming greater in the west
- Increased duration of heat waves by 9 to 30 days
- Likely increased average rainfall by -3 to +28 percent, mainly from October to May and in the coast and highlands
- Increased inter-seasonal rainfall variability and frequency and intensity of heavy rainfall events
- Likely decreased duration but increased severity (-2 to +27 percent) of dry spells
- Increase in sea level rise by 16 to 42 cm

Kenya's health infrastructure and services are highly vulnerable to climate change impacts, including:

- Increased flooding and health impacts caused by climate change could affect ability to carry out capacity-building activities or provide health services.
- Climate change could increase health issues, requiring an increase in capacity-building for healthcare services to meet the needs of patients.

[32] Reference to ADS Chapter 201: https://www.usaid.gov/ads/policy/200/201mal

- Increased flooding could damage roads and buildings, disrupting the health commodities value chain and resulting in delays for supply deliveries and expired medicines.
- Climate change could negatively impact livelihoods, reducing people's ability to pay for medications or health services.
- Climate change could disproportionately affect vulnerable populations like women and youth and patients with existing illnesses.
- Increased extreme events could damage health facilities and energy infrastructure, disrupting construction and operation of facilities.

METHODOLOGY

The CRM screening was completed through a desk review and a risk screening session with program staff. This included reviewing:

- Project specific information, including available descriptions of project activities;
- Climate and health information, including information specific to Kenya, such as:
  - USAID Climate Risk Profile of Kenya[33]
  - USAID/Kenya Country Development and Cooperation Strategy[34]
  - USAID Kenya Climate Vulnerability Profile[35]
  - World Bank Kenya Climate Risk Country Profile[36]

Following this desk review, the project design team engaged in a facilitated process to confirm risks for each intervention category; to rate risks as high, moderate, or low; and to define appropriate actions to respond to risks rated high and moderate.

RISK RATINGS AND DEFINED ACTIONS

The following summarizes the risk screening findings and actions. The complete results of the CRM screening are provided in Annex 1.

Health Service and Supply Chain Risks: Climate change could increase health issues, requiring an increase in capacity-building for healthcare services to meet the needs of patients. Increased flooding and health impacts caused by climate change could affect ability to carry out capacity-building activities or provide health services. Increased flooding could damage roads and buildings, disrupting the health commodities value chain and resulting in delays for supply deliveries and expired medicines. Climate change could also disproportionately affect vulnerable populations. Climate change may also increase transmission of mosquito-borne diseases and negatively impact malaria control measures, such as distribution of ITNs.

- Risks to health services and supply chains are rated moderate.

Program Management Risks: Increased flooding could block roads and damage buildings, disrupting the ability to carry out social marketing and education and behavior change activities, as well as surveys and sampling activities. Climate change impacts not incorporated into design of health activities or health-related research could result in underperforming interventions. Climate shocks and stressors may also result in increased government costs related to

[33] USAID, *Climate Risk Profile: Kenya*, https://www.climatelinks.org/sites/default/files/asset/document/2018_USAID-ATLAS-Project_Climate-Risk-Profile-Kenya.pdf
[34] USAID, *Kenya Country Development and Cooperation Strategy*, https://www.usaid.gov/sites/default/files/documents/Kenya_CDCS_External_Sept_2021.pdf
[35] USAID, *Kenya Climate Vulnerability Profile*, https://www.climatelinks.org/sites/default/files/asset/document/kenya_climate_vulnerability_profile_jan2013.pdf
[36] World Bank Group, *Climate Risk Country Profile: Kenya,* https://www.acaps.org/sites/acaps/files/key-documents/files/climate_risk_country_profile_kenya.pdf

addressing damage and affected sectors, which could redirect government funds and resources away from promoting health strengthening efforts.

- Risks that disrupt social marketing activities, research-related activities, and financial mobilization are rated low.

Infrastructure Risks: Increased extreme events could damage health facilities and energy infrastructure, disrupting construction and operation of facilities.

- Risks to infrastructure are rated moderate.

