MINISTRY OF HEALTH, GHANA

GHANA COVID-19 EMERGENCY RESPONSE ON VACCINES SECOND ADDITIONAL FINANCING (P176485)

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

June 2021

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

List of Annexes

ACRONYMS

AER	Annual Environmental Report
AEFI	Adverse Events Following Immunization
AF	Additional Financing
ARAP	Abbreviated Resettlement Action Plan
BAT	Best Available Technology
CCO	Chemical Control Order
CDC	Centre for Disease Control
CERC	Contingent Emergency Response Component
CHPS	Community-based Health Planning and Services
CHWTSDF	Centralized Healthcare Waste Collection, Transportation, Storage, Treatment, and Disposal Facility
COVID-19	Coronavirus
CSOs	Civil Society Organisations
DSS	Demographic Surveillance Sites
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPRP	Emergency Preparedness and Response Project
E&S	Environmental and Social
ESA	Environmentally sensitive areas
ESF	Environment and Social Framework
ESIA	Environmental and Social Impact Assessment
ESIS	Environmental and Social Impact Statement
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Electrostatic Precipitators
ESRC	Environment and Social Risk Classification
ESS	Environment and Social Standards
ESSO	Environmental and Social Safeguard Officer
FTCF	Fast Track COVID-19 Facility
GAEC	Ghana Atomic Energy Commission
GAMA	Greater Accra Metropolitan Area Sanitation and Water Project
GARID	Greater Accra Resilient and Integrated Development Project
GBV	Gender Based Violence
GDP	Gross Domestic Product
GHS	Ghana Health Service
GRM	Grievance Redress Mechanism
GSA	Ghana Standards Authority
HC	Hydrocarbons
HCF	Health care facility
HCWM	Health Care Waste Management
HCWMO	Health Care Waste Management Officer
HCWMP	Health Care Waste Management Plan
HCW	Health Care Worker

HeFRA	Health Facilities Regulatory Agency
HFC	hydrofluorocarbon
ICR	Implementation Completion Report
ICU	Intensive care units
IHR	International Health Regulations
ILO	International Labour Organization
IMCC	Inter-Ministerial Coordination Committee
IPC	Infection Prevention and Control
IPF	Investment Policy Financing
IPV	Intimate Partner Violence
KCCR	Kumasi Centre for Collaborative Research
LI	Legislative Instrument
LMP	Labor Management Plan
MDAs	Ministries, Departments and Agencies
MMDAs	Metropolitan Municipal and District Assemblies
MOF	Ministry of Finance
MoH	Ministry of Health
MSW	Municipal Solid Waste
MSWR	Ministry of Sanitation and Water Resources
NAPHS	National Action Plan for Health Security
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organisation
NMIMR	Noguchi Memorial Institute for Medical Research
NAPHS	National Action Plan for Health Security
NMIMR	Noguchi Memorial Institute for Medical Research
ODS	Ozone Depleting Substances
OIE	World Organization for Animal Health
PCU	Project Coordinating Unit
PDO	Project Development Objective
PEA	Preliminary Environmental Assessment
PIU	Project Implementing Unit
POE	Point of Entry
PPE	Personal Protective Equipment
PPME	Policy Planning, Monitoring and Evaluation
RAP	Resettlement Action Plan
RF	Results Framework
RRT	Rapid Response Team
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SPM	Specific Particulate Matter
STI	Sexually Transmitted Infections
TBA	Traditional Birth Attendants
TV	Television
UHC	Universal Health Coverage

UNDP	United Nations Development Programme
US	United State
WAG	Waste Anaesthetic Gas
WAHO	West Africa Health Organization
WB	World Bank
WHO	World Health Organization
WRC	Water Resources Commission

EXECUTIVE SUMMARY

Background

This *Environmental and Social Management Framework* (ESMF) assists the MOH in identifying the type of environmental and social assessment that should be carried out for projects that involve the construction, expansion, rehabilitation and/or operation of healthcare facilities, and the deployment of a safe and effective vaccine in response to COVID-19, and in developing the environmental and social (E&S) management plans in accordance with the World Bank's Environmental and Social Framework (ESF).

An outbreak of the coronavirus disease (COVID-19) caused by the novel coronavirus (SARS-CoV-2) has been spreading rapidly across the world since December 2019. On March 11, 2020, the World Health Organization (WHO) declared the disease as a global pandemic as the virus spreads rapidly across the world, with an estimated 266,073 confirmed cases and 11,184 deaths in more than 160 countries. As of April 7, 2021, global estimates were 135,591,622 confirmed cases and 2,901,200 deaths, reported in 235 countries, areas or territories.

Ghana registered its first COVID-19 case on March 12, 2020. Confirmed cases as of April *7, 2021 is reported 91,009 and 752 deaths.*. Ghana prepared an Emergency Preparedness and Response Plan (EPRP) with the overall objective to: (a) slow and stop transmission, prevent outbreaks and delay spread; (b) provide optimized care for all patients; and (c) to minimize the impact of the pandemic on health systems, social services and economic activity.

The World Bank is providing support to the Government of Ghana for preparedness planning to provide optimal medical care, maintain essential health services and to minimize risks for patients and health personnel (including training health facilities staff and front-line workers on risk mitigation measures and providing them with the appropriate protective equipment and hygiene materials). As COVID-19 places a substantial burden on inpatient and outpatient health care services, support will be provided for a number of different activities, all aimed at strengthening national health care systems, including systems for the deployment of a safe and effective vaccine. The scope of the World Bank's support to financing the plan is made up of (i) US$35 million of the COVID-19 Emergency Preparedness and Response Project Investment Project Financing (IPF: P173788) prepared under the Fast-Track COVID-19 Facility (FTCF approved by the Board of Directors on April 2, 2020; The first AF to the above parent project (P174839) of US$130.00 million was approved on November 10, 2020 and became effective on December 14, 2020.

The proposed second Additional Financing (AF) would support the costs of expanding activities of the Ghana COVID-19 Emergency Preparedness and Response (P173788) and its first Additional Financing (P174839) under the COVID-19 Strategic Preparedness and Response Program (SPRP), using the Multiphase Programmatic Approach (MPA), approved by the Board on April 2, 2020, and the vaccines AF to the SPRP approved on October 13, 2020.1 The expanded project scope

[1] The World Bank approved a US$12 billion WBG Fast Track COVID-19 Facility (FTCF or "the Facility") to assist IBRD and IDA countries in addressing the global pandemic and its impacts. Of this amount, US$6 billion came from IBRD/IDA ("the World Bank") and US$6 billion from the International Finance Corporation (IFC). The IFC subsequently increased its contribution to US$8 billion, bringing the FTCF total to US$14 billion. The Additional Financing of US$12 billion (IBRD/IDA) was approved on October 13, 2020 to support the purchase and deployment of COVID-19 vaccines as well as strengthening the related immunization and health care delivery system.

for the second AF include the activities of rehabilitation and construction of vital health facilities, support for the in-country supply chain and climate-friendly cold chain system strengthening, training of vaccinators, waste management for COVID-19 vaccination and roll out of COVID-19 vaccination.

The primary objectives of the AF are to enable affordable and equitable access to COVID-19 vaccines and help ensure effective vaccine deployment in Ghana through vaccination system strengthening, and to further strengthen preparedness and response activities under the parent project.

The Project Development Objective (PDO) statement is to ***"to prevent, detect and respond to the threat posed by COVID-19 and strengthen national systems for public health preparedness in Ghana."***

There are four main project components as below:

- Component 1: Emergency COVID-19 Response.
    - This involves (i) support to operationalize COVID-19 rollout, including data collection, of the priority populations, in-country transportation, cold chain system strengthening, training of vaccinators, and waste management for COVID-19 vaccination; (ii) case detection, diagnostics, contact tracing, and vaccine safety monitoring, (iii) COVID-19 case containment and management in health facilities, schools and other public places, (iv) scale up of COVID-19 purchase beyond 20 percent of the total population, subsidized within the framework of COVAX and under other agreements,
- Component 2: Strengthening Multi-sector, National Institutions and Platforms for Policy Development and Coordination of Prevention and Preparedness using One Health approach.
    - This involves multi-agency support to enhance response and the strengthening of policy and institutional capacity for disease control.
- Component 3: Community Engagement and Risk Communication
    - This involves nationwide awareness campaigns employing diverse channels of communication. It also involves the establishment of call centers and COVID-19 information centers in all the 16 regions, to responding to inquiries and grievances from the public and project workers.
- Component 4: Implementation Management, Monitoring and Evaluation and Project Management
    - This refers to implementation, management and oversight by the PIU and the establishment of a task team to oversee the implementation of the Ghana Center for Disease Control (CDC).

Purpose and objectives of the ESMF

The purpose of the ESMF is to establish a mechanism to determine and estimate the potential environmental and social impacts of activities under this project. The aim is to support decision-making and provide guidelines for implementation process associated with sub-project activities. These must adhere to environmentally sound, socially inclusive, protect human health and enhance positive environmental and social outcomes.

This project would involve several construction projects (construction of isolation, treatment and laboratories etc.) which will lead to the generation and transportation of biomedical and other hazardous health care wastes across country with associated E&S risks, rated as substantial. For

such infrastructure expansion/development projects site-specific ESIAs with subsequent development of ESMPs may be required to ensure implementation of site-specific control/mitigation measures to effectively minimize these risks. The ESMF however offers guidelines for processes to be followed and preparation of the relevant E&S tools like ESMPs.

However, the E&S risks associated with the non-construction sub-project activities such as surveillance, case monitoring, contact tracing, containment risk communication, multisectoral coordination etc., even though rated as substantial are not site specific, but are similar across country.

For such sub-project activities, a generic ESMF such as this document is adequate to provide guidance for generic environmental social management measures required to minimize and mitigate anticipated E&S impacts, as well as institutional arrangements for environmental management, including monitoring and reporting.

As and when required, this ESMF will be updated to capture any modifications to the project and the environmental and social arrangements for managing E&S risks of the project.

Policy, Legal and Regulatory Framework

Ghana has in place several policies, legislations and regulations that define a framework for the environmental and social impact assessment and management applicable to the health sector. The key policies, legislations and regulations include the Constitution of Ghana; the National Environmental Policy (Revised, 2014); the Environmental Sanitation Policy (Revised, 2010); the Environmental Protection Agency Act, 1994 (Act 490); the Environmental Assessment Regulations 1999, LI 1652; the Hazardous, Electronic and Other Wastes (Classification), Control and Management Regulations, 2016.

The COVID-19 Emergency Preparedness and Response Project is being implemented under the World Bank's new Environmental and Social Framework (ESF). The following Standards are considered relevant for guiding environmental and social risks assessment and management related to (i) assessment and management of environmental and social risks and impacts (ESS1); (ii) labour and working conditions (ESS2); resource efficiency and pollution prevention and management (ESS3); community health and safety (ESS4); and stakeholder engagement and information disclosure.

Potential Environmental and Social Risks

The analysis of the interventions of the COVID-19 Response Project show that the project will have positive impacts as it will improve capacity for surveillance, monitoring, and containment of COVID-19. The project will involve human resources intensive work especially for surveillance, contact tracing treatment and vaccination. It will also include some level of refurbishment, leasing and renting of health and hotel facilities. This will significantly lead to job creation and increase in revenue. The adoption of solar technology and the focus on gender and persons with disability will yield significant positive dividends.

The project could also cause environment, health and safety risks due to the nature of the COVID-19 pathogen and reagents and equipment used in the project-supported activities. There would be issues relating to noise, dust particles and effluence release from service and construction sites. Facilities treating patients may also generate biological, chemical waste, and other hazardous by-products that could be injurious to human health. With interventions such as lock downs and protracted closure of schools the risk of Gender Based Violence including Intimate Partner

Violence or Sexual Harassment are likely to go up. Data management will also be an issue as personal information might become exposed.

COVID-19 vaccine acceptance and uptake may present an unprecedented challenge since the vaccines are new and have been approved only under emergency use authorization, with limited understanding of potential long-tern adverse effects. Additionally, the sheer scale of the vaccination campaign is likely to generate a lot of biomedical waste, especially the sharp waste which will need to be safely disposed of. There may also be adverse events following immunization (AEFI) rightly or incorrectly attributed to the new vaccines, and monitoring of such events will be important.

The preparation of this ESMF considered several mitigation measures and principles for implementing a socially acceptable, environmentally sound and sustainable program. The measures considered include air quality control, occupational health and safety, labour management, sound health care waste management, conflicts and crime prevention, gender and vulnerable groups protection, stakeholder engagement and grievance redress mechanisms etc. The ESMP provides institutional arrangements for implementing and monitoring the mitigating measures.

Public Consultation and Disclosure

Due to the COVID-19 pandemic, public consultations were limited to the national level, cutting across all the necessary stakeholders; Ministry of Health (MoH), Ghana Health Service (GHS), Ministry of Finance (MoF), GARID and Korle Bu Teaching Hospital, civil society organizations, faith-based organizations, the media and associations for persons with disabilities. These were done using virtual media for communication and meeting.

The World Bank policies require that environmental reports/ESIA documents for projects are made available to project affected groups, local NGOs and CSOs, and the public at large. Following clearance from the World Bank, the Government of Ghana would disclose the framework through print media advertisements and copies made available in selected public places. The ESMF would finally be disclosed in the national dailies and on the websites of all the key stakeholders; MoH, GHS, GARID, MoF as well as the World Bank.

Grievance Mechanism

The Project would have multiple stakeholders and implementing agencies and would use a combination of approaches in the delivery of services and benefits. These approaches could lead to complaints, misunderstandings, conflicts and disputes. There would therefore be a grievance mechanism that would provide all direct and indirect beneficiaries, service providers and other stakeholders to raise their concerns. These stakeholders would be informed of the grievance mechanism in place. A national safeguards specialist will oversee grievances and would liaise with the project implementation team to resolve grievances. At the regional, district and community/sub-district levels, dedicated officers will be assigned roles for up taking and ensuring the resolution of cases with the various health committees under the leadership of the various level heads. Escalated cases beyond the Project and the Ministry of Health would be handled by the Ghana Judicial System.

Institutional Arrangements, Responsibilities and Capacity Building

The MOH is the primary implementation agency for the project activities. The Chief Director of the Ministry of Health (MOH) supported by the Director, Policy Planning, Monitoring and Evaluation (PPME-MOH) and the Director of Public Health, Ghana Health Service are responsible for overall project management. Specific technical staff including Environment Safeguards Specialist and Social Safeguards Specialist will be recruited or assigned for implementation of social and environment standards. MoH will collaborate with the Occupational and Environmental Health unit of the Ghana Health Service and the EPA on issues relating to the location of health facilities, identification of isolation centers, management of liquid and solid wastes, public health and safety, and occupational health and safety, as well as procuring environmental permits for the construction and operation of the health facilities. Specific training will be provided to persons working on the project in environmental and social safeguards as required by the project.

1. INTRODUCTION AND BACKGROUND

1.1. Project Background

Ghana has seen constant increases in COVID-19 cases following the detection of the first two COVID-19 cases on March 12, 2020. As of April 7, 2021, Ghana has 91,009 cumulative confirmed cases and 752 cumulative deaths (death rate of 0.5 percent). Globally, more than 156 million people have been infected worldwide and over 2.9 million people have died as at April 7 2021. The virus continues to spread at an average weekly rate of 7 percent and a weekly average rate of 4.5 percent of new confirmed deaths. Ghana continues to be considered a high-risk country and classified among 13 priority-1 countries in the region for being at risk based on flight and passenger volumes. There are risks of the second wave in the country, especially as the country plans to reopen the economy, schools and other socioeconomic activities.

After a strong and effective initial emergency response to the pandemic, the Government's attempts to relax restrictions and reopen socioeconomic activities were thwarted by the propagation of new variants in Ghana in early 2021. Following the detection of the first in-country COVID-19 case on March 12, 2020, the Government imposed restrictions that included border closures, quarantine for all travellers, school closures, and cancellation of religious gatherings and funerals. The Government has progressively lifted the various restrictions after analysing the epidemiology and identifying hotspots. The country's international airport was reopened on September 1, 2020, while land borders remained closed. Restrictions on social gatherings were lifted at the end of 2020. All schools were reopened on January 15, 2021.

However, restrictions on social gatherings were reinstated after Ghana experienced a surge in infections and fatalities in January 2021, entering a second wave of rising infections of COVID-19. Furthermore, on January 29, 2021, the Africa Union (AU) and the Africa Center for Disease Control and Prevention (CDC) confirmed Ghana to be amongst countries on the continent to have recorded the 501Y.V2 variant, which first appeared in South Africa.2 As at February 18, 2021, it recorded a total of 80,253 confirmed cases and 577 deaths, which case fatality rate was at 0.72 percent. The number of daily active cases on February 16, 2021 was as high as the peak of the first wave on June 17, 2020. The effective reproduction number on January 21, 2021 exceeded 2.0.3 The rollout of vaccines will take time to significantly reduce the incidence of COVID-19 and suppression of community transmission will remain a priority.

The COVID-19 crisis has had economic impact on the population through job and income losses which, puts pressure on the Government to sustain higher expenditure, resulting in larger fiscal deficits and debt accumulation. The COVID-19 pandemic ended a strong growth and a two-year disinflation process in Ghana with a negative impact on: (i) external demand, including for tourism; (ii) commodity prices, particularly of oil; and (iii) foreign direct investment (FDI). The GDP growth is expected to slow down to 1.1 percent in 2020, after averaging seven percent per year in 2017-2019. The crisis has also halted the fiscal consolidation program, with an estimated fiscal

[2] African Union and Africa CDC. New SARS-CoV2 variants in Africa. *https://africacdc.org/download/new-sars-cov-2-variants-in-africa/*

[3] WHO Country Office for Ghana. Update on COVID-19 response for Ghana. February 23, 2021.

deficit of 16.2 percent of GDP in 2020, as the Government of Ghana (GoG) provided extensively support to save lives and protect livelihoods. The public debt is estimated to have reached 78.7 percent of GDP in 2020. Ghana's labour market has been hard-hit by the pandemic, leading to job losses, lower incomes, and increased poverty. In the first three months of the crisis, 77 percent of the population reported a decline in household income.

1.2. Rationale for ESMF

This *Environmental and Social Management Framework* (ESMF) assists the MOH in identifying the type of environmental and social assessment that should be carried out for projects that involve the construction, expansion, rehabilitation and/or operation of healthcare facilities, and the deployment of a safe and effective vaccine in response to COVID-19, and in developing the environmental and social (E&S) management plans in accordance with the World Bank's Environmental and Social Framework (ESF).

