



# COMMUNITY HEALTH MANAGEMENT AND MONITORING PLAN



## MOZAMBIQUE LNG

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## REVISION MODIFICATION LOG

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	<b>Mozambique LNG</b> <b>COMMUNITY HEALTH MANAGEMENT AND MONITORING PLAN</b>		 <small>E&amp;P MOZAMBIQUE AREA 1, LIMITADA</small>
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## Acronyms

ACRONYM	DESCRIPTION
APE	Agentes Polivalentes Elementares / Community Health Workers
ARI	Acute Respiratory Infection
ASI	Afungi Site Improvements (Early Works)
BOD	Burden of Disease
CIEP	Community Investment Execution Plan
DHIS2	District Health Information System
DUAT	Direito de Uso e Aproveitamento de Terra/ The Right to Use and Enjoy Land
HIA	Health Impact Assessment
CHMMP	Community Health Management and Monitoring Plan
CMPs	Contractor Management Plans
DOT	Direct Observation and Treatment (Directa Observacao e Tratamento)
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
EPCI	Engineering, Procurement, Construction and Installation
EPCM	Engineering, Procurement and Construction Management
ERP	Emergency Response Plan
ESHIA	Environmental, Social and Health Impact Assessment
ESMP	Environmental and Social Management Plan
EMML	ExxonMobil Moçambique Limitada (EMML)
HIV	Human Immunodeficiency Virus
HSB	Health Seeking Behaviour
HSE	Health, Safety and Environment
HCS	Hazardous Chemical Substances
HF	Health Facility
HSS	Health Systems Strengthening
IEC	Information, Education and Communication
IFC	International Finance Corporation
KPI	Key Performance Indicator
LNG	Liquefied Natural Gas
MDP	Mocimboa Da Praia
MSP	Medical Services Provider
MVA	Motor Vehicle Accident
M&E	Monitoring & Evaluation
NCD	Non-Communicable Diseases
NGO	Non-Government Organization
PIZ	Project Influence Zone
PS	Performance Standards on Environmental and Social Sustainability (International Finance Corporation/World Bank Group)
PAC	Potentially Affected Communities
PVA	Pedestrian Vehicle Accident
RV	Resettlement Village
SEP	Stakeholder Engagement Plan
SI	Social Investment
SIDA	Síndrome da Imuno-deficiência Adquirida
TEPMA1	Total Exploration & Production Moçambique Area 1
WASH	Water Hygiene and Sanitation

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## 1. INTRODUCTION

The Community Health Management and Monitoring Plan (CHMMP) has been developed as an outcome of the Regional Health Impact Assessment (RHIA) process. The CHMMP documents the Project's approach to planning, prioritizing, implementing and monitoring community health interventions to address identified potential community health impacts and risks. The plan considers a multi-disciplinary approach and should therefore be read in conjunction with other Project-related documents referenced in Section 3 below. Only broad recommendations that guide the development of separate specific community health management plans and programs will be included. Detailed analysis of interventions can be obtained in specific Project plans and programs referenced in Section 6.

In addition to listing non-discretionary impact mitigation measures, the CHMMP also lists social investment opportunities that enhance impact mitigation measures or promote sustainability of interventions. These will, however, only be included as high-level guidance with detailed descriptions of individual interventions available in either the Community Investment Plan and/or the broader Regional Development Plan.

### 1.1 Objectives

The CHMMP is intended to serve as a platform and reference guide that consolidates control measures within separate plans, programs and initiatives that address the potential community health impacts relating to the Project. Effective community health management requires alignment between control measures from the following disciplines:

- Non-discretionary impact mitigation measures as identified in the Environmental and Social Management Plan and its component plans
- Health, Safety and Environmental (HSE) plans and procedures (including workplace health and safety measures)
- Project Induced In-Migration management measures
- Social Investment (SI) programs and initiatives.
- Security and Emergency Response plans and procedures
- Resettlement
- Contractor Management Plans

Although considered in the RHIA and the framework CHMMP, measures that relate to workplace health and safety management as well as contractor management have not been included in this document.



### 1.2 Scope

The extent of the control measures referenced in this document, apply to the following geographical and temporal boundaries:

#### 1.2.1 Geographic Scope

The geographic scope of the CHMMP is linked to Project construction phases. Interventions during the Afungi Site Improvement (ASI) phase primarily focus on the potentially affected communities (PAC) within the Afungi peninsula, Palma Sede and other communities that may attract influx. During the construction phase, broader areas of the Palma district will be considered for implementation of community health interventions. The PACs that are considered during these two Project phases are similar in geographic distribution and are represented in Figure 1 and Figure 2 respectively.

As the Project progresses towards the operational phase, the focus of community health interventions will consider a broader, more regional perspective in addition to existing PACs in the Afungi and Palma area. These regional PACs

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are represented in Figure 3. The PACs used to guide the geographic distribution of impact mitigation measures, have been aligned with those portrayed in the RHIA and are described in more detail in Section 4 below.

### 1.2.2 Temporal Scope

Community-focused interventions included in the CHMMP, are presented in a temporal framework that considers the phase of the Project whilst highlighting priority interventions. The Project phases include:

- Afungi Site Improvement

Interventions are to be implemented as soon as possible in ASI phase so that mitigation measures are piloted and in place prior to the main construction period. These will generally be limited to Project mitigation measures in the Afungi peninsula, Palma Sede and communities that may attract influx as well as occupational health, safety and environmental management. Sustainability considerations will be limited to planning at this stage.

- Construction

These include interventions that need to be developed to prevent longer-term legacies that initiate in construction and continue into the operational phase. These can include Project mitigation measures with an overlap into social development initiatives such as the Social Investment Strategy, Project Induced In-migration Management/Regional Development as they relate to Palma District and, potentially, MDP District. Longer term sustainability will be considered in some elements.

- Operations

Interventions during this phase will primarily focus on broader Health Systems Strengthening (HSS). A regional development perspective and sustainability will be key determinants of intervention development during this phase. It is anticipated that interventions that are implemented during this phase will consist of both direct impact mitigation measures and form part of the Regional Development Plan's health-related interventions for the Project. The latter will be addressed under a separate cover.

Certain measures will be implemented during the initial ASI phase and may be extended and expanded in subsequent Project phases. This implementation timelines are dependent on the type of impact and specific interventions may only require implementation during specific phases. In addition to the nature of the potential impact, certain interventions may also be extended, based on input from the monitoring and evaluation of programs and activities.



## 1.3 Relevant Legislation, Standards, Policies and Guidelines

While there is no specific legislation in Mozambique that requires a detailed and standalone HIA as a component of Project permitting, the RHIA from which the CHMMP derives, has taken into consideration Mozambican Environmental Impact Assessment (EIA) legislation and regulations. Mozambique is also a signatory to various international conventions that may be seen to provide additional direction. The legal and other relevant requirements for the health components include the following:

### 1.3.1 General Laws

- Mozambique's 2004 Constitution.
- The Labor Law (Law 23/07 of 1 August 2007), with articles 216 through 236 outlining occupational health and safety requirements.



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- Law on Local State Administration no 8/2003 and Decree no 15/2000 on Local Authorities, which both expand on the level of control and responsibility to local authorities for development and decentralization.
- Guidelines on Safety and Health in the Workplace. Ministry of Health (December 2008).

### **1.3.2 Environmental Laws**



- The Environmental Law n.º 20/97, of 1 of October 1997.
- The Environmental Impact Assessment Regulation, approved by Decree n.º 54/2015, which updates the decree n.º 45/2004. This updated decree was enacted on the 1st of April 2016.
- The Environmental Regulations for Petroleum Operations is set out in Decree n.º 56/2010, of 22 November.
- The Regulation on the Resettlement Process Resulting from Economic Activities, approved by Decree n.º 31/2012, of 8 August.
- Regulation to Prevent Pollution and Protect Marine and Coastal Environment, approved by Decree n.º 45/2006, of 30 of November.
- The Forests and Wildlife Law (Law n.º 10/99, of 7 of June) and specific regulations.
- The Land Law (Law n.º 19/97, of 1 of October).
- The Land Planning Law (Law n.º 19/2007 of 18 of July) and its regulations.
- Mine (14/2002) and Oil (3/2001) Laws.
- The National Water Law (1991).
- Pesticides Regulation (n.º 153/2002, of 11 of September).

### **1.3.3 Specific Health and Community Related Policies and Legislation**

- Regulation on Environmental Quality and Waste Emission (Decree n.º 18/2004 of 2 of June).
- Pesticides Regulation (Ministerial Diploma n.º 153/2002, of 11 of September).
- Regulation on Medical Waste Management (Decree 8/2003, of 18 of February).
- Housing Policy.
- Occupational health and safety management.
- National Water Law in 1991 and the National Water Policy from 1995 (plus updates from 2007).
- Law on HIV/SIDA. Law 5 of 2002

### **1.3.4 General Strategies**

- Poverty Reduction Action Plan 2011-2014. This strategy places emphasis on the need for economic growth as a means to reducing poverty.
- The Mozambique Health Sector Strategic Plan (PESS) 2014-2019 (4).

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### 1.3.5 International Standards:

- International Finance Corporation (IFC) Performance Standard 4 (2012) - Community Health, Safety and Security.

## 2. RATIONALE FOR HIA AND CHMMP

Despite the absence of specific legislation in Mozambique that require extractive industry activities to conduct an HIA and subsequently address community health impacts through the development of an CHMMP, TEPMA1 is committed to the evaluating and addressing potential impacts and establishing control measures as part of a multi-disciplinary approach. This approach takes into consideration the different Project related activities, themes and areas that can serve as catalyst for community health impacts.

### 2.1 HIA Methodology

The methodology of the RHIA developed for the Project was based on the Good Practice Note for HIAs as supported by the IFC Performance Standards (PS) and specifically PS4. This methodology supports a systematic and consistent approach to collecting and analyzing health data through assessing 12 different environmental health areas (EHAs) as part of a structured framework as illustrated Table 1 below.



**Table 1: Environmental Health Areas**

Environmental Health Areas	
1.	Communicable diseases linked to the living environment
2.	Vector-related diseases
3.	Soil-, water- and waste-related diseases
4.	Sexually transmitted infections, including HIV/AIDS
5.	Food- and nutrition-related issues
6.	Non-communicable diseases
7.	Accidents/injuries
8.	Veterinary medicine and zoonotic diseases
9.	Exposure to potentially hazardous materials, noise and malodors
10.	Social determinants of health
11.	Cultural health practices
12.	Health services and systems capacity

### 2.2 Key Principles for CHMMP development

The following key principles were adhered to during the development of the CHMMP and will also apply to delivery of defined management/ mitigation measures:

- Alignment with national strategies and/or programs in program development.
- Strong focus on strategic health system strengthening initiatives rather than localized, one-off activities.
- Effective communication and cultural sensitivity in interactions with stakeholders, especially the potentially affected communities.

