

COMMUNITY MALARIA CONTROL PLAN



MOZAMBIQUE LNG

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ACRONYM	DESCRIPTION
AMA1	Anadarko Moçambique Área 1, Lda
BHS	Baseline Health Survey
APE	Community Health Worker
BHS	Baseline Health Survey
DUAT	Direito de Uso e Aproveitamento de Terra – The Right to Use and Enjoy Land
FID	Final Investment Decision
HSE	Health Safety and Environment
HSS	Health Systems Strengthening
IEC	Information, Education and Communication
IPTp	Intermittent Preventive Treatment of pregnant women
IPIECA	International Petroleum Industry Environmental Conservation Association
IRS	Indoor Residual Spraying
ITN	Insecticide-treated Nets
LLIN	Long Lasting Insecticide-treated Net
IVC	Integrated Vector Control
MCP	Malaria Control Plan
MDP	Mocimboa da Praia
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
NMCP	Mozambican National Malaria Control Program
RDT	Rapid Diagnostic Test
SI	Social Investment
TEPMA1	Total Exploration and Production, Moçambique Área 1, Lda

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1.0 INTRODUCTION

Malaria is endemic in Mozambique, placing its entire population at risk. Transmission occurs throughout the entire calendar year with peaks during the rainy season, typically from November to April. In recent years, natural disasters such as cyclones and floods have become more frequent occurrences in Mozambique, contributing to an increase in malaria vector breeding sites and transmission, particularly in coastal areas and alongside major rivers. Malaria continues to be the principal public health challenge facing Mozambique, with the National Ministry of Health reports estimating that the disease was responsible for 29% of all hospital deaths and 42% of deaths in children under five in 2015 (National Malaria Strategic Plan 2017-2022).

In 2013, TEPMA1 – Total Exploration and Production Mozambique Area 1 (formerly Anadarko Mozambique Area 1 (AMA1)) completed a Baseline Health Survey (BHS) in the wider Project Area of Influence (including Afungi peninsula) as part of the Health Impact Assessment (HIA). The results of the survey demonstrated the following:

- a mean point malaria prevalence of 52.3%.
- despite National Malaria Control Program (NMCP) interventions that were mainly in the form of mass distribution of insecticide treated bed nets (ITNs) in 2017, the number of malaria cases has been increasing in both Palma District and the neighboring district of Mocimboa Da Praia (MdP). Both Palma and MdP have reported an increase in malaria cases from 2016 to 2017, of 7.6% and 24.8% respectively¹. The malaria incidence rates in both districts remain higher than the provincial average.
- limited knowledge and awareness related to malaria, reporting that only 50% of women and 62% of men had consistent knowledge when questioned about transmission patterns².

The HIA highlighted the potential for the Project to impact on malaria transmission patterns in both a direct and indirect manner, with this influence dependent on a range of determinants including the epidemiological setting, local vector behavior and management, and environmental and social changes including changes in the environment, in human demographic, land use, socio-economic conditions and health seeking behavior. In addition to impact mitigation, the long-term economic impact of malaria control in sub-Saharan Africa has demonstrated positive educational and economic effects. Like many other early-life health interventions, eliminating malaria in young children has beneficial long-term health, nutrition and cognitive impacts. Benefits demonstrated in studies in similar settings are consistent with the theory that reduced malaria exposure in utero and during early life leads to cognitive improvements that later benefit children both in school and the labor market³.

TEPMA1 recognizes and acknowledges the seriousness of the impact of malaria nationally and is particularly concerned about the well-being of communities and the workforce who reside in, or close to the Project Area of Influence, in Palma District, Cabo Delgado Province. Accordingly based on the HIA and as articulated in the Community Health Management and Monitoring Plan (CHMMP), TEPMA1 has developed this Community Malaria Control Plan (CMCP). The CMCP details the proposed activities, the level of effort and the temporal and geographic scope of

¹ Owuor, M, Olivier, IPA, Lima, M, AMA1 Regional Health Impact Assessment Baseline Health review, SHAPE Consulting, COWI; April 2018.