The project team has identified activity actions and analyses to respond to these risks, as documented in Annex 1. These recommendations include:

- Incorporate climate change into planning for healthcare worker training and development.
- Work with community members to identify alternate locations/travel routes or methods to carry out capacity-building activities.
- Explore backup power options for critical health care, laboratory, and supply chain facilities.
- Integrate climate change into contingency planning and increase access to and use of quality meteorological information and early warning services to reduce the risk of climate change impacts to supply chains.
- Consider climate change's disproportionate impacts on vulnerable communities when planning health services delivery.
- Incorporate climate change into design standards for infrastructure.

The climate risk analysis and the actions listed to integrated climate risks will be shared with the Implementing Partners (IPs), and discussed during work planning sessions with CORs, Activity Managers, and IPs. The Mission can reach out to USAID Africa Bureau climate staff for support as needed.

Engineering analysis preceding design activities must include consideration of climate change and its potential impacts on the location (siting), functionality, and sustainability of resulting infrastructure and infrastructure services. Such analysis must include identification of relevant data sets and gaps, review of local building standards and codes for adequacy; and determination of safety factors or other measures of uncertainty that will be carried through design. The results of this analysis, including risks identified and how they are addressed, shall be documented.

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.

5.1.1 During Pre-Award:

5.1.1.1 **Pre-Award Briefings**: As feasible, the design team and/or the cognizant environmental officer(s) (e.g., MEO, REA, BEO) will provide a pre-award briefing for potential offerors on environmental compliance expectations/responsibilities at bidders' conferences.

5.1.1.2 **Solicitations:** 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.

5.1.1.3 **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.

5.1.2.3 **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.

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

5.1.2.5 **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.

5.1.2.6 **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.

5.1.2.7 **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.

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

5.1.2.9 **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.).

5.1.2.10 **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 mitigation measures stipulated in 5.3 and other requirements set out in this IEE.

5.1.2.11 **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.

5.1.2.12 **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.

5.2 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.

5.2.8 **Pesticides or Pesticide Products**: Any activities conducted under this IEE involving the procurement, use, research, or disposal of pesticides and/or larvicides and their waste products will require a supplemental IEE, supplemental EA, or PERSUAP based on consultations with the BEO/MEO.

5.2.9 **Integrated Waste Management Plan**: The AOR/COR or AM(s) shall ensure that the IP prepares an Integrated Waste Management Plan (IWMP) or utilize an equivalent standard operating procedure (SOP) that will define and detail direct and indirect waste streams generated by IP-managed activities and specify appropriate management practices, including handling and treatment or disposal, for each. The AOR/COR or AM(s) will ensure that the IP verifies the use of such WMP or SOP as a part of its environmental mitigation, monitoring, and reporting, including documentation in the annual EMMR.

5.3 MITIGATION MEASURES

The mitigation measures presented in this section constitute the minimum required based on available information at the time of this IEE and the environmental analysis in Section 4. These measures shall provide general direction for completing the project/activity Environmental Mitigation and Monitoring Plan (EMMP) and/or the EA and PERSUAP, if required.

5.3.1 Healthcare Waste Standard Conditions:

1. When USAID support increases the delivery of healthcare services, such as through the provision of supplies, equipment, and/or staffing, USAID will take responsibility for ensuring the proper management of medical waste generated by the supported services; including, but not limited to, proper handling, labeling, treatment, storage, transport and final disposal.

2. When USAID supports healthcare service delivery solely or in partnership with other actors, including the host country, NGOs, CSOs, etc., USAID will ensure appropriate, sufficient, and sustainable medical waste management for the supported interventions through collaboration. If significant deficiencies* in medical waste management persist in

spite of collaborative efforts, USAID must reallocate its resources to either independently close those gaps or to work in facilities where medical waste is properly managed.

*Significant deficiencies are defined as not meeting “minimum approaches” as established by WHO Guidance for each of the following aspects of medical waste management: health care waste management policy; planning; waste minimization; segregation, storage and transport; treatment and disposal; wastewater management; waste management costing; health and safety practices; hygiene and infection control; training, education and public awareness.

3. USAID must regularly monitor the state of healthcare waste management system in the facilities it supports, and USAID should request reports on that monitoring with the same regularity as it receives reports on other programmatic objectives of the activity.

4. When reports or other information indicate significant deficiencies in the management and disposal of medical waste in a given facility (at minimum for waste resulting from USAID’s interventions), USAID will commit its resources (independently or through collaborative efforts) to a speedy correction of significant deficiencies.