Its purpose is to establish a mechanism to determine and estimate the potential environmental and social impacts of activities under this project. The aim is to support decision-making and provide guidelines for implementation process associated with sub-project activities. These must adhere to environmentally sound, socially inclusive, protect human health and enhance positive environmental and social outcomes.

The ESMF covers processes to be followed for (i) environmental and social screening to guide decision-making; (ii) conducting environmental impacts assessment and preparation of ESMPs for selected subprojects; (iii) Preliminary assessment of anticipated environmental impacts (iii) generic environmental social management measures to avoid, minimize and mitigate anticipated impacts and (iv) institutional arrangements for environmental management, including monitoring and reporting.

The specific objectives of the ESMF are to:

a. Ensure that the project is carried out in accordance to the relevant Ghanaian laws and World Bank Environmental and Social Standards;
b. Assess the potential environmental and social impacts of envisaged sub-projects under the components and propose a management framework comprising of the measures to mitigate the negative environmental and social impacts and enhance the positive impacts of the project.
c. Establish clear procedures and methodologies for incorporating environmental and social management requirements throughout all the stages of the project implementation, including planning, design, execution and operations of sub-projects.
d. Provide guidelines to appropriate roles and responsibilities and outline the necessary reporting procedures for managing and monitoring environmental and social concerns of the project and its sub-projects.
e. Determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF.
f. Estimate the costs for the implementation of the Environmental and Social Management Framework for the project.

The expanded project scope for the second AF include the activities of rehabilitation and construction of vital HFs, support for the in-country supply chain and climate-friendly cold chain system strengthening, training of vaccinators, waste management for COVID-19 vaccination and roll out of COVID-19 vaccination. There are moderate to substantial E&S risk and impacts associated with these activities during the civil works phase, transportation of vaccines, infectious health care waste management, chemicals, drugs, clinical supplies, and distribution, use of refrigerants and transportation of cold storage facilities for vaccine storage and distribution. As per the Environmental Assessment (EA) Regulations of Ghana (1999), undertakings for which EIA is mandatory include among many others, the construction of health facilities, incineration plants, waste water treatment plants, waste disposal sites and human settlement development; many of such undertakings which might occur within the project.

The EA regulation requires that for the above-mentioned sub-project undertakings, the project proponent (the MOH in this case) will have to apply to the EPA Ghana for an environmental permit prior to commencement of the undertaking. Based on the outcome of such an application, the EPA will generate a screening report to determine whether, the application is approved; or is objected to; or requires submission of a preliminary environment report; or requires the submission of an environmental impact statement. For the afore-mentioned construction projects, site-specific instruments such as ESIAs, ESMPs etc may be required to ensure proper identification of site-specific risks for formulation of specific and effective control/mitigation measures.

On the contrary, for non-construction sub-project activities such as surveillance, case monitoring, contact tracing, containment, risk communication, multisectoral coordination etc., the associated E&S risks are considered minimal and so the EPA, after conferring with the World bank and project proponent, may come to agreement that no ESIA or ESMP will be required.

The development of a generic ESMF such as this document will therefore offer broad guidelines on steps required for planning an ESIA application process, preparation of relevant E&S instruments like (e.g., ESIA, ESMPs) and the development of health care waste management plans (HCWMP) or workers safety and well-being plans (WSWPs).

The ESMF has been prepared to ensure that interventions under the COVID-19 EPRP are undertaken in a manner that avoids and minimizes environmental and social impacts as much as possible. It covers (i) processes to be followed for environmental and social screening to guide decision-making; (ii) process to be followed for conducting environmental impacts assessment and preparation of ESMPs for selected subprojects; (iii) Preliminary assessment of anticipated environmental impacts (iii) generic environmental social management measures to avoid, minimize and mitigate anticipated impacts and (iv) institutional arrangements for environmental management, including monitoring and reporting.

As and when required, this ESMF will be updated to capture any modifications to the project and the environmental and social arrangements for managing E&S risks of the project.

In response to plans by the recipient to initiate a nation-wide COVID-19 vaccination campaign within the first quarter of 2021, this ESMF has been updated to reflect measures to address potential negative environmental or social impacts of any activity related to the deployment of vaccines and which may be supported by Additional Financing to the existing COVID-19 response project.

1.3. Project Description

The project covers all regions of the Republic of Ghana. The country is divided into 16 administrative regions, six of which were created in 2019. The population growth rate is 2.2 percent reaching an estimated 30 million at end of 2018. The population density is about 133 per square kilometer. The number of poor individuals was reduced from 50 percent to 23.4 percent and extremely poor from 37 percent to 8.2 percent between 1990 and 2017. However, some regions experienced worsening poverty[4]. Approximately 86 percent of the population have access to improved drinking water of which 92 percent is urban and 80 percent is rural. However, sanitation facilities remain a challenge at 14 percent of the population: 18.8 percent in urban areas and 7.7 percent for rural.

The Original Project (P173788) initially had four components and the first and second AF will retain the same components as shown below:

1.3.1.Component 1: Emergency COVID-19 Response

Sub-component 1.1: Case detection, confirmation, contact tracing, recording and reporting

This sub-component would help (i) strengthen disease surveillance systems at points of entry (POEs), public health laboratories, and epidemiological capacity for early detection and confirmation of cases; (ii) combine detection of new cases with active contact tracing; (iii) support epidemiological investigation; (iv) strengthen risk assessment; and (v) provide on-time data and information for guiding decision-making and response and mitigation activities. The project will support surveillance systems strengthening for emerging infectious diseases by using a risk-based approach. The surveillance system comprises the following components: (i) disease reporting system for the priority infectious diseases; (ii) laboratory investigation of priority pathogens; (iii) community event-based surveillance; and (iv) contact tracing, rumour surveillance and verification. Well-structured epidemiological studies and surveillance programs would be integrated with the disease control measures, which would be then adjusted and improved as new information becomes available. Strengthening animal and human disease surveillance and diagnostic capacity would be supported through the following activities: improving health information flow among relevant agencies and administrative levels; detection, reporting and follow-up of reported cases; public and community-based surveillance networks; routine serological surveys; and improving diagnostic laboratory capacity. Support would be provided to strengthen the network of the designated laboratories for COVID-19. The existing Noguchi Memorial Institute for Medical Research (NMIMR) and the Kumasi Collaborative Center for Research (KCCR) would investigate pathogens under the One Health approach and lead infectious diseases research and development in the country.

Within the course of the first three months of project implementation, the laboratory system has been expanded from two to ten with streamlined digital solutions for timely case detection, diagnosis and reporting. A total of 868,173 COVID-19 tests have been performed as at February 18, 2021.[5]

[4] Ghana Statistical Services; 2018 Demographic and Health Survey; Accra
[5] WHO Country Office for Ghana. Update on COVID-19 response for Ghana. February 23, 2021.

Through the strengthened surveillance system with 1,340 trained surveillance officers and contact tracers, all the confirmed cases' contacts were traced (100 percent) to date.

Sub-component 1.2: Containment, isolation and treatment

An effective measure to prevent contracting a respiratory virus such as COVID-19 would be to limit, as possible, contact with the public. Therefore, the project would support the government for implementation of immediate term responses, i.e., classic "social distancing measures" such as school closings, escalating and de-escalating rationale, in compliance with the International Health Regulations (IHR) 2005. Several holding, isolation, quarantine, and treatment centers have been identified across the country. This sub-component supports the leasing, renting, establishment and refurbishing of designated facilities and centers to contain and treat infected cases in a timely manner. Support would be provided to ensure the operations of effective case containment and treatment with Infection Prevention and Control (IPC) measures to be enforced at all time with necessary equipment, commodities and basic infrastructure. Psychosocial and essential social support would be provided to those who are in isolation and quarantine centers with consideration of gender sensitivity and special care for people with disabilities and/or chronic conditions. Additional trained health workers would be deployed to the designated isolation/treatment centers for COVID-19 case management, not to disrupt the general health services. It is important to clarify that the Bank will not support the enforcement of such measures when they involve actions by the police or the military, or otherwise that require the use of force. Financing would also be made available to develop guidelines on social distancing measures (e.g., in phases) to operationalize existing or new laws and regulations, support coordination among sectoral ministries and agencies, and support the MOH on the caring of health and other frontline personnel involved in pandemic control activities with IPC measures and psychosocial support when distressed. Compensation payments, life and health insurance for staff working in the frontlines of fighting the disease will be paid.

Currently, case management capacity has been reinforced with 21 treatment centers and 129 Intensive Care Unit (ICU) beds in 10 out of 16 regions, including Greater Accra Region where is the epicenter of COVID-19 and regions with the formal points of entry such as Western, Volta and Upper East Regions.

More than 4,400 health workers were trained in case management and infection prevention and control (IPC).

Health and life insurance packages were provided to health workers to secure the necessary workforce in combatting this crisis.

The project also supports the re-opening of socioeconomic activities, especially school reopening, through fumigation and specific infection prevention and control measures at health facilities and schools.

Sub-component 1.3: Social support to vulnerable groups

Patients and their families needing support, especially those who are isolated or quarantined would be provided psychosocial counselling support, food-baskets and feeding during the isolation, quarantine and treatment period. Active social support would also be provided to reduce the impact of COVID-19 on the finances of directly affected to families. This will include cash transfers and support to access and use needed health services. To this end, financing would be provided for fee-waivers to access medical care and cash transfers to mitigate loss of household income due to job losses that may result from the closure of firms and enterprises,

informal sector businesses, as well as government agencies, during the COVID-19 outbreak. The government would develop a COVID-19 Compensation Benefit Framework.

By December 2020, over 20,000 people with disability had received psychosocial support, wheelchairs, and PPE to prevent the infection.

Sub-component 1.4: Health System Strengthening:

Human resource and institutional capacity are key to addressing the COVID-19 outbreak as well as to strengthen health systems to ensure the constant provision of general health services without disruption. This activity is related to training and capacity building for preparedness and response as well as service delivery guided by the different pillars and activities of the National Action Plan for Health Security (NAPHS) and the Universal Health Coverage (UHC) Roadmap. These include: (i) training of contact tracing coordination teams and networks at the national, regional and district levels; (ii) recruitment of technical experts and human resources for technical work and supportive supervision; (iii) training of district and sub-district level health workers and volunteers for surveillance and case management; (iv) training of laboratory personnel to build diagnostic capacity for COVID-19 at the subnational (regional/district) level; (v) orientation of POE staff for screening people entering the country at designated points of entry (airports, border crossings, etc.); (vi) capacity building for call/hotline centers; (vii) strengthening Pre-Hospital Emergency Medicine (PHEM) and community- and event-based surveillance for COVID-19; (vii) capacity building and orientation of national, regional and district Rapid Response Teams (RRTs), Doctors, Physician Assistants, staff of quarantine facilities, surveillance and point of entry teams across country and particularly in treatment centers at all border districts; and (viii) simulation exercises and scenarios conducted in facilities and communities marked as Demographic Surveillance Sites (DSS) sites and quarantine facility to ensure that facilities measure up to the required standards.

The project also supports the continuity of essential health and nutrition service delivery. Despite a sharp drop in service utilization, among which child immunizations were most affected in March-May 2020,6 the Government is making up for missed immunization while the rates for antenatal care (ANC) and counseling for family planning remain lower than the previous years.

Sub-component 1.5: Strengthening preparedness for vaccine deployment

The project supports the readiness assessment, using the Vaccine Introduction Readiness Assessment Tool (VIRAT)/Vaccine Readiness Assessment Framework (VIRAF) 2.0 tool and the development of the National COVID-19 Vaccine Deployment Plan. Its procurement plan and micro plans are underway. The component supports the operationalization of COVID-19 vaccine rollout, including data collection of the priority populations, in-country transportation, cold chain system strengthening, training of vaccinators and waste management for COVID-19 vaccination

No major preparatory civil works such as construction, upgrading, expansion or rehabilitation of existing vaccine cold storage units are expected since the recipient has planned to run the COVID-19 vaccination roll out program on the backbone of an already existing EPI child immunization program. Furthermore, the type of vaccine to be procured and deployed are likely to be those which do not require any special cold chain logistics or storage conditions.

[6] Global Financing Facility (GFF) and the World Bank Group. Monitoring essential health services in times of COVID-19: September 2020 update.

Sub-component 1.6: The component will support the purchase of COVID-19 vaccines for an additional 18.25 percent of the total population of the national target of 17.5 million. The component will finance the costs of the vaccines, international freight and procurement fees to UNICEF or private suppliers

1.3.2.Component 2: Strengthening Multi-sector, National Institutions and Platforms for Policy Development and Coordination of Prevention and Preparedness using One Health Approach

Sub-component 2.1: Multi-agency support to enhance response

The main implementing agency of this Project will be MOH, working in collaboration with the Ghana Health Service (GHS), other ministries, departments, and agencies. The project would support costs associated with project coordination. The country has set up an Inter-Ministerial Coordinating Committee (IMCC) and an Emergency Operations Center (EOC) under GHS which is operational. These bodies are the main coordinating points for the COVID-19 preparedness and response in Ghana. This component would also support implementation of the IHR as incorporated in National Action Plans for Health Security. Such support would include: (i) technical support for strengthening governance and updating policies and plans; (ii) support for institutional and organizational restructuring to respond to emergencies such as pandemic diseases; (iii) Operating Costs of the IMCC, EOC, quarantine centers and the Ghana Center for Disease Control (CDC) including transport, communication support equipment and other administrative-related costs for coordination meetings and supportive supervision and monitoring; and (vi) contracts for private management of newly established infectious disease centers and medical villages. Support would be also provided to MOH with oversight from IMCC to develop standardized life insurance package, overtime and hazard payments, which are to be made for those directly involved in surveillance and case management.

The timely support for the inter-ministerial coordination committee (IMCC) has enabled policymakers to develop policies and legislative instruments, including the Imposition of Restrictions Act 2020 (Act 1012) and Executive Instruments (EI 61) and (EI 64) on the wearing of face masks and border closures to protect the population from the spread of the virus.

The inter-agency National Technical Coordinating Committee (NTCC) and the regional and district Public Health Emergency Management Committees (PHEMCs) have been supported to take adequate public health and social measures nationwide.

Sub-component 2.2: Strengthening policy and institutional capacity for disease control.

The component would support enhancing diseases information systems through development of a disease surveillance information system, as part of the disease control program. The aim is to provide better analytical capacity to Ghana; and to participate in global disease information sharing, complying with national obligations as members of World Organization for Animal Health (OIE) and WHO. A strengthened national system will contribute progressively towards better global and regional control. The information system and data management would be linked to rapid and standardized methods of routine analysis of surveillance data, which would demonstrate important changes in the health situation, and promptly supply this information to field personnel.

Updates: The Government has adjusted protocols of self-quarantine for asymptomatic patients according to the epidemiological trends to avoid overwhelming health facilities and quarantine centers.

The national policy on port health is being reviewed and initial assessments for upgrading and refurbishing Points of Entry is underway.

1.3.3.Component 3: Community Engagement and Risk Communication

Risk communication: The project will focus on risk communication and community engagement at the points of entry, engaging key decisions makers and stakeholders, community leadership and opinion leaders. The first level will be points of entry communication targeting travellers. Mass communication and social media will be key in bringing the message to individual households using various methods including community van announcements for community sensitization. A series of executive briefings will be held for parliament and the media. The plan focuses on both the process and development of broadcast and communication support materials including billboards, printing of leaflets and pocket cards, epidemiological bulletins, TV documentaries and payment for broadcast of infomercials, civic education, and faith-based organization engagements. Where needed, technical assistance will be procured, and technical facilitator and expert commentator allowances paid for discussants on key media outlets.

Community Engagement: Various approaches for community engagement including: (i) surveillance, home visits and contact tracing at the district, sub-district and community levels; (ii) risk communication through a well-established network of call center, community health officers and community volunteers; and (iii) community mass communication and announcements and outreach services and sensitization through community announcement centres, sensitization, information sharing and counter misconceptions information sharing.

Updates: Currently, the project supports nationwide extensive awareness campaigns delivered in a sign language and local languages with wide dissemination of the information, education and communication materials, some of were translated into braille.

The Government has promptly launched a designated official website on COVID-19, three days after its first cases were detected, to limit the number of fake news and to establish trusted communication channels for the media and the population.

The Minister of Information and technical experts conducted daily, then later on semi-weekly briefs with a sign language on local TV and social media. Furthermore, the President has periodic brief in both English and local language to inform residents social and public health measures on Sunday evenings.

Communication caravans went around the country to disseminate information on preventive measures and appropriate care seeking. Resource persons and facilitators were supported by the project to hold awareness discussions in local languages daily on over 200 radio stations.

Call centers and COVID-19 information centers were established in all the 16 regions, responding to inquiries and complaints from citizens. As a result of these extensive awareness campaigns, a survey showed that 97 percent of survey respondents were aware of COVID-19, 70 percent knew the symptoms, and 83 percent reported to have sufficient information about COVID-19.

1.3.4. Component 4: Implementation Management, Monitoring and Evaluation and Project Management

Sub-component 4.1: Implementation, management and oversight

Project Management: activities of the Project include (a) providing support for the strengthening of public structures for the coordination and management of the Project, including central and

local (decentralized) arrangements for the coordination of Project activities; (b) the carrying out of financial management and procurement requirements of the Project; (c) the recruitment of additional staff/consultants responsible for overall administration, procurement, and financial management under country specific projects; and (e) the financing of project coordination activities.

Monitoring and Evaluation: The project activities include a monitoring and prospective evaluation framework for the project and for operations at the country and sub-regional or regional levels. For operations at the country and sub-regional or regional levels, the monitoring and prospective evaluation will provide a menu of options to be customized for each operation, together with performance benchmarks. The activities include: (a) monitoring and evaluating prevention and preparedness; (b) building capacity for clinical and public health research, including joint-learning across and within countries, and this could include: (i) training in participatory monitoring and evaluation at all administrative levels, including: (1) the carrying out of evaluation workshops; and (2) the development of an action plan for monitoring and evaluation; and (3) the replication of successful models. Monitoring and evaluation activities such as (1) Supporting the PIU in the monitoring of Project implementation through, inter alia: (I) the collection of data from line ministries and other implementation agencies; (II) the compilation of data into progress reports of Project implementation; (III) the carrying out of surveys; (IV) the carrying out of annual expenditure reviews; and (V) Carrying out an impact evaluation on quantitative and qualitative aspects of the Project interventions, including the collection of qualitative information through site-visit interviews, focus groups and respondent surveys.

Updates: So far, building on the existing M&E systems in the country, the Project Implementation Unit (PIU) has been effectively monitoring the progress of the key results indicators.