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- Extension of mitigation measures to extended beneficiaries as part of potential corporate social investment strategies.
- Consideration of cumulative impacts associated with the development of associated infrastructure in program development.
- Strong focus on Project contractor management and compliance.

### 3. REFERENCE DOCUMENTS

The following Project plans should be read in conjunction with the CHMMP:

- The Mozambique LNG Regional Health Impact Assessment (MZ-000-AM1-HS-ASM-00002)
- The Project Framework Community Health Management and Monitoring Plan (MZ-000-AM1-HS-PLN-00024)
- The Project Environmental and Social Management Plan (ESMP) (MZ-000-AM1-HS-PLN-00007)
- Contractor management requirements (Annexure J)
- The Project Resettlement Plan
- The Project Induced In-Migration Management Plan (PIIMMP) (MZ-000-AM1-SP-PLN-00001)
- The Project Social Investment Strategy (MZ-000-AM1-SP-STG-0001)
- Project Traffic and Transportation Plan (EA-MZ-SR0000-APC-C01-00011-00)
- The Project IR Handbook (EA-MZ-SR0000-IDP-C17-00001-00)
- The Project Environmental Management Plan for the Quionga Quarry (MZ-093-CMC-HS-PLN-00025).

### 4. COMMUNITY PROFILE

#### 4.1 Demographics in Study Area

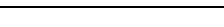
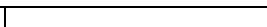
Palma district is divided into four administrative posts, with the study area located in the administrative posts of Palma Sede and Olumbi. Approximately 49% of the district's population of 52, 665, resides in Palma Sede, with Olumbi the second most populated at 32%.

In 2007, it was estimated that the population density in the district was 13.5 people/km<sup>2</sup> and with only 3.7 people per household (compared to 4.1 provincially) it is not densely populated. However, people are generally concentrated along the coastal areas, with Palma Sede having the highest population density at 28.6 people/km<sup>2</sup>. The other more densely populated villages in the study area include Olumbi, Maganja and Quionga.

#### 4.2 Potentially Affected Communities

For the purposes of the CHMMP, the PACs that may be impacted from a community health perspective have been divided into two groups, namely:

- the Local Project area; and
- the Regional Project area.



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#### 4.2.1 Local Project Area

The Local Project Area includes PACs located in the Afungi Peninsula as well as those in the broader Palma district. A summary of the communities that make up these PACs is presented in Table 2 below and are also spatially represented in Figure 1 and Figure 2 below.

**Table 2: Summary of PACs in the Local Project area**

PAC number	Communities	Description
PAC1	Afungi Peninsula Communities Ngoji 1 Ngoji 2 Milamba 1 Milamba 2 Quitupo Simo Barabarane Quitunda Mpama Patacua Mondlane	Communities to be physically displaced during the resettlement process in ASI.  During construction and operations, the physically displaced communities in the RV, impacted by integration of several communities and potential impacts related to town planning, provision of basic services, environmental health and hygiene, etc.
PAC2	Senga Missonobali Macala Mangala Resettlement Village (RV)	Communities with the potential to serve as hotspots for influx onto the Afungi Peninsula, including existing and new communities on the new Palma-Afungi road during ASI, construction and operations. Potential impacts also relate to an increase in traffic and draw-down effects on groundwater.
PAC3	Palma Sede Nkumbi Manguna	Communities that are sensitive to potential influx in the broader context of the Palma district. Palma Sede, as the district capital is regarded as a primary hotspot, and Nkumbi and Manguna located at junctions of important roads during all Project phases.
PAC4	Macala Mangala	Communities located on the Project access roads, including any old/new communities located along the new Palma Afungi road during all Project phases
PAC5	Nsemo Kibunju Nfunzi M'Paia	Altered access to Palma Sede through the establishment and fencing off the PIZ and the marine exclusion zones during all Project phases

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PAC number	Communities	Description
	Maganja Maganja Velha	
PAC6	Olumbi Quionga	Communities in the broader local study area that may only be impacted indirectly through the development of the Project during all Project phases.

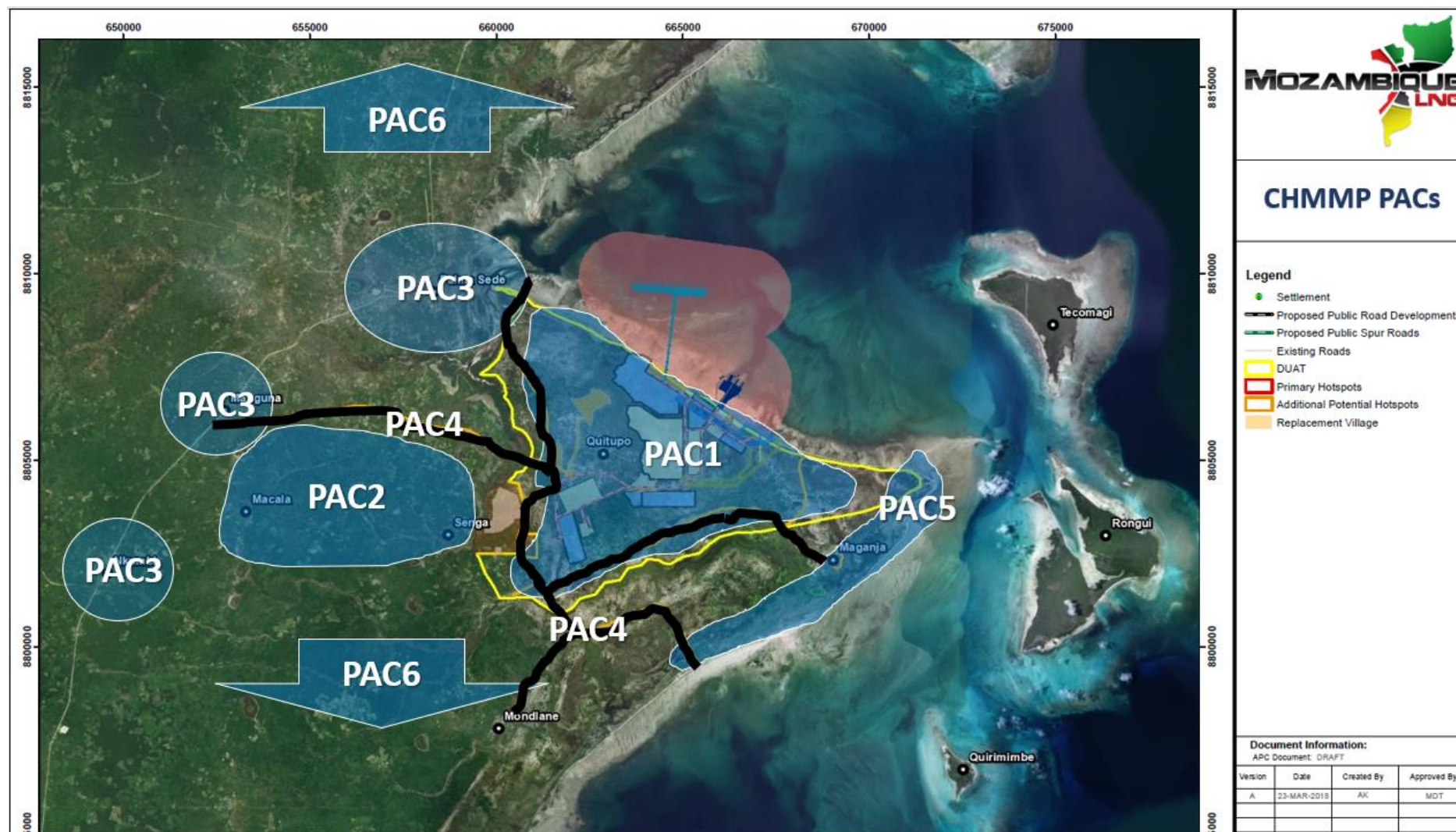
#### 4.2.2 Regional Project Area

The Regional Project area considers communities located in the broader regional area during all Project phases. The communities in these PACs are summarised in Table 3 below as well as spatially represented in Figure 3.