² Dearham, A, Divall, M, Owour, M, Knoblauch, A, Archer, C. Baseline Health Survey. Anadarko Mozambique Area 1 (AMA1) Liquefied Natural Gas Project. SHAPE Consulting Limited, COWI; 2013 Apr.

³ Jeremy Barofsky, Tobenna D. Anekwe, Claire Chase, Malaria eradication and economic outcomes in sub-Saharan Africa: Evidence from Uganda, Journal of Health Economics, Volume 44, 2015, Pages 118-136, [available from: <https://doi.org/10.1016/j.jhealeco.2015.08.002>].

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activities that will be implemented by the Project during the various phases of Project development and operations.

2.0 OBJECTIVES

The overarching aim of the CMCP is to identify and enhance opportunities to mitigate potential Project impacts and positively influence malaria indicators in the immediate and wider Project Area of Influence and extend these gains to Palma District. Specifically, the program will:

- Outline TEPMA1’s approach to community- malaria control interventions in defined geographical areas in support of existing and planned government and multisectoral partner’s interventions.
- Provide guidelines to Project stakeholders regarding support of specific malaria control measures to minimize impacts to malaria transmission during different phases of Project development and operations.
- Ensure alignment between TEPMA1’s community focused malaria control interventions and the guiding principles outlined in the National Mozambican Malaria Strategic Plan.

3.0 SCOPE

The plan is applicable to malaria control interventions that are considered or supported by TEPMA1 to a population that falls outside of the TEPMA1 workforce Malaria Control Plan (MCP). The scope of the plan will be reviewed continually as part of the Monitoring and Evaluation (M&E) cycle as part of this and potentially other interventions. The scope may include or integrate planned interventions from the Area 4 operator.

3.1 *Temporal Scope*

Different phases in the Project timeline will dictate the consideration of specific levels of support based on associated activities (and potentially, resultant impacts) and available resources.

While the Project will consider supporting community malaria control measures throughout the Project lifespan, the CMCP describes support of specific measures during different phases of Project implementation and operations. Accordingly, the duration of activity implementation will be aligned with the specific phase of the Project but may change materially based on monitoring and evaluation of interventions (including disease burden, entomology, demographics, environmental factors etc.) as well as by changes in the regulatory mandate or strategy of the NMCP. In general, selected interventions will be implemented during the following phases:

3.1.1 ***Afungi Site Improvement Phase***

Initial activities will be considered during Afungi Site Improvements (ASI).

3.1.2 ***Construction Phase***

Certain activities will only be considered for implementation post-FID during the construction phase of the Project. Based on M&E results, successful initiatives implemented during ASI Phase may be extended into this phase or be considered for geographic expansion. Other interventions may also be considered based on needs and the dynamic nature of shifting health impacts.

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3.1.3 Operations Phase

Initiatives are those that will be associated with the operational phase of the Project. It is anticipated that the implementation period associated with these initiatives will be no longer than 10 years.

3.2 Geographic Scope

The geographic scope is currently divided into three specific focus areas, which consider the immediate communities that may be affected by direct Project activities as well more generally within the DUAT, the Afungi peninsula and the wider Palma District that are more likely to be influenced by indirect Project activities. This geographical scope may alter as the Project and interventions progress, but the initial determination has been made on the expected long-term physical presence and proposed Project activities. These areas are displayed in Figure 1, and include:

3.2.1 Focus Area 1

This focus area is restricted to Project work- and accommodation sites only and relates to the workplace MCP. Although no communities are included in this focus area, several communities may potentially derive indirect benefit from these activities due to their proximity to the Project or related to benefits in the local workforce.