The PIU regularly submits reports on financial, procurement and implementation of the Environmental and Social Management Framework (ESMF), Stakeholder Engagement Plan (SEP) and the Environmental and Social Commitment Plan (ESCP) in compliance with the World Bank's requirements. A designated ESMF focal person has been appointed to ensure that the project meets the environment and social standards. The Project Implementation Manual (PIM) was developed and is being implemented.

Despite an unprecedented number of transactions in procurement and financial management (FM), the PIU staff successfully managed the project and have obtained experience in dealing with emergency operations with extensive support from the World Bank team.

Sub-component 4.2: Strong institutions for managing Ghana Center for Disease Control (CDC)

The terms of reference (ToR) for a task team to oversee the implementation of the Ghana CDC has been developed and consultations on the establishment of the core task team is underway.

1.3.5.Vaccine Additional Financing

The proposed second Additional Financing (AF) would support the costs of expanding activities of the Ghana COVID-19 Emergency Preparedness and Response (P173788) and its first Additional Financing (P174839) under the COVID-19 Strategic Preparedness and Response

Program (SPRP), using the Multiphase Programmatic Approach (MPA), approved by the Board on April 2, 2020, and the vaccines AF to the SPRP approved on October 13, 2020.[7]

The primary objectives of the second AF are to enable affordable and equitable access to COVID-19 vaccines and help ensure effective vaccine deployment in Ghana through vaccination system strengthening, and to further strengthen preparedness and response activities under the parent project.

Ghana is benefiting from its membership of COVID-19 Vaccines Advance Market Commitment (COVAX AMC) and its strong logistics offering to secure early access to vaccines through the COVAX Facility of up to 20 percent of a total population. On February 24, 2021, Ghana received the first batch of the COVID-19 vaccines, 600,000 doses of AstraZeneca from the COVAX Facility. This enables the Government to start vaccine deployment from March 2, 2021. To reach the country's target of vaccinating at least 60 percent of the population or 20 million people, the country is relying on mobilizing domestic resources, development aid and the goodwill of the international community. Transport, storage, distribution and vaccine hesitancy present major challenges for the rollout of COVID-19 vaccines across the country. The Government attentively addresses science-based equity deployment of vaccines through an updated of the National COVID-19 Emergency Preparedness and Response Plan and the National Vaccine Deployment Plan which ensures that the vulnerable are vaccinated.

Vaccines and priority groups

This second AF and Restructuring is being proposed at a crucial juncture in the Government's response to COVID-19. The proposed AF will play a critical role in enabling affordable and equitable access to vaccines globally for low- and middle-income countries, including Ghana, and therefore playing a critical role in further strengthening the health systems. The private global economy will not recover fully until people feel they can live, socialize, work, and travel with confidence. Given the importance of limiting the spread of COVID-19 to improve health outcomes and support economic recovery, providing access to COVID-19 vaccines will be critical to accelerate economic and social recovery for Ghana.

Vaccine's availability will limit the Government's capacity to roll out the vaccine to the population in 2021. Ghana's COVID-19 vaccines strategy is to cover 20 percent of its population by September 2021 (within the course of the first six months), then eventually reaching more or less 60 percent of the population by end of 2021, in line with the target set by the AU for its members. Table 1 below shows the prioritized target population by phase.

[7] The World Bank approved a US$12 billion WBG Fast Track COVID-19 Facility (FTCF or "the Facility") to assist IBRD and IDA countries in addressing the global pandemic and its impacts. Of this amount, US$6 billion came from IBRD/IDA ("the World Bank") and US$6 billion from the International Finance Corporation (IFC). The IFC subsequently increased its contribution to US$8 billion, bringing the FTCF total to US$14 billion. The Additional Financing of US$12 billion (IBRD/IDA) was approved on October 13, 2020 to support the purchase and deployment of COVID-19 vaccines as well as strengthening the related immunization and health care delivery system.

Table 1. Prioritization of target groups for the COVID-19 vaccines rollout

Segmented population	Estimated proportion (%)	Population	Justification
Phase I			
1. Health care workers[8] (medical and non-medical)	0.65	206,338	Health care workers provide critical medical care (in and outpatients), emergency care and immunization. They are at high risk of exposure and occupational infection and spread. Loss of a critical number of HCWS can adversely affect the quality of the health delivery system.
2. Security Service[9]	0.3	95,233	Security services interact with large segments of the population and are at high risk of exposure, infection and disease transmission.
3. Persons with known underlying com-morbidities	3.95	1,253,903	Individuals with underlying medical conditions are within the highest risk bracket of disease morbidity and mortality.
4. Adults 60 years and above	6.5	2,063,385	Older persons are at high risk of severe disease and mortality
Sub-total	11.4%	3,618,859	
Phase II			
5. Tertiary and second cycle students, teachers at all levels	7.9	2,507,806	Exposure to large populations at a given time and are at risk of high exposure and infection
6. Essential service providers (Electronic Company of Ghana (ECG), Ghana Water Company (GWCL), bankers and professions in contact with large populations at a time (market women, commercial drivers etc.)	5.0	1,587,219	Exposure to large populations at a given time and are at risk of high exposure and infection.
7. Special group on national assignments (contact sports e.g., football, boxing etc.)	0.2	63,489	Potential for focal outbreaks during tournaments, travel etc.
8. Executive, Judiciary and Legislature, Ministries & Civil service	0.3	95,233	Exposure to large populations at a given time and are at risk of high exposure and infection
9. Media	0.2	63,489	Exposure to large populations at a given time and are at risk of high exposure and infection

[8] Consideration will be given to volunteers and social mobilizers who will support the vaccination.
[9] Prisoners to be considered as part of this group.

Segmented population	Estimated proportion (%)	Population	Justification
Sub-total	13.6%	4,317,236	
Sub-total (cumulative of Phases I and II)	25.0%	7,936,095	
Phase III			
10. Other members of the population, excluding children under 18 years and pregnant women	30.0	9,523,313	General risk of exposure and infection. Important to build herd immunity
Sub-total (cumulative of Phases I, II and III)	55.0%	17,459,408	
Phase IV			
11. Pregnant women and children under 18 years, excluding neonates	39.0	11,741,734	Upon confirming the vaccine safety for pregnant women and children
Sub-total (cumulative of Phases I, II, III and IV)	96.0%	29,201,142	

Of these target population, the AF will finance the purchase of COVID-19 vaccines to cover population groups such as Adults 60years and above; Tertiary and second cycle students, teachers at all levels; and Essential service providers. The vaccines prioritized to be purchased under the AF include Astra Zeneca, and Sputnik V.

1.3.6.Vaccine deployment scenarios

Two scenarios are proposed for the national deployment. The scenarios are premised on vaccine characteristics, available quantities, delivery schedule, human resource capacity, procurement and supply chain management. A phased approach will be used for the deployment of the vaccine according to the segmented population simultaneously across all the sixteen (16) regions if there are adequate vaccines. In an instance where vaccine supply is inadequate, targeted populations in high burden regions or hot spots will be prioritized.

Scenario 1: Assumption is that the country has adequate vaccine doses, ancillary logistics and operational capacity. This deployment is expected to be completed in 5 months.

Scenario 2: This scenario envisages global vaccine supply over a longer period and hence vaccine deployment will be staggered in 3 phases. Table 2 shows the segmented population groups and justification

Table 2. Segmented population groups and justification

Segmented population	Estimated proportion (%)	Population	Justification
12. Health care workers[10] (clinical and non-clinical)	0.65	206,338	Health care workers provide critical medical care (in and outpatients), emergency care and immunisation. They are at high-risk of exposure and occupational infection and spread. Loss of a critical number of HCWS can adversely affect the quality of the health delivery system.
13. Security Service[11]	0.3	95,233	Security services are at the core of the country's national security and will be relied on should a major disaster (health and other natural disasters) occur. Safeguarding their health is paramount. Security personnel also interact with large segments of the population in the execution of their duties and are at high risk of exposure, infection and disease transmission.
14. Persons with known underlying com-morbidities [12](Hypertension, Diabetes Mellitus, Asthma/COPD, Sickle Cell Disease etc.)	3.95	1,253,903	Individuals with underlying medical conditions are within the highest risk bracket of disease morbidity and mortality. Protecting this group would reduce incidence and mortality
15. Adults 60 years and above	6.5	2,063,385	Older persons are at high risk of severe disease and mortality
16. Tertiary and second cycle students, teachers at all levels	7.9	2,507,806	Tertiary and second cycle students and teachers are mostly confined in their various campuses. Exposure to large populations at a given time and are at risk of high exposure and infection
17. Essential service providers (ECG, GWCL, UN staff and other DPs, Bankers and professions in contact with large populations at a time (market women, commercial drivers etc.)	5.0	1,587,219	People in this category provide essential services which includes coming into contact with people, providing meals and utility services. Exposure to large populations at a given time and are at risk of high exposure and infection.

[10] *Consideration will be given to volunteers and social mobilizers who will support the vaccination.*
[11] *Prisoners to be considered as part of this group*
[12] *To consider persons with disability*

Segmented population	Estimated proportion (%)	Population	Justification
18. Special group on national assignments (contact sports e.g. football, boxing etc.)	0.2	63,489	Potential for focal outbreaks during tournaments, travel etc.
19. Executive, Judiciary and Legislature, Ministries & Civil service	0.3	95,233	It is important to ensure that the governing structure of the country is protected. The leadership of the country are engaged in several physical meetings to advance the course of the country. Exposure to large populations at a given time and are at risk of high exposure and infection
20. Media	0.2	63,489	Exposure to large populations at a given time and are at risk of high exposure and infection
21. Other members of the population excluding children under 16 years and pregnant women	30	9,523,313	General risk of exposure and infection. Important to build herd immunity
Total	**55.0%**	**17,459,408**	

1.3.7.Strategies for Vaccine Delivery

The overall vaccine deployment strategy will be hinged on vaccine availability, vaccine choice, country context and the characteristics of the segmented populations. Following discussions with the President Representative for Health on the deployment of Covid-19 Vaccine storage facilities in Ghana, an assessment was carried out to ascertain the state of cold storage facilities available to support the Covid-19 vaccination program. From the assessment, it was confirmed that the cold storage facility at EPI could accommodate up two (2) million doses of Covid-19 vaccines that require storage temperature of +2^{0}C to +8^{0}C. Similarly, Zipline also has refrigerators that could accommodate up to one (1) million doses of vaccines requiring storage temperature of +2^{0}C to +8^{0}C.

Unfortunately, none of the two entities had ultralow temperature storage facilities to accommodate vaccines that require storage temperature from around -80^{0}C to -20^{0}C. Though Zipline confirmed their plan to import three units of ultralow vaccines storage to support the program, it may not be enough to support the national Covid-19 vaccination program.

Ministry of Health has therefore put in place a plan for the procurement of additional cold storage facilities to achieve self-sufficiency and resilience in the cold-chain system required for Covid-19 vaccines as well as the other vaccines. Please find it below:

Summary

	Type of equipment	**Level of care**	**Quantity**
1	Ultralow Temperature Freezer, -20^{0}C to -80^{0}C, approx. 850L	National level	15
2	Ultralow Temperature Freezer, -20^{0}C to -80^{0}C, approx. 720L	Regional	16
3	Ultralow Temperature Freezer, -20^{0}C to -80^{0}C, approx. 400L	Regional	16
4	Ultralow Temperature Freezer, -20^{0}C to -80^{0}C, approx. 200L	District	300
5	Ice Lined refrigerator, +2^{0}C to +8^{0}C, approx. 80L	Sub-district	6,000
6	Ice Lined refrigerator, +2^{0}C to +8^{0}C, approx. 40L	Sub-district	12,000
7	Solar Direct Drive refrigerators , 36L	Sub-districts	500
8	Ice Lined refrigerator, +2^{0}C to +8^{0}C, approx. 150L	District	300
	Normal Vaccine Refrigerators, +2^{0}C to +8^{0}C, approx. 750L	National and regional	20
9	Transport Boxes, 20L	District, sub-district and community	15,000
10	Cold Van for vaccine distribution	National and regional level	20
11	Completion of the Greater Accra Regional Medical Stores	National	1

The country will leverage on existing vaccination strategies (fixed, temporary and mobile sites) and lessons from previous mass vaccination campaigns to deliver the vaccine to the targeted population. The human resource requirement using the different strategies to reach all the eligible population for the different deployment scenarios are provided in Table 3 and Table 4.

Table 3. Vaccine deployment schedule (Scenario 1)

Phase	Targeted Pop	Period/Duration[13]	Target population	Proposed dates
Phase 1	Segmented population	2 months Each round lasting for at least 14 days.	7,936,095	**R1:** 14 – 28 April 2021 **R2:** 12 May – 02 June 2021
Phase 2	Other members of the population excluding children under 16 years and pregnant women	2 months Each round lasting for at least 14 days.	9,523,313	**R1**: 07 – 21 July 2021 **R2**: 04 – 25 August 2021
Total			**17,459,408**	

Table 4. Vaccine deployment schedule (Scenario 2)

Phase	Targeted Population	Period/ Duration[14]	Target population	Proposed dates
Phase 1	• Health Care Workers • Security Personnel • Persons with known underlying medical conditions	2 months Each round lasting for at least 14 days.	1,555,475	**R1:** 14 – 28 April 2021 **R2:** 12 May – 02 June 2021
Phase 2	• Adults above 60 years • Secondary and tertiary students & all teachers • Essential service providers • Specialized groups on national assignment • Executive, legislature & Judiciary, Ministries, Civil Service • Media personnel	2 months Each round lasting for at least 14 days.	6,380,620	**R1:** 23 June – 07 July 2021 **R2:** 21 July – 11 August 2021
Phase 3	1. Other members of the population excluding children under 16 years and pregnant women	2 months Each round lasting for at least 14 days.	9,523,313	**R1**: 01 – 15 September 2021 **R2:** 29 September – 20 October 2021
Total			**17,459,408**	

The MOH will explore other strategies based on current best practices and adapt to the country context to effectively reach all the targeted population. The MOH will use the existing cross-sectoral collaboration platforms to support the deployment of the vaccine including integration with other health programmes.

The private sector will play a key role in supporting effective vaccine deployment. The MOH will develop a collaborative platform to engage the private sector (this will include private care facilities, private schools, pharmacies, churches, mosques and other private establishments). The aim is to ensure that the private sector fully participates and align with the national COVID-19 vaccine deployment plan.

[13] *2 rounds for 2-dose vaccine with a minimum of 28 days between doses*
[14] *2 rounds for 2-dose vaccine with a minimum of 28 days between doses*

The support of security personnel/forces are not expected to be required in vaccine storage, distribution, temperature monitoring, tracking or reporting on vaccine stocks. However, in the event gaps in such services are realized in any part of the country, contracting the security sector resources may be considered to address the capacity shortfall.

Adequate quantities of emergency drugs will be provided at all vaccination posts and all healthcare workers involved in the administration of the vaccine will be appropriately trained to promptly manage potential adverse events such as severe anaphylactic reactions. Deployment will take into consideration other special and vulnerable population (persons with disability, prisoners, etc.) that were not captured under segmented population. Strategies will be adopted to ensure that they are included in the appropriate phase of the vaccine deployment.

Below, Table 5 shows recommended potential vaccination sites for different target groups for the deployment of vaccine. During the vaccination campaign, the generation of health care waste is expected to surge due to the mandatory use of disposable materials such needles, syringes, and PPE, used by the vaccination teams. To minimize risk of community exposure to such infectious waste, each vaccination team would be expected to practice on-site waste segregation and implement reverse logistics, where health care waste is taken back to the facility by the vaccination team to be disposed of properly along with other hazardous wastes.

To facilitate the development of the HCWMPs, the Project has adopted a WHO HCWMP Procedure and Template to support the institutionalization and implementation of HCWM at each HF in the country.

Considering the current limitation in the healthcare waste management, the project will ensure that the 47 districts without incinerators put in systems for effective health care waste management. In the medium to long term, efforts would be made to engage the few specialized health care waste service providers in the country such as Zoomlion Ghana Limited, Sewerage Systems Ghana Limited and COLIBA GHANA to provide the full range of waste management services at the health facilities across the country.

Table 5. Potential target groups and vaccination strategies

Target groups	Potential delivery strategy	Potential vaccination sites
Health workers	• Fixed sites	Primary health care facilities, hospitals, long-term care facilities, private clinics
Older people	• Fixed and outreach sites. • Temporary/mobile clinics • Mass campaigns	Primary health care facilities, long-term care facilities, day care centres, community care centres, pharmacies, mobile teams for home visit and other public and private establishments, marketplace, parks, drive-through
Persons with underlying medical conditions	• Fixed sites and outreach sites Temporary/mobile clinics	Primary health care facilities, outpatient clinics, hospitals, long-term care facilities, at workplaces, through mobile teams for those with underlying medical conditions confined at home, other public and private establishments

Target groups	Potential delivery strategy	Potential vaccination sites
Other targets groups: essential workers, social employment groups unable to social distance, age groups of high risk to transmit disease, border protection staff, travellers	• Fixed site and outreach sites • Temporary/mobile clinics • Mass campaigns	Any of above plus special strategies, e.g., insecure areas (access negotiation, transit points, vaccination teams), workplaces

Source: WHO, 2021

The waste management system should prioritize the use of best available technologies in accordance with the Stockholm Convention when possible.

To assure equity in vaccine allocation, six guiding principles will be considered. These are human well-being, national equity, reciprocity, equal respect, national equity and legitimacy. The guiding principle of national equity is to ensure that there is equitable access to vaccines, and that vulnerable groups at increased risk of COVID-19, benefit from vaccination. Such vulnerable groups must include but are not limited to older persons, persons with underlying health conditions, the female gender, low socioeconomic status (including beggars), Kayayei, street vendors, residents in long-term care facilities (School of blind, deaf etc.), those living in informal settlements/ urban slums, populations in conflict settings, people living with disabilities, refugees/internally displaced persons, nomadic persons (e.g., Fulani herdsmen), homeless persons, marginalized ethnic groups and populations affected by humanitarian emergencies.

For the vulnerable groups especially those with co-morbidities and the aged, there are plans to improve the database coverage for these groups to aid identification of such individuals for tailored vaccine delivery, continuous surveillance, follow up and tailored support to help the improve their overall health towards the attainment of improved Primary Health Care (PHC). As part of this plan, the GHS intends to reach out to such groups at primary health care facilities, outpatient clinics, hospitals, long-term care facilities, at workplaces, and further leverage mobile teams to reach-out to those confined at home, other public and private establishments.