5. As applicable, all efforts to strengthen or improve health commodity supply chains (e.g., pharmaceuticals, equipment,diagnostic tests kits (including malaria test kits), including procurement, storage infrastructure, and distribution must address and take all practicable efforts to assure that adequate facilities, procedures and capacities are in place to properly manage expired, used, obsolete or surplus commodities and/or that plans and strategies incorporate and provide for such management. In any instance that a USAID project controls commodities at end-of-life, appropriate end-of-life management must be assured. Mandatory references for “appropriate end of life management”: WHO Guidelines for Safe Disposal of Unwanted Pharmaceuticals.
https://apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf;jsessionid=29E4FC7B647745587FF832EB6C1E8EED?sequence=1
“Healthcare Waste” chapter, USAID Sector Environmental Guidelines:
https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/seg-healthcare-waste/pdf

6. Any healthcare waste generated by USAID-funded training, capacity building and/or technical assistance activities must be appropriately managed, including disposal, following WHO guidelines as well as the Government mandatory procedures and guidelines.
https://apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf;jsessionid=29E4FC7B647745587FF832EB6C1E8EED?sequence=1

7. Training, supervision, curricula development and other health care workforce capacity building must address appropriate management practices concerning the proper handling, use, and disposal of medical waste, including blood, sputum, and sharps, when techniques or care situations being addressed would generate and require disposal of hazardous or highly hazardous waste (e.g. sharps, afterbirth from delivery, waste from screening for HIV or STDs, sputum samples for diagnosis of TB). Note that this condition applies to activities targeting home care AND community health workers, not just those in clinics and health facilities. Wherever relevant, appropriate disposal mechanisms in home-based and community-based situations that are cost effective and safe must be identified and appropriately incorporated in training, protocols, and

guidelines. This includes training home care and community health workers to deliver positive messages about personal and household hygiene, sanitation, and proper disposal of condoms and other potentially harmful materials.

INTERVENTION CATEGORY 1: Direct Support to Healthcare Worker/Workforce Training; Strengthening & Development

TABLE 5A. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 1

Sub-intervention	Mitigation Measure(s)
Sub-intervention 1.1: Provide capacity building to frontline health workers	**Negative Determination** subject to the following **conditions**: ● IP must develop, embed in training, and implement a waste management plan (WMP) or SOPs on managing treatment and/or disposal of health commodities and occupational health and safety, including in the host country healthcare supply chain systems. Refer to the following documents for guidance when developing SOPs: ● Sector Environmental Guideline: USAID: Healthcare Waste (2019) ● WHO: Safe management of waste from health-care activities ● USAID: Integrated Waste Management Plan (IWMP) Refer to section 5.3.1 Healthcare Waste Standard Conditions for additional, mandatory mitigating measures.
Sub-intervention 1.2: Provide technical assistance and training for health promotion activities	
Sub-intervention 1.3: Orphans and Vulnerable Children training and support	**Categorical Exclusion**; no conditions.
Sub-intervention 1.4: Strengthen human resource quality management systems	**Categorical Exclusion**; no conditions.

INTERVENTION CATEGORY 2: Direct Procurement of Commodities & Strengthening of Commodities, Logistics & Equipment, Non-pharmaceuticals and Diagnostic Systems

TABLE 5B. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 2

Sub-intervention	Mitigation Measure(s)
Sub-intervention 2.1: Capacity building to support critical policy and strategy reforms to supply chain management	**Negative Determination** subject to the following **conditions**: ● IP must have, implement, and embed a training program on standard operating procedures SOPs for the safe distribution of health commodities transported in bulk in motorized vehicles. Distribution considerations include but are not limited to transport needs and availability, fleet management and monitoring, theft prevention procedures, accident and spill response, incident reporting, and vehicle maintenance. ● IP must provide training to workers and drivers on the standard operating procedures SOPs developed for the safe distribution of health commodities. ● IP must develop, embed in training, and implement a waste management plan (WMP) or SOPs on managing
Sub-intervention 2.2: Improve commodity(pharmaceutical and non pharmaceutical) and medical equipment procurement and supply chain management strategies to ensure availability of health products	
Sub-intervention 2.3: Improve the quality of and access to essential health commodities	

	treatment and/or disposal of health commodities and occupational health and safety, including in the host country healthcare supply chain systems. Refer to the following documents for guidance when developing SOPs: ● USAID DELIVER Project. The Logistics Handbook: A Practical Guide for the Supply Chain Management of Health Commodities ● Sector Environmental Guideline: USAID: Healthcare Waste (2019) ● WHO: Safe management of waste from health-care activities ● USAID: Integrated Waste Management Plan (IWMP) ● Sector Environmental Guideline: USAID: Solid Waste Refer to section 5.3.1 Healthcare Waste Standard Conditions for additional, mandatory mitigating measures.

