FACESHEET

INITIAL ENVIRONMENTAL EXAMINATION

Activity/Project Title: *BIOTOUR [new stand-alone IEE]*	DOAG #: 656-016
Contract/Award Number (if known):	
Geographic Location : *Mozambique*	
Originating Bureau: USAID/AFR	
Supplemental IEE: ☐ Yes ☒ No	DCN and date of Original document: N/A
Amendment: ☐ Yes ☒ No	DCN and ECD link(s) of Amendment(s): N/A
Programmatic IEE: ☐ Yes ☒ No	Amendment No.: N/A
Funding Amount: $16.8 Million	Life of Project Amount: $34.0 Million
Implementation Start/End: FY 2013 – FY 2018 (PAD Approval)	
Date Submitted: *24 September 2016*	
Prepared By Eduardo Langa, USAID/Mozambique Mission Environment Officer (elanga@usaid.gov); Josh Habib and Patrick Hall, The Cadmus Group, (Josh.Habib@cadmusgroup.com)	
Expiration Date: 30 September 2020	Reporting due dates (if any): N/A
Environmental Media and/or Human Health Potentially Impacted (check all that apply): None ☐ Air ☐ Water ☒ Land ☒ Biodiversity ☒ Human Health ☒ Other ☐	
Recommended Threshold Determination *(check all that apply):* ☒ Negative Determination ☒ with conditions ☒ Categorical Exclusion ☐ Positive Determination	☒ Deferral ☐ Exemption ☐ USG Domestic NEPA action
Additional Elements ☒ Conditions ☒ EMMP ☐ ESF/EFF ☐ WQAP ☒ Pesticides ☐ Other_____	
Climate Change: ☐ GCC/Adaption ☐ GCC/Mitigation ☐ Climate Change Vulnerability Analysis Adaptation/Mitigation Measures: BIOTOUR will need climate risk management screening [future IEE amendment in FY 2017]	

Other Relevant Environmental Compliance Documentation

- Agriculture, Environment and Business (AEB) Portfolio IEE, http://gemini.info.usaid.gov/egat/envcomp/repository/pdf/49091.pdf
  Mozambique AEB Portfolio IEE Amendment 2 – http://gemini.info.usaid.gov/egat/envcomp/repository/pdf/45911.pdf
- 2009 AEB Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) – Implementation Form, extended to May 1, 2017 http://gemini.info.usaid.gov/egat/envcomp/document.php?doc_id=43411
- Coastal City Adaptation Project IEE 2015 – 2019 http://gemini.info.usaid.gov/egat/envcomp/document.php?doc_id=43811

SUMMARY

Scope. This Initial Environmental Examination (IEE) addresses the BIOTOUR Program in Mozambique. The goal of BIOTOUR is to undertake natural resource management, biodiversity conservation, and biotourism activities in the Niassa National Reserve and in conjunction with the Gorongosa Restoration Project.

The IEE will address planned activities as defined primarily in USAID Mozambique's Country Development Cooperation Strategy (CDCS), recent and complementary IEEs, and workplans. This IEE will align with one of USAID/Mozambique's Development Objective (DO) and corresponding Intermediate Result (IR) and Sub-IR:

- DO 2: Resilient, broad-based economic growth accelerated
  - IR 2.3: Improved management of natural resources.
    - Sub-IR 2.3.1: Improved biodiversity conservation in priority landscapes linked to income and employment activities

This IEE consolidates the assessment of the BIOTOUR program separate from the other projects (e.g., Feed the Future activities) in the USAID/Mozambique Agriculture, Environment and Business (AEB) Portfolio, creating a stand-alone BIOTOUR IEE. Creating an IEE specific to BIOTOUR is necessary because of the size of the program and the potential environmental impacts of the BIOTOUR activities. As such, This IEE replaces and supersedes the Mission's previous IEEs regarding the Niassa National Reserve and the Gorongosa Restoration Project; except that ongoing activities for existing projects with an approved environmental mitigation and monitoring plan (EMMP) may continue operating under that EMMP (while taking into consideration the conditions set out in this IEE). New activities under existing projects, or ongoing activities without an existing, approved EMMP must meet the conditions of this IEE regardless of the award date.

Recommended Determinations. The following table summarizes the recommended determinations for the BIOTOUR project, per the intervention categories established by this IEE for purposes of environmental review. For each, a link is provided to the entailed activity descriptions, analysis of potential environmental impacts, and activity-by-activity determinations and conditions within Section 3 of the IEE.

Intervention Category	Categorical Exclusion(s)	Negative Determination(s)	Positive Determination	Deferral of Threshold Decision	Link to full analysis
1. Technical assistance and capacity building to improve biodiversity conservation policies at the institutional level.	✓	✓ (w/ conditions)			Click Here
2. Improve biodiversity conservation in national parks and protected areas (e.g., Niassa National Reserve [NNR] and Gorongosa Restoration Project [GRP]) and other biologically significant areas.	✓	✓ (w/ conditions)			Click Here
3. Training in and implementation of community engagement, environmental education, park management, and scientific services.	✓	✓ (w/ conditions)			Click Here
4. Promote sustainable livelihood development in park, protected area, or other important habitat buffer zones.		✓ (w/ conditions)			Click Here
5. Work with local/small businesses to enhance biotourism infrastructure, services and marketing.		✓ (w/ conditions)			Click Here
6. Strengthen transportation infrastructure		✓ (w/ conditions)		✓	Click Here
7. Small-Scale Construction		✓ (w/ conditions)		✓	Click Here

8. Support to non-governmental organizations engaged in health, education, governance, climate change and conservation activities, particularly coastal and marine conservation.	✓	✓ (w/ conditions)			Click Here
9. Generation of and support for data and research	✓				Click Here

General Implementation & Monitoring Conditions. In addition to the specific conditions enumerated in Section 3, the negative determinations recommended in this IEE are contingent on full implementation of a set of general monitoring and implementation requirements specified in Section 4 of the IEE.

In summary, these require (1) Development of EMMPs; (2) Integration and implementation of EMMPs in workplans and budgets; (3) Integration of compliance responsibilities in prime and sub-contracts and grant agreements; (4) Assurance of sub-grantee and sub-contractor capacity and compliance; (5) ABEO)/ENRMO environmental compliance monitoring; (6) 22 CFR 216 documentation coverage for new or modified activities; and (7) compliance with host-country requirements.

AFR BEO note: An amended BIOTOUR IEE will need to be submitted in FY 2017 to address USAID Climate Change Resilient Development and Climate Risk Assessment for GCC/Adaption, GCC/Mitigation, Climate Change Vulnerability Analysis, and/or Adaptation/Mitigation Measures**.**

APPROVAL OF ENVIRONMENTAL ACTION RECOMMENDED:

(USAID/Mozambique BIOTOUR Program 2016)

CLEARANCE:

Mission Director: _____ Date: 11/1/16
Alexander Dickie

Deputy Mission Director: _____ Date: _____
Sheryl Stumbras

CONCURRENCE:

AFR Bureau Environmental Officer: _____ Date: 11/17/2016
Brian Hirsch

Approved: ☒
Disapproved ☐

FILE Nº: Mozambique BIOTOUR IEE 111716

ADDITIONAL CLEARANCES:

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Eduardo Langa

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John Irons

Acting Regional Environmental Advisor: _____ Date: 10/26/16
USAID/Washington Kerry Reeves

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Stephen Valdes-Robles

Distribution List:

USAID/Mozambique ----- Teams A/CORs and Activity Managers
USAID/Mozambique Contracts Office
USAID/Mozambique ---- Office

INITIAL ENVIRONMENTAL EXAMINATION

PROGRAM/ ACTIVITY DATA:

Program/Activity Number: AID-OAA-M-11-00021
Program Activity Title: USAID/Mozambique BIOTOUR Portfolio
Country/Region: Mozambique

Functional Objective: 4 Economic Growth
Program Areas & Elements: 4.5 Agriculture
4.5.1 Agriculture Enabling Environment
4.5.2 Agriculture Sector Capacity
4.6 Private Sector Competitiveness
4.6.1 Business Enabling Environment
4.8 Environment
4.8.1 Natural Resources and Biodiversity

1.0 BACKGROUND AND ACTIVITY/PROGRAM DESCRIPTION

1.1 Purpose and Scope of IEE

The BIOTOUR program will focus efforts on the Niassa National Reserve, Gorongosa National Park, and other priority biodiversity areas in Mozambique, including coastal and marine areas. This IEE addresses the BIOTOUR Program, whose goal is to undertake natural resource management, biodiversity conservation, and biotourism activities in the Niassa National Reserve and the Gorongosa Restoration Project.

The IEE will address planned activities as defined primarily in USAID Mozambique's Country Development Cooperation Strategy (CDCS), recent and complementary IEEs, and workplans. This IEE will align with one of USAID/Mozambique's Development Objective (DO) and corresponding Intermediate Result (IR) and Sub-IR:

- DO 2: Resilient, broad-based economic growth accelerated
  - IR 2.3: Improved management of natural resources.
    - Sub-IR 2.3.1: Improved biodiversity conservation in priority landscapes linked to income and employment activities

1.2 PROGRAM BACKGROUND

The biodiversity and tourism program's main objective is to strengthen Mozambique's biodiversity-based tourism sector, which is emerging after years of civil war and political insecurity. The program has two interrelated objectives:

- Improve the capacity of domestic institutions to execute biodiversity conservation; and
- Expand biodiversity-based economic enterprises.

The BIOTOUR project will be executed through several interrelated and reinforcing activities, including improved management of natural resources, development of sustainable livelihood and economic opportunities, strengthened enforcement of environmental laws, and increased capacity for governmental and non-governmental organizations with regards to biodiversity conservation. Project interventions will provide direct support to GOM and independent Mozambican entities to strengthen their core functions while bolstering their ability to fulfill their mandate related to improved conservation outcomes. The activities of local partners will be complemented by expert assistance to assist them in meeting technical and administrative expectations of USAID. This project will prioritize local capacity development (LCD) throughout the implementation to ensure sustainability of outcomes after USAID support ends.

Key agencies and projects involved in BIOTOUR include:

***Agencia Nacional das Áreas de Conservação* (ANAC):** The Government of Mozambique (GOM) has created a national public institution with responsibility to ensure proper management of conservation areas and wildlife (ANAC) to implement the component of the Conservation Policy linked to conservation areas and wildlife. To accomplish its mandate, ANAC will need to define the scientific agenda for improving conservation in Mozambique. Through implementation of this scientific agenda, ANAC will provide a valuable service to the conservation community that will strengthen conservation outcomes throughout the country and improve tourism assets.