2. POLICY, LEGAL AND REGULATORY FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT

2.1. National policies and regulatory framework

The Constitution of Ghana

The Constitution of Ghana provides the basis for and supersedes all laws. Article 36(9) on Directive Principles of State Policy on the environment states that: *"The State shall take appropriate measures needed to protect and safeguard the national environment for posterity; and shall seek co-operation with other states and bodies for purposes of protecting the wider international environment for mankind"*.

Article 41(K) in Chapter 6 of the Constitution requires that all citizens (employees and employers) to;

a. Protect and safeguard the natural environment of the Republic of Ghana and its territorial waters;

b. Cooperate with other states and bodies to protect the wider global environment; and

c. Endeavour to preserve and protect places of historical interest and preserve artifacts.

The provisions guide policy actions and legislation to promote sound environmental protection and management.

The National Environmental Policy (Revised, 2014)

The vision of the environmental policy is "to manage the environment to sustain society at large". The emphasis is on access to adequate wholesome food, clean air and water, decent housing and other necessities of life. That will further enable them to live in a fulfilling spiritual, cultural and physical harmony with their natural surroundings. The policy is implemented through the Ghana Environmental Action Plan which draws on integrated and holistic environmental management practices and processes to improve outcomes over the next ten years. The government is committed to using resources in the most effective way to achieve the aims of the policy and promote the integration and coordination of its approach to environmental management among all the Ministries, Departments and Agencies (MDAs).

Environmental Sanitation Policy (Revised, 2010)

The current Environmental Sanitation Policy updated the one developed in 1999. It provides the basis for a systematic approach and framework for identifying and harnessing resources to improving sanitation and hygiene practices. The revision takes on board the changing context of national and international sanitation management principles. Emphasis is placed on sustainable domestic and industrial waste management and the need to ensure systematic collection of data on wastes from all sectors of the economy.

The National Water Policy (2005)

The overall goal of the National Water Policy is to achieve sustainable development, management and use of Ghana's water resources to improve healthy livelihoods, reduce vulnerability while ensuring good governance for present and future generations. The policy outlines the principle of recognizing water as a finite and vulnerable resource, given its multiple uses; the principle of integrating water resources management and development with environmental management to ensure the sustainability of water resources in both quantity and quality; the precautionary principle that seeks to minimize activities that have the potential to negatively affect integrity of all water resources; and, the principle of the greatest common good to society in prioritizing conflicting uses of water.

Occupational Health and Safety Policy and Guidelines for the Health Sector (2010)

The policy and technical guidelines are compliant with the Labour Act 2003, (Act 651) apply to all health institutions, workers and professionals within the health sector. The provisions are also consistent with international occupational health and safety protocols in full view. Implementation of the policy and guidelines therefore should result in compliance with the requirements of the health and safety laws of the country. Health and safety inspectors and practitioners seeking to secure compliance with), refer to this guidance as illustrating good practice. They are also intended to serve as a reference guide to the health worker in the field.

2.2. Legislative and Regulatory Framework for Environmental Assessment

Schedule 1, Regulation 1 (1) outlines activities for which an Environmental Permit is needed.

Schedule 2, Regulation (3) outlines activities for which EIA is mandatory.

Schedule 3, Regulation 15 (2) provides requirements for disclosure of scoping notice and "notice of intent" to undertake the proposed project.

Schedule 4, Regulation 16 (3) provides requirements for disclosure and public consultation in the EIA process.

Schedule 5, Regulation 30 (2) outlines environmental sensitive areas known as Sites for Special Scientific Interest (SSSI).

Environmental Protection Act 490

The current legal and regulatory framework for environmental assessment is based on the Environmental Protection Act, 1994 (Act 490). The Act mandates the formulation of environmental policy, prescribing of standards and guidelines, issuing of environmental permits and pollution abatement notices. Section 2 (i) of Act 490 further mandates the EPA to enforce compliance with established EIA procedures among companies and businesses in the planning and execution of development projects, including existing projects. Section 10 (2) of the Act also promulgates the establishment of a Hazardous Chemicals Committee with functions to monitor the use of hazardous chemicals by collecting information on the importation, exportation, manufacture, distribution, sale, use and disposal of such chemicals.

Environmental Assessment Regulations, 1999 (LI 1652)

The Environmental Assessment Regulations is established to provide a framework for environmental assessment of development projects in Ghana. The LI 1652 is organized into five schedules of categorized projects which may either be subjected to a complete EIA or a Preliminary Environmental Assessment. The Schedules include:

Regulation 1 (2) of LI 1652 mandates that no person shall commence an undertaking which in the opinion of the Agency has or is likely to have adverse effects on the environment or public health unless, prior to the commencement, the undertaking has been registered by the EPA and an environmental permit has been issued by the Agency in respect of the undertaking.

The activities under AF, which involves the collection and disposal of hazardous waste is considered under Schedule 1 (25)b and are required to be registered at the EPA for the issuance of environment permit before commencement of the activity. The activity of provision of incinerator plants is considered under schedule 2(15) (a)i for which environmental impact assessment (EIA) is mandatory.

The LI 1652 prescribes requirements for the following documents:

- Environmental Impact Statement (EIS).
- Preliminary Environmental Assessment (PEA).
- Environmental Management Plan (EMP).
- Annual Environmental Report (AER).
- Environmental Permits and Certificates

2.3. Ghana Standards & Guidelines

The Environmental Protection Agency Act, 1994 (Act 490) mandates the EPA to prescribe standards and guidelines relating to the discharge of pollutants into environmental media. These include:

Ghana Standards for Environment and Health Protection – Requirements for Ambient Air Quality and Point Source/Stack Emissions (GS 1236, 2019)

The EPA in conjunction with the Ghana Standards Authority (GSA) has developed Environment Quality Standard –Ambient Air Quality GS 1236: 2019 for ambient air pollution standards in the country. The standard set limits for air pollutants considered harmful to public health and the environment. Table 6 shows the maximum permissible level for Ambient Air Quality.

Table 6. Ambient Air Pollutants – Maximum Limits

#	Substance	Maximum Limits	Averaging time	Test method
1	Sulphur Dioxide (SO^2), µg/m³	520 50	1 hour 24 hours	AS 3580.4.1
2	Nitrogen Oxides (measured as $NO_{2)}$, µg/m³	250 150	1 hour 24 hours	ISO 7996
3	Total Suspended Particulate Matter µg/m³	150 80	24 hours 1 year	ASTM D4096 – 17
4	PM_{10}, µg/m³	70 70	24 hours 1 year	ASTM D4096 – 17
5	$PM_{2.5,}$ µg/m³	35	24 hours	
6	Black Carbon, µg/m³	25	24 hours	ASTM D6602-13
7	Benzene, µg/m³	5	1 year	ASTM D5466-15
8	Lead, µg/m³	0.5 1	1 year 24 hours	ISO 9855

- Ghana Standards for Health Protection – Requirements for Ambient Noise Control (GS 1222, 2018)

The EPA Act, 1994 (Act 490) mandates the EPA to prescribe standards and guidelines relating to the pollution of noise including the day and night ambient noise permissible levels. Table 7 shows the requirement for ambient noise control levels per zones and Table 8 shows the classification of the zones.

Table 7. Requirement for Ambient Noise Control Level Based on Categorized Zones

Zone	**Permissible Noise Level in DB(a)**	
	DAY (6.00 AM -10 PM)	**NIGHT (10 PM -6.00AM)**

- improving the standard of waste disposal operations in Ghana;
- setting out options for the environmentally acceptable disposal of solid waste;
- providing a framework of sustainable waste disposal standards within which to operate;
- providing a framework for upgrading all landfills in Metropolitan, Municipal and large urban areas to high density aerobic (HDA) landfills by the end of 2010 and full sanitary landfills by 2020, and
- setting out the regulatory framework for landfills.

A (Residential Areas)	55	48
B (Educational and Health facilities, Offices and Law Courts)	55	50
C (Mixed Use)	60	55
D (Area with some light industry)	65	60
E (Commercial Area)	75	65
F (Light Industrial Area)	70	60
G (Heavy Industrial Area)	70	70

Table 8. Classification of Area of Noise Description into Zones

Zone	Description of Area
A	Residential areas
B	Educational (school) and health (hospital, clinic) facilities, office and law courts
C	Mixed use (Residential area with some commercial and light industrial activities)
D	Areas with some light industry places of entertainment or public assembly and places of worship
E	Commercial areas
F	Light industrial areas

Ghana Landfill Guidelines, 2002

The Guidelines provide practical information to enable license applicants, license holders, and their designated advisors and managers to comply with the policy of the District Assemblies and related legislative requirements. The main objectives of the guidelines include:

2.4. Other Relevant Environmental Legislation

Water Resources Commission Act, 1996 (Act 522)

The Water Resources Commission (WRC) was established under the Water Resources Commission Act, 1996 (Act 522). The WRC is responsible for the regulation and management of the utilization

of water resources, and for the co-ordination of any policy in relation to them. The WRC is therefore mandated to grant water rights. Section 13 (a and b) of the Act prohibits the diversion, damming, storage, abstraction, construction or maintenance works for the use of water resources without prior approval by the Water Resources Commission. Section 16 empowers the Commission to grant Water Rights (water use permits) to prospective users. The Act states under Section 24 that any person who pollutes or fouls a water resource beyond the level that the EPA may prescribe, commits an offence and is liable on conviction to a fine or a term of imprisonment or both.

Water Use Regulations, 2001 (LI 1692)

The Water Use Regulations, 2001 (LI 1692) was passed by the Water Resources Commission to regulate and monitor the use of water. Under the WRC Act, the Commission has the power to enter upon any land to inspect works constructed or under construction there and to ascertain the amount of water abstracted or capable of being abstracted by means of the works. The Water Use Regulations, 2001 (LI 1692) enjoins all persons to obtain Water Use Permits from the Water Resources Commission for commercial water use. The Commission is also mandated to request for evidence that an environmental impact assessment or an environmental management plan has been approved by the EPA before issuance of the Water Use Permit.

Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917)

This Act provides for the control, management and disposal of hazardous, electrical and electronic waste and related purposes. Under the Act, a person shall not deposit hazardous waste or other wastes on any land in the country or in the territorial waters of the country. The Act also states that a person involved in the management of hazardous wastes or other wastes shall:

- Take the steps that are necessary to prevent pollution from hazardous wastes and other wastes arising from the management; and
- Where pollution occurs, minimize the consequences of the pollution on human health and the environment.
- Hazardous, Electronic and Other Wastes (Classification), Control and Management Regulations, 2016

The Regulations apply principally to waste generators, waste transporters and waste managers, but not to the generation of domestic waste which is collected by a District Assembly. The purpose of the regulations includes:

- Regulating the classification, control, and management of wastes.
- Prescribing general duties of waste generators, waste transporters and waste managers; and
- Prescribing requirements for the disposal of wastes.

A key requirement for a waste generator is to ensure that the waste generated is classified in accordance with the Ghana Waste List specified in the First Schedule, among others.

2.5. National Labour, Safety and Health Legislation

National Labour Act, 2003

The Act provides for the rights and duties of employers and workers; legal or illegal strike; guarantees trade unions and freedom of associations and establishes the Labour Commission to mediate and act in respect of all labour issues. Section 118(1) of the Labour Act, 2003 (Act 651) stipulates that "it is the duty of an employer to ensure that every worker employed works under satisfactory, safe and healthy conditions". The Act contains several specific provisions relating to an employer's duty of care to its workers. These include providing and maintaining "at the workplace, plant and system of work that are safe and without risk to health" and taking "steps to prevent contamination of the workplaces by, and protect the workers from, toxic gases, noxious substances, vapours, dust, fumes, mists and other substances or materials likely to cause risk to safety or health". A worker is required to report situations that he believes may pose "an imminent and danger to his or her life, safety or health".".

Workmen's Compensation Law, 1987 (Act 187)

The law holds employers responsible for the payment of compensation to workmen for personal injuries caused by accidents arising out and in the course of their employment. Statutory Instruments made under Workmen's Compensation Act 1963 (No. 174) and the 1966, 1968 and 1969 amendments are still in effect until varied or revoked in accordance with the provisions of the new law.

Ghana National Fire Service Act, 1997 (Act 537)

The Act makes provision for the management of undesired fires and as per the functions of the service, provides technical advice for building plans in respect of machinery and structural layouts to facilitate escape from fire, rescue operations and fire management. Other functions of the service are:

i. Organize public fire education programs.
ii. Inspect and offer technical advice on fire extinguishers; and
iii. Offer rescue and evacuation services to those trapped by fire or in other emergencies.

The Fire Precaution (Premises) Regulations 2003 (LI 1724) requires all premises intended for use as workplaces to have Fire Certificates to meet fire safety standards. These premises include those put to use as public residential accommodation; for the purpose of entertainment, recreation, or as a club; as a place of work; as an institution providing health treatment or care for infants, disabled or aged persons; for a purpose of training, teaching or research; and for a purpose of which involves access to the premises by members of the public. According to the LI, it is incumbent on any project developer to ensure that adequate measures are introduced to minimize or prevent fire out breaks and a fire permit is obtained for development prior to the commencement of works. There is also the need to ensure that there are adequate exits within the premises for easy evacuation, serviceable fire-fighting facilities, among other interventions.

Fire Precautions Premises Regulations 2003 (LI 1724)

Children's Act 1998 (Act 560)

The Children's Act defines a child as a person below the age of eighteen (18) years. Sections 12 and 87 prohibit engaging a child in exploitative labour which is defined to mean labour depriving the child of its health, education, or development.

Persons with Disability Act, 2006 (Act 715)

Ghana's Disability Law was passed in 2006, aimed at ending the discrimination that faces people with disabilities. The Act offers a legal framework to protect the rights of physically and mentally disabled persons in all areas of life, from education, training and employment to physical access and health care. It is also intended to promote the creation of an environment that will advance the economic well-being of disabled people and enable them to function better in society. Chief among the provisions of the Act requires that the owner or occupier of a place to which the public has access shall provide appropriate facilities that make the place accessible to and available for use by a person with disability. Furthermore, each public place for parking vehicles shall have a clearly demarcated area for the exclusive use of persons with disability.

Local Government Act 2016, Act 936

The Local Governance Act, 2016 (Act 936) makes provision for District Assemblies who are the local planning authority to make building bye-laws within the scope of national building practices prescribed by law for the control of the construction of buildings, streets, fences and signboards; the execution of work on and in relation to existing building structures and streets; sanitation, and the removal or abatement of obstructions and nuisance and matters referred to for the guidance of district planning authorities. The Act also empowers the Minister responsible for Works and Housing to prescribe national building regulations which shall be complied with by District Assemblies in making building byelaws for the districts. The Act also requires that a physical development shall not be carried out in a district without prior approval in the form of a written permit granted by the district planning authority.

Land Use and Spatial Planning Act, 2016 (Act 925)

The Act consolidates the laws on land use and spatial planning. It provides sustainable development of land and human settlements through a decentralized planning system and ensures judicious use of land to improve the quality of life, promote health and safety in respect of human settlements. This gives a clearer direction to ensure compliance and enforcement of development regulations by the Ghanaian society. It also contributes to a more sustainable and well-functioning land administration system that is fair, efficient, cost effective and decentralized and will enhance land tenure security in the country.

National Building Regulations 1996, (LI 1630)

National Building Regulations 1996, (LI 1630) is a legislative instrument mandated by the Local Government Act. The core principle of the National Building Regulations like most National Codes is the provision of guidelines for safety, health and governance.

Public Health Act, 2012 (Act 851)

The Public Health Act repealed the Food and Drugs Amendment Act, 1996 (Act 523). Act 851 was passed to prevent disease; promote, safeguard, maintain and protect the health of humans and animals, and provide for related matters. The Act has various groupings that deal with the many aspects of Public Health. Part One provides for how to deal with Communicable Diseases (and Covid-19 is a communicable disease). This part provides, among others, the following: declaration of infected area order for evacuation; stopping of vehicles; sales within an infected area; postmortem examination; disinfection; removal and detention of infected persons or disposal of corpse; isolation of contacts; presumption of knowledge of disease; penalty and regulations as to diseases of a communicable nature. Part two and three provide for vaccination and quarantine

respectively. Overall, the Act outlines the regulations penalties and measures to take to contain and control public health emergency.

National Policy and Guidelines for Infection Prevention and Control in Health Care Settings, 2015

The Infection Prevention and Control (IPC) policy was augmented with IPC guidelines developed for Ebola Viral Disease. Additional guidelines have since the outbreak of COVID-19 been developed and disseminated to the peripheral health service delivery points. Guidelines on effective triaging, early recognition and isolation of suspected patients, precautions on how to prevent droplet and or contact airborne spread. Further guidelines include:

i. Administrative controls to minimize spread of disease.
ii. Hand washing with soap under running water.
iii. Appropriate use of PPE.
iv. Environmental cleaning and disinfection procedures.
v. Medical devices and equipment, laundry and medical waste should be managed in accordance with safe routine procedures.
vi. Adequate ventilation for patients.
vii. Use of medical mask by all health workers.
viii. Use of medical mask by health workers.
ix. Ensuring exclusive management of suspected cases by HCWs.
x. Wearing of Googles or face masks and non-sterile long-sleeved gown.
xi. Disposal of PPE and hand hygiene facilities.
xii. Use of ethyl alcohol 70% to rub hands regularly; and
xiii. Access to prompt laboratory testing.

Ghana Health Care Waste Management Policy (2020)

Last year, the Ministry of Health revised and replaced the existing National Health Care Waste Management policy and guideline, 2006, with two separate documents – A National Health Care Waste Management Policy and a National Guideline for Health Care Waste Management Countrywide. Among other issues, this new policy was introduced to clarify institutional arrangements for the implementation and enforcement of the policy, and emphasis the use of high temperature incineration (800^0C - $1200^{0)}$ instead of the usual practice with the De Montfort incinerators.

The National HCWM policy and guidelines specify the following internal and external regulatory roles for stakeholder MDAs.

Internal regulatory mechanisms

- The Ministry of Health has the overall responsibility of ensuring proper Healthcare waste management
- Ghana Health Service has ultimate responsibility for implementation of HCWM plans through the Institutional Care Division (ICD).
- The Occupational and Environmental Health (OEH) Unit of GHS, through its proposed regional OEH units, will collaborate with the the Estates Management Unit to coordinate and supervise the operational activities on HCWM, in addition to OHS.

- At the Health care facility level, Environmental Health Officers in collaboration with Estate Management Unit (EMU) will assuming day to day responsibility for coordinating waste management activities.