INTERVENTION CATEGORY 3: DIRECT AND CAPACITY BUILDING SUPPORT FOR HEALTH SERVICE DELIVERY, EXCLUDING COMMODITY PROCUREMENT/ SUPPLY CHAIN STRENGTHENING

TABLE 5C. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 3

Sub-intervention	Mitigation Measure(s)
Sub-intervention 3.1: Expand access to and use of malaria, maternal and child health, nutrition, and family planning and reproductive health services **Sub-intervention 3.2:** Support the provision of health services delivery **Sub-intervention 3.3**: Improve TB detection, treatment, and prevention programs **Sub-intervention 3.4**: Improve provision of and demand for quality HIV/AIDS health care services	**Negative Determination** subject to the following **conditions**: ● IP must develop, embed in training, and implement SOPs for the handling and management of health commodities for occupational health and safety. ● IP must develop, embed in training, and implement a waste management plan (WMP) or SOPs on managing treatment and/or disposal of waste health commodities. ● IP must develop and obtain commitment from each supported facility to implement/meet host country standards as part of the support agreement. ● For TB diagnosis and treatment, IP must provide training and PPE and any necessary facility modification e.g., separate entrances for this activity. Subsequently, the IP must monitor implementation of biosafety procedures. Refer to the following documents for guidance when developing SOPs: ● Sector Environmental Guideline: USAID: Healthcare Waste (2019) ● WHO: Safe management of waste from health-care activities ● USAID: Integrated Waste Management Plan (IWMP) Refer to section 5.3.1 Healthcare Waste Standard Conditions for additional, mandatory mitigating measures.

INTERVENTION CATEGORY 4: SOCIAL MARKETING, EDUCATION, & BEHAVIOR CHANGE COMMUNICATION

TABLE 5D. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 4

Sub-intervention	Mitigation Measure(s)
Sub-intervention 4.1: Support strategic leadership, coordination, and participatory social and behavior change (SBC) interventions	**Categorical Exclusion;** no conditions.
Sub-intervention 4.2: Support community and private sector participation in SBC interventions	**Categorical Exclusion;** no conditions.

INTERVENTION CATEGORY 5: POLICY AND STRATEGY DEVELOPMENT AND ASSISTANCE

TABLE 5E. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 5

Sub-intervention	Mitigation Measure(s)
Sub-intervention 5.1: Identify critical policy and strategy reforms to support, excluding supply chain management	**Categorical Exclusion;** no conditions.
Sub-intervention 5.2: Engage with, and provide technical assistance to the Government of Kenya and other relevant stakeholders	

INTERVENTION CATEGORY 6: STUDIES, SURVEYS/ PUBLIC HEALTH SURVEILLANCE AND OTHER DATA-GATHERING ASSESSMENTS AND ANALYSIS, MODELS, AND CAPACITY BUILDING IN SUPPORT OF ALL AREAS ABOVE

TABLE 5F. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 6

Sub-intervention	Mitigation Measure(s)
Sub-intervention 6.1: Conduct public health surveillance activities and studies that include collection of biological samples	Negative Determination subject to the following conditions: ● Implementing Partner draft, and train staff on the following: ● Implement laboratory environmental, health, and safety (EHS) manuals with standard operating procedures (SOPs), or use existing SOPs, for laboratory operations in accordance with country-specific compliance mechanisms. ● Implement SOPs for the safe storage, transport, and use of equipment, chemical reagents, insecticides, and supplies in conformance with international best practices (e.g., WHO, FAO) and host country requirements. ● Provide training to workers on the approved SOPs or Waste Management Plan (WMP) developed for properly handling and disposing of wastes. Refer to the following documents for guidance when developing material(s):