**Table 3: Summary of PACs in the Regional Project Area**

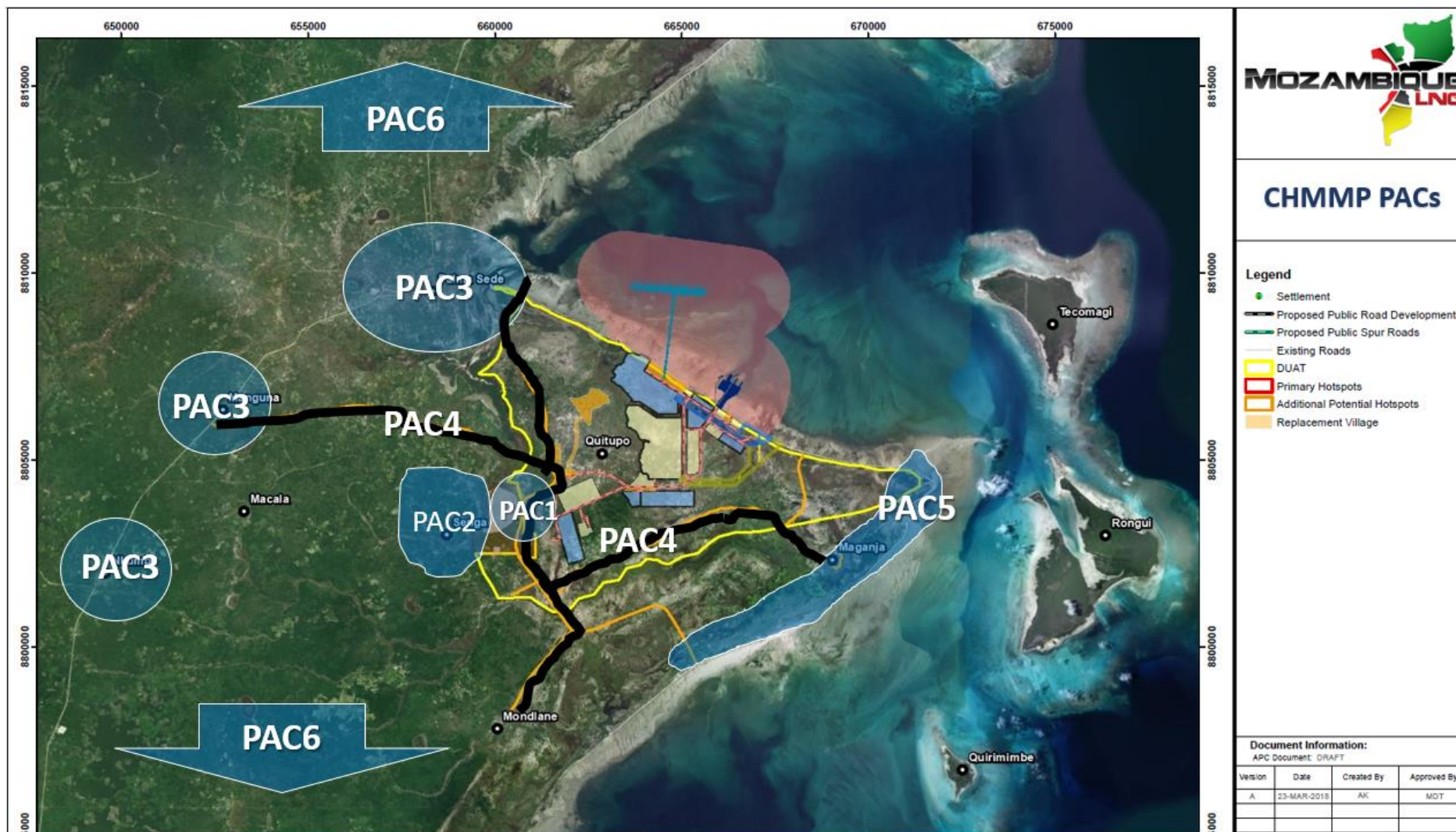
PAC number	Communities	Description
PAC7	Mocimboa da Praia	Potential for influx and general indirect impacts from the ASI Phase and movement of people and goods along R762 as well as reliance upon the MDP airstrip until such time as the Project airstrip is operational.
PAC8	1 <sup>st</sup> de Maio Unidade Njama 25 de Junho Quelimane Maputo Namalala Mapalanganha Huvilili Zambia Mute Ngueo Maconco Matapata	Potential for increase in accidents along R762 in ASI and construction phase
PAC9	Pundanhar	High potential for cross-border migration from neighboring Tanzania as well as indirect development to support this migratory process.
PAC10	Mueda Quionga	Potential for impacts related to quarry activities, primarily related to the ASI phase.



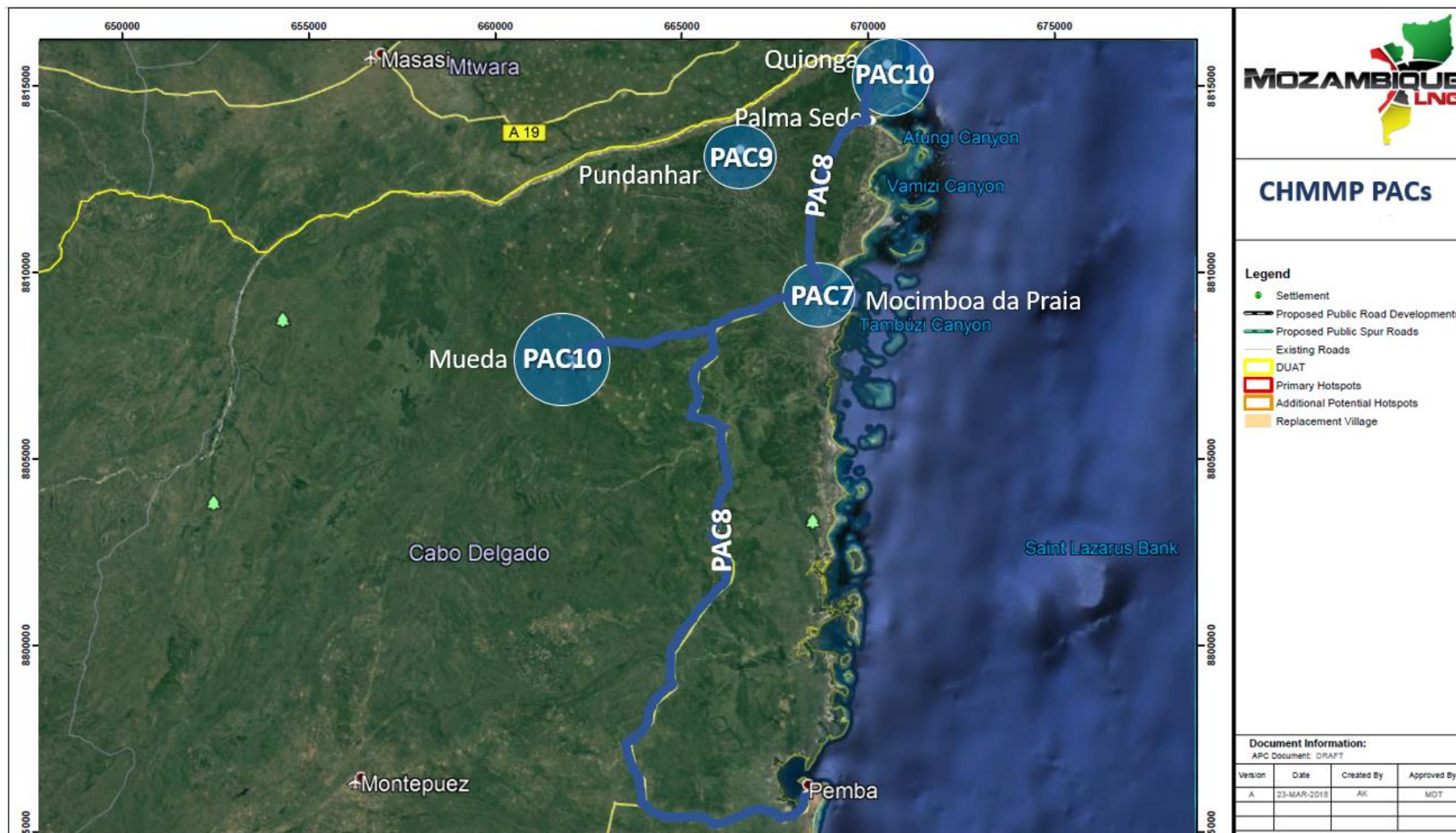


**Figure 1: Potentially Affected Communities in Local Project area during Afungi Site Improvements**



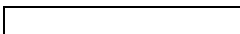
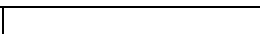


**Figure 2: Potentially Affected Communities in Local Project area during Construction and Operations**



**Figure 3: Potentially Affected Communities in the Regional Project area during ASI, Construction and Operations**





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## 5. SUMMARY OF HEALTH IMPACTS PER PROJECT LIFE-CYCLE



To summarize the findings of the Project RHIA, dashboards detailing the potential inherent and residual community health impacts per Project phase, are presented in Table 4, Table 5 and Table 6. These potential impacts are presented in the EHA framework to align with the RHIA, with the dashboard allowing for a quick reference to identify significant inherent health impacts, while also demonstrating how effective implementation of the proposed management measures may result in mitigation of risk.

A detailed description of the impact pathway and the proposed impact mitigation measures are not included in this document and the reader is referred to the RHIA (MZ-000-AM1-HS-ASM-00002) for a detailed overview of the proposed impacts, mitigation measures and the methodology used in the determination of impact rating and ranking.

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**Table 4: Dashboard Summary of Community Health Impacts during Project ASI phase**

Environmental Health Area		Before Management				After Management/Enhancement			
		Severity	Probability	Significance	Direction	Severity	Probability	Significance	Direction
EHA #1	Communicable diseases linked to the living environment	Major	Possible	High	Negative	Moderate	Possible	Medium	Negative
EHA #2	Malaria and other vector related diseases	Major	Probable	High	Negative	Moderate	Probable	Medium	Negative
EHA #3.1	Access to safe drinking water	Major	Possible	High	Negative	Minor	Possible	Low	Negative
EHA #3.2	Sanitation and waste management	Major	Possible	High	Negative	Minor	Possible	Low	Negative
EHA #4	Sexually transmitted infections including HIV/AIDS	Major	Probable	Very high	Negative	Moderate	Probable	High	Negative
EHA #5	Food and nutrition	Major	Possible	High	Negative	Moderate	Possible	Medium	Negative
EHA #7.1	Accidents and Injuries- road traffic accidents as well as accidental and non- accidental injury	Major	Definite	Very high	Negative	Major	Unlikely	Medium	Negative
EHA #7.2	Work related illness and injuries	Major	Probable	Very high	Negative	Moderate	Unlikely	Medium	Negative
EHA #8	Veterinary medicine and zoonotic diseases	Moderate	Possible	Medium	Negative	Moderate	Unlikely	Low	Negative
EHA #9.2	Environmental health determinants: Noise and vibration	Moderate	Probable	Medium	Negative	Minor	Possible	Low	Negative
EHA #9.3	Environmental health determinants: Hazardous chemical substances.	Major	Possible	High	Negative	Nil	Unlikely	Low	Negative
EHA #9.5	Environmental health determinants: Air quality	Moderate	Possible	Medium	Negative	Moderate	Unlikely	Low	Negative
EHA #10.1	Social determinants of health: Local economic development and, employment.	Minor	Possible	Medium	Benefit	Moderate	Possible	Medium	Benefit
EHA #10.2	Social determinants of health: Social ills and gender based domestic violence.	Moderate	Possible	Medium	Negative	Minor	Unlikely	Low	Negative
EHA #10.4	Social determinants of health: Social harmony, inequalities and Project expectations	Moderate	Probable	Medium	Negative	Minor	Possible	Medium	Negative
EHA #11	Cultural health practices and health seeking behaviors	Moderate	Probable	Medium	Negative	Moderate	Possible	Medium	Negative
EHA #12	Health services and infrastructure	Major	Probable	High	Negative	Moderate	Possible	Medium	Negative

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**Table 5: Dashboard Summary of Community Health Impacts during Project Construction Phase**