External regulatory mechanisms

- Health Facilities Regulatory Authority (HeFRA), an agency of MOH, has incorporated some aspects of the revised policy and guideline on HWCM in its legislative instrument for licencing health care facilities. It therefore has the requisite tools to monitor and enforce compliance with the revised national HCWM policy and guidelines.
- Health Facilities Regulatory Agency (HEFRA) is expected to use as a permitting requirement for hospitals and clinics, the availability of appropriate technology and procedures to undertake efficient waste management.
- HeFRA is also expected to maintenance a database of permits granted to health facilities with efficient waste management procedures.
- The Revised national HCWM guidelines clearly states under section 1.2 for enforcement and compliance that:

    - HeFRA has to ensure enforcement and compliance with legislations.
        - The internal activities of the health facilities that can compromise on quality-of-service delivery are therefore expected to be monitored by the Agency as part of their regulatory activities.
        - The Agency shall therefore monitor operational activities of healthcare facilities as set out by Act 829 to ensure the safe management of health care waste within health facilities.

- MMDAs have to ensure development of necessary infrastructure for the management of non-hazardous waste, including organized reception and transportation of domestic waste to disposal facilities, construction and maintenance of a sanitary landfill.
- The Revised national HCWM guidelines clearly states under section 1.2 for enforcement and compliance that:

    - District Assemblies has responsibility to assign HCWM activities outside the hospitals to the Environmental Health and Waste Management Department, with the aim of establishing long-term sustainability in HCWM.
    - The Environmental Health Officers of the District Assemblies shall ensure compliance with the following:
        - Waste segregation
        - Approved collection routines, including packaging and labelling.
        - On-site treatment procedures, ensuring that the incinerator plant continually bums its materials at 850 degrees and above to eliminate the release of dioxins.
        - Use of appropriate, labelled and adequate containers for both internal and external storage.
        - Transportation, including technical standards and certification of contractors.
        - Worker safety measures.
        - Disposal at sanitary landfills, cemeteries and crematoria.

- The EPA is responsible for licensing waste treatment and disposal facilities, licensing transportation of hazardous waste on public roads, and monitoring of the same. The functions of EPA are set out in the EPA Act, 1994 (Act 490) and the Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917).

- The Ministry of Environment is responsible for the development of standards as well as licensing and monitoring of hazardous waste (which includes HCW) to protect the environment and public health.

Following weak enforcement regime experienced in the first phase, the E&S specialist therefore plans to organize a high level, meeting for representatives of HeFRA and EPA (the key external regulatory agencies), representatives of parent ministries (MOH, MESTI, MoLGRD) and GHS (OEHU, ICD and Clinical Engineering dept) to share findings from E&S monitoring and promote dialogue among the key stakeholders to achieve consensus on the way forward.

2.6. World Bank Environmental and Social Framework (ESF) and Healthy and Safety Guidance

The COVID-19 Emergency Preparedness and Response Project is being implemented under the World Bank's new Environmental and Social Framework (ESF). The framework expresses the Bank's commitment to sustainable development and sets out 10 environmental and social standards with requirements for borrowers to identify, assess and address environmental and social risks and impacts associated with projects supported by the Bank through Investment Project Financing. Based on due diligence and assessment, the Environmental and Social Risk Classification (ESRC) for the project is substantial. The following Standards are considered relevant for guiding risks assessment and management related to the EPRP:

ESS1: Assessment and Management of Environmental and Social Risks and Impacts;

ESS2: Labour and Working Conditions;

ESS3: Resource Efficiency and Pollution Prevention and Management;

ESS4: Health and Safety;

ESS10: Engagement and Information Disclosure.

ESS 1: Assessment and Management of Environmental and Social Risks and Impacts: This standard evaluates the potential environmental and social risks and impacts associated with each stage of a project (the project lifecycle) in its area of influence. It examines project alternatives; identifies ways of improving projects election, siting, planning, design, and implementation by preventing, reducing, mitigating, or compensating for adverse environmental and social impacts and enhancing positive impacts. It includes the process of mitigating and managing adverse impacts throughout the project implementation so that the project is environmentally and socially sound and sustainable. ESS1 considers the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous people, and physical cultural resources); and trans-boundary and global environmental aspects. This ESS provides the guidelines and the instruments that will be prepared to address ES risks and impacts associated with refurbishment and construction of medical facilities and hazardous waste disposal.

ESS 2: Labour and Working Conditions: The World Bank through the ESS2 promotes the fair treatment, non-discrimination and provision of equal opportunities for workers engaged on projects it supports. It strongly encourages protection of all project workers, including vulnerable groups such as women, persons with disabilities, children (of working age) and migrant workers,

contracted workers and primary supply workers, as appropriate. It provides certain requirements that the project must meet in terms of working conditions, protection of the work force (especially the prevention of all forms of forced and child labour), and provision of a grievance mechanism that addresses concerns on the project promptly and uses a transparent process that provides timely feedback to those concerned.

This ESS inspires the need to protect and minimize the exposure of frontline health staff and construction worker to COVID-19 and providing them with fair compensation package. Labour Management Procedures (LMP) will be prepared, disclosed, adopted, and implemented consistent with ESS 2. The Project shall be carried out in accordance with the applicable requirements of ESS2, including through implementing adequate occupational health and safety measures (including emergency preparedness and response measures), setting out grievance arrangements for Project workers, and incorporating labour requirements into the ESHS specifications of the procurement documents and contracts with contractors and supervising firms. The project will implement adequate occupational health and safety measures (including emergency preparedness and response measures) based on WHO guidelines on COVID19 in all facilities, including laboratories, quarantine, and isolation centers, and screening posts.

ESS 3: Resource Efficiency and Pollution Prevention and Management: The ESS3 provides requirements for projects to achieve the sustainable use of resources, including energy, water and raw materials, as well as implement measures that avoid or reduce pollution resulting from project activities. The standard places specific consideration on hazardous wastes or materials and air emissions (climate pollutants) given that the current and projected atmospheric concentration of greenhouse gases threatens the welfare of present and future lives.

ESS 4: Community Health and Safety: This standard recognizes that project activities, project equipment and infrastructure may increase the exposure of project communities to various health, safety and security risks and impacts and thus recommends that projects implement measures that avoids or limits the occurrence of such risks. It provides further requirements or guidelines on managing safety, including the need for projects to undertake safety assessment for each phase of the project, monitor incidents and accidents and preparing regular reports on such monitoring. ESS4 also provides guidance on emergency preparedness and response. The project will draw for the guidelines to mitigate potential community tensions from setting up of isolation centers and contact tracing especially considering the safety of women and children. It also provides basis for minimizing community exposure to hazardous waste and disturbances from constructional activities under this project.

ESS 10: Stakeholder Engagement and Information Disclosure: The World Bank through the ESS10 seeks to encourage open and transparent engagement between the Borrower and the project stakeholders project-affected parties throughout the project life cycle. The standard establishes a systematic approach to stakeholder engagement that potentially helps the Borrower to identify stakeholders and build and maintain a constructive relationship with them, as well as disclose information on the environmental and social risks and impacts to stakeholders in a timely, understandable, accessible, and appropriate manner and format. It recommends that stakeholder engagements are commenced as early as possible in the project development process and continued throughout the lifecycle of the Project. This allows for stakeholders' views to be considered in the project design and environmental and social performance. The Borrower is also expected to implement a grievance mechanism to receive and facilitate resolution of concerns and grievances. In line with this requirement, a stakeholder Engagement Plan (SEP) has already prepared to guide the engagement and involvement all stakeholders in the preparation, implementation, and monitoring of projects.

World Bank Group (WBG) Environmental Health and Safety Guidelines

The following subsections of the WBG Environmental Health and Safety Guidelines are relevant to the project:

- General Environmental Guidelines: The general guidelines present emissions levels normally acceptable to the WBG in making decisions regarding provision of World Bank Group assistance. Any deviations from these levels must be described in the World Bank Group project documentation. [available at: *https://www.ifc.org/wps/wcm/connect/77a4c571-c743-48a8-9c6d-21d6ce77d017/genenv_PPAH.pdf?MOD=AJPERES&CVID=jqeDiLg*]
- Health Care Facilities: This guideline contains the performance levels and measures that are normally acceptable to WBG and are generally considered to be achievable at reasonable costs by existing technology. While adherence to this guideline is strongly recommended, the application of these guidelines may be adjusted to each project or site, taking into account variables such as host country context, sponsor capacity and project factors. The environmental assessment process may recommend alternative (higher or lower) levels or measures, which, if accepted by WBG, become project- or site-specific standards or requirements. The environmental assessment document must provide a full and detailed justification or explanation for the levels or measures recommended for the project or site. [available at: https://www.ifc.org/wps/wcm/connect/4a5e1495-9b7c-4be2-9254-54cedb9f88a5/healthcarefacilities.pdf?MOD=AJPERES&CVID=jqeDiS6].
- Occupational Health & Safety: This guideline contains the performance levels and measures that are normally acceptable to WBG and are generally considered to be achievable at reasonable costs by existing technology. While adherence to this guideline is strongly recommended, the application of these guidelines may be adjusted to each project or site, considering variables such as host country context, sponsor capacity and project factors. The environmental assessment process may recommend alternative (higher or lower) levels or measures, which, if accepted by WBG, become project- or site-specific standards or requirements. The environmental assessment document must provide a full and detailed justification or explanation for the levels or measures recommended for the particular project or site. [available at: https://www.ifc.org/wps/wcm/connect/7e1e8c90-2a9b-4054-8d66-5880a7e34821/OHSguideline.pdf?MOD=AJPERES&CVID=jkD21Iz]
- Hazardous Materials Management Guidelines: These Guidelines apply to facilities and activities involving the transportation, production, handling, storage, and disposal of hazardous materials. WBG-financed projects that involve hazardous materials are required to develop and implement a Hazardous Materials Management Program and, in some cases, more detailed plans, as described in these Guidelines. Project companies are responsible for complying with the provisions in these Guidelines whether they manage hazardous materials themselves or through contractors. [Available at: https://www.ifc.org/wps/wcm/connect/2657c3c6-2e07-4184-98da-0faa53ea2354/hazmatmgmt.pdf?MOD=AJPERES&CVID=jkD22TV].
- Water and Sanitation: The EHS Guidelines for Water and Sanitation include information relevant to the operation and maintenance of (i) potable water treatment and distribution systems, and (ii) collection of sewage in centralized systems (such as piped sewer collection networks) or decentralized systems (such as septic tanks subsequently serviced by pump trucks) and treatment of collected sewage at centralized facilities. [Available at: https://www.ifc.org/wps/wcm/connect/83217cd8-b9a5-4383-97b5-5af26182b3b8/2007+Water+and+Sanitation.pdf?MOD=AJPERES&CVID=m3CdtQr].

2.7. Applicability of Laws, Regulations, and Policies of Ghana and World Bank Standards

This section provides summary of relevant laws, regulations, and policies of Ghana and the World Bank that are applicable to the project. Table 9 shows the applicable laws, regulations and policies of Ghana and the World Bank.

Table 9. Applicability of laws, regulations, and policies of Ghana and World Bank Standards

#	Laws, Regulations, Policies and Standards	Applicability to the project
	National Policy, Legal and Regulatory Framework	
1.	The constitution of Ghana	It provides the basis on which the Government initiates policy actions and legislation to promote sound environmental protection and management. On this project, it is mandatory for the government to consider measures to mainstream E&S issues into project decision making.
2.	The National Environmental Policy (Revised, 2014)	On this project, the policy requires MoH to collaborate and coordinate project activities with other agencies such as EPA to ensure full integration of national environmental aspirations into decision making and in a way that enable citizens to live in a fulfilling spiritual, cultural and physical harmony with the natural surroundings.
3.	Occupational Health and Safety Policy and Guidelines for the Health Sector (2010)	The policy provides the framework for handling occupational health and standards in the health sector. The project will operationalize this framework together with other relevant guidelines to ensure proper health care and safety of all health workers that will be involved in this project.
Legislative and Regulatory Framework for Environmental Assessment		
4.	Environmental Protection Act, 1994 (ACT 490)	This policy created EPA as the lead regulator and administrator of environmental regulations in Ghana. EPA will oversee to the project compliance with environmental assessment guidelines and other mandatory requirements. They will provide oversight on issues relating to siting of health facilities, provide permits for construction and operation of health facilities, management of liquid and solid wastes, public health and safety, and occupation and health and safety.
5.	Environmental Assessment Regulations, 1999 (LI 1652)	The project will comply with the environmental assessment guidelines prescribed by this LI and as when applicable establish other mandatory requirements such as ESIA, EMP, environment permits and certificates on facilities to be rehabilitated under the project.

#	Laws, Regulations, Policies and Standards	Applicability to the project
National Labour, Safety and Health Legislation		
6.	National Labour Act, 2003	The project will have to follow the requirements of this act to set appropriate occupational health and safety measures to prevent contamination of workplaces and protect both the healthcare staff and none health care workers that will be involved in the implementation of the project. This law also guarantees minimum wage to workers and protect the right of workers to bargaining and association.
7.	Children Act 1998 (Act 560)	This law provides safeguard against child labour on this project. The law prohibits engagement of a person below 18 years in an exploitative labour, which defined to mean labour depriving the child of its health, education and or development. Contractors working on rehabilitation projects will strictly comply with this law.
8.	Persons with Disability Act, 2006 (Act 715)	This law requires all public health facilities that will be rehabilitated under this project to provide facilities that will make the place accessible to and available for use by person with disability.
9.	Local Government Act 2016, Act 936.	This law requires the project to secure building permits from Metropolitan, Municipal and District Assemblies before commencing rehabilitation of any health facility.
10.	Public Health Act, 2012 (Act 851)	With regard to communicable diseases such as COVID-19, this law among other issues provides for declaration of infected area order for evacuation; stopping of vehicles; sales within an infected area; post mortem examination; disinfection; removal and detention of infected persons or disposal of corpse; isolation of contacts. These statutory requirements legitimise some restrictive measures that will be considered to minimize and mitigate some E&S risks on the project.
11.	National Policy and Guidelines for Infection Prevention and Control in Health Care Settings	This policy provides the framework that will be used to set administrative controls, and health and safety protocols to minimize the spread of COVID-19. It also provides guidelines for disposing of medical wastes under this project.
World Bank Standards		
12.	ESS 1: Assessment and Management of Environmental and Social Risks and Impacts:	This ESS provides the guidelines and the instruments that will be prepared to address ES risks and impacts associated with refurbishment and construction of medical facilities and hazardous waste disposal.

#	Laws, Regulations, Policies and Standards	Applicability to the project
13.	ESS 2: Labour and Working Conditions	This ESS inspires the need to protect and minimize the exposure of frontline health staff and construction worker to COVID-19 and providing them with fair compensation package. Labor Management Pro Procedures (LMP) will be prepared, disclosed, adopted, and implemented consistent with ESS 2. The Project shall be carried out in accordance with the applicable requirements of ESS2, including through implementing adequate occupational health and safety measures (including emergency preparedness and response measures), setting out grievance arrangements for Project workers, and incorporating labor requirements into the ESHS specifications of the procurement documents and contracts with contractors and supervising firms. The project will implement adequate occupational health and safety measures (including emergency preparedness and response measures) based on WHO guidelines on COVID19 in all facilities, including laboratories, quarantine and isolation centers, and screening posts.
14.	ESS 3: Resource Efficiency and Pollution Prevention and Management:	The project is expected to through this standard, avoid or limit all sources of pollution to air, water and land as a result of the project. The project will adopt efficient and effective resource use, pollution prevention and mitigation or management technologies and practices.
15.	ESS 4: Community Health and Safety	The project will draw for the guidelines to mitigate potential community tensions from setting up of isolation centers and contact tracing especially considering the safety of women and children. It also provides basis for minimizing community exposure to hazardous waste and disturbances from constructional activities under this project.
16.	ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	No land acquisition or involuntary resettlement will be undertaken under this project.
17.	ESS 8: Cultural Heritage	In the unlikely event of major construction or the movement of earth in connection with any project activities that have not yet been anticipated, this ESS guidelines will be relevant to provide useful basis for preparing "chance find" procedure.

#	Laws, Regulations, Policies and Standards	Applicability to the project
18.	ESS 10: Stakeholder Engagement and Information Disclosure	The project will engage with various stakeholders at the project design, planning, and project implementation stages. The project will be guided by this standard in undertaken all project related consultations and engagements given that this enhances the environmental and social sustainability of the Project. In line with this requirement, a stakeholder Engagement Plan (SEP) has already prepared to guide the engagement and involvement all stakeholders in the preparation, implementation, and monitoring of projects.

2.8. Applicability of relevant international and regional conventions and technical guidelines

These are relevant international and regional conventions and technical guidelines that have been adopted by the Borrower, such as:

- Stockholm Convention for Persistent Organic Pollutants, Basel Convention for hazardous wastes and disposal
- WHO technical guidance developed for addressing COVID-19, such as:
    - *Laboratory biosafety*,
    - *Infection prevention and control*,
    - *Rights, roles, and responsibilities of health workers, including key considerations for occupational safety and health*,
    - *Water, sanitation, hygiene and waste management*,
    - *Quarantine of individuals*,
    - *Rational use of PPE*,
    - *Oxygen sources and distribution for COVID-19 treatment centers*,
    - *Vaccine readiness assessment*,
    - Surveillance of adverse events following immunization.
    - Developing a national deployment and vaccination plan for COVID-19 vaccines

3. ENVIRONMENTAL AND SOCIAL BASELINE

The Project is national in outlook. The COVID-19 Response Project activities will be implemented in all the sixteen (16) regions of Ghana. Information on the environmental and social baseline conditions, including conditions in the health sector are presented below.

3.1. Location and Size

Ghana is situated on the west coast of Africa and lies within longitudes 3°5'W and 1° 10'E and latitudes 4°35'N and 1l°N, with a total area of 238,540 km^2. The country has a north-south extent of about 670 km and a maximum east-west extent of about 560 km. It shares borders with Côte d'Ivoire to the west, Burkina Faso to the north, and Togo to the east. To the south are the Gulf of Guinea and the Atlantic Ocean. The country is divided into 16 administrative regions and 254 Metropolitan, Municipal and District Assemblies (MMDAs).

3.2. Climate

The country has a warm equatorial climate. Mean annual temperatures range between 24^{O}C and 36^{O}C. Relative humidity is high at the coastal areas decreasing inland. The dry harmattan conditions occur from November to January throughout the country, but severer in the north. Average rainfall over the country is about 1,260 mm/year but ranges from 890 mm/year in the coastal zone near Accra to 2,030 mm/year in the southwestern rainforests. The rainfall is bi-modal in the southwestern forest zone, giving a major and a minor growing season; elsewhere, a uni-modal distribution gives a single growing season from May to October. Except for the southwestern zone, the reliability of the rainfall, particularly after crop germination, is a major factor affecting crop growth and agriculture in general. Rainfall decreases from south to north and eastwards, reaching an average of 1,000 mm in the extreme northeast and in the southeast coastal areas. Rainfall in the wettest areas of the forest zone reaches an average of 2,000 mm. The rainfall pattern in the savanna areas is uni-modal while in the forest and forest-savanna transitional zones, a bi-modal pattern occurs.