3.2.2 Focus Area 2

This focus area includes communities located on and in close proximity to the DUAT area. These include Barabarane, Quitupo (prior to resettlement), Maganja, Mondlane and Senga and the Resettlement Village (RV) at Quitunda. In alignment with the approach in other community-focused initiatives, the initial part of this intervention may be supported as a pilot program, with subsequent expansion (e.g. the RV may be used as the initial intervention location).

3.2.3 Focus Area 3

Focus area 3 includes the communities of Palma Sede and those located along the R762 in the Palma and Olumbi Administrative Posts) and ultimately, communities in the broader Palma district.



Figure 1: CMCP Focus Areas

4.0 LEGAL AND OTHER REQUIREMENTS

All community focused initiatives will be developed in alignment with the national regulatory and strategic requirements.

Table 1: National guidelines

Plano Estratégico da Malária (PNCM) 2017 – 2022	This document presents the Strategic Plan for Malaria (PEM) 2017 – 2022, which was developed through a multi-sector and participatory approach including all the partners of the National Program for Malaria Control (NMCP). This plan arose following the achievements and progress of the NMCP in implementing the Strategic Plan for Malaria 2012 – 2016.
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Furthermore, the Project will reference international guidance and standards set out in the table below.

Table 2: International guidelines

International Petroleum Industry Environmental Conservation Association (IPIECA) – A Guide to Malaria Management Programs in the Oil and Gas Industry. (2006)
ICMM Good Practice Guideline in HIV/AIDS, TB and Malaria (2008)

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4.1.1 *Related Company Documents*

This plan should be read in conjunction with:

- AMA1 Community Health Management and Monitoring Plan - MZ-000-AM1-HS-PLN-00024
- Mozambique LNG Regional Health Impact Assessment - MZ-000-AM1-HS-ASM-00002
- AMA1 Baseline Health Survey - EA-MZ-SR0200-RRG-U17-00001-00
- AMA1 Social Investment Strategy - MZ-000-AM1-SP-STG-00001
- AMA1 Project Induced In-migration Management Plan MZ-000-AM1-SP-PLN-00001
- AMA1 Workforce Malaria Control Plan – [Insert ref number HERE]

5.0 OVERVIEW

Malaria control measures in the geographical area described above are currently implemented by the government of Mozambique and follows the strategic direction as provided by the National Malaria Control Plan.

5.1 *Mozambique National Malaria Control Plan*

The specific government objectives are highlighted in the National Malaria Control Plan (2017-2022) which sets the below guiding principles to be achieved at national, provincial and district levels:

- **Objective 1:**
Provide 85% coverage of the population with a minimum of one vector control intervention in every district of the country, by 2022.
- **Objective 2:**
Test 100% of suspected malaria cases and treat 100% of confirmed malaria cases at health facility and community levels as per national guidelines, by 2022.
- **Objective 3:**
Implement an effective Information Education and Communication (IEC) approach to ensure at least 70% of people timely and appropriately seek healthcare services and at least 80% of the population uses an appropriate malaria protection method, by 2022.
- **Objective 4:**
Strengthen the surveillance system so 100% of health facilities & districts are reporting complete, timely & quality data for evidence-based decision-making at all levels of the health system by 2022.
- **Objective 5:**
Accelerate efforts towards malaria elimination by implementing epidemiologically appropriate interventions in defined areas of low and very low transmission by 2022.

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- **Objective 6:**

Strengthen program management skills at central, provincial & district levels, to effectively achieve the strategic plan objectives by 2022.

5.2 NMCP Interventions in Palma District

In Mozambique, the public sector, through the National Health Service (NHS), dominates health service delivery. Although there is a growing private sector, it is largely limited to major cities. The public sector reaches an estimated 60% of the population.

At the time of this plan, NHS interventions for malaria control in the Palma district are limited and provided through National Malaria Control Program, consist of:

- Long-Lasting Insecticide Treated Nets (LLIN) mass distribution campaigns and LLIN distribution through district health facilities.
- Diagnosis and treatment of malaria cases in public health facilities (six facilities in the Palma district).
- Intermittent Presumptive Treatment in Pregnancy (IPT_P) in district health facilities; and
- IEC regarding malaria prevention by health workers at health facilities.