Environmental Health Area		Before Management				After Management/Enhancement			
		Severity	Probability	Significance	Direction	Severity	Probability	Significance	Direction
EHA #1	Communicable diseases linked to the living environment	Major	Probable	Very high	Negative	Moderate	Possible	Medium	Negative
EHA #2	Malaria and other vector related diseases	Major	Probable	High	Negative	Moderate	Possible	Medium	Negative
EHA# 3.1	Access to safe drinking water	Major	Probable	High	Negative	Moderate	Possible	Medium	Negative
EHA# 3.2	Sanitation and waste management	Major	Probable	High	Negative	Minor	Possible	Medium	Negative
EHA# 4	Sexually transmitted infections including HIV/AIDS	Major	Definite	Very high	Negative	Moderate	Possible	High	Negative
EHA #5	Food and nutrition	Major	Probable	Very high	Negative	Minor	Possible	Low	Benefit
EHA #6	Non-communicable diseases	Major	Possible	High	Negative	Moderate	Possible	Medium	Negative
EHA #7.1	Accidents and Injuries- road traffic accidents as well as accidental and non- accidental injury	Major	Definite	Very high	Negative	Moderate	Unlikely	Medium	Negative
EHA #7.2	Work related illness and injuries	Major	Probable	Very high	Negative	Moderate	Unlikely	Medium	Negative
EHA #8	Veterinary medicine and zoonotic diseases	Moderate	Possible	Medium	Negative	Moderate	Unlikely	Low	Negative
EHA #9.1	Environmental health determinants: Water quality and quantity	Not ranked in HIA- refer to ESIA							
EHA #9.2	Noise and vibration	Not ranked in HIA- refer to ESIA							
EHA #9.3	Environmental health determinants: Visual Intrusion	Not ranked in HIA- refer to ESIA							
EHA #9.4	Environmental health determinants: Hazardous chemical substances	Major	Possible	High	Negative	Nil	Unlikely	Low	Negative
EHA #9.5	Environmental health determinants: Air quality	Moderate	Possible	Medium	Negative	Moderate	Unlikely	Low	Negative
EHA #10.1	Social determinants of health: Local economic development	Minor	Possible	Medium	Benefit	Major	Possible	Very high	Benefit
EHA #10.2	Social determinants of health: Social ills/domestic violence	Moderate	Possible	Medium	Negative	Minor	Possible	Medium	Negative
EHA #10.3	Social determinants of health: Altered accessibility	Moderate	Possible	Medium	Benefit	Moderate	Probable	High	Benefit
EHA #10.4	Social determinants: Social harmony, inequalities and expectations	Moderate	Probable	High	Negative	Minor	Possible	Medium	Negative
EHA #11	Cultural health practices and health seeking behaviors	Moderate	Probable	Medium	Negative	Minor	Possible	Medium	Negative
EHA #12	Health services and infrastructure	Major	Probable	High	Negative	Minor	Probable	Medium	Benefit

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**Table 6: Dashboard Summary of Community Health Impacts during Project Operations Phase**

Environmental Health Area		Before Management				After Management/Enhancement			
		Severity	Probability	Significance	Direction	Severity	Probability	Significance	Direction
EHA #1	Communicable diseases linked to the living environment	Moderate	Possible	Medium	Negative	Moderate	Unlikely	Medium	Negative
EHA #2	Malaria and other vector related diseases	Moderate	Possible	Medium	Negative	Moderate	Possible	Medium	Benefit
EHA# 3.1	Access to safe drinking water	Moderate	Probable	High	Negative	Minor	Unlikely	Low	Negative
EHA# 3.2	Sanitation and waste management	Moderate	Possible	Medium	Negative	Moderate	Possible	Medium	Benefit
EHA# 4	Sexually transmitted infections including HIV/AIDS	Major	Possible	High	Negative	Moderate	Possible	Medium	Negative
EHA #5	Food and nutrition	Moderate	Probable	High	Negative	Moderate	Possible	Medium	Benefit
EHA #6	Non-communicable diseases	Major	Possible	High	Negative	Moderate	Possible	Medium	Negative
EHA #7.1	Accidents and Injuries- road traffic accidents as well as accidental and non- accidental injury	Major	Probable	Very high	Negative	Moderate	Unlikely	Medium	Negative
EHA #7.2	Work related illness and injuries	Major	Probable	Very high	Negative	Moderate	Unlikely	Medium	Negative
EHA #8	Veterinary medicine and zoonotic diseases	Moderate	Possible	Medium	Negative	Moderate	Unlikely	Low	Negative
EHA #9.1	Environmental health: Water quality/ quantity	Not ranked in HIA- refer to ESIA							
EHA #9.2	Noise and vibration	Not ranked in HIA- refer to ESIA							
EHA #9.3	Environmental health: Visual Intrusion	Not ranked in HIA- refer to ESIA							
EHA #9.4	Environmental health Hazardous chemical substances	Major	Possible	High	Negative	Nil	Unlikely	Low	Negative
EHA #9.5	Environmental health: Air quality and malodors	Not ranked in HIA- refer to ESIA							
EHA #10.1	Social determinants of health: Local economic development and, employment	Minor	Possible	Medium	Benefit	Major	Possible	Very high	Benefit
EHA #10.2	Social determinants of health: Social ills and gender based domestic violence	Moderate	Possible	Medium	Negative	Moderate	Possible	Medium	Benefit
EHA #10.3	Social determinants of health: Altered accessibility	Moderate	Possible	Medium	Benefit	Moderate	Probable	High	Benefit
EHA #10.4	Social determinants of health: Social harmony, inequalities and Project expectations	Moderate	Probable	Medium	Negative	Moderate	Possible	Medium	Negative
EHA #11	Cultural health practices and health seeking behaviors	Minor	Probable	Medium	Negative	Moderate	Possible	Medium	Benefit
EHA #12	Health services and infrastructure	Moderate	Probable	High	Negative	Minor	Probable	Medium	Benefit

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## 6. IMPACT MITIGATION AND MANAGEMENT MEASURES



Although the health impacts described in the RHIA and Section 5 above have been presented in the recognized EHA format, significant opportunities to integrate activities across distinctive EHAs exist and affords the Project the ability to simplify and streamline management interventions.

Therefore, impacts have been grouped into five health impact themes in the framework CHMMP to illustrate areas where integration across EHAs may be possible. These five themes and their corresponding EHAs are summarized in Table 7 below. While the themes are broad in nature, the framework CHMMP provides an additional programmatic element level to ensure appropriate detail is available to inform the design of interventions.

**Table 7: Summary of impact themes and corresponding EHAs**

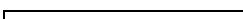
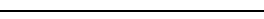
Impact theme	Description	Corresponding EHA
<b>ASI and construction phase</b>		
Communicable diseases	Considers the potential impacts on communicable diseases as it relates to diseases linked to the living environment, vector-related diseases, HIV/sexually transmitted infections and zoonotic diseases.	EHA1, 2, 4 and 8
Hygiene, sanitation and environmental determinants of health	Considers the potential of impacts to sanitation, hygiene, access to safe water (both quality and quantity), associated communicable diseases as well as impacts related to environmental alteration, exposure to hazardous chemical substances and other effects of Project development and operations.	EHA2, 3, 5 and 9
Health systems strengthening	Increased burden on the existing health services relating to availability of quality healthcare, altered access, health seeking behavior as well as impacts to health service planning, capacity and capability.	EHA11, 12
Nutrition and NCDs	Impacts related to malnutrition as well as the potential for the increase of non-communicable disease (NCD) in the Project area.	EHA 5 and 6
Safety and security	Considers impacts related to the safety and security of community members including direct and indirect impacts to accidents and injuries as a result of motor vehicle accidents, increases in gender-based violence and those associated with social ills and influx.	EHA 7 and 10

Impacts during Project phases, differ in significance and distinct receptors, specifically between ASI and Construction. To illustrate this differentiation, the impacts and associated mitigation measures have been divided between these two distinctive Project phases in the framework CHMMP and will also be presented in the same manner in this document. This approach highlights the importance of initiating mitigation

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measures even at the stage of ASI, so that impacts that may be caused in this phase do not persist as legacies into the construction and operational phases.

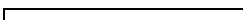
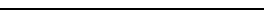
The tables below provide an overview of the community health management measures as grouped in the five impact themes. In addition to highlighting specific focus areas, the table also provide information regarding the corresponding EHAs, proposed programs/activities that are planned for development and implementation, the implementation timelines and the focus areas (as PACs).

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## 6.1 SUMMARY OF COMMUNITY HEALTH MANAGEMENT MEASURES DURING ASI PHASE

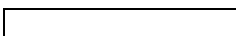
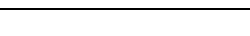
Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNICABLE DISEASE MANAGEMENT</b>				
HIV/AIDS and other Sexually Transmitted Infections (STIs)	EHA4	Develop Project Community Communicable Disease Strategy that considers all focus areas in this theme in alignment with occupational programs.	ASI through construction and operations	N/A
		Collect baseline information to inform the design of any programs and to define a clear point of departure.	ASI	PAC 1-8
		Develop and implement community-focused HIV and Sexually Transmitted Infections initiatives.	ASI through construction	PAC1-8
		Extend the current Project VIDAS and Quero initiatives <sup>1</sup> , if possible.	ASI through construction	PAC 1-6
TB and other respiratory diseases	EHA1	Collect baseline information to inform the design of any programs and to define a clear point of departure.	ASI	PAC1-5
		Develop and implement a community-focused TB program with a specific focus on high risk areas and high-risk populations.	ASI through construction	PAC1-5
		Consider upgrading the diagnostic capability and ability to detect multi drug resistant TB in the Palma Sede Health Center (ensure alignment with the national TB program).	ASI	Palma Health Center
Malaria and other vector related diseases	EHA2	Perform entomological survey/s to define and understand the baseline condition/s of the main vector species in the Project area. Plan to extend entomological surveys longitudinally during ASI and into construction.	ASI through construction	PAC1-5
		Collect baseline information to inform the design of any community programs and to define a clear point of departure.	ASI	PAC1-5
		Consider developing a Community Malaria Control Program (CMCP) as an extension of the Project workplace malaria program.	ASI	PAC1-5
		Consider "Clean Community Campaigns" in the relevant PACs to address source reduction and vector densities.	ASI through construction	PAC1-5

<sup>1</sup> This project was initially started by Government in coordination with the CDC and Total (formal Anadarko) was invited to participate on the program. Upon the end of the funds from the CDC Total, decided to continue the project .