3.3. Population

The current population of Ghana is 29,884,261 as of March 3, 2019, based on the latest United Nations estimates. Ghana's population is equivalent to 0.39% of the total world population. Ghana ranks number 48 in the list of countries (and dependencies) by population. The population density in Ghana is 132 per km^2 (343 people per mi^2). The total land area is 238,540 km2 (87,854 sq. miles) 54.8 % of the population is urban (16,507,512 people in 2019). There is a growing consensus in Ghana that while rapid population growth may not prevent economic growth, economic improvements will occur more rapidly without this obstacle. A slower rate of population growth will ensure that more people will have better access to health care and social amenities (Population Impact Project, 1994). Ghana has a youthful population, thus consisting of a large proportion of children under 15 years, and a small proportion of elderly persons (65 years and older). The proportion of the population living in urban areas is 50.9 percent, with the level of urbanisation varying from region to region.

In terms of ethnicity, Akans are the predominant ethnic group in Ghana (47.5%), followed by the Mole Dagbani (16.6%), the Ewe (13.9%) and Ga-Dangme (7.4%). The Mande forms the smallest ethnic group (1.1%) in Ghana. For religion, 71.2 percent of the population profess the Christian

faith, followed by Islam (17.6%). Only a small proportion of the population either adhere to traditional religion (5.2%) or are not affiliated to any religion (5.3%).

Literacy in Ghana is quite high, with majority (74.1%) of the population 11 years and older being literate. A large proportion (67.1%) of the population can read and write in English. About one-fifth (20.1%) can read and write in the English language only while 53.7 percent of the population can read and write in at least one Ghanaian language (Ghana Statistical Service, 2012).

3.4. Economy

The economy of Ghana has a diverse and rich resource base, including the manufacturing and exportation of digital technology goods, automotive and ship construction and exportation, and the exportation of diverse and rich resources such as hydrocarbons and industrial minerals. These have given Ghana one of the highest GDP per capita in West Africa. Owing to a GDP rebasement, Ghana became the fastest-growing economy in the world in 2011. Ghana's economy continued to expand in 2019 as the first quarter gross domestic product (GDP) growth was estimated at 6.7%, compared with 5.4% in the same period of last year. The economy grew 7.4 percent year-on-year in the third quarter of 2018. It was the strongest growth rate since the third quarter of 2017, mostly driven by the industry and services sectors. GDP Annual Growth Rate in Ghana averaged 6.68 percent from 2000 until 2018, reaching an all-time high of 25 percent in the first quarter of 2012 and a record low of -1.60 percent in the third quarter of 2015. In 2018, government expenditure in Ghana amounted to about 21.45 percent of the country's gross domestic product. The population aged 15 years and older, 71.1 percent are economically active and of these, most are employed (94.7%). About two-fifth (41.2%) of this economically active population aged 15 years and older are into skilled agricultural, forestry and fishery workers. About 21 percent are also engaged as service and sales workers while 15.2 percent are craft and related trade workers. Skilled agricultural, forestry and fishery work remain the dominant occupation for both males (44.9%) and females (37.7%). However, a much higher proportion of females (31.7%) than males (10.2%) is engaged as service and sales work. This pattern is generally the same for most of the regions, with the three Northern Regions (Northern, 73.3%; Upper West, 72.3%; Upper East, 70.1%) having relatively high proportions of the economically active population engaged as skilled agricultural, forestry and fishery workers (Ghana Statistical Service, 2012).

3.5. Health Profile

The current health profile of Ghana in terms infrastructure is presented in Table 10. Ghana has a comprehensive health service delivery system. It encompasses community-based programs, such as the Community-based Health Planning and Services (CHPS) initiative; subdistrict health centers and clinics; district general hospitals; regional general hospitals; and specialized tertiary hospitals.

Table 10. Health Infrastructure in the Ghana

Region	CHPS	Clinic	District Hospital	Health Centre	Hospital	Maternity Home	Regional Hospital	Teaching Hospital	Grand Total
Ahafo	130	18	3	20	7	7			185
Ashanti	1113	185	24	152	127	70		1	1672

Bono	300	67	6	59	11	19	1		463
Bono East	274	34	3	39	12	5			367
Central	425	106	3	68	27	35		1	665
Eastern	842	90	10	129	29	27	1		1128
Greater Accra	695	460	1	33	118	91	1	1	1400
North East	96	9	2	19	2				128
Northern	312	53	9	59	18	7		1	459
Oti	172	11	2	36	6	2			229
Savannah	117	16	3	26		2			164
Upper East	363	55	2	60	8	2	1		491
Upper West	324	21	2	70	10	5	1		433
Volta	316	45	8	118	19	11		1	518
Western	402	131	4	54	30	16	1		638
Western North	250	39	5	26	12	21			353
Grand Total	6131	1340	87	968	436	320	6	5	9293

Source: Ministry of Health, May 2020

The public sector employs the greatest proportion of essential health care workers (HCWs). The number of health care workers under MoH is provided in Table 15. The distribution of HCWs is highly concentrated in the urban areas. The greatest density of HCWs per 1,000 population is in the Greater Accra and Ashanti regions. Medical officers tend to locate in the Ashanti and Greater Accra regions; professional nurses, midwives, and community health nurses tend to be spread out. The Northern regions has the lowest ratios. Table 11 shows the number of health personnel in Ghana. Table 12 shows the summary information on Endemic Neglected Tropical Diseases (NTDs). Table 13 shows the Top 20 Causes of Death and Disability in Ghana.

Table 11. Number of Health Personnel in Ghana (April 2020)

Personnel	No.
Nurses and Midwives	79,285
Doctors	4,390
Pharmacist	705
Biomedical Scientist	994
public Health officers /Disease Control	2,791
Clinical Psychologist	40

Source; Ministry of Health, May 2020

Table 12. Summary Information on Endemic Neglected Tropical Diseases (NTDs), target population and specific control strategies

Focus disease	Year of Inception	No. of Districts Targeted	Geographic Coverage	Target Population	Population covered	Key strategies used
Lymphatic Filariasis	2001	74	100%	12 million	12 million	MDA, Case Management
Onchocerciasis	1974	73	100%	4 million	8.8 million	MDA
Schistosomiasis	2008	170	170 (100%)	7 million	7 million	MDA
Trachoma	2001	29	29	2.6 million	2.6 million	Surveillance
Buruli Ulcer	1999	89	42	17,7 million	8.4 million (47%)	Case detection & management
HAT	2008	14	14	1.1 million	Data not available	Case detection & management
Leishmaniasis	2006	5	5	400,000	Data not available	Case detection & management
Leprosy	1980	9	9	720,000	N/A	Case detection & management
Soil Transmitted Helminthiasis	2007	170	170	6 million	6 million	MDA
Guinea Worm	1989	170	170	25 million	25 million	Case detection, management & containment

Source: Ministry of Health, May 2020

Table 13. The Top 20 Causes of Death and Disability in Ghana

Leading causes of death	% of total	Leading causes of DALYS [1]	% of total	Leading risk factors for DALYS	% of total	Years lost due to disability	% of total
Lower respiratory tract infections	9	Malaria	10.5	Unsafe sex	19.9	Depressive disorders	10.7
Malaria	8.8	Lower respiratory tract infection	6.8	Raised blood pressure	13.6	Low back and neck pains	8.7
Cerebrovascular disease	8.5	HIV/AIDS	6.6	Childhood underweight	10.6	Iron deficiency anaemia	8.3

Leading causes of death	% of total	Leading causes of DALYS [1]	% of total	Leading risk factors for DALYS	% of total	Years lost due to disability	% of total
HIV/AIDS	7.9	Neonatal sepsis	4.9	Household air pollution from solid fuels	10.4	Vision problems	6
Ischaemic heart disease	5.3	Complications of preterm birth	4.7	Overweight or obesity	8.9	Skin diseases	4.6
Protein energy malnutrition	3.7	Protein energy malnutrition	4.3	Unsafe water source	7.4	Malaria	3.4
Neonatal sepsis	3.5	Neonatal sepsis	3.7	Raised blood sugar	7.1	Chronic obstructive pulmonary disease	3.3
Complications of preterm birth	3.3	Haemoglobino pathies	3.1	Iron deficiency	7	Schistosomiasis	2.9
Road traffic injuries	3.1	Cerebrovascul ar disease	3.1	Alcohol use	6.9	Migraine	2.7
Neonatal encephalopath y	2.6	Congenital anomalies	2.8	Air pollution	5.3	Anxiety disorders	2.4
Diabetes mellitus	2.5	Road traffic injuries	2.8	Poor sanitation	5.1	Diabetes mellitus	2.3
Haemoglobino pathies	2.3	Iron deficiency anaemia	2.6	Kidney problems	4.5	Other muscular-skeletal disorders	2
Diarrhoeal diseases	2.2	Diarrhoeal diseases	2.5	Low intake of fruits	3.7	Haemoglobino pathies	1.8
Meningitis	2.1	Meningitis	2.3	Suboptimal breastfeeding	3.6	Kidney disease	1.7
Tuberculosis	1.9	Depression	2.2	Low vegetable intake	3.5	Schizophrenia	1.6
Congenital anomalies	1.9	Ischaemic heart disease	2.1	Drug abuse	3.3	Drug abuse	1.5
Hypertensive heart disorders	1.6	Low back and neck pains	1.8	Diet low in whole grains	3	Gynaecological diseases	1.4
Chronic obstructive pulmonary disease	1.5	Diabetes mellitus	1.4	Poor hygienic practices	3	Osteoarthritis	1.4
Other cardiovascular diseases	1.3	Tuberculosis	1.3	Cigarette smoking	2.5	Mental retardation	1.4
Iron deficiency anaemia	1.3	Skin diseases	1.3	High cholesterol	2.3	Bipolar disorders	1.3

Source: Ministry of Health, May 2020

3.6. Ghana's COVID Profile

Table 14 shows the number of cases per region as of October 10, 2020. Table 15 shows a summary of activities and cases.

Table 14. No. of Cases per Region (October 10, 2020)

Region	Cases	Recovered/ Discharged	% Recovered/ Discharged	Active Cases
Ahafo	527	512	97.2	13
Ashanti	10,980	10,874	99.0	2
Bono	511	510	99.8	0
Bono East	783	766	97.8	6
Central	1928	1,906	98.9	6
Eastern	2,419	2,385	98.6	15
Greater Accra	24,347	24,008	98.6	220
North East	19	18	94.7	0
Northern	547	535	97.8	0
Oti	242	233	96.3	7
Savannah	62	61	98.4	0
Upper East	323	303	93.8	16
Upper West	90	87	96.7	0
Volta	679	658	96.9	10
Western	2971	2,955	99.5	12
Western North	646	636	98.5	10
International travellers(KIA)	77	43	54.4	34
TOTAL	**47,151**	**46,490**	**98.6**	**351**

Source; Ghana Health Service, October 2020

Unfortunately, the available data has not been disaggregated to show disease burden by vulnerable groups. Furthermore, COVID-19 vaccines have only been recently developed, and as such the parent project financing did not cover any activities related to vaccine deployment. As such there is data on COVID-19 vaccination under the parent project financing. COVID-19 vaccination performance data on vaccination coverage with lessons learnt from vaccine deployment will only become available following the implementation of activities under Additional Financing of the project.

Table 15. Summary Activities and Cases

Total Samples collected on 22-04-2020	4324
Total confirmed cases	1,154
Confirmed from Routine surveillance	402
Confirmed cases from enhanced surveillance	637
Confirmed cases from travellers under quarantine	115
Total Deaths among confirmed cases	9

3.7. Ghana's Capacity on COVID-19 Testing

a. Noguchi Centre for Medical Research: It is the leading medical research centre in Ghana and the leading centre for testing of Covid-19 samples. It is also providing leadership in ensuring that other centers are capacitated to test for COVID-19.

b. Kumasi Centre for Collaborative Research in Tropical Medicine (KCCR): is providing Covid-19 testing capacity for cases in mid to northern Ghana.

c. Veterinary Laboratories of the Ministry of Agriculture

d. Other Laboratories identified within the existing public Health structure. including the Public Health Reference Laboratory, University of Allied Health Sciences, and the Cape Coast Teaching Hospital.

3.8. Health Care Waste Management in Ghana

The management of health care/medical waste in Ghana has been an area of growing concern. Due to population growth and expansion of medical services, there have been an increase in the generation of hazardous waste in health facilities. The effect of this has been the exposure of healthcare workers, patients and nearby communities to toxic substances which pose threats to their health and the environment. Whereas 0.5 kg of municipal solid waste (MSW) is generated per person per day, an average of 1.5 kg/ bed/day of healthcare waste is generated by health facilities in Ghana[15]. Ghana Health Service estimates that the country generates approximately 31.2 tons of healthcare waste per day and 136,656 tons annually. Based on an assumption that 25% of the waste is hazardous or infectious in nature, this amounts to the generation of 34,260 tons of hazardous waste on a yearly basis.

The management of medical waste in Ghana has been an area of growing concern. Whereas 0.5 kg of municipal solid waste (MSW) is generated per person per day, an average of 1.5 kg/ bed/day of healthcare waste is generated by health facilities in Ghana. Ghana Health Service estimates that the country generates approximately 31.2 tons of healthcare waste per day and 136,656 tons annually. Based on an assumption that 25% of the waste is hazardous or infectious in nature, this amounts to the generation of 34,260 tons of hazardous waste on a yearly basis.

Since 2006, a Health Care Waste Management (HCWM) policy and guideline document has been in place to direct the management of health care waste throughout its lifecycle in the health sector. Although this resulted in some improvements in health care waste management, there were still challenges with the implementation of the policy. In 2020, MoH, in collaboration with United Nations Development Programme (UNDP) and other stakeholders, revised the Health Care Waste Management Policy and Guidelines (2020) to reflect current global best practices. The policy (Appendix 1) review seeks to improve management of health care waste in accordance with existing international conventions through adoption of Best Available Technology (BAT) and

[15] GNA, Every Person Generates Half Kilogram of Solid Waste a Day, GNA, Accra, Ghana, 2008.

Best Environmental Practices (BEP). The Guidelines (Appendix 2) provide direction to health care facilities in Ghana to comply with the requirement of the Hazardous and Electronic Waste Control and Management Act, 2016 (Act 917) and the revised national policy to ensure safe management of health care waste. The guidelines apply to all health institutions including public, private, quasi-governmental, non-governmental, faith-based and traditional practitioners that operate in the country at all levels of the health care system: Tertiary/Teaching/Specialist Hospitals, Regional Hospitals, District Hospitals and Sub-district Health Institutions (i.e., Health Centres/Clinics and Community Clinics). Others include Health Research Institutions, Laboratories, Home-based Care, Nursing Homes, Alternative Health Care Providers, (including traditional healers and Traditional Birth Attendants (TBAs)), Dentists, Mortuaries, Funeral Homes and Undertakers, Pharmacies, Veterinary Hospitals and Chemical Shops. Though some existing laws assign functions to some institutions such as the Environmental Protection Agency (EPA) (Act 490) and National Sanitation Policy (1999).

The Revised National Guidelines on HCWM, 2020 covers adequately the disposal of pathological waste and dead bodies in cemeteries or special burial sites and through cremation. The guidelines however failed to address the disposal of dead bodies as a result of infectious diseases like COVID-19. This has been adequately covered by the Ministry of Sanitation and Water Resources (MSWR) through the development of Guidelines on Safe and Dignified Burial of COVID-19 Dead, June, 2020 (Appendix 3). The Revised National Guidelines on HCWM, 2020 together with the Guidelines on Safe and Dignified Burial of COVID-19 Dead, June 2020 would therefore be adequate to handle the health care waste management issues under COVID-19.

A survey undertaken in 2019 by a team of researchers from the University of Energy and Natural Resources, Sunyani and the University of Cape Coast in Ghana to assess the behavioral patterns on medical waste sorting and handling revealed a significant differences in waste-sorting behavior based on occupation in the health sector. Even though contaminated sharps were separated into brown safety boxes, color coding for other infectious waste containers was however inconsistent across the health facilities. The survey confirmed that the major means of disposal of medical waste is through incineration onsite. The few specialized health care waste service providers in the country include Zoomlion Ghana Limited, Seweage Systems Ghana Limited and COLIBA GHANA.

3.9. E&S implementation challenges and lessons learned from the parent project

Due to the frantic and urgent nature of the initial national response to control spread of the COVID-19 outbreak in the country, when it began in March 2020, the E&S safeguards aspect of the response was unfortunately delayed.

The E& S focal point was appointed late, in the August 2020 without budgetary allocation. This limited the team to preparatory work and rely on remote interviews of sub-project team leads to exact quarterly progress report on ESHS management performance of the project.

To date, the E&S safeguards team has not yet been able to conduct field visits to project sites to verify E&S impacts, because of delayed release of funds from the MOH. Information used to prepare the 2020 Q2, Q3 & 4 E&S progress reports were obtained through remote interviews and are therefore yet to be independently verified through onsite visits.

Fortunately, the MOH is just about to release our first allocation of funds for E&S safeguards activities. But even as our team prepares to begin field visits across the country, in the very near future, we will have to rely on GHS pooled vehicles since our unit has no roadworthy cross-country

vehicle that can travel to the distant parts of the country. Because of our busy itinerary and competing demands from other GHS program activities we anticipate high demand for pooled GHS vehicles. Going forward, our unit will therefore require a roadworthy cross-country duty-post vehicle to ensure safe travels of the team across the country.

Additional E&S challenges include the lack of regulatory enforcement for healthcare waste management, training of key staff on E&S issues, E&S screening of sub-project activities, preparation and implementation of ESMPs and HCWMPs.

4. POTENTIAL ENVIRONMENTAL AND SOCIAL RISKS AND MITIGATION

4.1. Environmental and Social Risk Classification (ESRC)

The overall E&S risk classification for the EPRP is substantial. The risk ratings take into consideration the E&S risk and impacts associated with the proposed activities under the project and the institutional capability of the government implementing agency to manage them.

4.2. Potential Environmental and Social Risks and Impacts

The EPRP would be implemented across the entire country and will involve a set of activities that could trigger potential E&S risks and impacts. Based on experience with similar activities under this project, the potential negative impacts and risks envisaged are presented in table 16 below. Land acquisition resulting in involuntary resettlement or restrictions on access to resources and livelihoods is not anticipated because all civil works will occur within the existing parameters of government acquired lands for health facilities.