ANAC will develop a research strategy and agenda that will aim to attract talent and investment into scientific research in Mozambique. This support complements a related objective to increase SAVE (Scientific, Academic, Voluntary and Educational) travel in Mozambique, build local capacity to attract and receive SAVE tourists, and to launch a SAVE development strategy within the national scientific, research, academic, and conservation communities. Organizational development assistance will also be provided to ANAC by the U.S. Department of Interior, International Technical Assistance Program (DOIITAP), which will provide technical input over the course of ANAC's first several years of operation to improve systems, maximize potential revenues, and build the capacity within ANAC to meet their financial needs.

The Alliance for Ecosystem Conservation Systems, Markets, and Tourism (ECOSMART): This project aims to improve the management of the Niassa National Reserve (NNR), conserve the biodiversity within the reserve, encourage sustainable local livelihood development, attract high-end tourism operators, and aid ANAC in the rollout of a nation-wide wildlife monitoring tool. The implementer for this project is the Wildlife Conservation Society (WCS), who has a 5 year, $9.8 million cooperative agreement, along with a Global Development Alliance that has private sector donors providing an additional $14.75 million.

Gorongosa Restoration Project: This project aims to return the Gorongosa National Park, Mount Gorongosa, and the greater Gorongosa ecosystem to major tourist attractions. Another objective of the project is to develop financially sustainable operations for the park. USAID has been supporting the park and ecosystem restoration effort since 2007, in partnership with the Carr Foundation. Prioritized activities include community engagement, environmental education, park management and scientific services, conservation agriculture in the buffer zone, and reforestation of Mount Gorongosa.

Parceira Civica para Boa Governança: This activity, managed from the GOM Democracy and Governance Office, will provide advocacy support to small non-governmental organizations engaged in health, education, governance, climate change and conservation activities, namely coastal and marine conservation. The purpose of BIOTOUR funds going to this activity is to provide civic organizations training in financial and administrative management and advocacy, while undertaking small-scale climate change and conservation projects.

1.3 INTERVENTION CATEGORIES FOR ENVIRONMENTAL REVIEW

1. Technical assistance and capacity building to improve biodiversity conservation policies at the institutional level.

2. Improve biodiversity conservation in national parks and protected areas (e.g., Niassa National Reserve [NNR] and Gorongosa National Park) and other biologically significant areas.

3. Training in and implementation of community engagement, environmental education, park management, and scientific services.

4. Promote sustainable livelihood development in park, protected area, or other important habitat buffer zones.

5. Work with local/small businesses to enhance biotourism infrastructure, services and marketing.

6. Strengthen transportation infrastructure

7. Small Scale Construction

8. Support to non-governmental organizations engaged in health, education, governance, climate change and conservation activities, particularly coastal and marine conservation.

9. Generation of and support for data and research

2.0 MOZAMBIQUE ENVIRONMENTAL BASELINE INFORMATION

2.1 PHYSICAL PROFILE

GEOGRAPHY. Mozambique is located in Southeastern Africa along the Indian Ocean, between Southern Africa and Swaziland to the south, and Tanzania to the North. It is bordered to the west by Malawi, Zambia and Zimbabwe. Mozambique has a total area of almost 800,000 km^2, 13,000 km^2 being water, and almost 5,000 km of coastline along the Mozambique Channel. The Zambezi River flows from West to East across the middle of the country, originating in Zambia and emptying into the Indian Ocean. Lake Nyasa (also known as Lake Malawi) is the largest lake in Mozambique, located between Malawi, Mozambique and Tanzania.[1]

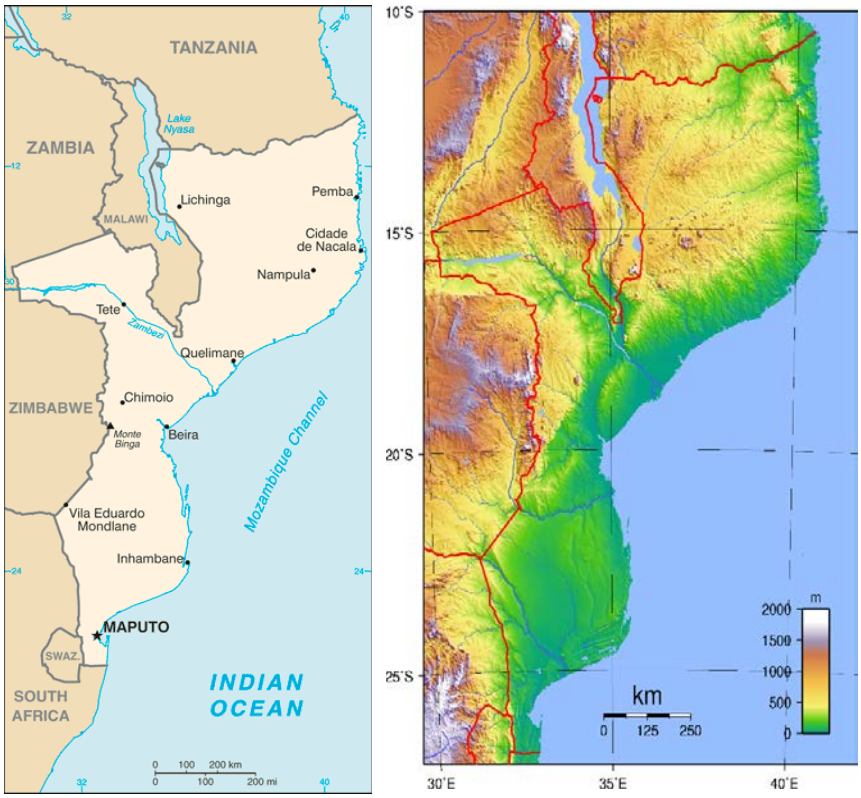

Figure 1. Maps of Mozambique
Sources: CIA World Factbook; https://upload.wikimedia.org/wikipedia/commons/1/15/Mozambique_Topography.png

GEOLOGY. The geology of Mozambique is quite varied. The south western, central and northeastern provinces consist of mostly Precambrian terrains, from Archean to Upper Proterozoic rocks, covered mainly by Phanerozoic (ranging from Jurassic through Tertiary) sedimentary rocks in the south and east. Precambrian terrains (ranging from Archaean to Upper Proterozoic rocks) are the predominant underlying rock in the south west, central, and northeastern provinces.

Along the western border with Zimbabwe, the terrain is an extension of the Zimbabwe Craton, which is mostly Archaean granitic gneiss complexes, with greenstone belts and shallow Palaeo-Proterozoic sedimentary basins. The Great East African rifting event (partly occupied by Lake Nyasa), has extensions in Mozambique, which are typically filled by the Karoo System terrigenous sediments and volcanism from the end of the Karoo sedimentation. The majority of coastal plans in the central and southern parts of the country were laid down during the Cretaceous. [2]

[1] CIA World Factbook, Mozambique; accessed via the internet on 4/8/2016 at: https://www.cia.gov/library/publications/the-world-factbook/geos/mz.html
[2] Regional Geology, Baobab Resources; accessed via the internet on 4/8/2016 at: http://www.baobabresources.com/mozambique/regional-geology

TOPOGRAPHY. The Zambezi River divides Mozambique into distinctive northern and southern halves. The northern half contains many mountains and plateaus, including the Livingstone-Nyasa Highlands, the Shire (or Namuli) Highlands and the Angonia Highlands in the northeast. The west is particularly mountainous, transitioning to plateaus and uplands heading eastward. Below the Zambezi River are fertile plains, especially surrounding the river. The central part of the country consists of uplands, marshes and coastal lowlands. The dry inland areas do not support much vegetation. Due to its location on the African Tectonic Plate, Mozambique experiences little to no tectonic activity.[3]

CLIMATE. Mozambique's climate is semi-arid and subtropical in the south and tropical in the north. There is a warm, wet season from November to March and a dry, cooler season from April to October. Climate is influenced by altitude, latitude, and proximity to the sea. Mozambique receives anywhere from 300 to 2,000 millimeters (mm) of rain per year, depending on location. The lowlands in the southern interior typically receive less rain than the Zambezi Delta and the mountainous areas in the north and west. Droughts and floods are common as precipitation varies significantly from year to year.[4]

PROTECTED AREAS. Mozambique has extended its protected areas from 11 to 25 percent of its national area, and it has added Quirimbas National Park for marine and coastal ecosystems and Limpopo Transfrontier National Park. Several areas are also under special protection, including Marromeu Complex, Maputoland Centre of Endemism, and the Chimanimani and Namuli Mountains. Overall, protected areas include 6 national parks, 8 national reserves, 13 forest reserves, 2 integral reserves, and 14 hunting concession designated for sport hunting and protecting species. In addition, the Marromeu Natural Reserve and Lake Niassa Partial Reserve are Ramsar sites due to the extensive biodiversity of their wetlands. Mozambique has one UNESCO Cultural World Heritage Site, the Island of Mozambique.[5]

SOILS. Granite rock underlies most of northern and west-central Mozambique, while the soils of southern and east-central Mozambique are derived from sedimentary rock. The northern and central regions have more fertile, water-retentive soils with a higher content of red clay. In the south, soils are mostly sandy and infertile; fertile soils are limited to alluvials in the valleys of the Save, Limpopo, Incomáti, Umbelúzi, and Maputo Rivers.[6]

HYDROLOGY. Mozambique has abundant water resources due to its major river systems, which also offer hydroelectric and irrigation potential. The Rovuma River lines Mozambique's northern border with Tanzania, while the Zambezi River and its tributaries are found in the central region. The Zambezi has 819 km in Mozambique and drains more than 225,000 km^2 of the central region. The southern border with Swaziland and South Africa is formed partly by the Maputo River. Other drainage areas include the Messalo, Púngoè, Revuè, Buzi, and Limpopo Rivers. Mozambique shares several lake borders with Malawi (Nyasa, Chiuta and Chilwa) but has no other important lakes besides those created by the hydroelectric dam network.

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[3] Topographic Regions, Mozambique, Nations Encyclopedia; accessed via the internet on 4/8/2016 at: http://www.nationsencyclopedia.com/geography/Morocco-to-Slovakia/Mozambique.html

[4] Excerpt from Southern Africa Amendment to the PEA for the Manufacture and use of aflasafe in Sub-Saharan Africa; prepared under GEMS project; accessed via the internet on 4/11/2016 at: http://gemini.info.usaid.gov/egat/envcomp/repository/pdf/46761.pdf

[5] Ibid

[6] Ibid

Mozambique has considerable groundwater potential with well yields in the Zambezi and Incomáti basins at 70,000 m^3 per day. Seventeen km^3 of groundwater is produced annually, along with 97.3 km3 of surface water. Including some overlap between ground and surface water, total renewable water sources equal around 100.3 km^3 per year. The Cahora Bassa dam on the Zambezi River is the largest hydroelectric plant in southern Africa, with an installed capacity of 2,060 megawatt (MW). Surface water is the main water source in Mozambique, although groundwater is used for drinking water supply in certain urban areas. In rural areas, shallow wells and handpump-mounted boreholes are the main source of drinking water.