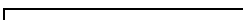

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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNICABLE DISEASE MANAGEMENT</b>				
Diseases with outbreak potential	EHA1, 2, 3, 4 and 8	Develop a documented agreement with the provincial and local district authorities regarding the management of emergencies and incidents in both the communities and Project facilities.	ASI through construction and operations	PAC1-7, 9
		Develop and maintain Project pandemic preparedness policies and programs to reduce the impact of any suspected or confirmed outbreak of communicable disease at the Project level.	ASI through construction and operations	Project employees, Contractors and local workers
Zoonotic diseases	EHA8	Develop and implement community Information, Education and Communication and awareness initiatives relating to the risks of wildlife interaction (e.g. snakes and other animals) during Project bush clearing and construction activities	ASI through construction	PAC1--5
		Support the improvement of veterinary public health services in study area.	ASI through construction	PAC1-6
		Support hygiene standards at local markets where animals are sold or slaughtered, to prevent transmission of disease.	ASI	PAC3
		Support the development of an abattoir.	ASI	PAC3
Stakeholder engagement	N/A	Develop and implement effective and transparent communication strategies with communities, local government authorities and other stakeholders on all matters pertaining to community health.	ASI through construction and operations	All stakeholders
		Develop and implement a grievance mechanism through which communities and other relevant stakeholders can communicate community health related concerns to the Project.	ASI through construction and operations	All stakeholders
Project induced In-migration	N/A	Develop and implement a Project PIIM Management Plan with associated measures to reduce, manage and, where possible, mitigate influx. Include appropriate Industrial Relations (IR) management to reduce attraction to move to the RV and adjoining areas of the DUAT. Elements as detailed in column G.	ASI through construction	PAC2-5

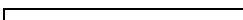



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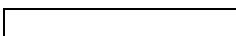
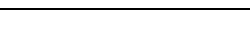
Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: WATER, SANITATION, HYGIENE AND ENVIRONMENTAL MANAGEMENT</b>				
Safe water	EHA3	Collect baseline information to inform the design of any programs and to define a clear point of departure.	ASI	PAC1-5
		Develop and implement community water source monitoring initiatives to longitudinally evaluate flows, availability of water and quality.	ASI through construction	PAC1-2
		Implement environmental management measures as per the recommendations in the EIA.	ASI through construction	N/A
		Develop and implement a water management plan that evaluates and tracks both Project and community water sources.	ASI through construction and operations	N/A
Sanitation related diseases	EHA3	Develop and implement WASH initiatives in the communities that are to be resettled, the Resettlement Village and where influx on Afungi is expected.	ASI through construction	PAC2,3 and 5
		Support sustainable and integrated WASH programs in the broader Palma district communities that considers provision of water	ASI	PAC6-8
Stakeholder engagement	N/A	Develop and implement effective and transparent communication strategies with communities, local government authorities and other stakeholders on all matters pertaining to WASH and environmental management.	ASI through construction and operations	All stakeholders
		Develop and implement a grievance mechanism through which communities and other relevant stakeholders can communicate WASH and environmental management-related concerns to the Project.	ASI through construction and operations	All stakeholders
Project induced In-migration	N/A	As per previous theme	ASI through construction	PAC2-5
Environmental management	EHA9	Develop and implement processes to monitor the state of general environmental health conditions in the communities.	ASI through construction	PAC1, 2, 4 and 5
		Design and develop appropriate environmental health programs to reduce the potential risk of airborne pollutants, e.g. dust suppression.	ASI through construction	PAC1-5

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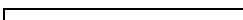
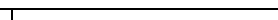
Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: HEALTH SYSTEMS STRENGTHENING</b>				
Capacity building	EHA12	Collect baseline information to define a clear point of departure in terms of health services and infrastructure. An updated Service Availability and Readiness Assessment is to be conducted.	ASI	PAC2, 3, 5 and 6
		Develop and implement selected Capacity Building activities in partnership with the provincial and district health authorities.	ASI through construction	PAC2, 3, 5 and 6
		Partner with implementing partners for Health Systems Strengthening interventions in the broader Project area.	ASI through construction	PAC7 and 9
Infrastructure support	EHA12	Effective planning of the health center to be developed in the Resettlement Village.	ASI	PAC2
		Develop and implement selected Infrastructure Support activities in partnership with the provincial and district health authorities.	ASI	N/A
Data collection support	EHA12	Develop and implement Project Community Health Information System (CHIS) with selected key indicators to longitudinally track community health metrics. Performed in alignment with Health Systems Strengthening initiatives to support data collection through the existing District Health Information System (DHIS2) on a health facility and community level.	ASI through construction and operations	N/A

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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: NUTRITION</b>				
Nutrition	EHA5	Collect baseline information to inform any programs and to define a clear point of departure.	ASI	PAC1-5
		Conduct a survey on local food prices (and other inflation indicators) to support future food inflation surveys to longitudinally track impacts on food prices and availability.	ASI through construction	PAC1-6
		Support community nutrition initiatives in the Local Project area.	ASI through construction	PAC1-5
Stakeholder engagement	N/A	As per previous theme	ASI through construction and operations	All stakeholders
Project induced In-migration	N/A	As per previous theme	ASI through construction and operations	PAC2-5

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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNITY SAFETY AND SECURITY</b>				
Local economic development	EHA10	Collect baseline information to inform the design of any programs and to define a clear point of departure.	ASI	PAC1-5
		Support opportunities to extend capacity building and other skills development initiatives in the broader area of influence beyond the RV and Afungi communities	ASI	PAC6-8
		Evaluate opportunities to create an effective linkage program to stimulate local businesses to support the Project	ASI through construction	PAC1-5
		Support opportunities for the empowerment of women and girls in the area.	ASI through construction	PAC1-5
Social ills	EHA10	Develop and implement mitigation measures as part of the social management and community development plan. These should seek to involve programs to promote gender equality and promotion of women's rights.	ASI through construction	PAC1-5
		Evaluate opportunities to support the retention of the role of traditional and cultural authorities and governance structures in communities to limit the development of social ills in communities.	ASI through construction	PAC1-5
		Evaluate the opportunity to support local policing initiatives and an effective justice system, where possible, and in partnership with the local authorities.	ASI through construction	PAC3
		Evaluate the opportunity to promote gender-based programs as mentioned above under local economic development. This can include micro-finance projects, education and skills development programs.	ASI through construction	PAC1-5
		Continue to consider support of educational development but support the focus on education for girls as part of these initiatives.	ASI through construction	PAC1-5
		Support local empowerment for girls in the Project area through local development projects.	ASI through construction	PAC1-5
		Develop procedures to attempt a gender balance in the workforce noting the limitations of females in certain forms of manual labor.	ASI through construction	Project employees, Contractors and local workers



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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNITY SAFETY AND SECURITY</b>				
		Evaluate the development and implementation of programs that maintain traditional values and promote social cohesion/ sense of community.	ASI through construction	PAC1-5 and 8
Stakeholder engagement	N/A	As per previous theme	ASI through construction and operations	All stakeholders
Project induced In-migration	N/A	As per previous theme	ASI through construction and operations	PAC2-5

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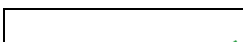
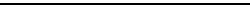
## 6.2 SUMMARY OF COMMUNITY HEALTH MANAGEMENT MEASURES DURING CONSTRUCTION PHASE

Focus area	EHA	Proposed activity/program	Implementati on timeline	Target Population
<b>THEME: COMMUNICABLE DISEASES</b>				
HIV/AIDS and other Sexually Transmitted Infections (STIs)	EHA4	Maintain and expand the community HIV and STI initiative as per the ASI phase.	Construction and operations	PAC1-6
		Develop an effective interface with community/traditional leaders/ APes as well as district authorities to report any increase in high risk sexual behavior from elements of the workforce and development of commercial sex work in communities especially linked the Project workforce. Capture concerns regarding increased high-risk sexual encounters by Project workforce in a grievance register, investigate and report back to stakeholders, as required.	Construction and operations	PAC1-9
		Evaluate performing serial knowledge, attitude and practices surveys in the workforce and community to determine if the Information, Education and Communication programs are effective and adapt initiatives, as required.	Construction	PAC1-8
		Evaluate supporting initiatives to restrict the development of a commercial sex industry especially in Palma, by working with the local authorities	Construction	PAC3
		Evaluate improving antenatal care programs to promote the effective detection and treatment of STIs in pregnancy. Support data collection and management linked to these interventions to report on the burden of disease from HIV and select STIs.	Construction and operations	PAC1-6
		Consider supporting the district health center/hospital with a safe blood supply initiative. Support data collection and management linked to these interventions to report on the burden of disease from HIV and select STIs.	Construction and operations	PAC1-6
		Based on review and success, consider extending the Project VIDAS and Quero initiatives.	Construction	PAC1-6 and 9
Tuberculosis and other communicable diseases linked to	EHA1, 9	Through the community communicable disease strategy, maintain support of the community TB program during the construction phase.	Construction	PAC1-6
		Maintain appropriate environmental health programs and initiatives to reduce risk from air-borne pollutants and monitor results.	Construction and operations	PAC1-6 and 8

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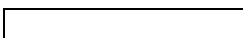
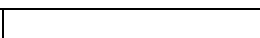
Focus area	EHA	Proposed activity/program	Implementati on timeline	Target Population
<b>THEME: COMMUNICABLE DISEASES</b>				
the living environment		Maintain support of the outreach health promotion unit. Continue and extend community-based Information, Education and Communication campaigns and other outreach activities and revise these based on needs and changing requirements in the communities.	Construction	PAC1-6
		Evaluate supporting district or provincial authorities in the development of an outbreak management and response plan for conditions such as pandemic influenza in the study area to promote local capacity.	Construction	PAC1-9
Malaria and other vector related diseases	EHA2	Maintain strict environmental controls around earth works and related construction activities as per the ASI phase.	Construction and operations	PAC1-6
		Evaluate opportunities to develop a Community Malaria Control Program as an extension of the workplace program. Any interventions should be planned and developed based on sustainability considerations.	Construction and operations	N/A
		Perform entomological surveys to define the most predominant vector species in the area, as well as determining the susceptibility of mosquitoes to the different classes of insecticides. (if not performed during ASI).	Construction and operations	PAC1-6 and 8
		Develop strict source reduction procedures at near- and on-shore activities, specifically where goods from international origin is stored.	Construction	PAC7-9
		Evaluate extending the Community Malaria Control Program in the broader Project focus area.	Construction	PAC1-6
		Continue supporting communities with source reduction activities through 'Clean Community Campaigns' as per ASI phase	Construction	PAC1-6
		Evaluate including the training of health facility staff and community health workers on Integrated Management of Childhood Infections (IMCI) principles.	Construction	PAC1-6
		Evaluate supporting the district health authorities with lymphatic filariasis eradication programs to ensure adequate coverage of target areas with community directed treatment programs.	Construction and operations	PAC1-6
		Place polystyrene balls in pit latrines to reduce the number of Culex spp. <sup>2</sup> as they may create an impression that mosquito activity has increased.	Construction	PAC1-7