Table 16. Potential Environmental and Social Risks/Impacts of EPRP

Component	Activity	Negative risks and impacts
Sub-component 1.1: Case detection, confirmation, contact tracing, recording and reporting	Strengthen disease surveillance systems at points of entry (POEs), public health laboratories, and epidemiological capacity for early detection and confirmation of cases	Process will involve no negative E&S risk or impacts
	Combine detection of new cases with active contact tracing	
	Support epidemiological investigation	
	Strengthen risk assessment	
	Provide on-time data and information for guiding decision-making and response and mitigation activities	
Sub-component 1.2: Containment, isolation and treatment	Leasing, renting, establishment and refurbishing of designated facilities and centers	The refurbishment process may involve minimal to moderate negative risk or impacts
	Fumigation and specific infection prevention and control measures at health facilities and schools.	The process of fumigation may involve minimal to moderate negative risk or impacts and will therefore be undertaken according to the appropriate guidelines and protocols
Sub-component 1.3: Social support to vulnerable groups	Provision of psychosocial counselling support, food-baskets and feeding during the isolation, quarantine and treatment period	Exposure to COVID-19 virus during the provision of counselling support
	Provision of funds for fee-waivers to access medical care and cash transfers	Risk of exclusion of vulnerable groups especially

Component	Activity	Negative risks and impacts
	to mitigate loss of household income due to job losses	women, seniors, etc., in the community
Sub-component 1.4: Health System Strengthening	Training of contact tracing coordination teams and networks at the national, regional and district levels	There is the potential exposure to the COVID-19 virus during in-person operations. The other processes will however no negative E&S risk or impacts
	Recruitment of technical experts and human resources for technical work and supportive supervision	
	Training of district and sub-district level health workers and volunteers for surveillance and case management	
	Training of laboratory personnel to build diagnostic capacity for COVID-19 at the subnational (regional/district) level	
	Orientation of POE staff for screening people entering the country at designated points of entry (airports, border crossings, etc.)	
	Capacity building for call/hotline centers	
	strengthening Pre-Hospital Emergency Medicine (PHEM) and community- and event-based surveillance for COVID-19	
	Capacity building and orientation of national, regional and district Rapid Response Teams (RRTs), Doctors, Physician Assistants, staff of quarantine facilities, surveillance and point of entry teams across country and particularly in treatment centers at all border districts	
	Simulation exercises and scenarios conducted in facilities and communities marked as DSS	
Sub-component 1.5: Strengthening preparedness for vaccine deployment	This will involve the continuous maintenance of the cold storage units, which require huge amount of energy to operate and may use different kinds of cooling agents/refrigerants in their cooling systems. Some refrigerants can cause depletion of the ozone layer and can contribute to greenhouse gas emissions that cause global warming.	The lack of proper maintenance will involve substantial E&S risk and impacts, which will require the preparation of an adequate Maintenance Plan.
Sub-component 1.6: The component will support the purchase of COVID-19 vaccines	The component will finance the costs of the vaccines, international freight and procurement fees to UNICEF or private suppliers.	Activity will generate biomedical waste e.g., empty vaccine vials, used syringes, used medical PPE. There will therefore be a risk of exposure to sharps and non-sharp medical waste.
	This will involve refrigeration within the cold chain system	Ghana achieved a reduction of the HFCs

Component	Activity	Negative risks and impacts
		emission by 36% in the period 2012-2016. However, despite actively promoting the use of low-GWP natural refrigerants and discouraging use of ozone depleting substances (ODS) as refrigerants, there may still be a risk of releasing ODS from non-compliant refrigerators.
Sub-component 2.1: Multi-agency support to enhance response	Technical support for strengthening governance and updating policies and plans	Exposure to spread of COVID-19 during IMCC meetings and direct stakeholder engagements. Policy development and coordination. No physical works involved. No significant environmental risks envisaged.
	Support for institutional and organizational restructuring to respond to emergencies such as pandemic diseases	
	Operating Costs of the IMCC, EOC, quarantine centers and the Ghana Center for Disease Control (CDC) including transport, communication support equipment and other administrative-related costs for coordination meetings and supportive supervision and monitoring	
	Contracts for private management of newly established infectious disease centers and medical villages	
Component 3: Community Engagement and Risk Communication	Surveillance, home visits and contact tracing at the district, sub-district and community levels	Community engagement and communication. No physical works involved. No significant environmental risks envisaged. Exposure to spread of COVID-19 risk communication engagements. Risk of exclusion of women, seniors and other vulnerable groups in the community consultation process Risk of lack of adequate means to reach out to illiterate population for their risk awareness
	Risk communication through a well-established network of call center, community health officers and community volunteers	
	Community mass communication and announcements and outreach services and sensitization through community announcement centres, sensitization, information sharing and counter misconceptions information sharing	
Sub-component 4.1: Implementation, management and oversight	Provide support for the strengthening of public structures for the coordination and management of the Project	Project management. No physical works involved. No significant environmental and social risks envisaged.
	Undertake financial management and procurement requirements of the Project	

Component	Activity	Negative risks and impacts
	Recruitment of additional staff/consultants responsible for overall administration, procurement, and financial management under country specific projects	
	Financing of project coordination activities	
Sub-component 4.2: Strong institutions for managing Ghana Center for Disease Control (CDC)	Establishment of the implementation core task team of the Ghana CDC	Project management. No physical works involved. No significant environmental and social risks envisaged.

Of the various components under COVID EPRP AF, it is only component 1.2, 1.3, 1.4 and 1.5 activities involve minimal to substantial environmental and social risk and impacts. The potential environmental and social risk and impacts at the various stages of project are detailed below.

A. Construction Phase

i. Generation of Constructional Waste

It is expected that construction waste will be generated from the rehabilitation, upgrading and other constructional works. The significant sources of construction wastes may include:

- Vegetation that may have to be removed from sites.
- Volumes of soils and rocks that may be produced from excavations and other earth movements.
- Construction debris made up of, among others, pieces of wood, scrap metals, packaging materials and containers, and
- Construction rubble that will be produced due to the demolition of parts of buildings and other structures.

These wastes will have to be removed from the construction sites to create an obstruction-free environment for the effective execution of the project works. The waste will largely be inert and some of it can be re-used during the construction activities.

ii. Air Pollution: Dust and Particulates

Clearing of sites, excavations and other earth-moving activities could expose loosened soils which could be blown into the air by wind. Vehicular movement on loosened soils could throw plumes of dust into the air. The delivery of sand, gravels and aggregates to the project sites could also release plumes of dust into the air. Construction equipment and trucks are likely to emit exhaust fumes and add to concentrations of Carbon Monoxide, Nitrogen Oxide (NOx), Specific Particulate Matter (SPM) and Hydrocarbons (HC) at the project sites. High concentrations of these pollutants could induce several health problems e.g., coughing, sneezing and eye irritation. Air pollution will, however, be intermittent, temporary and localized. The impact on air quality is likely to be confined to the project sites, exposing the construction workers to polluted air.

iii. Noise Generation and Vibration

The movement and operation of heavy-duty machinery and equipment that may be engaged in the preparation works at the project sites could generate high level noise and vibration. Ambient noise levels on and around the project sites are expected to appreciate because of various construction activities including excavations, drilling, ramping and the operation of construction equipment and movement of trucks. Noise is a nuisance that has the potential to negatively affect persons living near the project sites. The noise can cause sleep disorders for inpatients in nearby health facilities, and lack of concentration by medical health workers. Vibrations can damage structures, particularly makeshift or lightly constructed buildings.

iv. Disruption of Public Utilities

Communities in areas where project works will be undertaken may be connected to the national power grid, water supply systems, telecommunication networks and wastewater collection pipes. These services are supplied via underground pipes and overhead cables. Excavations and other earth movements could destroy electricity cables, telephone cables, water distribution pipes and sewerage pipes, if they are not found and relocated before commencement of construction works. The re-location as well as potential destruction of the utility lines would result in temporary disruption of power, water supply and telecommunication services to the communities as well as create insanitary conditions.

v. Increased Traffic

Construction works could add to traffic volumes on local roads in areas where project sites are located. Trucks delivering sand, aggregates, gravels, and cement as well as paints, pipes and other building materials could add to the traffic on access and local roads. Besides adding to traffic volumes, the trucks could slow down vehicular movement on the roads and cause traffic hold-ups. The presence of these trucks on the roads could create conditions for vehicular accidents and create safety risks for persons as they pass through communities/neighbourhoods to get to the project sites. In addition, transport of medical equipment to health facilities and ambulance transport COVID-19 patients to isolation and treatment centers could cause traffic disruptions.

vi. Public Health and Safety Risks

Persons living close to project sites could be exposed to air polluted by dust and emissions resulting from construction works and vehicles. Another source of public health risk is the exposure to high level noise and vibrations, which could result in sleep disturbance, lack of concentration and hearing impairment. The movement of trucks through neighbourhoods would expose residents to accidents with the resultant fatalities and injuries. Where the works include excavations, persons could fall into pits created if the project site is not fenced off. The pits could also collect water and become breeding grounds for disease borne vectors such as mosquitoes.

vii. Labour related risks

Bringing in workforce for construction and civil works can enhance risks of transmission of diseases to and from the communities like HIV, Malaria, STDs. The contractor workforce if not managed properly could create risks of child and forced labour. No work camp will be constructed and hence, the project does not envisage accommodation of workers at the construction sites. Other likely labour risk may also include general labour working conditions (pay and compensation), community grievance over recruitment process and selection and protection of female workers. Security forces may be used to protect quarantine and isolation centers under this project so incidence of conflicts between security forces and civilians or abuse of civilian may need to be assessed and prevented.

viii. Gender based violence and sexual exploitation:

GBV risks including sexual harassment, defilement, rape etc. may arise from interaction between construction workers and people living near the construction sites. Search for jobs and procurement opportunities from the project could provide grounds for sexual harassment and exploitation of girls and women.

ix. Incidence of crime and conflicts

Civil works can be associated with theft and pilfering of construction materials either from the general public or construction workers. Site workers can also steal from the offices with the immediate project environs. Outside the construction activities the identification and setting up of isolation and treatment centers could lead to community tensions if stakeholder engagement and associated communications are not managed well.

x. Land acquisition and restriction of land use

No land acquisition is required under this project as all construction and renovation activities will be carried out on already existing government health facilities. During implementation, the sites will be screened using the environment and social screening toll to identify potential social impacts and develop appropriate mitigation measures to address the impacts identified as required by ESS 5.

xi. Occupational Health and Safety

Construction activities could expose construction workers to potential risks and accidents. Among conditions that could expose the workers to these risks are:

- Exposure to dust pollution and construction fumes could cause respiratory ailments.
- Exposure to hazardous materials and solvents.
- Noise and vibration could result in temporary or permanent hearing loss and lack of concentration with the attendant potential for accidents and injuries; vibrational exposure could result in hand and foot injuries.
- Injuries from the (mis)use of construction machinery, equipment and tools.
- Injuries from falling from heights.
- Excavations and other earth movements will create pits and trenches which could result in serious falls and injuries.
- The workers could suffer cuts by stepping on sharp objects such as nails and metal off-cuts, and
- Accidents and injuries could occur because of clashes between construction vehicles and the workers as they both operate within the same work zone.

The outbreak of COVID-19 pandemic has also created a new phase of health risk for construction workers. Workers can be exposed to the spread of the coronavirus if adequate procedures and protective measures are not put in place to avoid and minimize the exposure of workers to the virus. The exposure here is particularly high given that most of the construction activities may occur around existing health facilities that are either testing or treating COVID-19 patients. The risks are greater for migrant workers who would be staying close to the construction sites, if adequate protective measures like provision of masks, soaps, sanitizers, COVID related screening, basic medicines for fewer, cold etc. are not taken for the labour camps where migrant labour is staying.

Potential operational phase impacts include:

xii. Increased Pressure on Utilities/Services

The extension of electricity and water to the health facilities could add to the demand and pressure on existing utilities. The pressure could affect the efficiency of the utilities and thereby affect the supply of these services to other consumers with the attendant negative impact on peoples' welfare and income activities.

xiii. Increased Traffic

The rehabilitation or upgrade of the health facilities and their subsequent use could lead to an increase in vehicular traffic to these facilities. As vehicles transport patients to and from the facilities and bring medical supplies to the facilities, they could add to the existing volume of traffic on the roads. Increased traffic could result in traffic hold-ups and increase the risk for vehicular-vehicular accidents and vehicular-pedestrian conflicts on local roads.

B. Operational Phase

i. Generation of Biomedical Waste

Activities at the facilities will generate biomedical waste in various forms. These will include as shown in table 17:

ii. Generation of Liquid Waste

Wastewater from medical service areas (e.g., laboratories, treatment rooms, quarantine centres, etc.) of the health care facilities (excluding offices, stores, meeting places, catering services, etc.) are to be considered and treated as hazardous wastes. Contaminated wastewater may result from discharges from medical wards, laboratories (e.g., microbiological cultures, stocks of infectious agents), pharmaceutical and chemical stores; cleaning activities and x-ray development facilities. Wastewater may also result from treatment disposal technologies and techniques, including autoclaving and chemical disinfection. Contaminated wastewater will require careful management to prevent any adverse health consequences. Improper disposal of liquid waste could result in insanitary conditions, pollution of both surface and underground water resources as well as generation of offensive odour in the vicinity of the facility.

Table 17. Types of biomedical waste expected to be generated

Types of wastes	Description
Infectious waste	Includes waste suspected to contain pathogens (e.g., bacteria, viruses, parasites, or fungi) in sufficient concentration or quantity to cause disease in susceptible hosts. Includes pathological and anatomical material (e.g., blood, and other body fluids), clothes, dressings, equipment / instruments, and other items that may have come into contact with infectious materials.
Sharps:	Includes needles, scalpels, blades, knives, infusion sets, saws, broken glass, and nails etc.
Pharmaceutical waste:	Includes expired, unused, spoiled, and contaminated pharmaceutical products, drugs, vaccines, and sera that are no longer needed, including containers and other potentially contaminated materials (e.g., drug bottles vials, tubing etc.).
Chemical waste:	Waste may be hazardous depending on the toxic, corrosive, flammable, reactive, and genotoxic properties. Chemical waste may be in solid, liquid, or gaseous form and is generated through use of chemicals during diagnostic/experimental work, cleaning, housekeeping, and disinfection. Chemicals typically include halogenated and nonhalogenated solvents, organic chemicals for cleaning / disinfecting, and various inorganic chemicals (e.g., acids and alkalis).
Radioactive waste:	Includes solid, liquid, and gaseous materials that have been contaminated with radionuclides. Radioactive waste originates from activities such as organ imaging, and research/clinical laboratory procedures, among others, and may include glassware, syringes, solutions, and excreta from treated patients
Waste with high content of heavy metals:	Batteries, broken thermometers, blood pressure gauges, (e.g., mercury and cadmium content).
Pressurized containers:	Includes containers/cartridges/cylinders for nitrous oxide, ethylene oxide, oxygen, nitrogen, carbon dioxide, compressed air, and other gases.
General health care	Includes food waste and paper, plastics, cardboard waste

iii. Public Health and Safety Risks

Persons living close to the health facilities and, for that matter, the public could be exposed to health and safety risks from various sources, including:

- Exposure to biomedical waste, especially contaminated sharps, and other objects. Contaminated facemasks, gloves, needles, syringes represent a particular threat, as the failure to dispose of them safely may lead to dangerous recycling and repackaging, which lead to unsafe reuse and further spread of COVID-19. Contaminated injection equipment may be scavenged from waste areas and dumpsites and either be re-used or sold for re-use;

- Exposure to polluted air due to the mismanagement of biomedical waste.
- Insanitary conditions due to poor wastewater management and the associated ailments.
- Nosocomial or health care associated infections, and
- Accidents and injuries due to increased traffic on local roads.

The setting up of isolation and treatment centers near residential areas could lead to spread of COVID-19 to nearby residents if appropriate containment measures are not put in place to restrain interaction between residents and COVID-19 patients in such isolation centers. The treatment of large numbers of patients at various isolation centers could be potential grounds for sexual harassment, exploitation, and abuse.

iv. Occupational Health and Safety Risks and Impacts

Staff of the health facilities and laboratories, will be exposed to a variety of health and safety hazards. These hazards include.

- Exposure to communicable diseases, particularly COVID-19.
- Handling of hazardous substances and chemicals.
- Handling of hazardous wastes/contaminated materials.
- Exposure to polluted indoor air.
- Exposure to inflammable chemicals and other materials.
- Fire outbreaks.
- Stressed induced injuries.
- Musculoskeletal injuries, and
- Slips and falls due to wet floors.
- Psychosocial hazards such as anxiety and depression, and patient aggressive behaviours

Members of the Inter-Ministerial Management Committee and those involved in contact tracing and risk communication could be exposed to the coronavirus if appropriate safety protocols and PPEs are not used.

v. *Refrigeration within the Cold Chain System*

AF will support the in-country supply chain and climate-friendly cold chain investment requirements, which will require the use of refrigeration. Refrigeration[16] in the cold chain system for vaccine storage and distribution is necessary to maintain efficacy of the vaccines. Adequate and proper refrigeration is required during storage and distribution to minimise vaccine rejects. However, the refrigeration facilities (cold storage and refrigerated road transport), require huge amount of energy to operate and use different kinds of cooling agents/refrigerants in their cooling systems. The use of refrigerants in the cold chain system can cause depletion of the ozone layer and can contribute to greenhouse gas emissions that cause global warming. The lack of proper

[16] In the 2017 UNEP Report of the Technology and Economic Assessment Panel (Montreal Protocol on Substances that deplete the ozone layer), industrial refrigeration accounts for approximately 2% of HFC consumption in terms of CO2-eq and is projected to grow by approximately 6.7% annually between 2015 and 2050.

maintenance and knowledge very often translates into an inadequate management of the life cycle of refrigerant gases. More refrigerant leakage results to less efficient equipment and higher emission of high global warming potential (GWP) gases into the atmosphere.

Refrigerants are toxic and some are flammable and could form explosive mixture with air if leakage occurs, posing risk to people's health and safety. Some cold storage warehouses use ammonia as a refrigerant, which has negligible GWP but is toxic and mildly flammable, with the potential to cause health hazards. It is therefore necessary that safe practices be applied to the operations. Despite the provision and adherence to safe procedures and practices, some cold storage may not be energy- efficient.