The greatest use of water is agriculture; irrigation accounted for 86.6 percent of total water used in 2000, mainly from surface water. In 2003, 1,181 km^2 was irrigated. Total irrigation potential is around 3,300,000 ha, where the main areas suitable for irrigation are the center and the north of the country. The Zambezia province is home to 60 percent of the irrigation potential. Most irrigated lands are occupied by smallholder farmers and agricultural enterprises. Small-scale irrigation schemes exist all over the country, but are mostly abandoned or in bad condition due to the civil war, lack of inputs and technical assistance, and floods in 2000 and 2001.[7]

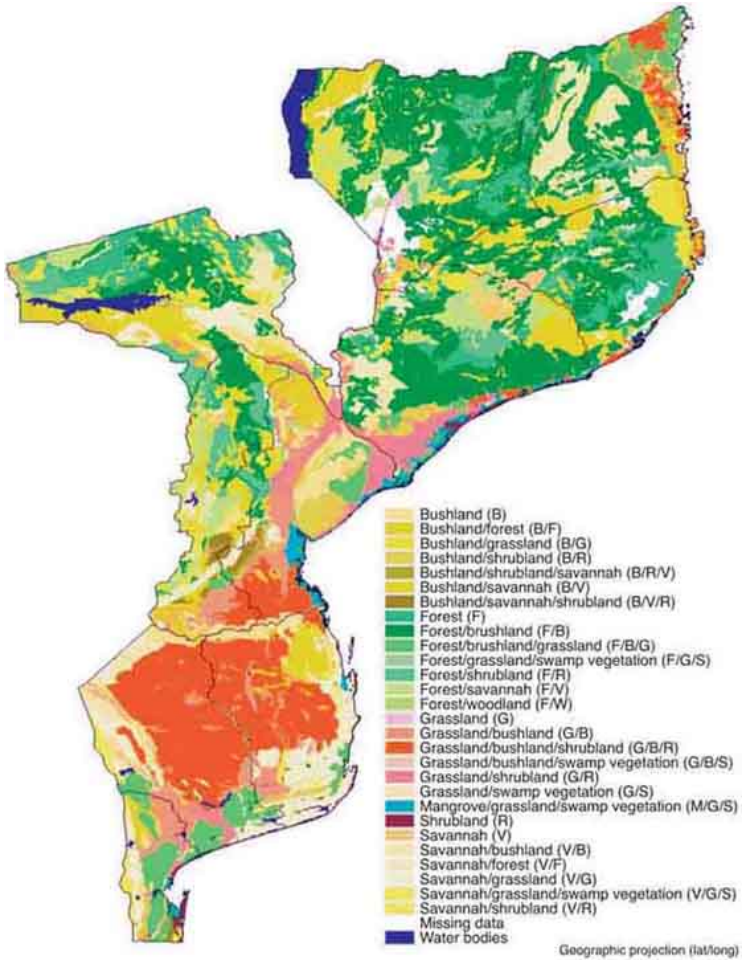

Figure 2. Vegetation Map of Mozambique. Source: http://www.fao.org/docrep/008/y5744e/y5744e07.htm

ECOSYSTEMS.

Terrestrial Ecosystems. Terrestrial Ecosystems in Mozambique consist of Miombo Woodlands; Coastal Forest; Mopane Woodlands; Grassland, Wooded Savannah and Bushland; and Montane Ecosystems. The Miombo woodlands are the dominant terrestrial ecosystem, consisting of tropical woodlands with broad-leaved trees. These woodlands are found throughout Southern Africa, and have adapted to the poor soil quality and strong rainfall associated with this region. Mozambique has 13,400 km^2 of coastal forests, found mainly north of the Zembezi River. Levels of biodiversity and endemism are not well-known, but these areas are facing increasing threats as development and exploitation of natural resources expands into this area. Mopane woodlands (containing the mopane tree) are located in arid, low-elevation areas with alkaline soils, mainly in the Zambezi Valley in the west, and Gaza Province in the southwest. In the dry southern

[7] Excerpt from Southern Africa Amendment to Africa; prepared under GEMS project; accessed via the internet on 4/11/2016 at: http://gemini.info.usaid.gov/egat/envcomp/repository/pdf/46761.pdf

regions, tree cover can be less than 20% in some areas, which are generally occupied by savanna grassland or thorn scrub vegetation. Montane ecosystems include moist evergreen forests, afroalpine grasslands, shrublands and moorlands. These systems are mostly found in western Mozambique in the mountains, and north on the Angonia Plateau. Deforestation, as calculated in 2007, is occurring at a rate of .58% per year. The main threats to forests are clearing for agriculture, fuelwood and construction material collection, commercial charcoal production, forest fires, timber harvesting and the establishment of forest commercial plantations.[8]

Freshwater and Wetland Ecosystems. Mozambique's main freshwater and wetland ecosystems are rivers, deltas and lakes. Lake Niassa is the southernmost Rift Valley Lake, located 500 m above sea level, with a depth of about 700 m. About 13,000 km^2 of its area is located in Mozambique's territory. As a Ramsar site, it contains habitats of global importance, and is home to many endemic species. Cahora Bassa Lake was formed by the Cahora Bassa Dam on the Zambezi River, and is considered the largest artificial lake in the country. The ecology of the lake is not well-known, but alien species have been introduced (for example, Kapenta and Nile tilapia), which has affected the diversity of the local fauna. The Zambezi delta is the other Ramsar site in Mozambique, and supports one of the largest populations of aquatic birds in the country, as well as thousands of migratory species. It is also an important breeding site for the wattled crane, and is home to species that are endangered, threatened, or that are of commercial importance. Finally, Mozambique has more than 100 coastal lakes, swamps, and rain-filled pans occurring from Vilankulos to Ponda do Ouro. Those that are connected to the sea have a more estuarine, salinity-tolerant fish fauna, while those further inland have more freshwater fish fauna. The most biodiverse coastal lakes that are also important for fisheries and tourism are Lake Bilene, Nhambavale, Quissico, Inharrime and Piti. They are also feeding and breeding grounds for birds, but face stress from development, tourism and pollution.[9]

Marine Ecosystems. Coastal and marine ecosystems occupy approximately 42% of the country. The main coastal and marine ecosystems are dunes and beaches, seagrass beds, coral reefs, mangroves, and open-ocean pelagic ecosystems.

Coastal Mozambique is characterized by high dunes and north-trending capes and barrier lakes. The dunes are most extensive between Bazaruto Island and Ponta do Ouro, and can attain heights of 120 meters, making them the tallest vegetated dunes in the world. The flora is diverse, and contains sources of medicinal plants for local communities, some of which are endemic. Sandy beaches cover around 1,200 km of the coastline, and provide habitat for five species of endangered marine turtles. The area between dunes and sandy beaches generally contains herbaceous pioneers that trap sand particles and build dunes, later being stabilized by woody vegetation. The major fauna on these beaches is ghost crabs, coastal birds and small invertebrates. Both dunes and beaches face threats from unregulated development, tourism and deforestation.

Thirteen different species of seagrass cover about 439 km^2 in Mozambique, and play an important role as both nurseries and feeding areas for commercially valuable species, and also endangered species,

[8] USAID/Mozambique Environmental Threats and Opportunities Assessment (ETOA), January 2013; accessed via the internet on 4/13/2016 at:
http://www.usaidgems.org/Documents/FAA&Regs/FAA118119/Mozambique2013.pdf
[9] Ibid

such as sea turtles and dugongs. Seagrass bed are also home to several invertebrate species which are collected by coastal communities, and also support artisanal fisheries in northern Mozambique.

Coral reefs cover 1,890 km^2 in Mozambique, and are distributed from the northern coast just north of Sofala Bank. These are mainly fringing reefs, containing mostly hard corals, although soft corals are abundant from the Bazaruto archipelago to Ponta do Ouro. Mozambique's coral reefs contain significant biodiversity, including more than 900 species of fish, 300 species of hard coral, more than 50 species of soft coral, and other species such as ascidians, sponges and other invertebrates. Coral reefs also support about 6.6 million people in 48 coastal districts for small-scale fisheries.

Mangrove forests make up 4,000 km^2 in Mozambique, of which nine species of mangrove trees have been identified. Mangroves are important for livelihood activities for local communities, who use mangrove forests for construction, firewood, fish traps, and medicine. They also provide ecosystem services such as coastal protection, and nursery/refuge habitats for important species.

The majority of Mozambique's exclusive economic zone (EEZ) is over deep water, meaning little is known about these ecosystems. However, the pelagic zone is considered productive, whereas several tuna and other fish species are harvested commercially by foreign vessels. [10]

AGRICULTURE. Agricultural production is an important livelihood for 80 percent of Mozambicans, contributing 30.9 percent to the GDP in 2011. There are an estimated 3.2 million smallholder farmers with plot sizes averaging about 0.25 ha, yet smallholder farmers are responsible for nearly 95 percent of the agricultural GDP production. Maize and cassava make up 80 percent of the crops grown by smallholder farmers. They typically sell produce to secondary buyers, sell it themselves at roadside stalls, or retain it for household use. Mozambique's major exports are tobacco, sugar, cashew, cotton, and sesame, while groundnut, cassava, maize, poultry, and cashew are important in the domestic market. [11]

Shifting cultivation is an ancient agricultural production system that is commonly practiced today in Mozambique. Shifting cultivation is not destructive and can be sustainable if rotation cycles are sufficient to allow natural vegetation to recover before re-clearing. However, under increasing human population pressures, the cycle is shortened, the natural vegetation does not have the chance to recover fully, and as a result soil fertility declines and crop yields are lower. Fire is an essential and integral part of shifting cultivation. Only through burning at the end of the dry season can the felled trees and slashed brush be converted to ash and incorporated into the soil to sustain crop production.[12]

Deforestation in Mozambique is minimal, with the annual rate of forest loss estimated at about 63,000 hectares per year. Mozambique's protected area system encompasses 7.2 million hectares, around 9% of total land area. Because of soil and climatic factors, agricultural potential in Mozambique is low in relation to neighboring countries. Arable land—defined as land suitable for repeated cropping of annual

[10] USAID/Mozambique Environmental Threats and Opportunities Assessment (ETOA), January 2013; accessed via the internet on 4/11/2016 at:
http://www.usaidgems.org/Documents/FAA&Regs/FAA118119/Mozambique2013.pdf

[11] Excerpt from Southern Africa Amendment to the PEA for the Manufacture and use of aflasafe in Sub-Saharan Africa; prepared under GEMS project; accessed via the internet on 4/11/2016 at:
http://gemini.info.usaid.gov/egat/envcomp/repository/pdf/46761.pdf

[12] Excerpt from Mozambique Agriculture, Environment and Business (AEB) Portfolio IEE

or semiannual crops such as maize, rice, wheat, etc. – composes 4% of the country's land area or 3.1 million hectares.[13]

CLIMATE CHANGE[14]**.** Extreme climate events such as cyclones and tropical storms already impose large costs on Mozambican coastal cities. Climate change will worsen the toll by causing sea levels to rise, inundating unprotected low-lying areas. It is also likely to increase the frequency and severity of high-rainfall storms and the most intense cyclones, leading to more destructive floods without significant adaptive investments. These recurring incidences will have serious impacts on urban infrastructure and the health of local populations and biodiversity. Urban vulnerability in Mozambique is exacerbated by an infrastructure deficit that is among the highest in Africa, a lack of adequate emergency response capacity and equipment, inadequate and ageing coastal defenses, and the loss of natural coastal defenses such as mangrove forests. The most comprehensive analysis to date on the economic costs of climate change in Mozambican cities found that average annual losses due to climate hazards could increase by more than USD 160 million by 2030 in Maputo alone.