<sup>2</sup> Culex is a genus of mosquitoes, several species of which serve as vectors of one or more important diseases of birds, humans, and other animals



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<b>THEME: COMMUNICABLE DISEASES</b>				
		This will be especially important in latrines constructed in resettlement areas		
Diseases with outbreak potential	EHA1, 2, 3, 4 and 8	Maintain and amend (based on outcomes from the ASI phase) the documented agreement with provincial and district authorities regarding the roles and responsibilities of stakeholders during non-Project related and Project related health emergencies and / or incidents.	Construction and operations	N/A
Zoonotic diseases	EHA8	Enhance, maintain and update the outbreak and pandemic preparedness policies and programs including early warning systems of global outbreaks. These need to include effective surveillance mechanisms, business continuity plans, etc. and should have linkages to the agreement between the Project and government authorities.	Construction and operations	PAC1-6
		Develop and implement community Information, Education and Communication and awareness initiatives relating to the risks of wildlife interaction (e.g. snakes and other animals) during Project bush clearing and construction activities.	Construction	PAC1,2,3,5
		Evaluate supporting the improvement of veterinary public health services in study area.	Construction	PAC1-6
		Evaluate support with the local markets where animals are sold or slaughtered, to prevent transmission of disease.	Construction	PAC1-6
		Based on the demand for local meat, evaluate the need and, if required, support the development of an abattoir.	Construction	PAC1-7
Stakeholder engagement	N/A	Maintain effective interface/communication strategies with the communities, local government and other relevant stakeholders on matters pertaining to communicable diseases as during ASI.	Construction and operations	PAC1-6
		Maintain the grievance mechanism supported by a register and a process to follow up and close out complaints	Construction and operations	PAC1-9
Project induced In-migration	N/A	As part of the Project PIIM management, continue with in-migration management initiatives as discussed during the ASI phase. Expand and extend management measures as required by Project scale during the construction phase and based on outcomes during ASI.	Construction	PAC1-3, 5

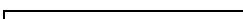



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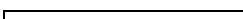

Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: WATER, HYGIENE, SANITATION AND ENVIRONMENTAL MANAGEMENT</b>				
Safe water	EHA3	Maintain the support the provision of improved water sources in PACs that are experiencing significant PIIM, or that may in the future. Similar principles mentioned in ASI should be considered. Exit strategies and sustainability principles should be considered in this required measure, with a recommendation to extend the benefits by considering the social development initiatives	Construction	PAC1-6
		Perform longitudinal monitoring of water conditions. These should be conducted in partnership with the district health authorities as well as the district water/sanitation utility authorities and should include monitoring of longitudinal data sets as well as specific indicators collected at baseline and linked to mitigation activities.	Construction	PAC1-6
		Maintain and extend the support of sustainable WASH programs in Afungi communities. Develop specific initiatives based on findings from CHIS to focus on areas of greatest need.	Construction	PAC1-3,5
		Consider supporting the development of institutional capacity in the local health and water/sanitation authorities to support the long-term planning, development and maintenance of infrastructure in the district.	Construction and operations	PAC3
Sanitation related diseases	EHA3	Maintain capacity building initiatives for local authorities to ensure adequate planning and provision for sanitation services and waste management services in communities where PIIM is anticipated	Construction	PAC1-3,5
		Maintain and expand (based on outcomes of the ASI phase) WASH initiatives implemented during ASI to manage the potential influx related impacts in the RV and other PACs, focusing on Information, Education and Communication, improved hygiene and sanitation practices and improved sanitation infrastructure.	Construction	PAC1-3,5
		Maintain (and possibly expand) WASH programs in the broader Palma and MDP communities that may be subject to sanitation and waste management related impacts.	Construction	PAC1-6
Environmental management	EHA9	Maintain Project water management as per the Project Water Resources Plan.	Construction	N/A

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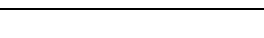
Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: WATER, HYGIENE, SANITATION AND ENVIRONMENTAL MANAGEMENT</b>				
		Maintain implementation of engineering designs and location of equipment that consider noise and model potential exposures to communities.	Construction and operations	PAC1-2
		Develop and implement recommendations as per the noise specialist study from the EIA.	Construction and operations	N/A
		Plan routing for aircraft and helicopters away from noise sensitive communities, where safe.	Construction and operations	N/A
		Develop and implement recommendations from the EIA and waste management plan in alignment with the specific Project phase.	Construction and operations	N/A
		Develop and implement appropriate hazardous chemical substances management programs in alignment with IFC Performance Standard 3 guidance as well as the International Code of Conduct on the Distribution and Use of Pesticides.	Construction and operations	N/A
		Ensure that pest control activities and associated selection of insecticides for malaria control and other pest control activities conform to national programs and policies.	Construction and operations	N/A
		Ensure the development and implementation of effective waste management so the communities do not use Project-related discarded containers that may have contained hazardous materials for collecting of water or storage of water or related domestic products.	Construction and operations	N/A
		Develop and implement air quality mitigation as per the air quality specialist study and the EIA.	Construction and operations	N/A
		Ensure on-going monitoring of air quality as per the recommendation of the air quality specialist study, EIA and Project commitments.	Construction and operations	N/A
		Maintain and extend (where required) effective air quality management, especially dust controls in line with scope of Project activities during the construction phase.	Construction	PAC1-6
Stakeholder engagement	N/A	As per previous theme	Construction and operations	PAC1-6
Project induced In-migration	N/A	As per previous theme	Construction	PAC1-3,5

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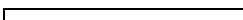
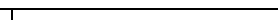
Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: HEALTH SYSTEMS STRENGTHENING</b>				
Capacity building and Infrastructure support	EHA12	Maintain and expand any Health Systems Strengthening support (if implemented) to the provincial and local district health authorities as per the documented agreement in ASI.	Construction and operations	PAC1-6
		Maintain and expand the site based medical service as described in the ASI phased and ensure adequate scaling to align with the relevant Project requirements.	Construction and operations	Project employees, Contractors and local workers
		Monitor the demographic changes in the immediate study area and work with local health authorities to determine if the available health facilities are adequate for the needs of the community.	Construction	PAC1-6
		Continue to explore opportunities to improve health care services in the broader area.	Construction and operations	PAC7-9
		Evaluate supporting capacity building in the local health services in management of data electronically across the district to support improved trending, planning and prioritization of health services	Construction	PAC1-6
Data collection support	EHA12	Continue to maintain the Project CHIS and refine indicators across all EHAs, as required, and based on outcomes from the ASI phase and interventions.	Construction and operations	N/A

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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: NUTRITION AND NON-COIMMUNICABLE DISEASES</b>				
Nutrition	EHA5	If not done during ASI, develop and implement community initiatives on nutrition.	Construction	PAC1,2,4-6
		Continue with the surveillance of food inflation as initiated in the ASI phase. Vulnerable groups should be identified as part of this monitoring where it is possible.	Construction	
		Implement and extend local economic development initiatives associated with agriculture, farming and entrepreneurial activities that were started in ASI. Seek to establish a linkages program where different elements in the supply chain can support each other to promote sustainable and effective programs	Construction	PAC1-6
		Consider supporting community initiatives in both the Resettlement Village and other PACs in the Local Study Area that focus on nutrition.	Construction	PAC1-6
		Support educational attainment initiatives in women as this will promote better childcare and nutrition. Consider offering support to livelihood practices and economic development in community members, with a key focus on women.	Construction	PAC1-6
Non-communicable diseases	EHA6	Support Information, Education and Communication programs as part of community-based outreach programs that should focus on lifestyle risk factors such as diet, exercise, smoking, oral health and alcohol consumption.	Construction and operations	PAC1-6
		Support school-based Information, Education and Communication programs as they are the generation who are most likely to be affected by these diseases in the medium to long term.	Construction	PAC1-6
		Consider promoting well-being and healthy lifestyle programs in the communities through different planned interventions.	Construction and operations	PAC1-6
		Support the local health authorities to implement an integrated Non-communicable Disease intervention program based on national or WHO programs with the intent to reduce risk factors in the community.	Construction and operations	PAC1-6
Stakeholder engagement	N/A	As per previous theme	Construction and operations	PAC1-6
Project induced In-migration	N/A	As per previous theme	Construction	PAC1-3,5

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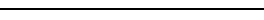
Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNITY SAFETY AND SECURITY</b>				
General	EHA7	Maintain and expand the Project community security and safety management plan and capabilities for the Project related to the scope of the construction phase. The plan needs to include near shore and onshore activities as well as all transport corridors and maritime activities.	Construction	N/A
		Maintain and, as required, update the documented agreement with provincial and district authorities regarding the interface and roles and responsibilities of stakeholders during non-Project related and Project related health emergencies / incidents.	Construction	N/A
		Maintain and expand any support required to address any risks associated with terrorism in the area based on outcomes of the ASI phase and current threats	Construction	N/A
		Maintain and extend the community grievance mechanism to monitor the nature of any complaints to identify any trends in increasing tension or unease within the community in general or directed at the Project in particular.	Construction	PAC1-6
Road safety	EHA7	Maintain and expand on the required community road safety initiatives that were started during ASI phase. Adapt and refine these as required to ensure they remain relevant and address risks. Data should be evaluated on accident trends and high-risk areas to focus interventions as required.	Construction	PAC3,4 and 7
		Consider maintaining and expanding support for the development of driving schools in the Project area of influence.	Construction	PAC3
		Consider initiating or extending the support to the local police and criminal justice system suggested in the ASI phase	Construction	PAC3
		Consider Health Systems Strengthening in Palma Sede and MDP health facilities as well as health facilities on transport corridors to increase capacity and capabilities to more effectively manage injuries and trauma related to accidents.	Construction and operations	PAC3,7 and 8