5.3 Gap Analyses of NMCP Interventions in Palma District

The above malaria control interventions currently implemented by authorities in the Palma district, demonstrate substantial gaps when compared with the minimum expectations by the NMCP. The gaps are mostly noted in in the following key areas:

5.3.1 Vector Control Interventions

Palma district does not have an established vector control program with a regular schedule of activities. The district does occasionally conduct rounds of Indoor Residual Spraying (IRS) but this is inconsistent and depends on availability of funds to finance campaigns. This ad-hoc approach in a limited geographical area is not likely to support a meaningful public health response. A mass distribution of LLIN was conducted in 2017, but the coverage is not likely to have covered all sleeping spaces, utilization is variable through poor knowledge and behaviors, the population had grown and the nets may have been damaged.

5.3.2 Malaria IEC program to Influence Behavior Change

The level of knowledge and awareness related to malaria within communities is limited and dominated by misconceptions. The government malaria interventions in Palma does not include a consistent malaria IEC program implemented in the communities to influence behavior change. This is compounded by a limited outreach capacity.

5.3.3 Training to Community Health Workers

Training provided to community health workers, known as Agente Polivalente Elementar (APEs), include community-based diagnosis and treatment of non-complicated malaria cases as well as identification of early signs of complications and referral to the conventional health centers. The number of APEs is very limited and the few that exist and have been trained, are not actively involved as their functions are not remunerated. Supply of consumables and medications is also a challenge.

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5.3.4 Monitoring and Evaluation for Malaria Surveillance

A key component of the malaria control interventions being implemented by the authorities should be the establishment of specific and objective metrics to measure impact and inform program decision-making. No effective monitoring and evaluation systems for malaria have been implemented in the district, limiting an effective evidence or epidemiologically linked response to programs or planned interventions.

6.0 Malaria Control Measures

In alignment with the internationally recognized approach to malaria control, potential management measures have been divided into three levels of prevention, as detailed below in

Table 3. Detailed community-focused interventions that consider these measures, will be developed based on engagement with the relevant internal and external stakeholders and subject to approval by the Mozambican regulatory authorities. A summary of the proposed approach that will be followed by TEPMA1 are described below and summarized in Table 5.

Table 3: Levels of Malaria Control

PRIMARY CONTROL	
Vector Management	
ENVIRONMENTAL CONTROL <u>Site Selection</u> Buffer zone; distance from vector breeding areas/ populations with active malaria transmission. <u>Source Reduction</u> Environmental modification to reduce vector habitats; environmental manipulation to produce unfavorable conditions for larval growth.	CHEMICAL CONTROL <u>Larval Control</u> Destruction of larvae through chemical, biological, mechanical or physical means. <u>Adult Mosquito Control</u> Indoor residual spraying, space spraying and long-lasting insecticide-treated bed-nets and other materials.
ENTOMOLOGICAL SURVEYS Entomological survey/s to define and understand the condition/s of the main vector species in the Project area, their behavior and insecticide susceptibility.	
SECONDARY CONTROL	
Control/Reduction of Individual Risk	
AWARENESS Malaria IEC campaigns and personal protection information distribution.	BITE PROTECTION Bed-nets (LLIN), physical exclusion and other measures of personal protection.
CHEMOPROPHYLAXIS	

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Regular chemoprophylaxis for those considered at risk, limited to use in non-immune population

TERTIARY CONTROLS	
Limiting effect of infection	
DIAGNOSIS	TREATMENT
Prompt diagnosis through blood sampling or rapid diagnostic tests.	Use of artemisinin-based combination therapy, emergency standby treatment. Potential use of active case detection and seasonal malaria chemoprophylaxis.