Mozambique's urban centers and more specifically its coastal cities serve as the country's economic hubs and drivers of development. These coastal cities house much of the country's key infrastructure and productive workforce, which are vital to sustaining the strong economic growth levels it has enjoyed over the past few years. Yet Mozambique's coastal cities are also some of the most vulnerable to climate change in Africa as identified by the National Institute for Disaster Management (INGC) and international development agencies.

2.2 ENVIRONMENTAL REGULATIONS

The Ministry for Land and Rural Development (MITADER) has the responsibility for promoting and coordinating the implementation of sound environmental policies. The National Environmental Management Program (NEMP) was drawn up for this purpose.

Environment Laws and Regulations: Based on the NEMP, the *Mozambique Environmental Law* (July 30, 1997) defines the legal basis for the proper use and management of the environment and its components in order to establish a system of sustainable development in Mozambique. Article 5 establishes a National Council for Sustainable Development as a consultative organ of the Council of Ministers and forum for environmental issues, to help ensure coordination and integration of environmental management principles and activities. The law contains provisions directly related to conservation of biodiversity. Article 7 establishes local organs responsible for implementation of the law in a decentralized fashion.

The Law encourages community and public participation, stating that: "It is the duty of the Government to create appropriate mechanisms in order to involve the different sectors of civil society, local communities and in particular associations for the defense of the environment, in the preparation of policies and legislation related to the management of the nation's natural resources...". Article 13 of the *Environment Law* provides a legal basis for the creation of protected areas. The law prohibits pollution and mandates environmental quality standards. It also institutes the establishment of Environmental Protection Zones. Article 30 of the *Environment Law* recognizes the need to guarantee the participation

[13] Ibid

[14] Additional information about Climate Change in Mozambique can be found in the USAID/Mozambique Environmental Threats and Opportunities Assessment, 2013, located here: http://www.usaidgems.org/Documents/FAA&Regs/FAA118119/Mozambique2013.pdf

of local communities and to utilize indigenous and local knowledge in the management of the environment.

Mozambique Biodiversity Strategy: MITADER also produced a strategy to conserve and sustainably use Mozambique's biological diversity. The overall goal of Mozambique's *Biodiversity Strategy* is "the conservation of biological diversity and the maintenance of the ecological systems and processes taking into account the need for sustainable development and fair and equitable distribution of the benefits arising from the use of biological diversity." The strategy identifies biological hotspots and areas for action. The strategy also identifies the need to review and evaluate legislation, policies and programs related to the agricultural sector with regards to conservation and sustainable use of agricultural biodiversity.

Environmental Impact Assessment: The Regulations for Environmental Impact Assessment were passed in 1998 and revised through Decree no. 45/2004, dated September 29, 2004. They specify that all programs and projects that may directly or indirectly affect sensitive areas shall be subject to EIA. Among others, these include conservation or protected zones or areas, zones where habitats and ecosystems are in danger of extinction, and natural forests. In 2000, a National Directorate for Environmental Impact Assessment was created within MITADER.

Mozambique Land Policy: According to the *Constitution of the Republic of Mozambique* (2005), the State retains ownership of the land. It also retains the right to decide the conditions of their exploitation and use. Recognizing the need for modernization in post-conflict Mozambique, the Land Commission was charged with the development of a program to upgrade the Land Law and to modernize and upgrade the relevant institutions and services to implement the new policy and law.

The *Land Policy (1995)* maintains that land ownership is vested in the State, but recognizes the legitimacy of customary law, including traditional use rights, and the role of local leaders in land management and conflict resolution. It also promotes food production, develops family agriculture, promotes private investment, preserves areas of ecological and natural resource interest, and updates the taxation system. The policy provides the framework for the Land Law (1997).

The Land Law 1997 states that land is State property and may not be sold. It provides a legal basis for demarcating areas for total protection and conservation (Article 7) and for zones of partial protection Article 8). The latter provision provides for the conservation and management of ecologically sensitive habitats and riparian vegetation, along with their associated species.

The *Land Law* also provides for the participation of local communities in the management and protection of natural resources. Specifically it allows rural local communities to participate in:

- Management of natural resources;
- Resolution of conflicts;
- The titling process; and
- Identification of the areas they occupy.

The *Land Law Regulations* for implementation of the law were passed by the Council of Ministers (Decree No 66/98, December 8, 1998).[15]

[15] Excerpt from Mozambique Agriculture, Environment and Business (AEB) Portfolio IEE

PESTICIDE-RELATED ENVIRONMENTAL POLICY. The regulation by which pesticides are registered for use in Mozambique was first promulgated in 1998 with updates in 2003 and 2009. The current procedure adheres to the 2009 regulation (Decree 6/2009 of 31st of March), but guidelines are being developed to provide guidance on transport, storage, handling, and use of pesticide products to accompany the legislation. The regulation covers matters of registration, production, donation, trading, importation, exportation, packing, storage, transport, handling, use, and elimination of pesticides and adjuvants.

The main institutions responsible for pesticides management in Mozambique are the Ministry of Agriculture and Food Security (MASA, previously Ministry of Agriculture, MINAG), the Ministry of Health (MISAU), and the Ministry of Land, Environment, and Rural Development (MITADER, previously MICOA). Representatives of these ministries form part of the Technical Assessment Committee for Pesticides Registration (CATERP, or Comité de Avaliação Técnica do Registo de Pesticidas), which was created to assess, approve, or disapprove the registration of pesticides in Mozambique; determine the technical conditions to be observed during importation, exportation, production, donation, trading, handling, and application of each pesticide; and impose restrictions on the use of certain pesticides.

During pesticide registration, the active ingredient as well as the formulation are registered at the same time. While the Agricultural Investigation Institute (IIAM) is responsible for conducting and validating efficacy field trials, pesticide registration relies on CATERP. The National Directorate of Environmental Management (DNGA) is responsible for reviewing environmental impacts of the product following review by IIAM. Several of the institutions profiled above have roles in the registration of pesticides as part of CATERP. CATERP is chaired by the Registrar of the Agrochemicals Registration and Control Department (RRCA). It also includes the National Directorate of Veterinary Services (DSNV), the Registrar of the Agrochemicals Registration and Control Department (RRCA), IIAM, MISAU, and MITADER. After approval of the pesticide, the National Directorate of Agricultural Services (DNSA) then issues the permits and licenses.[16]

[16] Southern Africa Amendment to the PEA for the Manufacture and use of aflasafe in Sub-Saharan Africa; prepared under GEMS project; accessed via the internet on 4/11/2016 at: http://gemini.info.usaid.gov/egat/envcomp/repository/pdf/46761.pdf

3.0 Potential Environmental Impacts & Recommended Determinations, Including Conditions

As noted in Section 1.4, for the purpose of environmental review, current and proposed BIOTOUR activities are grouped into the following intervention categories:

1. Technical assistance and capacity building to improve biodiversity conservation policies at the institutional level.

2. Improve biodiversity conservation in national parks and protected areas (e.g., Niassa National Reserve [NNR] and Gorongosa Restoration Project [GRP]) and other biologically significant areas.

3. Training in and implementation of community engagement, environmental education, park management, and scientific services.

4. Promote sustainable livelihood development in park, protected area, or other important habitat buffer zones.

5. Work with local/small businesses to enhance biotourism infrastructure, services and marketing.

6. Strengthen transportation infrastructure

7. Small Scale Construction

8. Support to non-governmental organizations engaged in health, education, governance, climate change and conservation activities, particularly coastal and marine conservation.

9. Generation of and support for data and research

3.1 Intervention Category 1: Technical assistance and capacity building to improve biodiversity conservation policies at the institutional level.

Entailed activities. This intervention category consists of the following activities:

- Provide support to the *Agencia Nacional das Areas de Conservação* (ANAC)[17] in the development and articulation of a coherent research strategy and agenda.
    - Aid ANAC in the rollout of a nation-wide wildlife monitoring tool
    - Revise ANAC's business plan and financial projections models to strengthen ANAC's revenue generation and management capabilities
- Investigate opportunities in new biodiversity law to establish conservancies and pursue the re-establishment of concession agreements between the community and the government.
- Train civil society organizations (CSOs) in advocacy, constituency building, and financial and administrative management.
- Increase SAVE (Scientific, Academic, Voluntary and Educational) travel in Mozambique
- Build local capacity development (e.g., NGOs, CSOs, cooperatives) in biodiversity conservation.
- Conduct mid-term and final performance evaluations of BIOTOUR (externally-led).

Potential Adverse Impacts & Considerations Regarding Recommended Determinations.

One of the objectives of the *BIOTOUR* Project is to advance institutional reforms that will help the Government of Mozambique (GOM) improve the country's approach to biodiversity conservation. Institutional reforms at this scale are often rooted in policy initiatives that (re)define the structure and/or mandate of state entities and the delivery of government services. *BIOTOUR* entails support for these types of policy interventions, including efforts to improve natural resource management (NRM), expand capacity for complex decision-making, and generally enhance the delivery of public-sector services.