	• Sector Environmental Guideline: USAID: Healthcare Waste (2019) • WHO: Safe management of waste from health-care activities • USAID: Integrated Waste Management Plan (IWMP) • USAID. Integrated Vector Management Programs for Malaria Vector Control Programmatic Environmental Assessment. • Sector Environmental Guideline: USAID: Safer Use Pesticides • Sector Environmental Guideline: USAID: Solid Waste • EHS Manual: WHO. Laboratory Biosafety Manual- Third Edition (2004) Refer to section 5.3.1 Healthcare Waste Standard Conditions for additional, mandatory mitigating measures.
Sub-intervention 6.2: Strengthen information management systems and quality and use of data for planning and decision making	**Categorical Exclusion;** no conditions.
Sub-intervention 6.3: Conduct demographic and health surveys	**Categorical Exclusion;** no conditions.

INTERVENTION CATEGORY 7: TECHNICAL ASSISTANCE TO MALARIA VECTOR CONTROL

TABLE 5G. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 7

Sub-intervention	Mitigation Measure(s)
Sub-intervention 7.1: Insecticidal-Treated Nets (ITN) Distribution	**Positive Determination** is subject to the following **conditions:** As referenced in the BEO Specified Conditions, the results of the Kenya SEA will inform mitigation measures that may be needed to prevent or reduce misuse and may indicate the need for further analysis. Therefore, the IP will draft an Initial Site Assessment based on the Kenya SEA, and the scope of work must be approved by the MEO, and completed within six (6) months from the issue of this IEE. The results of the Initial Site Assessment must be shared with the BEO upon completion, along with recommended mitigation measures. Based upon the results of the Initial Site Assessment, the BEO will work with the Mission to evaluate whether the recommended mitigation measures are appropriate for continued implementation of the bednet activity, and whether more investigations are necessary. Additional investigations would likely take the form of the Rapid Assessment detailed in the Toolkit. At that time, this IEE will be amended accordingly. Refer to the 2018 PMI Toolkit for guidance on initiating this process. The evaluation should include the following: • Survey the extent of misuse of bednets for fishing in the activity area using the list of recommended stakeholders

	and guiding questions outlined on page 5 of the 2018 PMI Toolkit. If no reports or evidence is found through consultations and observations, the activity should document the findings and continue to monitor for any changes in the zone of influence. If the survey indicates occurrences or prevalence of misuse for fishing, a full rapid assessment should be completed to thoroughly evaluate the issue's magnitude, impact, and drivers. • Once the issue's scope, scale, actors, and drivers are characterized, the Country Office must work with implementing partners and local stakeholders to identify interventions and mitigate the misuse. • Mitigation measures should be considered at the procurement, distribution, and disposal phases of ITNs, and may include enforcement of stiff penalties for ITN use in fishing, social behavior change communication campaigns, development of an accountability system for distribution, or other regionally appropriate measures. • Refer to Annex L of the 2017 IVM PEA for a list of potential mitigation measures which should be applied to the extent possible in order to reduce the potential for impact on aquatic ecosystems. Refer to the following documents for guidance when developing material(s): • Sector Environmental Guideline: USAID: Healthcare Waste (2019) • WHO: Safe management of waste from health-care activities • USAID: Integrated Waste Management Plan (IWMP) • USAID. Integrated Vector Management Programs for Malaria Vector Control • Identifying and Mitigating Misuse of Insecticide-Treated Nets for Fishing Toolkit
Sub- intervention 7.2: Provide procurement, distribution/delivery, storage, application, and waste disposal associated with World Health Organization Pre-Qualified (WHO/PQ) and/or U.S. Environmental Protection Agency (USEPA)-approved PMI/Malaria control insecticides, services such	**Positive Determination** is subject to the following **conditions:** USAID completed an Integrated Vector Control Programmatic Environmental Assessment in 2017 which addresses the Positive Determination for Malaria Vector control: 2017 IVM PEA. All activities must comply with the requirements of the 2017 IVM PEA and the Kenya Malaria Vector Control Supplemental Environmental Assessment, including Training of spray

as IRS.	operators according to PMI Best Management Practices for IRS, available at: www.fightingmalaria.gov/technical/pest/bmp_manual_aug10.pdf Refer to the following documents for guidance when developing material(s): ● Sector Environmental Guideline: USAID: Healthcare Waste (2019) ● WHO: Safe management of waste from health-care activities ● USAID: Integrated Waste Management Plan (IWMP) ● USAID. Integrated Vector Management Programs for Malaria Vector Control, 2017 Programmatic Environmental Assessment