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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNITY SAFETY AND SECURITY</b>				
		Consider supporting town planning in especially communities that are likely to expand and develop (the hot-spots for influx) to support better access to provide services but also to allow road and urban planning to limit the risk of road traffic accidents, access to rescue vehicles and associated services.	Construction	PAC2 and 3
Local economic development	EHA10	Evaluate opportunities to support local economic development, inclusive of the following elements (if not implemented during ASI).	Construction and operations	PAC1-6
		If not done during the ASI phase, collect baseline information to inform the design of any programs and to define a clear point of departure.	Construction	PAC1-6
		Evaluate opportunities to extend capacity building and other skills development initiatives in the broader area of influence beyond the Resettlement Village and Afungi communities detailed in the Project Impact Mitigation section (if not implemented during ASI).	Construction	PAC7 and 8
		Evaluate opportunities to create an effective linkage program to stimulate local businesses to support the Project and other opportunities (if not implemented during ASI).	Construction and operations	PAC1-6
		Evaluate opportunities for the empowerment of women and girls in the area. Microfinance and self-reliance/co-operative schemes may be opportunities with the understanding that programs are being developed based on the ability at the local level to support this (if not implemented during ASI).	Construction and operations	PAC1-6
Social ills	EHA10	If not implemented during ASI, develop and implement mitigation measures as part of the social management and community development plan.	Construction	PAC1-6
		Evaluate opportunities to support the retention of the role of traditional and cultural authorities and governance structures in communities to limit the development of social ills in communities (if not implemented during ASI).	Construction	PAC1-3 and 5
		Evaluate the opportunity to support local policing initiatives and an effective justice system, where possible, and in partnership with the local authorities (if not implemented during ASI).	Construction	PAC1-6

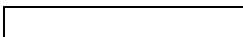
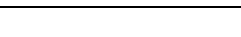
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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNITY SAFETY AND SECURITY</b>				
		Evaluate the opportunity to promote gender-based programs as mentioned above under local economic development. This can include micro-finance projects, education and skills development programs (if not implemented during ASI).	Construction	PAC1-6
		Continue to consider support of educational development but support the focus on education for girls as part of these initiatives (if not implemented during ASI).	Construction and operations	PAC1-7
		Support local empowerment for girls in the study area through local development projects (if not implemented during ASI).	Construction and operations	PAC1-8
		Attempt a gender balance in the workforce noting the limitations of females in certain forms of manual labor (if not implemented during ASI).	Construction and operations	PAC1-9
Altered accessibility	EHA10	If not performed in ASI, evaluate opportunities to enhance the potential benefits of the improved access to the areas within the study area.	Construction	PAC5
		If not done in ASI, evaluate opportunities to enhance the local economic development through access to markets, improved education and gender empowerment.	Construction	PAC5
		Support the broader study area with access to improved and affordable information technology services (if not done during ASI).	Construction	PAC5
		Evaluate opportunities to promote improved delivery of social services to communities who have improved access in the broader study area (if not done during ASI).	Construction	PAC5
Social harmony	EHA10	Develop and implement mitigation measures as part of the social management and community development plan.	Construction	PAC1-6
		Evaluate opportunities to support local economic development, inclusive of the following recommended elements:	Construction	PAC1-6
		Maintain and expand Industrial Relations and Health and Safety management measures related to the accommodation and camp management standards of the incoming Project workforce based on outcomes of the ASI phase.	Construction	N/A

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Focus area	EHA	Proposed activity/program	Implementation timeline	Target Population
<b>THEME: COMMUNITY SAFETY AND SECURITY</b>				
		Evaluate the development and implementation of programs that maintain traditional values and promote social cohesion/ sense of community.	Construction	PAC1-6
Health seeking behavior	EHA11	Develop and implement community initiatives for the reduced access of the community to health care services as an extension from initiatives in ASI.	Construction and operations	PAC5
		Monitor access of the community to health care services and extend services (such as rooming-in facilities for complicated pregnancy cases).	Construction and operations	PAC5
		Evaluate supporting the development and implementation of Information, Education and Communication programs related to health seeking behavior and use of traditional medicine.	Construction	PAC1-6
		Evaluate the opportunity to partner with the local health care authorities to improve the functionality of health care services and to improve health seeking behavior towards the formal health sector for serious conditions.	Construction	PAC1-6



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## 7. IMPLEMENTATION OF IMPACT MITIGATION AND MANAGEMENT MEASURES

### 7.1 Organizational Framework

Community health management is recognized under the ESMP and mapped as part of the community impacts and development framework as illustrated below in Figure 6.





**Figure 4: ESMP and underlying plans**

Internally within TEPMA1, implementation of programs for adequate management and mitigation of anticipated positive and negative Project impacts to the health of the local communities, is a shared responsibility between the HSE and Social Performance functions. The HSE assumes primarily responsibility for design and delivery of management and mitigation programs while the Social Performance team leads the planning and implementation of specific health management and mitigation programs.

### 7.2 TEPMA1 and EMLL Coordination

The strategic approach for management of community health impacts will be coordinated by a Joint Community Health Working Group that includes primarily TEPMA1 and EMLL personnel in recognition of the spatially and technically similar Area of Influence (AOI) for both companies as defined in the HIA, including the near and onshore activities of both Area 1 and Area 4 at Afungi peninsula, the Project DUAT, the broader Palma area as well as possible regional impacts. This approach will prevent unnecessary duplication of efforts with maximization of resources and geographical areas of coverage, diversification of programs and overall extended benefits for the local communities. Specifically, the Joint Community Health Working will coordinate:

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- The planning and design of specific community health interventions in the common AOI likely to be performed jointly by both companies, based on agreed goals and common objectives. These interventions may address specific impact mitigation measures as well as elements that may be considered as voluntary contributions or corporate social investment.
- Stakeholder identification and engagement in the community health field at the national and provincial levels.
- Identification of potential partners/ service providers and the technical elements of managing the expressions of interest, proposals and awarding for discrete programs.
- Support stewardship, monitoring and evaluation of community health initiatives.

## 8. MONITORING, EVALUATION REPORTING AND LEARNING (MERL)

This chapter provides a summary description of the Community Health Management Plan's framework for:

- Tracking demographic and health indicators to understand how these are changing and inform program interventions and success.
- Monitoring the effectiveness of the various community health programs in enhancing positive impacts and mitigating negative impacts. This will also include surveillance of health interventions designed to enhance the health and well-being of communities;
- Evaluating the outcome and impact of the programs;
- Reporting findings to internal and external stakeholders; and,
- Documenting learnings from the process that includes changes made to the programs due to required improvements as well as lessons learnt.

As control measures are divided amongst several Project teams, monitoring and evaluation will be performed by the TEPMA1 Community Health, Safety and Security (CHSS) Monitoring and Evaluation team. It remains the responsibility of TEPMA1 to collect and track all KPIs relating to community health and reporting performance.

In addition to this framework, detailed M&E plans will be developed for each of the community health programs that will be implemented by Implementation Partners (IPs).

### 8.1 Data Collection



To track demographic and health indicators at a community, health facility- and district-level, data will be collected by means of the following three processes:

1. Longitudinal monitoring of selected indicators,
2. Collecting data through community health programs, and
3. Abbreviated serial baselines (Serial Health Baselines) will be conducted on a quarterly basis for the majority of indicators<sup>3</sup> to inform program interventions and success.

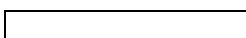
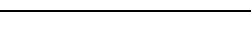
Gathering data through these three processes will gather both quantitative and qualitative data from the communities well as district health services and will provide a general overview of the key health indicator trends across Palma District.

It is important to note that these are lagging indicators that will inform how things have changed from a single point in time to the next and will not allow dynamic surveillance of impacts or trends of interventions. Nevertheless,

<sup>3</sup> Some indicators will only be collected on an annual basis as this conforms with Government reporting timeframes.

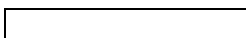
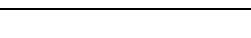
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these are useful for tracking a reproducible set of indicators to see how things have changed and will be complemented by other socio-economic data gathered from other functional area studies. The tables below illustrate proposed indicators for longitudinal monitoring, program specific monitoring and through the conduct of serial surveys. It is important to note that these tables and the associated metrics are indicative only and this will be updated as the scopes of work for CHMMP programs are developed.

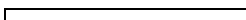

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**Table 8: Longutinal monitoring**

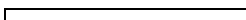

Longitudinal Monitoring							
Disease/Theme monitored	Elements	Objective	Indicator/s	Informant/s level	Data source	Level	Frequency
HIV / STI		Burden of Disease (BOD)	Number of cases (per age grouping) as reported from community health worker (APE) / Health Facility (HF)	Health Facility (HF)	District Health Information System (DHIS2/SISMA)	HF, District	Monthly
			HIV/STI positivity rate	HF	DHIS2/SISMA	HF, District	Monthly
			Case fatality rate	District health authorities (SDSMAS)	DHIS2/SISMA	District	Quarterly
Communicable disease linked to the living environment	Acute Respiratory Infections (ARI)	BOD	Number of cases (per age grouping) as reported from APE/HF	Community Health workers (APEs), HF	DHIS2/SISMA	HF, District	Monthly
			Number referred	APEs, HF	DHIS2/SISMA	Community	Community
			Case fatality rate	SDSMAS	DHIS2/SISMA	District	Quarterly
	Tuberculosis	BOD	Number of cases (per age grouping and per MDR/XDR) as reported from SDSMAS	SDSMAS	DHIS2/SISMA	HF, District	Quarterly
			Treatment completion rate				
			Co-infection rate (HIV/TB)				
			Cure rate				
			Case fatality rate				
Compulsory	Diarrhea	BOD	Number of cases (per age grouping) as reported from APE/HF	APEs, HF	DHIS2/SISMA	HF, District	Weekly

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Longitudinal Monitoring							
Disease/Theme monitored	Elements	Objective	Indicator/s	Informant/s level	Data source	Level	Frequency
Notification Diseases	Dysentery	BOD	Number of cases (per age grouping) as reported from APE/HF	SDSMAS	DHIS2/SISMA	HF, District	Weekly
	Measles	BOD	Number of cases (per age grouping) as reported from APE/HF	APEs, HF	DHIS2/SISMA	HF, District	Weekly
			Case fatality rate	SDSMAS	DHIS2/SISMA	District	Weekly
	Cholera	BOD	Number of cases (per age grouping) as reported from APE/HF	APEs, HF	DHIS2/SISMA	HF, District	Weekly
	Malaria	BOD	Number of cases (per age grouping) as reported from APE/HF	APEs, HF	DHIS2/SISMA	HF, District	Weekly
			Presumptive vs confirmed	APEs, HF	DHIS2/SISMA	HF, District	Weekly
			Inpatient admissions	SDSMAS	DHIS2/SISMA	District	Weekly
			Case fatality rate	SDSMAS	DHIS2/SISMA	District	Weekly
Nutrition		BOD	Stunting (number of cases)	APEs, HF	DHIS2/SISMA	Community, HF	Monthly
			Wasting (number of cases)	APEs, HF	DHIS2/SISMA	Community, HF	Monthly
			MUAC (number of cases)	APEs, HF	DHIS2/SISMA	Community, HF	Monthly
			Underweight (number of cases)	APEs, HF	DHIS2/SISMA	Community, HF	Monthly
			Hospital admissions	SDSMAS	DHIS2/SISMA	District	Quarterly
			Case fatality rate	SDSMAS	DHIS2/SISMA	District	Quarterly
		EPI coverage	Percentage coverage per locality/community	APEs, SDSMAS	DHIS2/SISMA	HF, District	Quarterly