BIOTOUR entails policy and capacity building initiatives that are specifically designed to impact NRM and/or environmental decision making in Mozambique. And although any adverse impacts would be indirect in nature, the relative influence of these types of policies on environmental outcomes warrants the establishment of particular conditions. Externally-led performance evaluations of BIOTOUR would not have any adverse impacts on the environment and are therefore categorically excluded.

Activity or intervention sub-category	***Recommended Determination***
Provide support to ANAC in the development and articulation of a coherent research strategy and agenda.	**Negative determination**, subject to the following **condition**: 1) Policy development must integrate or otherwise reflect current data and analysis on regional environmental trends, including principles of biodiversity conservation and sustainable NRM adaptation strategies. Data and
Investigate opportunities in new biodiversity law to establish	

[17] ANAC is a national quasi-governmental institution with responsibility to ensure proper management of conservation areas and wildlife.

conservancies and pursue the re-establishment of concession agreements between the community and the government.	analysis may be drawn from USAID, other bilateral donor agencies, International Financial Institutions, Multilateral Development Banks, or other internationally recognized research or development entities.
Train civil society organizations (CSOs) in advocacy, constituency building, and financial and administrative management.	
Increase SAVE (Scientific, Academic, Voluntary and Educational) travel in Mozambique	
Build local capacity development (e.g., NGOs, CSOs, cooperatives) in biodiversity conservation.	
Conduct mid-term and final performance evaluations of BIOTOUR (externally-led).	**Categorical Exclusion**, per §216.2(c)2 • (iii) Analyses, studies, academic or research workshops and meetings; • (v) Document and information transfers; and (xiv) Studies, projects, or programs intended to develop the capability of recipient countries to engage in development planning.

3.2 Intervention Category 2: Improve biodiversity conservation in national parks and protected areas (e.g., Niassa National Reserve [NNR] and Gorongosa Restoration Project [GRP]) and other biologically significant areas.

Entailed activities. This intervention category consists of the following activities:

- Facilitate working groups of stakeholders and technical experts to develop and help implement park management approaches
    - Conduct planning efforts *only* for large-scale landscape and land-use activities with stakeholder communities, government officials, and businesses to divide the reserve into economic zones (agriculture, mining, logging, animal rearing, safari hunting, photographic safaris, etc.) and strictly conservation zones.
    - Using the data layers generated from the landscape land-use planning process, run a multi-stakeholder workshop to analyze the trade-offs between different land-use options in different zones and how these might have positive or negative impacts
- Support ANAC to engage bilaterally with key countries (e.g. South Africa, Vietnam, China) to develop and implement policies to combat wildlife trafficking.
- Strengthen patrolling of the national park by rangers deployed to intercept poachers or other people engaged in illegal environmental activities.
- Prevent human-wildlife conflict by, e.g., removing injured and dangerous animals.
    - Training in human-wildlife conflict issues, e.g., training communities to surround their farms with thick hedges, pepper plants, and/or bee hives.
- Employ a fire management strategy and develop habitat based fire management plans
    - Help prevent late-season, hot wildfires by conducting early-season, cold mosaic burning of dambos (seasonal wetlands) and high grasses, and create fire-breaks between communities and the parks.
    - Provide community trainings on proper fire management techniques.
- Undertake reforestation efforts, e.g., tree planting, erosion control in the protected areas.

Potential Adverse Impacts & Considerations Regarding Recommended Determinations.

The activities in this intervention category aim to improve park and natural resource management in the NNR and Gorongosa areas. However, some of the management activities have the potential to directly and adversely impact natural resources and the environment. For instance, preventing human-wildlife conflict (e.g., situations where animals attack people or their farmland) and strengthening of patrolling could result in injured or killed animals in an effort to resolve potential conflicts with communities or poachers.

While the facilitation of working groups to develop park management approaches will not have direct impacts on the environment, the objective of these efforts is to change management and use of the natural environment in and near protected areas. Thus, though the change sought is environmentally beneficial (i.e., strengthened biodiversity conservation and NRM), possible “failure modes” exist which could result in adverse environmental impacts. For example, stakeholders could formulate management approaches that are unrealistic or counterproductive, with potential impacts on the environment (e.g., endangering a species in the park).

Similarly, the landscape planning initiative is intended to foster the inception and promulgation of policies and regulations needed to permit effective biodiversity conservation and natural resource management. The primary environmental risk in such endeavors is “process capture,” an uneven distribution of benefits wherein more powerful political and economic interests exploit the process at the expense of local populations. Process capture by extraction-oriented governmental or private-sector stakeholders can drive policy development to the lowest common denominator.

A condition for planning and workshop activities is therefore established to hold mediated processes, run by an independent third party, whereby all stakeholders – from extraction companies to local residents to environmental organizations – are invited to participate in the planning process and be heard. This approach should lead to outcomes consistent with principles of biodiversity conservation in protected areas.

Landscape and land-use development itself – which is not covered by this IEE - can have profound implications on the country’s conservation agenda, and any economic development within a park of protected area would be considered new lands development, which may result in a significant adverse impact on the environment. As noted, however, the activity covered by this IEE is the planning process, not the actual development of economic and conservation zones.

With regard to fire management strategies, controlled burns are well-established pasture and brush management technologies. However, quick and hot fires can catch wildlife off guard and can trap them as well as killing plant or tree species. Moreover, the Niassa National Reserve has historically burned in its entirety each year due to communities setting fires to protect against wildlife and snakes or to flush out animals when poaching. Risks of setting wildfires include the uncontrolled burning of grasslands, the potential change of a wildfire in the early burning season turning into a much larger wildfire, and the accidental burning of agricultural lands.

Reforestation efforts risk the introduction of non-native species into protected areas; safeguards must be put in place to avoid inappropriate choices of species and techniques, including water and soil management and conservation techniques.

Activity or intervention sub-category	*Recommended Determination*
Facilitate working groups of stakeholders and technical experts to develop and help implement park management approaches (e.g., large-scale landscape land-use planning efforts) *Note: Landscape and land-use development itself – rather than just the planning effort - would be considered new lands development and automatically trigger a "positive determination," and is therefore not covered by this IEE. Further, USAID is not funding new lands development in Mozambique.*	**Negative Determination**, subject to the following **conditions**: 1. Hold mediated processes, run by an independent third party, whereby all stakeholders – from extraction companies to local residents to environmental organizations to investors – are invited to participate in the planning process and be heard. This approach should lead to outcomes consistent with principles of biodiversity conservation in protected areas. 2. Land use planning must integrate or otherwise reflect current data and analysis on environmental trends, including principles of sustainable NRM and GCC adaptation strategies. Data and analysis may be drawn from USAID, other bilateral donor agencies, International Financial Institutions, Multilateral Development Banks, or other internationally recognized research or development entities. 3. Land use planning should incorporate best practice standards in land tenure, property rights and natural resources 4. Implementation of new economic zones must include capacity building of customary land holding groups consistent with good practice guidelines and address issues of sustainable land use and management, social impacts of land use planning, and environmental soundness. See the USAID Sector Environmental Guidelines on Agriculture (http://www.usaidgems.org/Sectors/agriculture.htm) and Community-Based Natural Resource Management http://www.usaidgems.org/Sectors/cbnrm.htm
Support ANAC to engage bilaterally with key countries (e.g. South Africa, Vietnam, China) to develop and implement policies to combat wildlife trafficking.	**Categorical Exclusion** is recommended per 22CFR216.2(c)(2)(xiv) studies, projects or programs intended to build the capacity of recipient countries to engage in development planning except to the extent designed to result in activities directly affecting the environment as construction of facilities.
Strengthen patrolling of the national park by rangers deployed to intercept poachers or other people engaged in illegal environmental activities.	**Negative determination**, subject to the following **condition**: 1. TA and training in anti-poaching techniques, in conjunction

Activity or intervention sub-category	*Recommended Determination*
	with anti-poaching organizations, to park rangers and community groups
Prevent human-wildlife conflict by, e.g., removing injured and dangerous animals.	**Negative determination**, subject to the following **condition**: 1. Training communities in methods to protect their crops from elephants, hippos, warthogs, or other animals, and training communities in keeping bees to ward off elephants. Conduct community sensitization to reduce the use of snares, which injure the animals. 2. Where necessary, park rangers should be responsible for dispatching injured animals to assure it is done humanely, that the species is not of special concern, and make a determination on whether poaching occurred.
Employ a fire management strategy (i.e., controlled burns) and develop habitat based fire management plans.	**Negative determination,** subject to the following **conditions:** 1. Burns should be conducted in accordance with protected area work plans based on integrated natural resource management planning. 2. All burn events must be accompanied by pre-notification of tourists, workers, and local communities. Emergency procedures and appropriate emergency contacts should also be disseminated. 3. Early burns are conducted only during the months of April – July, avoiding windy and hot days. 4. Burns should be done in a mosaic fashion, not burning in areas that were burned the previous year. 5. Burns should not occur in biologically sensitive areas whereby even cooler, slower burns could permanently alter an ecosystem. 6. Burns should be tracked with satellite imagery each year to ensure that mosaic burns are occurring in the correct areas and that compared to the baseline year are more controlled.

Activity or intervention sub-category	*Recommended Determination*
	7. Burns should neither be started near inhabited areas nor adjacent to agricultural lands 8. All officials involved in burning must be trained in designating appropriate locations to start fires and under which weather conditions burning is allowed. Training and deploying reserve rangers in the early burning of dambos (i.e., grasses near seasonal wetlands) and tall grassland areas during the months of April through July. http://www.usaidgems.org/Sectors/forestry.htm http://www.usaidgems.org/Sectors/drylandAg.htm
Undertake reforestation efforts, e.g., tree planting, erosion control in the protected areas.	**Negative Determination** subject to the following **conditions:** 1. USAID technical assistance to community conservancies on forest management and land use plans that include measures to: • Per FAA 118, training/extension in soil and water conservation techniques, sustainable agriculture, forestry, agro-forestry, and any NRM- or agriculture-related intervention may not promote the introduction of exotic plant species not already cultivated in the area, where there is any reasonable chance that this may facilitate their introduction or spread within a protected area. The training/extension review must specifically consider this issue and the soundness of species choices generally. In all cases, promoted crop, groundcover and agroforestry species must be endorsed for use by the relevant governmental authority. • Prevent or mitigate adverse economic consequences on local communities, including from loss of usual and customary use of resources • Otherwise assure that policy is fully consistent with accepted principles of natural resource management. See http://www.usaidgems.org/Sectors/forestry.htm

Activity or intervention sub-category	***Recommended Determination***
Implement conservation agriculture on existing community-run plots in the buffer zones.	**Negative Determination** subject to the following **conditions:** 1. Land preparation and cultivation activities shall integrate best management practices (BMPs) reflecting local soil conditions, climate and hydrology in order to reduce erosion (wind and water) and limit potentially nutrient-rich agricultural run-off. BMPs must be consistent with the principles of environmental management as detailed in the USAID *Sector Environmental Guideline* for agriculture, available at: http://www.usaidgems.org/Sectors/agriculture.htm 2. Land use planning must integrate or otherwise reflect current data and analysis on environmental trends, including principles of sustainable NRM and GCC adaptation strategies. Data and analysis may be drawn from USAID, other bilateral donor agencies, International Financial Institutions, Multilateral Development Banks, or other internationally recognized research or development entities. Also see http://www.usaidgems.org/Sectors/agriculture.htm

3.3 Intervention Category 3: Training in and implementation of community engagement, environmental education, park management, and scientific services.