INTERVENTION CATEGORY 8: SMALL SCALE CONSTRUCTION OR REHABILITATION OF HEALTH INFRASTRUCTURE (<10,000 SQ. FT)

TABLE 5H. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 8

Sub-intervention	Mitigation Measure(s)
Sub-intervention 8.1: Construction of small-scale facilities and/or limited refurbishment at existing facilities with costing less than $250,00.00 and/or not disturbing an area equal to less than 1,000m^2 with no complicating factors Sites with **no complicating factors** must, at minimum, meet the following criteria: ● *Not within 30m of a permanent or seasonal stream or water body* ● *Does not involve displacement of existing settlement/inhabitants* ● *Has an average slope of less than 5%* ● *Not heavily forested, in an otherwise undisturbed local ecosystem, or in a protected area* ● *Disturbed area of less than*	**Negative Determination** subject to the following **conditions**: The IP is required to following: ● Obtain all needed authorizations prior to construction: permits, environmental and social impact assessments, as required by host country procedures. ● Retain competent, licensed professionals to design and supervise construction ● Establish health, safety and environmental obligations in all contracts. ● Complete a site emergency action plan ● Provide safety training to all workers using construction equipment. ● Identify the closest health care facility to handle injuries. ● Develop and follow a waste management plan (WMP). ● Identify authorized recycling or disposal facilities prior to generation of waste. ● Ensure all workers are trained and dispose of wastes properly. ● Contractors much comply with the minimum recommended Occupational Safety and Health practices for construction (Construction Sector Environmental Guideline, Annex 3). See: https://www.usaid.gov/environmental-procedures/sectoral-environmental-social-best-practices/sector-environmental-guidelines-resources#co ● Undertake individual site assessments and any construction activities that are likely to adversely affect

1,000 sq meters *Less than $250,000 total cost*	threatened or endangered species would require an environmental assessment to be performed no matter the scope or size of the construction activity. (The IP must specify an appropriate instrument for the site assessments for approval as part of the EMMP.) Refer to the following documents for guidance when developing material(s): ● Sector Environmental Guideline: USAID: Healthcare Waste (2019) ● WHO: Safe management of waste from health-care activities ● USAID: Integrated Waste Management Plan (IWMP) ● Sector Environmental Guideline: USAID: Construction ● Sector Environmental Guideline: USAID: Solid Waste ● Sector Environmental Guideline: USAID: Healthcare Facilities Refer to section 5.3.1 Healthcare Waste Standard Conditions for additional, mandatory mitigating measures.

INTERVENTION CATEGORY 9: RESOURCE/ FINANCIAL MOBILIZATION

TABLE 5I. SUMMARY OF MITIGATION MEASURES FOR CATEGORY 9

Sub-intervention	Mitigation Measure(s)
Sub-intervention 9.1: Transfer of resources to promote health strengthening efforts	**Categorical Exclusion;** no conditions.
Sub-intervention 9.2: Improve budgeting and financial management systems	**Categorical Exclusion;** no conditions.

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, a determination will be made as to whether such change may have an environmental impact not previously assessed. If so, this IEE will be amended to cover the changes. 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 that might require revision of this environmental analysis and environmental determination.

ATTACHMENTS:

Annex 1: Climate Risk Management Summary Table

ANNEX 1. **PROJECT** CLIMATE RISK MANAGEMENT SUMMARY TABLE

Defined or Anticipated Project Elements[37]	**Climate Risks**[38]	**Risk Rating**[39]	**How Risks are Addressed at Project Level**[40]	**Further Analysis and Actions for Activity Design/ Implementation**[41]	**Opportunities to Strengthen Climate Resilience**[42]
Intervention Category 1: Direct Support To Healthcare Worker/Workforce Training; Strengthening And Development	Increases in flooding and landslides could block access routes and damage buildings, affecting ability to carry out capacity-building activities. Climate change shocks and stressors could negatively impact people's health (both physical and mental), preventing healthcare workers from participating in capacity-building activities. Climate change could impact health through heat-related illnesses, increased incidences of malaria, flooding that increases outbreaks of waterborne disease, and impacts to agriculture that increase malnutrition. Climate change could also worsen health for patients with existing illnesses such as HIV/AIDS. These could increase the number of patients that need care throughout Kenya, requiring an increase in capacity-building for healthcare services to meet the need of patients.	Moderate	Climate risks are not addressed at the project level.	Work with community members to identify alternate locations/travel routes or methods to carry out capacity-building activities.	Incorporate climate change into planning for healthcare worker training and development.
Intervention Category 2: Direct Procurement of Commodities & Strengthening of Commodities,	Increased frequency and magnitude of flooding may disrupt or damage roads, bridges, communication networks, and storage, which can have a significant impact on procurement and logistics in the health commodities value chain and result in delays.	Moderate	Climate risks are not addressed at the project level.	Explore backup power options for critical health care, laboratory, and supply chain facilities.	Integrate climate change into contingency planning and increase

[37] Purpose/Sub-purpose, Area of Focus, or Activity/ Mechanism, etc.

[38] List key risks related to the project elements identified through either the strategy- or project-level climate risk assessment.

[39] Low/Moderate/ High

[40] Describe how risks have been addressed at the project level. If a decision has been made to accept the risk, briefly explain why.

[41] Describe CRM measures to be integrated into activity design or implementation, including additional analysis, if applicable.

[42] Describe opportunities to achieve development objectives by integrating climate resilience or mitigation measures.

Defined or Anticipated Project Elements[37]	Climate Risks[38]	Risk Rating[39]	How Risks are Addressed at Project Level[40]	Further Analysis and Actions for Activity Design/ Implementation[41]	Opportunities to Strengthen Climate Resilience[42]
Logistics & Equipment, Non-pharmaceuticals and Diagnostic Systems	Increased temperatures could negatively impact medicine in storage or transport by reducing their potency and increasing their expiry rates. Climate change could result in impacts to energy infrastructure. This may include falling lake levels that affect hydropower generation and extreme weather can impact generation and transmission. These impacts to electricity may result in power failure for cold storage facilities, potentially destroying health commodities (such as vaccines or medicines) that require cold storage. Power failures could also impact laboratories and testing facilities, resulting in delays or destroyed samples. Climate change shocks and stressors could negatively impact people's health (both physical and mental), putting increased stress on health and supply chain workers and potentially resulting in high workforce turnover.	Moderate Low Low		Explore use of alternative sources such as solar power	access to and use of quality meteorological information and early warning services to reduce the risk of climate change impacts to supply chains.
Intervention Category 3: Direct and Capacity Building Support for Health Service Delivery, Excluding Commodity Procurement/ Supply Chain Strengthening	Climate change could impact health through heat-related illnesses, increased incidences of malaria, flooding that increases outbreaks of waterborne disease, impacts to agriculture that increase malnutrition, or flooding damage to homes that leave people more vulnerable to illness. These could increase the number of patients that need care throughout Kenya, straining national capacity for robust health service delivery. Climate change shocks and stressors could negatively impact people's health (both physical and mental), putting increased stress on health workers and potentially resulting in high workforce turnover.	Low Low	Climate risks are not addressed at the project level.	Develop and deliver training programs for healthcare service providers and stakeholders to raise awareness and knowledge of impacts of climate change on health. Work with community members to identify alternate locations/travel routes	Conduct further analysis on climate change effects to health service delivery. Coordinate with WASH activity managers when integrating