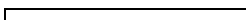

 <b>MOZAMBIQUE</b> <b>LNG</b>	<b><i>Mozambique Gas Development</i></b>		 <b>TOTAL</b> <small>E&amp;P MOZAMBIQUE AREA 1, LIMITADA</small>
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Longitudinal Monitoring							
Disease/Theme monitored	Elements	Objective	Indicator/s	Informant/s level	Data source	Level	Frequency
SDSMAS Capacity and access to services		MDA coverage	Percentage coverage per locality/community	APEs, SDSMAS	DHIS2/SISMA	HF, District	Quarterly
		Essential drug stock-outs	No. of stock out of rapid diagnostic kits and ACT per month.	APEs, Serial baselines	TEPMA1 MERL	HF, District	Monthly
		Resource number/posts filled	Number of posts filled as proportion of posts available	Serial baselines	TEPMA1 MERL	HF, District	Monthly
		Uptake on HF services	Utilization rates	APEs, DOT, Midwives, HF	TBD, DHIS2/SISMA	Comm, HF	Monthly
			Number of completed referrals (closed loops) vs number of referrals made by APE/HF	APEs, DOT, Midwives, HF	TBD, DHIS2/SISMA	Comm, HF	Monthly

 <b>MOZAMBIQUE</b> <b>LNG</b>	<b><i>Mozambique Gas Development</i></b>		 <b>TOTAL</b> <small>E&amp;P MOZAMBIQUE AREA 1, LIMITADA</small>
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**Table 9: Program Specific Monitoring**

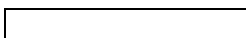
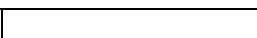
Programme specific monitoring					
Implementing partner	Focus areas	Key Performance Areas	Key performance Indicators	Frequency	Level
TBD	Malaria	Information, education, communication	As per CMCP M&E section	TBD	Community, District
		Vector control	As per CMCP M&E section	TBD	Community, District
		Burden of disease	As per CMCP M&E section	TBD	Community, District
		Distribution of Insecticide treated nets	As per CMCP M&E section	TBD	Community, District
		Entomology	As per CMCP M&E section	TBD	Community, District
		Health Systems Strengthening	As per CMCP M&E section	TBD	Community, District

 <b>MOZAMBIQUE</b> <b>LNG</b>	<b><i>Mozambique Gas Development</i></b>		 <b>TOTAL</b> <small>E&amp;P MOZAMBIQUE AREA 1, LIMITADA</small>
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**Table 10: Serial Surveys**

Serial Surveys						
Type	Focus area/s	Key Performance Areas	Key Performance Indicators	Frequency	Level	Implementing/monitoring partner
Serial Health Baselines	2 & 3	HEALTH FACILITY PROFILE	Type of infrastructures; Health care service components; Community Linkage (Local Health Stakeholders engagement); Electricity and water supply system; Hygiene and sanitation; Human resources (Availability & Education status); Medicines and medical supplies	Quarterly	Health Facility	TEPMA 1 MERL
		HIV/AIDS & TUBERCULOSIS	HIV/AIDS Prevalence rate; Incidence rate; Number of new patients initiating anti-retroviral treatment; Sexual transmitted infections incidence rate; Total number of patients taking Anti-Retroviral Treatment (ART); ART retention rate (6, 12, 24 and 36 Months); Co-Infection TB-HIV rate; Tuberculosis incidence rate; Tuberculosis prevalence rate.	Quarterly	Health Facility	
			Cholera; Dysentery; Diarrhea.	Monthly	Health Facility	
		MATERNAL AND CHILD HEALTH	Antenatal care (coverages); Maternal mortality rate; Stillborn mortality rate; Newborn mortality rate;	Semesterly	Health Facility	





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Serial Surveys						
Type	Focus area/s	Key Performance Areas	Key Performance Indicators	Frequency	Level	Implementing/monitoring partner
			Proportion of newborn affected by HIV virus (Mother-to-child HIV transmission).			
		MALARIA	Percentage of Pregnant Women who have taken at least two Antimalaria treatment at Anti-natal Care; Proportion of malaria infection cases; Malaria mortality rate; Proportion of pregnant women diagnosed with malaria at antenatal care; Mortality rate associated with malaria infection	Quarterly	Health Facility	
		NUTRITION	% of children 6-59 months with moderate acute malnutrition (MAM) (diagnosis via MUAC tape); % of children 6-59 months with severe acute malnutrition (SAM) (diagnosis via MUAC tape or bilateral edemas); % of pregnant women with moderate acute malnutrition (MAM) (diagnosis via MUAC tape); % of pregnant women with severe acute malnutrition (SAM) (diagnosis via MUAC tape or bilateral edemas); Stunting rate among children under 5 years of age; Prevalence of underweight birth (2500 g); Prevalence of exclusive breastfeeding among infants under 6 months;	Semesterly	Health Facility	

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Serial Surveys						
Type	Focus area/s	Key Performance Areas	Key Performance Indicators	Frequency	Level	Implementing/monitoring partner
			Prevalence of anemia among pregnant and lactating women; Acute malnourished mortality rate.			
		ZOONOTIC DISEASES	Snake bites; Dog bites; Rabies cases.	Semesterly	Health Facility	

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## 8.2 Monitoring

Monitoring is an ongoing analysis of progress towards the achievement of a specific goal or program. The following monitoring activities will be undertaken:

- **Input (or progress) monitoring**<sup>4</sup> - continuously assesses, measures and tracks whether the program resources (e.g. number of community health testing counsellors for target population; budget allocated for HIV testing) are delivered in accordance with scope of work. Inputs are services, resources or goods that contribute to achieving outputs and ultimately, desired outcomes.
- **Output (or performance) monitoring**<sup>5</sup> – measures the direct result of the inputs. Examples of outputs include number of individuals tested, number of sexual health workshops given, etc.
- **Outcome (impact) monitoring** – assesses whether programs' inputs and outputs are successful in achieving proposed outcomes, and therefore the effectiveness of the intervention (e.g. reduction in HIV transmission rate in the target population). Outcomes are categorized in short, medium and long-term and are evaluated periodically; the cumulative achievement of these outcomes enable community health programs' impact.
- **Longitudinal monitoring from secondary data sources** - secondary data from the public health sector, NGOs or other programs will be periodically gathered. These will serve as early warning system for the Project and the data will be used for surveillance of interventions but also for change in disease profile.
- **The Data Quality Assessment (DQA)** - refers to the Project standard practice for assessing data strengths and weakness', summarize data quality issues and establish a plan for addressing those issues. A DQA should be conducted to understand the extent to which data meets data quality standards: validity, reliability, integrity, precision and timeliness. A DQA will be conducted every 6 months unless program specifics require otherwise.

The monitoring activities described above will be carried out using various data collection methods. Quantitative outcome indicators will be collected from the Palma District Health Authorities (SDSMAS), Community Health and Social Investment programs. For example, longitudinal monitoring of health indicators can be supplemented by data from Community Health Workers (APE) that are collaborating on Social Investment projects, and from the Project's Community and Social Affairs team; data from these sources can perform the role of early warning systems. Collection of community-level outcome indicators will enable the identification of areas where control measures are less (or more) effective.

In addition, several qualitative outcome indicators will also be tracked as part of the community TEPMA1 SI programs. These will be collected as part of pre-, mid and post implementation Knowledge, Attitude and Practice (KAP) questionnaires (and other techniques where appropriate) that have been incorporated as a design element into these community programs to demonstrate efficacy of the IEC campaigns.



Standardized data collection methods and tools, aligned with proposed indicators, will be developed to be used by programs. This is an important step to ensure data quality and inform program decision-making. Additionally, in some cases, IP's may collect data that would be useful for monitoring progress in an area.

## 8.3 Evaluation

Impact evaluation assesses the changes that can be attributed to a particular intervention, both the intended and unintended. Impact evaluation helps answer key questions for evidence-based decision making: what works, what doesn't, where, why and for how much? In general, the following will be evaluated:

<sup>4</sup> Within the ESMP Monitoring Program this is known as compliance monitoring.

<sup>5</sup> Ibid.

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- impact mitigation activities that are designed to avoid or reduce negative impacts; and,
- impact of health interventions designed to enhance the health and well-being of the communities.

The impact evaluation of the community health programs proposed here will ultimately inform whether the goals and objectives of this plan have been achieved. These evaluations will be designed for each one of the community health programs.

#### **8.4 Indicators**

The monitoring and evaluation activities above will assess various pre-defined indicators for each of the community health and work force program areas, as illustrated in Tables 8, 9 and 10. As noted previously, specific indicators will be updated as programs are developed and as indicated by continued data analysis and evaluation.

##### **8.4.1 Indicators**



Process indicators will be developed to track implementation of the following workforce Programs/Plans in relation to control measures as detailed in Section 6.

- Health Assessment/Fitness to Work Program;
- Workplace Malaria Control Plan;
- Workplace HIV/STI Plan;
- Workplace Tuberculosis Plan;
- Vaccine Preventable Disease Plan;
- Infectious Disease Outbreak Management Plan;
- Community Relations/Stakeholder Engagement Plan
- Workforce Accommodation Design specifications;
- Camp Management standards;
- Air Emissions/Quality Plan;
- Water Resource Management Plan;
- Waste and Hazardous Substances Management Plan;
- Landscape and Soil Erosion Management Plan;
- Traffic and Transport Plan;
- Pest Control Plan; and
- Industrial Relations / Worker Relations Plan.

A logical framework will be designed to monitor and evaluate these plans, that will include output, outcome and impact indicators, as well as means of verification for each.

#### **8.5 Reporting and Learning**

Learning takes place in any activity which enables individuals and the broader programs to reflect on its performance, what has been achieved and what challenges have been faced. Time for reflection on Community Health Programs' should be incorporated into the Project cycle and where appropriate should include all staff and relevant stakeholders.

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Internal Quarterly Review Meetings will take place and lessons learned should be shared and referred to when developing strategies and policies, when designing programs/projects, and considered in decision-making and resource allocation. The MERL team will develop reports to inform relevant stakeholders to which extent the program is achieving the proposed outcomes and impacts. Reporting frequency will be established with Functional Area Managers.