Entailed activities. This intervention category consists of the following activities:

- Train Mozambican scientists and local community members on natural resource management and conservation education at the Community Education Centers and other locales.
- Implement conservation agriculture on existing plots in the buffer zones.
    - Training of community members in conservation farming methods in the buffer zone.
- Establish & expand Niassa Reserve and Gorongosa community outreach programs, engaging with resident communities through education, dialogue, and events focusing on youth and women.

Potential Adverse Impacts & Considerations Regarding Recommended Determinations.

In general, this intervention category is intended to improve management of the NNR and Gorongosa by training specialists and nearby communities in NRM and biodiversity conservation. However, activities in this category do present environmental risks that require management. Any training/capacity building in the types of collaborative approaches envisioned here (e.g., conservation agriculture) will likely include technical material related to specific management practices/objectives. Effectively implemented, the enhanced techniques (best management practices—BMPs) are expected to be environmentally beneficial. However, their use in and near protected or otherwise sensitive areas warrants careful review. For example, selective or incomplete adoption of BMPs may lead to poorly controlled use of fertilizers or other inputs, and/or the clearing of new or protected land for cultivation, etc.

The purposes of the outreach programs are to connect with resident communities on educational activities at NNR and Gorongosa and therefore will not have an impact on the environment and natural resources.

Activity or intervention sub-category	***Recommended Determination***
Train Mozambican scientists and local community members on natural resource management and conservation education at the Community Education Centers and other locales. Implement conservation agriculture on existing community-run plots in the buffer zones.	**Negative determination**, subject to the following **condition**: 1. Technical assistance and training will include environmental awareness and sensitivity components, including exposure to the principles and procedures of Environmental Impact Assessment (EIA). 2. Content review for promotion of specific NRM practices. Prior to any training activities or other promotion of specific NRM practices, an expert review of the specific practices must be completed, drawing on IP, USAID, or 3rd-party consultant expertise, as appropriate. This review must assess the potential for adverse environmental impacts stemming from implementation

	of target NRM practices/objectives under participatory governance structures, including the possibility of selective or incomplete adoption of best management practices. (For example, clearance of natural forest for tree lots, non-sustainable harvesting levels of non-timber forest products, poorly controlled use of pesticides, fertilizers or other inputs, clearing of new or protected land for cultivation, etc.). The review, including names, titles and qualifications of the expert(s) contributing, and a record of actions taken in response to the expert review must be provided to the C/AOR and MEO, who must approve the review and record of actions taken prior to the trainings. 3. Per FAA 118, training/extension in soil and water conservation techniques, sustainable agriculture, forestry, agro-forestry, and any NRM- or agriculture-related intervention may not promote the introduction of exotic plant species not already cultivated in the area, where there is any reasonable chance that this may facilitate their introduction or spread within a protected area. The training/extension review must specifically consider this issue and the soundness of species choices generally. In all cases, promoted crop, groundcover and agroforestry species must be endorsed for use by the relevant governmental authority.
Establish & expand Niassa Reserve and Gorongosa community outreach programs	**Categorical Exclusion** per 22CFR 216.2(c)(i) Education, technical assistance, or training programs.

3.4 Intervention Category 4: Promote sustainable livelihood development in park, protected areas, or other important habitat buffer zones.

Entailed activities. This intervention category consists of the following activities:

- Build capacity in small-scale sustainable natural resource management livelihoods such as beekeeping, mushroom gathering, etc.
- Undertake community land-use planning for targeted villages

Potential Adverse Impacts & Considerations Regarding Recommended Determinations.

Sustainable livelihood initiatives are intended to facilitate and promote adoption of more environmentally benign economic activities than logging, hunting, or land clearance for agriculture, and thus to conserve biodiversity and strengthen NRM in sensitive, at-risk environments. However, market development can trigger non-sustainable as well as sustainable harvesting levels, with attendant land clearing, pesticide use, etc. In this case, their biodiversity impacts can become negative rather than beneficial, and other adverse impacts (e.g., related to inappropriate pesticide use) are possible. The over-exploitation of natural resources may also have adverse impacts on biodiversity and forest ecosystems and the long-term viability of sustainable livelihoods. As such, effective strategies will balance the ecological *and* economic dimensions of natural resource management.

The potential adverse impacts stemming from sustainable livelihood initiatives are heightened by proximity to protected areas and habitats otherwise rich in biodiversity and other resources. The level of environmental risk in these scenarios is relatively higher than in other contexts—the existence of a protected area already denotes an environment of certain importance. The key challenge is empowering rural populations in and around protected areas with economic opportunity and livelihood options that align with conservation objectives.

The primary concern that a recommended determination must address is that of assuring that adequate consideration has been given and measures taken to limit the possibility of non-sustainable harvesters/production techniques benefiting from the activity.

Activity or intervention sub-category	***Recommended Determination***
Build capacity in small-scale sustainable natural resource management livelihoods such as beekeeping, mushroom gathering, etc.	**Negative Determination**, subject to the following **conditions**: 1. Prior to commencement of specific NRM livelihoods, the Implementing Partner must submit a memoranda to the A/COR and MEO specifically addressing how the risks of benefits accruing to non-sustainable harvesters/production techniques will be controlled and limited. 2. The measures specified in the memorandum must be implemented, and the memorandum will include

	reporting/verification measures regarding implementation of these risk control measures. 3. The memorandum must be cleared by the A/COR and MEO prior to implementation of the activity.
Undertake community land-use planning for targeted villages	**Negative Determination**, subject to the following **conditions**: 1. Hold mediated processes, run by an independent third party, whereby all stakeholders – from extraction companies to local residents to environmental organizations – are invited to participate in the planning process and be heard. This approach should lead to outcomes consistent with principles of biodiversity conservation in protected areas. 2. Land use planning must integrate or otherwise reflect current data and analysis on environmental trends, including principles of sustainable NRM and GCC adaptation strategies. Data and analysis may be drawn from USAID, other bilateral donor agencies, International Financial Institutions, Multilateral Development Banks, or other internationally recognized research or development entities. 3. Land use planning should incorporate best practice standards in land tenure, property rights and natural resources 4. Implementation of new economic zones must include capacity building of customary land holding groups consistent with good practice guidelines and address issues of sustainable land use and management, social impacts of land use planning, and environmental soundness. See the USAID Sector Environmental Guidelines on Agriculture (http://www.usaidgems.org/Sectors/agriculture.htm) and Community-Based Natural Resource Management http://www.usaidgems.org/Sectors/cbnrm.htm

3.5 Intervention Category 5: Work with local/small businesses to enhance biotourism infrastructure, services and marketing.

Entailed activities. This intervention category consists of the following activities:

- Provide business development services for SMEs focused on tourism around protected areas
  - Improve access to finance for conservation tourism-related SMEs.
  - Build partnerships to attract high-end tourism operators for the parks.
- Improve the implementation of marketing campaigns for high-potential and niche tourism markets (e.g., Brazil, UK, Australia, Netherlands, SAVE, SCUBA, Kite-Surfing, Dive Safari).
- Provide technical assistance and capacity development to tourism enterprises, including education on, the installation of, and access to loans to purchase or install clean energy technology.

Potential Adverse Impacts & Considerations Regarding Recommended Determinations.

In general, this intervention category is intended to expand biodiversity-based tourism in Mozambique. Biotourism operations and related/supporting businesses can prove an important source of investment and revenue in a rural economy, offering much-needed jobs and income while ostensibly protecting the natural resources on which they depend. Done right, biotourism initiatives can provide a sustainable alternative to farm-based livelihoods in the rural sector and can promote the conservation of biodiversity and forest ecosystems. However, the potential adverse impacts of eco-tourism activities are equally significant. Rapid degradation of the featured natural environment, as well as a decline in social cohesion and loss of traditional cultural norms, can result through poor planning and over-exploitation of available resources.

Unmanaged or unwise growth of the sector has potential to damage the protected areas and natural and ecosystem resources that are the focus of the tourism. For example, failure to restrict visitors to sustainable levels and appropriate areas can damage fragile habitats and populations; inadequate provision for sanitation/wastewater at hotels and other facilities can foul surface waters; tourist facilities and jobs can attract in-settlement that puts pressure on protected areas (e.g. illegal timber harvesting for construction; illegal charcoal extraction; pollution of surface waters). In addition, the growth in tourism does present known risks of adverse social impacts, including breakdowns in community values and the spread of sexually transmitted disease.

The potential adverse impacts stemming from biotourism are heightened by proximity to protected areas and habitats otherwise rich in biodiversity and other resources. The level of environmental risk in these scenarios is relatively higher than in other contexts—the existence of a protected area already denotes an environment of certain importance. The key challenge is empowering rural populations in and around forests and protected areas with economic opportunity and livelihood options that align with conservation objectives.

Activity or intervention sub-category	*Recommended Determination*
Provide business development services for SMEs focused on tourism around protected areas Improve the implementation of marketing campaigns for high-potential and niche tourism markets (e.g., Brazil, UK, Australia, Netherlands, SAVE, SCUBA, Kite-Surfing, Dive Safari). Provide technical assistance and capacity development to tourism enterprises, including education on, the installation of, and access to loans to purchase or install clean energy technology.	**Negative Determination**, subject to the following **conditions**: 1. These activities must be conducted consistent with (1) an approved management plan for the target areas, and (2) accepted eco-tourism principles (e.g. USAID's Sector Environmental Guideline for Ecotourism available at http://usaidgems.org/Sectors/ecotourism.htm, clean energy practices (http://www.usaidgems.org/Sectors/energy.htm), and the Global Sustainable Tourism Council (GSTC) Criteria, available at http://new.gstcouncil.org/resource-center/gstc-criteria. The tourism activities will be monitored for conformity with the approved management plans and that effective corrective action be undertaken if activities are not in compliance with the plan. 2. Any USAID project providing direct TA to tourism enterprises shall (a) identify any significant environmental management concerns in client operations; (b) identify non-compliance with Mozambican environmental requirements, and (c) undertake all practicable measures to assure that clients conform, at the conclusion of the assistance, to the eco-tourism principles and practices noted above and to requirements of Mozambican law. 3. Technical assistance to eco-tourism operators and associated businesses to enable the environmentally sound design and management of eco-tourism goods and service at a local level. Safeguards are needed to ensure that USAID project funding does not contribute to the degradation of the natural and human environment through eco-tourism activities that are otherwise poorly designed and implemented.