7.0 Implementation

7.1 General Considerations

The TEPMA1 Community Malaria Control Plan will not establish a separate parallel program of mitigation measures running side-by-side NMCP activities. Instead, it prioritizes alignment and support to the ongoing activities implemented by the health authorities and, where possible, alignment with workforce malaria control program activities implemented at the worksites and accommodation areas.

A final, detailed scope of work for any initiative that supports malaria control will only be implemented after the completion of appropriate stakeholder engagement and approval by the relevant Mozambican regulatory authorities on a national, provincial and district level. In general, the following approach will be followed:

- All approved CMCP activities will be implemented through a reputable and competent implementing partner under the auspices of the TEPMA1 SI, HSE teams and local health authorities/NMCP.
- All interactions with communities shall be well-coordinated and carried out by the implementing partner in cooperation with the TEPMA1 SI team and the endorsement of the NMCP.
- Emphasis shall be placed on outreach strategies to reduce the risk of malaria transmission by:
 - i. supporting IEC and promote behavior change,
 - ii. supporting community-based source reduction through environmental controls,
 - iii. supporting access to effective diagnosis and treatment and
 - iv. monitoring of case burden and controls to determine efficacy and strategies for future controls.
- Distribution of LLINs to the community shall be carried out only after proper training by recognized and competent partners/ NGOs.

Vector control efforts will be risk-based, evidence-based, and complement the efforts of the NMCP. These interventions will be managed under the guidance and direction of a specialist entomologist. Communication strategies with receiving communities are noted as an essential element of the proposed intervention.

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7.2 Roles and Responsibilities

The likely respective roles and responsibilities of TEPMA1, implementation partners and local authorities are summarized in Table 4 below.

Table 4: Likely Roles and responsibilities

Entity	Likely Responsibilities
TEPMA1	<ul style="list-style-type: none"> • Provide funds for implementation of community focused program activities. • Develop scope of work (SOW) for programs based on baseline data and anticipated impacts. • Leads and/or directs stakeholder engagement and government engagement process. • Facilitate and conducts monitoring and evaluation on implementing partners against relevant SI programs targets. • Compile reports after each assessment event of conformances and non-conformances, with recommended corrective actions and timing for resolution. • Acts on program data and other metrics, adapts SOW and interventions, as required. • Leads internal/ external audit and assurance process. • Develop and implement workforce relevant Company programs.
Implementing Partner	<ul style="list-style-type: none"> • Develop detailed program and implementation plan aligned with the SOW provided by TEPMA1. • Provide adequate skills and resources to implement program activities as per agreed SOW. • In conjunction with the TEPMA1 Community Health, Safety and Security (CHSS) M&E team, develop a M&E framework and collect baseline data and further datasets so that core metrics and KPIs can be tracked as part of program implementation and review. • Monitor and evaluate front line, project-specific activities and outcomes as per agreed SOW. • Provide reporting on KPIs as part of reporting guidelines. • Resolves corrective actions timeously and reports on resolution to AMA.
Government of Mozambique	<ul style="list-style-type: none"> • Assist in the development and sign-off of community focused programs. • Provide adequate resources and support to facilitate effective implementation of programs/interventions. • Support stakeholder engagement and communication with relevant stakeholders.

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7.3 Summary of CMCP approach

A summary of the proposed control measures and how these align with the duration and/or Project phase of implementation, geographic scope, alignment with the 2017-2022 NMCP, implementation status and responsible Project entity, is presented in Table 5 below.