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	Climate change shocks and stressors could negatively impact people's livelihoods, decreasing individual and household incomes and reducing their ability to access medications or health services. Increases in flooding and landslides could block access routes and damage healthcare facilities, affecting ability to carry out health services. Climate change impacts may disproportionately affect women and youth, who may lack adaptive capacity to respond to climate events such as flooding or drought. Climate change could also worsen health for patients with existing illnesses such as HIV/AIDS. If climate change is not incorporated into care for these populations, this may result in health service delivery that does not fully meet the needs of vulnerable populations.	Moderate Low Moderate		or methods to deliver health services. Increase the health workforce's capacity to identify and manage climate-related diseases, as well as adaptation responses to severe weather events. Consider climate change's disproportionate impacts on vulnerable communities when planning health services delivery.	climate change into health activities.
Intervention Category 4: Social Marketing, Education, & Behavior Change Communication	Increases in flooding and landslides could block roads and damage buildings, disrupting the ability to carry out social marketing, education or behavior change communication activities.	Low	Climate risks are not addressed at the project level.	Work with community members to identify alternate locations/travel routes or methods to deliver education and behavior change campaigns.	
Intervention Category 5: Policy and Strategy Development and Assistance	Climate change is likely to negatively impact health in Kenya due to continued increases in heat-related illnesses, water-borne illnesses, vector-borne diseases, and malnutrition from reduced agricultural productivity. If climate change impacts are not incorporated into health-related policy and strategy development, this may result in poorly performing future interventions related to improving health.	Low	Climate risks are not addressed at the project level.	Develop and track climate vulnerability indicators as they relate to health-strengthening efforts.	Mainstream climate change considerations into policy development for health-

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					related activities.
Intervention Category 6: Studies, Surveys/ Public Health Surveillance and other Data-Gathering Assessments and Analysis, Models, and Capacity Building in Support of All Areas Above	Climate change is likely to negatively impact health in Kenya due to continued increases in heat-related illnesses, water-borne illnesses, vector-borne diseases, and malnutrition from reduced agricultural productivity. If climate change impacts are not incorporated into public health studies, surveillance, and analyses, this may result in poorly performing future interventions related to improving health. Increased frequency and magnitude of flooding may disrupt or damage roads and buildings, which may make it difficult to conduct surveys or carry out activities that require sampling.	Low Low	Climate risks are not addressed at the project level.	Work with community members to identify alternate locations/travel routes or methods to carry out public health studies.	Incorporate climate change into design of public health surveys, surveillance, and analyses.
Intervention Category 7: Technical Assistance to Malaria Vector Control	Increased frequency and magnitude of heat and flooding could increase mosquito populations. Higher temperatures could expand habitat suitability for mosquitos, while increased precipitation may result in more standing pools of water that serve as mosquito breeding sites. If climate change is not incorporated into design of malaria vector control activities, this could result in maladaptation or underperforming activities. Increased frequency and magnitude of flooding may disrupt or damage roads, bridges, and storage, which can have a significant impact on distribution of ITNs. Shifting rainfall patterns can result in rain and extreme events (such as flooding) during different times of the year, affecting the timing for bed net distribution, as ITNs may lose effectiveness if impacted by floods.	Low Low Low	Climate risks are not addressed at the project level.	Incorporate climate-related indicators in monitoring of malaria vector populations and distribution. Enhance reach of malaria services and control into areas where new suitable mosquito habitats may form, such as higher elevations. Incorporate climate change projections into planning for timing of ITN distribution.	Incorporate climate change into research on malaria vectors and vector control. Increase use of quality meteorological information and early warning services to reduce the risk of climate change impacts to ITN distribution.

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Intervention Category 8: Small Scale Construction or Rehabilitation of Health Infrastructure (<10,000 sq. ft)	Increased frequency and magnitude of flooding will increase damage to health infrastructure. This can include damage to the building, blocked entrances or exits, damage to utility functions like water and energy, and potential inundation that could require relocation of vulnerable patients and critical equipment. Climate change could result in impacts to energy infrastructure. This may include falling lake and river levels that affect hydropower generation and extreme weather that can impact generation and transmission. These impacts to electricity may negatively impact construction and operation of small-scale health care and related facilities. Extreme heat can threaten the health and safety of construction workers, as well as affect efficiency or productivity of construction operations.	Moderate Moderate Low	Climate risks are not addressed at the project level.	Promote climate-smart infrastructure for health care facility construction investments. Invest in resilient energy alternatives, such as solar energy, to develop localized sources of power and provide backup power in extreme weather events.	Incorporate climate change into design standards for infrastructure.
Intervention Category 9: Resource/ Financial Mobilization	Climate shocks and stressors may result in increased government costs related to addressing damage, decreased agricultural production, and water shortages. This could redirect government resources and funds away from promoting health strengthening efforts.	Low	Climate risks are not addressed at the project level.	Develop and track climate vulnerability indicators for funding as they relate to health-strengthening efforts.	Mainstream climate change considerations into government planning for health-related activities.