3.6 Intervention Category 6: Strengthen transportation infrastructure

Entailed activities. This intervention category consists of the following activities:

- Maintain the road-network system within the NNR and Gorongosa to facilitate ranger deployments and reduce wear and tear on vehicles.
- Maintain an operational mechanics shop to service a small fleet of vehicles and motorcycles.
- Maintain and widen reserve airstrips to conform to Mozambican aviation regulations.
    - Expand aerial monitoring of protected areas

Potential Adverse Impacts and Considerations Regarding a Recommended Determination.

The adverse impacts of maintaining a fleet of vehicles in a mechanics shop in a park or reserve include the spillage of oil or other chemicals onto the soil or vegetation and the waste accumulation of used car parts. Potential adverse impacts of aviation-related activity include the potential over clearing or widening of roads or airstrips within the reserve, which could be detrimental to micro-ecosystems.

Road Construction, Rehabilitation, and Maintenance have a well-known set of potential adverse impacts including:

Road construction impacts. Due to the volume of material used and the large total disturbed area, road borrow pits/materials sourcing present special concerns, as do the potential for sedimentation of surface waters and disruptions to drainage patterns

- *Adverse impacts of materials sourcing.* Construction requires a set of materials often procured locally: timber, fill, sand and gravel, bricks. Borrow pits result in removal of vegetation and habitat, erosion of sediment to surface water, and nearby low-lying areas. Borrow pits may also be a human health hazard if filled with water not properly marked or fenced.
- *Disturbance to existing landscape/habitat.* Construction typically necessitates clearing, grading, trenching and other activities that can result in near-complete disturbance to the 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. Land clearing may also alter ground and surface water flows and negatively impacting recipient water areas. Linear projects may also segment habitat and impede wildlife movement. Roadways may also increase runoff water and erosion.
- *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.
- *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. Failure to provide appropriate sanitation on-site can
- *Increased Air and Noise Pollution* can result during construction or rehabilitation from the actions of construction equipment and workers. Once a road has been completed, increased traffic can bring with it more noise as well as additional adverse social impacts (i.e. increased crime, spread of

communicable diseases, etc.)

- *Protection of Wetland Integrity:* Wetlands can be affected by the damming effects associated with creation of road rehabilitation embankments across swamps, wetlands and farming areas. The BIOTOUR project team should employ alternative routing or techniques to ensure wetland ecosystem integrity, where appropriate.

- *Adverse Impacts Associated with Poor Road Maintenance:* Road maintenance requires a strategy for sustainably funding labor and long-term maintenance, training in maintenance for road crews and community maintenance workers, and technical training in equipment maintenance and operation for local contractors or public works workers.

- *Flood Mitigation*: Small bridge rehabilitation should take into account flood data, where available, as well as observations from long-time residents. The BIOTOUR project team should take into account potential increases in flood conditions that may be associated with upstream deforestation and/or soil erosion.

Experience shows that these impacts are controllable below the level of significance with basic good construction management practices, including occupational safety and health practices.

While USAID and Implementing Partners generally have direct control over their general contractors (GCs) or contractors, road construction materials are often procured by GCs from sub-vendors, which can be the terminus of a long and untraceable supply chain. Additionally, USAID in its support to the BIOTOUR for road construction and rehabilitation may have limited input or control over sourcing, siting, and contacting decisions. This separation both limits the actions that USAID and its IPs can take to assure environmentally responsible sourcing of these materials, siting, and contracting and reduces USAIDs and the IPs responsibility for these impacts. However, when possible, USAID and IPs can and should undertake reasonable due diligence to assure that contractors adhere to the environmental guidelines which will be stipulated in their contracts. USAID and IPs should strive to reduce indirect impacts so far as feasible and to support and build capacity for including best environmental management practices when working with GCs.

In the absence of complicating factors,[18] USAID AFR Bureau has concluded that very small-scale general rehabilitation of rural roads (i.e. involving a total of less than 10 km) is of its nature unlikely to create significant adverse impacts of any kind. Rehabilitation larger than this scale (or construction of new roads of any size) does typically present the risks that the impacts described above could be significant.

[18] Complicating factors include, e.g. siting within 30m of a permanent or seasonal stream or water body, or displacement of existing settlement/inhabitants, or building on an average slope in excess of 5%, or building on a site that is heavily forested or in an otherwise undisturbed local ecosystem.

Activity or intervention sub-category	*Recommended Determination*
Maintain (i.e., fill holes and repave as necessary) the road-network system within the NNR and Gorongosa to facilitate ranger deployments and reduce wear and tear on vehicles. Maintain and widen reserve airstrips to conform to Mozambican aviation regulations.	**Negative Determination**, subject to the following **conditions**: Potential rehabilitation impacts associated with *existing* tertiary and secondary roads and small bridges are to be mitigated by applying guidance for environmentally sound design and management (ESDM), including that found in USAID's *Sector Environmental Guidelines for Rural Roads* http://www.usaidgems.org/Sectors/roads.htm. This guidance addresses: • impacts on water quantity • altered hydrology and flooding • damage to valuable ecosystems and habitats • damage to scenic quality and tourism • adverse impacts on human health and safety • maintenance best practices • implementation of wildlife and plant conservation and protective measures • adaptation to climate related risks and vulnerabilities. The following World Bank resource may also be useful: World Bank, Transport Division of the Environmentally Sustainable Development Vice-Presidency and Transportation, Water & Urban Development Department. Washington, D.C. http://www.worldbank.org/transport/r&h_over.htm For rehabilitation and expansion from airstrips, IPs must also follow Mozambican country guidance to be in compliance with safety regulations.
Maintain an operational mechanics shop to service a small fleet of vehicles and motorcycles.	**Negative Determination**, subject to the following **conditions**: Collection and disposal of parts, batteries, oil, etc. in accordance with USAID waste management guidelines: http://www.usaidgems.org/Documents/SectorGuidelines/SectorEnvironmentalGuidelines_SolidWasteGuidelines_2014.pdf
Road Rehabilitation >10Km	**DEFERRAL** (an IEE must be developed for each road segment or a programmatic EA developed for the entire rehabilitation scheme. The IEE should establish environmental management conditions generally consistent with good-practice guidance of

	USAID's Sector Environmental Guidelines (Rural Roads; www.usaidgems.org/sectorGuidelines.htm)).

3.7 Intervention Category 7: Small Scale Construction

Entailed activities. This intervention category consists of the following activities:

- Improve park headquarters infrastructure through small-scale construction and rehabilitation of old buildings.
- Expand living quarters for rangers onto degraded lands adjacent to already inhabited spaces.
- Rehabilitate old infrastructure by destroying small-scale clay mixed with cement structures and constructing eco-block buildings on the old structures' foundations.
- Establish small-scale, temporary outpost camps for rangers (including clearing grass for canvas tents and building pit latrines).
- Build office, aviation, workshop, camp staff, visitor facilities (mainly NNR)

Potential Adverse Impacts & Considerations Regarding a Recommended Determination.

Typical Impacts of the construction process. Construction itself has a well-known set of potential adverse impacts:

- *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 particular concern as malaria is endemic in much of Mozambique.
- *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. Failure to provide appropriate sanitation on-site can
- *Increased Air and Noise Pollution* can result during construction or rehabilitation from the actions of construction equipment and workers.

Experience shows that these impacts are controllable below the level of significance with basic good construction management practices, including occupational safety and health practices.

- *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.)

  While IPs generally have direct control over their general contractors (GCs), construction materials are often procured by GCs from sub-vendors. In the case of timber, these sub-vendors are often the terminus of a long and untraceable supply chain.

  This separation from source both limits the actions that IPs can take to assure environmentally responsible sourcing of these materials and reduces IP responsibility for these impacts – the exception is burnt bricks, for which the impacts can be avoided by requiring use of an alternative material. It should also be noted that for the relatively small construction projects anticipated under the HPN portfolio, adverse impacts related to materials sourcing should be quite limited. .

However, IPs can and should undertake reasonable due diligence to assure that they do not bear direct responsibility for adverse impacts, and to reduce indirect impacts so far as feasible.

Note that in the absence of complicating factors,[19] USAID AFR Bureau has concluded that very small-scale general construction involving a total "disturbed area" of less than 1000m^2 is of its nature very unlikely to create significant adverse impacts. In general, the potential impacts of facilities construction and operation somewhat larger than 1000m2 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.

Activity or intervention sub-category	***Recommended Determination***
Improve park headquarters infrastructure through small-scale construction and rehabilitation of old buildings. Expand living quarters for rangers onto degraded lands adjacent to already inhabited spaces. Rehabilitate old infrastructure by destroying small-scale clay mixed with cement structures and constructing eco-block buildings	**Negative determination**, subject to the following **conditions**: 1) **No complicating factors**. The site is not within 30m of a permanent or seasonal stream or water body, will NOT involve displacement of existing settlement/inhabitants, has an average slope of less than 5 percent and is not heavily forested, in an otherwise undisturbed local ecosystem, or in a protected area; 2) **Construction will be undertaken in a manner generally consistent with the guidance for environmentally sound construction**, provided in the Small Scale Construction chapter of the USAID *Sector Environmental Guidelines*. (http://www.usaidgems.org/sectorGuidelines.htm) At minimum, (a) During construction, prevent sediment-heavy

[19] Complicating factors include, e.g. siting within 30m of a permanent or seasonal stream or water body, or displacement of existing settlement/inhabitants, or building on an average slope in excess of 5%, or building on a site that is heavily forested or in an otherwise undisturbed local ecosystem.

on the old structures' foundations. Establish small-scale, temporary outpost camps for rangers (including clearing grass for canvas tents and building pit latrines). Build office, aviation, workshop, camp staff, visitor facilities (mainly NNR)	run-off from cleared site or material stockpiles to any surface waters or fields with berms, by covering sand/dirt piles, or by choice of location. (Only applies if construction occurs during rainy season.); (b) Construction must be managed so that no standing water on the site persists more than 4 days; (c) IPs must require their general contractor to certify that it is not extracting fill, sand or gravel from waterways or ecologically sensitive areas, nor is it knowingly purchasing these materials from vendors who do so; (d) IPs must identify and implement any feasible measures to increase the probability that timber is procured from legal, well-managed sources. 3) **Asbestos.** If the presence of Asbestos is suspected in a facility to be renovated, the facility must be tested for asbestos before rehabilitation works begin. Should asbestos be present, then the work must be carried out in conformity with host country requirements, (if any) and in conformity with guidance to be provided by the MEO, in consultation with the REA. All results of the testing for asbestos shall be communicated to the C/AOR. 4) **Paint.** No lead-based paint shall be used. When lead-free paint is used, it will be stored properly so as to avoid accidental spills or consumption by children; empty cans will be disposed of in an environmentally safe manner away from areas where contamination of water sources might occur; and the empty cans will be broken or punctured so that they cannot be reused as drinking or food containers. 5) **Waste handling equipment and infrastructure.** USAID intervention must result in the facilities' possessing adequate provision for handling the wastes they may generate; including human wastes.