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Table 5: Summary of CMCP Implementation

Nr	Control measure	Level of control	Focus Area	NMCP alignment	Status	Implementation / Responsibility
Afungi Site Improvements Phase						
1	LLIN distribution to local Project workforce members	Secondary	FA1	Objective 1	Implemented	• TEPMA1 HSE
2	Provide malaria IEC to local Project workforce members	Secondary	FA1	Objective 3	Implemented	• TEPMA1 HSE
3	Provide malaria diagnosis and treatment to local Project workforce	Tertiary	FA1	Objective 2	Implemented	• TEPMA1 HSE
4	Perform entomological surveys to better understand vector behavior and direct control interventions	Primary	FA1	Objective 5	Implemented	• TEPMA1 HSE
5	Perform larviciding in vector breeding sites in the Project build zone	Primary	FA1	Objective 5	Implemented	• TEPMA1 HSE
6	Perform IRS on all Project infrastructure	Primary	FA1	Objective 1	Implemented	• TEPMA1 HSE
7	Implement environmental control measures on all Project worksites	Primary	FA1	Objective 1	Implemented	• TEPMA1 HSE
Project Construction Phase						
Potential extension and expansion of measures as above, based on outcome of monitoring and evaluation phase						
8	Support malaria IEC and behavior change campaigns in local communities	Secondary	FA2	Objective 3	Planned for implementation	• TEPMA1 Social Investment (SI)
9	Support LLIN distribution and IEC on LLIN utilization at community level	Secondary	FA2	Objective 1	Planned for implementation	• TEPMA1 SI
10	Support infrastructure development and capacity building in public health facilities- as part of Health Systems Strengthening (HSS)	Tertiary	FA2 (Maganja and RV)	Objective 6	Planned for implementation	• TEPMA1 SI
11	Support LLIN distribution at health facility level	Secondary	FA2	Objective 1	Planned for implementation	• TEPMA1 SI

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Nr	Control measure	Level of control	Focus Area	NMCP alignment	Status	Implementation / Responsibility
12	Support diagnostic and curative capabilities at community level through Community Health Workers program (APE), as part of HSS	Tertiary	FA2	Objective 2	Planned for implementation	• TEPMA1 SI
13	Planned equipment and supply chain support to health facilities and APE, as part of HSS	Tertiary	FA2+3	Objective 2	Planned for implementation	• TEPMA1 SI
14	Support treatment capacity of serious/complicated malaria cases on a district level	Tertiary	FA3	Objective 2	For consideration	• TEPMA1 SI
15	Support case reporting, monitoring and evaluation on community and district level	Tertiary	FA1,2 and 3	Objective 4	Planned for implementation	• TEPMA1 M&E
16	Support IEC campaigns for Integrated Vector Control (IVC) measures in communities: IRS, environmental control and larviciding	Primary	FA1+2	Objectives 1 and 5	Planned for implementation	• TEPMA1 SI
17	Support IRS implementation at community level	Primary	FA1+2	Objective 1 and 5	Planned for implementation	• TEPMA1 SI
18	Support IRS implementation at community level	Primary	FA3	Objective 1 and 5	For consideration	• TEPMA1 SI
19	Support larvaciding at community level	Primary	FA2	Objective 1 and 5	For consideration	• TEPMA1 SI
20	Support IPTp at district level, as part of HSS. Consider seasonal chemoprophylaxis in other vulnerable groups	Tertiary	FA1,2 and 3	Objective 3	For consideration	• TEPMA1 SI
21	Perform entomological surveys and surveillance in local Project area and share with authorities to support control at district level	Primary	FA1,2 and 3	Objectives 1 and 5	Planned for implementation	• TEPMA1 SI
Project Operations Phase						
Potential extension and expansion of measures described above, based on outcome of monitoring and evaluation of activities and entomological findings						

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8.0 Competency, Training and Awareness

All approved CMCP activities shall be implemented through an accredited and competent third-party Implementing Partner (IP) under the auspices of the TEPMA1 SI and HSE teams. All community focused malaria-related training, awareness and capacity building activities undertaken by implementing partners will be performed in alignment with national standards and partnership with the relevant regulatory authorities.

To support quality assurance the IP will be subject to external review for assurance and audit purposes. The scope and timing of this will be determined as part of contract negotiation and award.

9.0 Monitoring and Evaluation

Monitoring and evaluation of the CMCP will be performed by the Monitoring and Evaluation (M&E) team, in collaboration with the IP as per Table 4. The team will perform:

- M&E of specific process, outcome and output indicators as defined by the SOW with the IP and associated partners/providers (e.g. entomology).
- Progress evaluation (mid-term) to determine whether the program is on its way to achieve its goals.
- Summative/Impact evaluation to determine the program success in achieving its proposed goals.
- Reports from external audit and assurance

It remains the responsibility of the IP to monitor their own activities as part of on-going intervention management. The results of these monitoring activities will be reported as defined by the SOW, but will occur at least monthly, with summarized quarterly/ annual reports. Additionally, the IP will be required to design, with the support of the M&E team, a M&E Plan that includes:

- a) Identify Program Goals and Objectives
- b) Design the theory of change
- c) Define indicators (Process/Output/Outcome indicators)
- d) Establish stakeholder analysis
- e) Define Data Collection Methods and Timeline
- f) Identify M&E Roles and Responsibilities
- g) Plan for Dissemination and Reporting to the Project and other stakeholders

The result of this surveillance will also be used to make the business case to management and stakeholders regarding the value added by the programs and enhanced social license to operate. Where possible the economic benefit of interventions will be evaluated, either as a standalone intervention or as part of integration with other socio-economic interventions.

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9.1 Key Performance Indicators

Prior to implementation of any CMCP activities, detailed KPIs will be determined by TEPMA1 for tracking. Indicative KPIs are identified in Table 6.

Table 6: CMCP indicative KPIs

Activity	KPI	Performance measure
Workplace Malaria Control Program		
Burden of disease	<ul style="list-style-type: none"> • Total number of malaria cases per week/ month (displayed in trend graphic), divided by: <ul style="list-style-type: none"> ○ Camp residents (and location of camp) vs non camp residents. ○ Contractor company (list all contractors) ○ Immune/ non-immune. • Malaria incidence/ 100 employees, divided by: <ul style="list-style-type: none"> ○ Camp residents (and location of camp) vs non camp residents. ○ Contractor company (list all contractors) ○ Immune/ non-immune • Malaria frequency index= (Nr of employees X 200,000) /total man hours (or what total recordable frequency index is used)- displayed in a trend graphic. 	<ul style="list-style-type: none"> • Trend analysis and actions based on outcomes
Case management	<ul style="list-style-type: none"> • No of cases requiring hospitalization > 6 hours: <ul style="list-style-type: none"> ○ Immune/ non-immune ○ Camp residents/ non camp residents • No of cases requiring parenteral medication <ul style="list-style-type: none"> ○ Immune/ non-immune ○ Camp residents/ non camp residents • Number of malaria cases requiring off site referral/ evacuation: <ul style="list-style-type: none"> ○ Immune/ non-immune ○ Camp residents/ non camp residents • Number of days of sickness absence due to malaria: <ul style="list-style-type: none"> ○ Immune/ non-immune ○ Camp residents/ non camp residents 	<ul style="list-style-type: none"> • Trend analysis and actions based on outcomes

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Activity	KPI	Performance measure
	<ul style="list-style-type: none"> ○ Contractor company (list all contractors) ● Number of repeat cases of malaria in last 4 months (newly diagnosed after cure) <ul style="list-style-type: none"> ○ Immune/ non-immune ○ Camp residents/ non camp residents ○ Contractor company (list all contractors) 	
Expatriate, national and local workforce IEC sessions	<ul style="list-style-type: none"> ● Number of non-immune workers informed inducted on malaria prior to arrival vs target. ● Number of induction sessions conducted on malaria, with signed attestation forms: <ul style="list-style-type: none"> ○ Immune/ non-immune ○ Camp residents/ non camp residents ● Number of planned IEC sessions conducted vs target. 	<ul style="list-style-type: none"> ● Activities against set targets
Local Workforce Bite Prevention distribution	<ul style="list-style-type: none"> ● Number of bed spaces with LLIN coverage. ● Presence of insect repellent in planned areas. ● Screen check process and building maintenance close out in repair. ● Number of non-compliance's to personal protective clothing policy 	<ul style="list-style-type: none"> ● Performance linked to planned activities
Vector control	<ul style="list-style-type: none"> ● IRS spray coverage of >95% of all structures under Project operational control. ● Cone bioassay assessment of efficacy of IRS activity ● Identification and mapping of potential breeding sites identified for larval source management; defined by: <ul style="list-style-type: none"> ○ Environmental controls ○ Chemical control ○ Biological control ● Coverage of sites identified for larval source management vs target. 	<ul style="list-style-type: none"> ● Performance linked to planned activities