3.8 Intervention Category 8: Support to non-governmental organizations engaged in health, education, governance, climate change and conservation activities, particularly coastal and marine conservation.

Entailed activities. This intervention category consists of the following activities:

- Improve protection of ecosystems in biodiversity hotspots (e.g., coastal marine areas) through, e.g., research activities, establishing areas for protected area status, elimination of gill net usage within communities, and improved detection of illegal fishing activities.
- Improve enforcement measures for preventing illegal fishing or pollutant dumping in aquatic systems.
- Raise awareness in communities about activities deleterious to aquatic life.
- Determine vulnerability to climate change-related impacts at regional and site level.
- Increase preparedness of small civil society organizations engaged in climate change or conservation to conduct larger scale climate change or conservation projects.

Potential Adverse Impacts and Considerations Regarding Recommended Determinations

The activities in this intervention category are not expected to have significant direct, adverse impacts on the environment, however, some activities may have indirect impacts. For instance, a research project involving collection of aquatic samples to study the impact of pollutants, fishing, or hunting practices on these species. Another example would be poor management of fishponds, which can potentially lead to contamination of fish.

Where climate change adaptation strategies are appropriately selected, designed, and implemented, the impact on the environment would be positive, as these activities promote stewardship and improved quality of resources. However, the impact can also be adverse in cases where resources are managed and developed without appropriate knowledge of what that resource can sustain or how preserving one resource may come at the cost of another.

Note: Per direction from the MEO, certain health activities – e.g., those related to mobile health brigades and the training of 25 community health workers to service the communities residing around Gorongosa National Park – are covered by the Health Services Strengthening IEE for Mozambique (http://gemini.info.usaid.gov/egat/envcomp/repository/pdf/42336.pdf).

Activity or intervention sub-category	*Recommended Determination*
Improve protection of ecosystems in biodiversity hotspots, e.g., coastal marine areas Improve enforcement measures for preventing illegal fishing or pollutant dumping in aquatic systems.	**Negative Determination** subject to the following **conditions:** 1. Aquaculture/fish pond activities must follow the USAID Sector Environmental Guideline for Fisheries: http://www.usaidgems.org/sectorGuidelines.htm and at minimum: a) Siting of fish ponds should avoid impacting the natural environs; b) Training, capacity building, and information sharing activities must discuss how to incorporate environmental and social safeguards and considerations as part of fisheries management measures; and c) Technical assistance which introduces the use of new equipment or harvesting techniques must be evaluated and analyzed for their potential to generate shifts in ecosystem function and services.
Raise awareness in communities about activities deleterious to aquatic life.	**Categorical Exclusion**, per §216.2(c)2 • (i) Education, technical assistance, or training programs; • (iii) Analyses, studies, academic or research workshops and meetings; • (v) Document and information transfers; and • (xiv) Studies, projects, or programs intended to develop the capability of recipient countries to engage in development planning.
Determine vulnerability to climate change-related impacts at regional and site level.	**Categorical Exclusion**, per §216.2(c)2 • (iii) Analyses, studies, academic or research workshops and meetings;
Increase preparedness of small civil society organizations engaged in climate change or conservation to conduct larger scale climate change or conservation projects.	**Negative Determination,** subject to the following **condition**: 1. In capacity building efforts, the sustainable use of ecosystem services must be promoted and considered when climate change mitigation or adaptation planning takes place. Policy development must integrate or otherwise reflect current data and analysis on regional environmental trends, including principles of sustainable NRM and climate change adaptation strategies. Data and analysis may be drawn

	from USAID, other bilateral donor agencies, International Financial Institutions, Multilateral Development Banks, or other internationally recognized research or development entities. 2. Policy development must integrate or otherwise reflect current data and analysis on regional environmental trends that may be impacted by the sector, including principles of sustainable NRM and climate change adaptation strategies.

3.9 Intervention Category 9: Generation of and support for data and research

Entailed activities. This intervention category consists of the following activities:

- Conduct national inventory of park management plans.
- Establish partnerships with local and international universities and organizations to finance and execute scientific studies around conservation priorities.
- Generate and disseminate research on aquatic ecosystems.
- Identify scientific data gaps for sound ecosystem management of protected areas.
- Develop research agenda for biodiversity conservation in Mozambique based on site-specific and national data gaps.
- Conduct research in biodiversity hotspots to better inform government and stakeholder decision-makers.
- National elephant census conducted to provide a baseline for elephant numbers and information on poaching hotspots/intensity. (NNR)
- Continuation of monitoring support for the Lion project (Gorongosa)

Potential Adverse Impacts & Considerations Regarding Recommended Determinations.

Numerous BIOTOUR activities will depend on the improved collection, analysis, and sharing of data and information. In many cases these measures will inform the design and implementation of the types of health sector interventions described above; they are intended to enable more effective decision making and better development outcomes.

The types of data collection and analysis and information sharing that characterize the activities that comprise this Intervention Category are anticipated to have no discernable adverse impact on the environment, direct or indirect. These activities are therefore eligible for Categorical Exclusion under 22 CFR §216.2(c)2.

Activity or intervention sub-category	***Recommended Determination***
Conduct national inventory of park management plans. Establish partnerships with local and international universities and organizations to finance and execute scientific studies around conservation priorities. Generate and disseminate research on aquatic ecosystems. Identify scientific data gaps for sound	**Categorical Exclusion**, per §216.2(c)2 • (i) Education, technical assistance, or training programs; • (iii) Analyses, studies, academic or research workshops and meetings; and • (v) Document and information transfers.

ecosystem management of protected areas. Develop research agenda for biodiversity conservation in Mozambique based on site-specific and national data gaps. Conduct research in biodiversity hotspots to better inform government and stakeholder decision-makers. National elephant census conducted to provide a baseline for elephant numbers and information on poaching hotspots/intensity. (NNR) Continuation of monitoring support for the Lion project (Gorongosa)	

4.0 GENERAL PROJECT IMPLEMENTATION AND MONITORING REQUIREMENTS

In addition to the specific conditions above, the negative determinations recommended in this IEE are contingent on full implementation of the following general monitoring and implementation requirements:

1. **IP Briefings on Environmental Compliance Responsibilities.** USAID/Mozambique shall provide each Implementing Partner (hereinafter IP), with a copy of this IEE; each IP shall be briefed on their environmental compliance responsibilities by their cognizant C/AOR. During this briefing, the IEE conditions applicable to the IP's activities will be identified.

2. **Development of EMMP.** Each IP whose activities are subject to one or more conditions set out in Section 3 of this IEE shall develop and provide for C/AOR review and approval an Environmental Mitigation and Monitoring Plan (EMMP) documenting how their project will implement and verify all IEE conditions that apply to their activities.

   These EMMPs shall identify how the IP shall assure that IEE conditions that apply to activities supported under subcontracts and sub-grant are implemented. (In the case of large sub-grants or subcontracts, the IP may elect to require the sub-grantee/subcontractor to develop their own EMMP.)

   (Note: The AFR EMMP Factsheet provides EMMP guidance and sample EMMP formats: http://www.usaidgems.org/Documents/lopDocs/ENCAP_EMMP_Factsheet_22Jul2011.pdf)

3. **Integration and implementation of EMMP.** Each IP shall integrate their EMMP into their project work plan and budgets, implement the EMMP, and report on its implementation as an element of regular project performance reporting.

   IPs shall assure that subcontractors and sub-grantees integrate implementation of IEE conditions, where applicable, into their own project work plans and budgets and report on their implementation as an element of sub-contract or grant performance reporting.

4. **Integration of compliance responsibilities** in prime and sub-contracts and grant agreements.

   a. USAID/Mozambique shall assure that any future contracts or agreements for implementation of BIOTOUR Project activities, and/or significant modification to current contracts/agreements shall reference and require compliance with the conditions set out in this IEE, as required by ADS 204.3.4.a.6 and ADS 303.3.6.3.e.

   b. IPs shall assure that future sub-contracts and sub-grant agreements, and/or significant modifications to existing agreements, reference and require compliance with relevant elements of these conditions.

5. **Assurance of sub-grantee and sub-contractor capacity and compliance.** IPs shall assure that sub-grantees and subcontractors have the capability to implement the relevant requirements of this IEE. The IP shall, as and if appropriate, provide training to sub-grantees and subcontractors in their environmental compliance responsibilities and in environmentally sound design and management (ESDM) of their activities.

6. **USAID/Mozambique monitoring responsibility.** As required by ADS 204.5.4, USAID/Mozambique will actively monitor and evaluate whether the conditions of this IEE are being implemented effectively and whether there are new or unforeseen consequences arising during implementation that were not identified and reviewed in this IEE. If new or unforeseen consequences arise during implementation, the mission will suspend the activity and initiate appropriate, further review in accordance with 22 CFR 216. USAID Monitoring shall include regular site visits.

7. **New or modified activities.** As part of its Work Plan, and all Annual Work Plans thereafter, IPs, in collaboration with their C/AOR, shall review all ongoing and planned activities to determine if they are within the scope of this IEE.

   If *BIOTOUR* Project activities outside the scope of this IEE are planned, USAID/Mozambique shall assure that an amendment to this IEE addressing these activities is prepared and approved prior to implementation of any such activities.

   Any ongoing activities found to be outside the scope of the approved Regulation 216 environmental documentation shall be modified to comply or halted until an amendment to the documentation is submitted and approved.

8. **Compliance with Host-Country Requirements.** Nothing in this IEE substitutes for or supersedes IP, sub-grantee and subcontractor responsibility for compliance with all applicable host-country laws and regulations. The IP, sub-grantees and subcontractor must comply with host-country environmental regulations unless otherwise directed in writing by USAID. However, in case of conflict between host country and USAID regulations, the latter shall govern.