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Community Malaria Control Program		
Entomology	<ul style="list-style-type: none"> • Surveillance of breeding sites as per defined plan. • Surveillance for adult mosquitoes as per defined plan • Implementation of clear insecticide rotation policy • Cone bioassay result to determine efficacy of IRS activity. • Trend in entomological inoculation rates. • Trends in temperature, humidity and rainfall 	<ul style="list-style-type: none"> • Performance linked to planned activities
Vector control	<ul style="list-style-type: none"> • No. of structures defined as targets for IRS. • No. of structures sprayed per round compared to target- target at least 85% of planned structures • No. of areas for larval source management identified. • No. of areas planned for larval source management covered as per plan. 	<ul style="list-style-type: none"> • Performance linked to planned activities
Burden of disease	<ul style="list-style-type: none"> • Malaria case burden as reported from public health centers: <ul style="list-style-type: none"> ○ By health center with age grouping. ○ By health center grouping by gender, and disaggregated by pregnant and non-pregnant. ○ No. of presumptive cases vs confirmed cases. • Malaria case burden as reported from APES: <ul style="list-style-type: none"> ○ By locality ○ Age grouping ○ Gender grouping disaggregated by pregnant and non-pregnant. ○ Presumptive vs confirmed cases. • Case fatality rate for malaria cases admitted to hospitals and health centers with inpatient facilities (< fives, 5-14-year olds, 15+ years, pregnant women) • Annual malaria indicator study including parasite prevalence and anemia assessment (school aged children). 	<ul style="list-style-type: none"> • Performance linked to planned activities • Malaria case burden trends per source and locality • Annual malaria indicator survey

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	<ul style="list-style-type: none"> Active case detection as part of outreach activities. 	
Community IEC sessions	<ul style="list-style-type: none"> Annual malaria indicator study that includes key behavioral aspects. Number of IEC sessions conducted per locality Number of participants per IEC session, per locality. No. of outreach activities per APE 	<ul style="list-style-type: none"> Annual malaria indicator survey Number of sessions and participants
Community LLIN distribution	<ul style="list-style-type: none"> Number of distribution sessions Number of LLIN distributed Assessment of ownership and utilization as part of annual malaria indicator survey LLIN ownership and utilization checks by APEs 	<ul style="list-style-type: none"> Number of sessions and recipients Annual malaria indicator survey
Health systems strengthening support	<ul style="list-style-type: none"> No. of stock out of rapid diagnostic kits and ACT per month. Percentage of pregnant women receiving IPTp per month Percentage of women who has taken a complete IPTp package as recommended by MoH guidelines. No. of complicated cases of malaria per month Number of health facilities with adequate parasite detection services Number of APE that have received training in case management in last 24 months 	<ul style="list-style-type: none"> Number of facilities, health workers and APE supported as a proportion of the total number.

9.2 Data Sources

Workplace Malaria Control Program will be monitored by the HSE team in collaboration with the M&E team.

Data pertaining to the Community Malaria Control Program will be collected through quarterly cross-sectional studies (to be conducted by the M&E team), and through the Implementation Partner data collection systems (including IP's baseline) with a frequency to be determined according to indicators. The results of data analysis will be presented as a dashboard and shared with the relevant stakeholders.