4.3. Ensuring Data Privacy

The Government of Ghana is implementing measures to track and contain the spread of the novel coronavirus (COVID-19) and harnessing the power of data to drive digital solutions. Of particular importance to an effective front-line response is data concerning the spread of the virus, such as the location and number of new confirmed cases, rates of recoveries and deaths, and the source of new cases (international arrivals or community transmission). Data is also crucial to assess and improve the capacity of health care systems, and to evaluate the effectiveness of containment and mitigation policies that restrict the movement of individuals.

Timely, secure and reliable data access and sharing are thus critical to understanding the virus and its spread, improving the effectiveness of government policies, and fostering global co-operation in the race to develop and distribute therapies and vaccines.

But some responses to the crisis are giving rise to data governance and privacy challenges. For instance, contact-tracing technologies can be useful as they provide critical information to limit the spread of the virus, but if left unchecked, they can also be used for extensive collection and sharing of personal data, mass surveillance, limiting individual freedoms and challenging democratic governance.

The following considerations, data governance and privacy principles, will guide data collection and sharing practices:

- The Ministry of Health would consult the Data Protection Commission (DPC) before introducing measures that risk infringing on established privacy and data protection principles. DPC should be consulted in the front-line response efforts to ensure that incursions into privacy rights are accompanied by appropriate safeguards. The Ministry of Health will dedicate resource to enable these assessments. The DPC has a key role to play in advising on proposed new government programmes and provides clarity regarding the application of existing privacy and data protection frameworks.
- The Ministry of Health will promote the responsible use of personal data. The MOH will ensure data collection tools are implemented with full transparency, accountability and a commitment to swiftly cease or reverse exceptional uses of data when the crisis is over. Data controllers will have a lawful and fair basis to collect and use personal data.
- Subject to necessary and proportionate safeguards, the MOH will support national and international co-operation in collecting, processing and sharing personal health data for research, statistics and other health-related purposes in managing the COVID-19 crisis. This includes the adoption of privacy-preserving solutions for data access and sharing and, where appropriate, engaging in and leveraging public-private partnerships to facilitate data sharing.
- The MOH would be transparent and accountable for all actions they take in response to

the crisis. The Ministry will ensure the engagement and participation, notably through public consultation, of a wide range of stakeholders with a view to ensuring that the collection, processing and sharing of personal data serves the public interest and is consistent with societal values and the reasonable expectations of individuals.

4.4. Laboratory Biosafety Management

The project will ensure compliance to the WHO laboratory Biosafety Manual for guidance on laboratory design and operations[17]. The Laboratory Biosafety Manual provides practical guidance on biosafety techniques for use in laboratories at all levels. The manual encourages countries to accept and implement basic concepts in biological safety and to develop national codes of practice for the safe handling of pathogenic microorganisms in laboratories within their geographical borders. [Available at: https://www.who.int/publications/i/item/9241546506].

The WHO has also developed interim guidance on laboratory biosafety related to COVID-19 virus. This also includes the packaging and shipment requirements for sending specimens to WHO reference laboratories providing confirmatory testing for COVID-19. The latest update (13 May 2020) includes additional biosafety recommendations for the usage of Point of care (POC) or near-POC assays that could be performed at patient care settings with certain precautions. It is essential to ensure that health laboratories adhere to appropriate biosafety practices. Any testing for the presence of SARS-CoV-2, the virus that causes COVID-19 or of clinical specimens from patients meeting the suspected case definition (2) should be performed in appropriately equipped laboratories, by staff trained in the relevant technical and safety procedures. National guidelines on laboratory biosafety should be followed in all circumstances. [Available at: *https://www.who.int/publications/i/item/laboratory-biosafety-guidance-related-to-coronavirus-disease-(covid-19)*].

The Project will support the establishment of Biosafety level (BSL) 2 and 3 laboratory. See the WHO WHO laboratory Biosafety Manual for guidance on laboratory design and operations for BSL 2 and 3.

4.5. Generic Environmental and Social Management Plan (ESMP)

The Environmental and Social Management Plan (ESMP) aims to ensure that negative environmental, social and occupational health and safety impacts of the proposed Project and its sub-projects are reduced to the barest minimum or even eliminated during the rehabilitation and operational phases of its implementation. A generic ESMP presented in this report has been developed based on the current information on the proposed impacts and risk, the corresponding principle of mitigation, and responsibility. The impacts identified at this stage are all generic. When the exact locations and rehabilitation requirements become known, the proponent will develop site-specific ESMPs, which will address specific impacts associated with the Project's activities. This ESMP also presents generic recommendations for mitigating and monitoring measures. Additionally, monitoring indicators and frequencies, and institutional responsibilities. The PCU will be responsible for ensuring coordination and monitoring regarding the implementation of the ESMP throughout the Project's lifecycle. A generic ESMP template is provided in annex 1.

[17] https://www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf?ua=1

5. PROCEDURE TO ADDRESS ENVIRONMENT AND SOCIAL ISSUES

The ESMF provides a general impact identification framework and guidance on procedure to be followed, standards to be met, and instruments to be prepared in implementing this project. The activities shall be carried out in accordance with the provisions of the ESMF and any other applicable legislation, regulations and policies of the Government of Ghana and the World Bank

5.1. Environmental and Social Screening and Management Process

- Environmental and social screening marks the beginning of risk management process for any planned activity. The screening shall be initiated as early as possible along with the sub-project planning process after the sub-project is conceived. The extent of environmental and social assessment that might be required to be carried out in respect of a proposed sub-project will depend on the outcome of the screening process.
- The World Bank ESS1 provides guidance on the environmental assessment procedure for WB funded projects, whilst the Ghana ESIA procedure (EPA, 1999) have also established an acceptable process to screen and evaluate all developments projects which have the potential to give rise to significant environmental impacts. The two processes are largely similar and the Ghanaian procedures are therefore given in the following sections and will mostly be statutorily followed by all subprojects under EPRP to obtain environmental permits. Table 18 shows the summary of the steps according to both the Ghana EA and World bank Guidelines.

Table 18. Ghana EA Guidelines and World Bank EA Guidelines

EIA Stages	Ghana ESIA	WB ESIA	Responsible	Collaboration	Service Provider
Screening/categorization	Screening required for projects with i) significant negative environmental and social impacts; (ii) minimal or not likely to be significant Impact, (iii) no or minimal impacts,	Screening is required for High risk, Substantial-risk, Moderate-risk, Low-risk	E&S Specialist	MOH-PIU	WB/EPA
Scoping (TOR)	Required	Required	E&S Specialist	MOH-PIU	WB/EPA

EIA Stages	Ghana ESIA	WB ESIA	Responsible	Collaboration	Service Provider
Environmental and Social Impact Assessment	Required	Required	E&S Specialist	MOH-PIU	WB/EPA
Public consultation	Required	Required	E&S Specialist	MOH-PIU	
ESMP	Required	Required	E&S Specialist	MOH-PIU	WB/EPA
Ensure integration of ESMP construction phase mitigation measures and E&S clauses into bidding document	Required	Required	E&S Specialist	Project Coordinator, MOH-PIU	
Ensure Contractor prepares his ESMP (C-ESMP), gets it approved and integrates the relevant measures in the works breakdown structure (WBS) or execution plan	Required	Required	E&S Specialist	Project Coordinator, MOH-PIU	
HCWMP	Required	Required	HCWM	E&S Specialist, MOH-PIU	
Monitoring	Required	Required	E&S Specialist	Project Coordinator, MOH-PIU, Regional, District, Community	Consultants, Laboratories, NGOs
Safeguard Reporting and disclosure	Required	Required	Project Coordinator	E&S Specialist, MOH-PIU	

- In annex 2, there is a sample screening form specifically designed for identification of potential environmental & social safeguards issues in this project.
- This form is to be used by the MOH to screen potential environmental and social environmental and social risk levels of a proposed subproject, determine the relevance of Bank environmental and social standards (ESS), propose its E&S risk levels, and the instruments to be prepared for the sub project.
- The PIU shall have a designated Officer who shall be directly responsible for carrying out preliminary screening of all sub-projects under the guidance of the Environmental Safeguard Specialist or Focal Point. The Officers shall complete the Environmental and Social Screening Form (see Annex 2).
- The project will undertake physical visit to the proposed project site to conduct an initial environmental and social screening in line with World Banks ESF standards and the national requirements taking into consideration factors such as (see detail in the screening checklist

at annex 3):

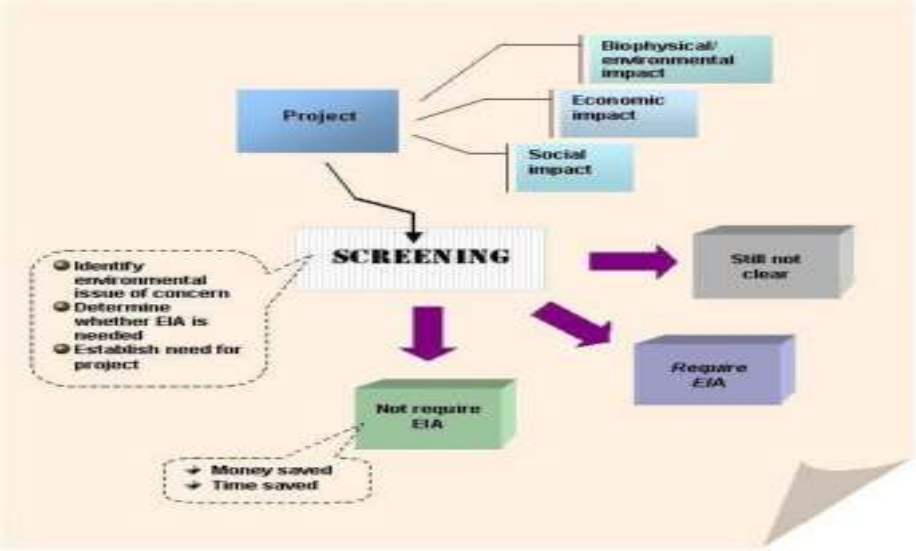
- Location, size and likely output of the undertaking.
- Technology intended to be used.
- Concerns of the public, if any, and in particular concerns of immediate residents, if any; and
- Land use and other factors of relevance to the particular undertaking to which the application relates.

- Following the field visit, the implementing agencies (under the leadership of the PIU safeguards specialist) shall prepare and submit a Screening Report to the World Bank.
- The implementing agency shall also apply to the EPA, Ghana for an environmental permit.

- The EPA, Ghana is the statutory national authority mandated to determine whether, the application for environmental permit is (i) approved; (ii) objected to or (iii) requires submission of a preliminary environment report or (iv) requires the submission of an environmental impact statement.
- All the afore-mentioned potential environmental risks should be addressed in accordance with the national Environmental Assessment Regulations, 1999 (L.I 1652) developed by the Environmental Protection Agency. This involves fulfilling several requirements that may include:
  - Environmental registration of the project
  - Initial Environmental and Social Assessment (Screening)
  - Scoping and preparation of terms of reference
  - Selection of Consultant
  - Conduct Environmental Impact Assessment studies
  - Review of the Environmental Impact Assessment (EIA)
  - Public Hearing
  - Approval of the environmental management plan
  - Other procedures that may Require Permits
- The EPA shall confer with the implementing partner and the World Bank to determine whether the E&S risks associated with the sub-projects are likely to have:
  (i) no or minimal impacts,
  (ii) minimal or not likely to be significant Impact,
  (iii) Significant negative environmental and social impacts;
- Where the negative E&S risks are considered as significant, the EPA shall confer with the implementing partner and the World Bank to identify the type and depth of environmental and social assessment or instrument (i.e., ESIA, ESMP, RAP) to be carried out for the sub projects, if required; in order that the project implementation is in compliance with the World Bank ESF and national environmental requirements.
- Where the negative E&S risks are considered as minimal, the EPA shall confer with the implementing partner to agree that no further E&S instrument is required.

- In which case the MOH may proceed with the minimum regular reporting requirements which will be discussed and agreed with the World Bank and the EPA prior to commencement of works/action.
- The implementing health agency should determine if there is the need to obtain other national permits, for example:
    - Building/ Development Permit from the District/ Municipal Assemblies.
    - Fire Permit from Ghana National Fire Service.
    - Occupational Health and Safety Permit from Department of Factories Inspectorate.
    - Water abstraction permit in case of borehole drilling.
- No sub-project requiring preparation of an environment and social instrument shall commence until the said instrument has been completed, approved by the EPA, Ghana and the World Bank; and disclosed publicly in Ghana and on the World Bank external website. The diagram below summarizes the screening process.

Figure 1: Environmental and Social Screening Process



Minimal or not likely to be significant Impact:

When there are minimal or not likely to be significant impacts and there is low probability of serious adverse effects, the World Bank may require the project to prepare an Environmental and Social Management Plan (ESMP) after the initial screening process. The ESMP is an instrument that details (a) the measures to be taken during the implementation and operation of a project to eliminate or offset adverse environmental and social impacts, or to reduce them to acceptable levels; and (b) the actions needed to implement these measures.

Significant Impact:

When there are likely to be significant impacts the World Bank and the EPA may require the project to prepare an Environmental and Social Impact Assessment (ESIA). The following steps should be followed in the preparation of an ESIA:

Step 1: Environmental Registration of the Project

- The PIU shall complete the relevant EPA Environmental Assessment Registration forms (EA form, see Annex 4). The completed forms shall be submitted to EPA in accordance with the Environmental Assessment Regulation, 1999.

Step 2: Scoping and Preparation of Terms of Reference

*The Wo*rld Bank requires that the extent of ESIA be outlined in a Term of Reference (TOR). The EPA also requires the preparation of a Scoping report which must indicate the essential issues to be addressed in the ESIA. The TOR and scoping report shall be submitted to EPA and the World Bank for approval and clearance.

Step 3: Selection of Consultant

- The selection process shall be in conformance with provisions under the procurement policies and procedures of the World Bank Group and the Ghana Public Procurement Act, 2003 (Act 663) as amended 2016 (Act 913).

Step 4: Conduct Environmental and Social Impact Assessment Studies

- The consultant shall prepare conduct the Environmental and Social Impact Assessment per the requirements of the TOR. Refer to Annex 5 that provides a template for the ESMP TOR.
- As part of the process the consultant must engage relevant stakeholders and project affected persons.

Step 5: Preparation of the ESIA with Community Consultation.

- The Environmental and Social Impact Statement (ESIS) or Environmental and Social Impact Assessment report must address potential direct and indirect impact of the undertaking on the environment and social setting at the pre-construction, construction, operation, decommissioning and post-decommissioning phases. Additionally, potential changes in social, cultural, and economic patterns must be dealt with in the ESIA.
- The ESIA shall also include an Environmental and Social Management Plan (ESMP) in accordance with the Environmental Assessment Regulations of 1999 (LI 1652) to ensure that the project activities are carried out in an environmentally safe and sustainable manner. The ESMP should outline management commitment and measures, action plan for implementation of mitigation measures and a monitoring plan to ensure the sustainable implementation of the proposed sub-project. An estimated budget for the implementation of the ESMP shall also be included. The ESIA report will follow the following format:
    - Description of the study area.
    - Description of the sub-project.
    - Discussion and evaluation of alternatives.
    - Environment description.
    - Legal and regulatory context.
    - Identifying potential impacts of proposed sub-projects.

- Process of public consultations; and
- Development of mitigation measures and a monitoring plan, including estimates of costs and responsibility for implementation of surveillance and monitoring activities.

Step 6: Review of the ESIA

The PIU shall submit the draft ESIA to the World Bank and the EPA for review. The World Bank and EPA laid down procedures for review of ESIA shall be followed. In addition, all EPA laid down procedure for public noticing and feedback shall be adhered to. If policy discrepancy exists in some domains, World Bank policies will override national policies and regulations.

The PIU will submit the draft ESIA to the EPA. The report will be reviewed by a cross-sectoral National Environmental and Social Impact Assessment Technical Review Committee (ESIA/TRC) made up of representatives of relevant Ministries, Departments and Agencies as determined by the EPA after preliminary review of the pertinent environmental and social issues associated with the project. The review committee is expected to:

- Assist the Agency in screening/reviewing all Environmental Assessment Applications and Reports (Environmental Impact Statements, Annual Environmental Reports, Environmental Management Plans and other related reports).
- make recommendations to the Executive Director of the EPA for final decision-making.
- provide technical advice on conduct of assessments and related studies on undertakings and the reports submitted on them.
- make recommendations on the adequacy of the assessment and any observed gap.
- advise on the seriousness of such gaps and the risks or otherwise to decisions required to be made, recommend whether the undertakings as proposed must be accepted and under what conditions, or not to be accepted and the reasons, as well as provide guidance on how any outstanding issue/areas may be satisfactorily addressed.
- Copies of the ESIA will be placed at vantage points including the EPA Library, relevant District Assemblies, EPA Regional Offices, and the sector Ministry. EPA serves a 21-day public notice in the national and local newspapers about the ESIA publication and its availability for public comments.

Step 7: Public Hearing

Where a Public Hearing is required, the PIU in conjunction with the EPA will organize same. Regulation 17 of the LI 1652 (1999) specifies three conditions that may trigger the holding of a public hearing. These are:

- Where notice issued under EPA EA regulation 16 results in great public reaction to the commencement of the proposed undertaking.
- Where the undertaking will involve the dislocation, relocation or resettlement of communities, and;
- Where the EPA considers that the undertaking could have extensive and far-reaching effects on the environment.

The outcomes/concerns expressed by the stakeholders at the Public Hearing shall be used to finalize the ESIS document.

Step 8: Review, Approval, Publication/Dissemination of the ESIA

- When acceptable, the World Bank and EPA will approve the ESIA. When the EPA approves the ESIA they will issue a permit. The EPA may require that an EMP/ ESMP is produced after 18 months of obtaining an environmental permit and commencement of the sub-project and thereafter every three years. The EPA may request the proponent to submit an EMP/ESMP prior to commencement of the sub-project in line with Act 490 and LI 1652.
- The ESIA shall be disclosed in-country and on the World Bank website. Copies of ESIA shall be placed at vantage points of PIU, the EPA Library, and EPA Regional Offices, Project communities, etc.

Step 9: Procedures that may Require Permits

The PIU should determine if there is the need to obtain other national permits such as:

i. Building/ Development Permit from the District/ Municipal Assemblies.
ii. Fire Permit from Ghana National Fire Service.
iii. Occupational Health and Safety Permit from Department of Factories Inspectorate to ensure sub-project success.
iv. Water abstraction permit in case of borehole drilling

5.2. Instruments Anticipated.

Once the sites and activities are identified during project implementation, the project after environmental and social screening may prepare site specific Environmental and Social Management Plan or Resettlement Action Plans (RAPs) to identify any social and environmental issues and provide mitigation measures for implementation. However, as this project is not expected to induce any form of displacement preparation of RAPs may not happen under this project.

5.2.1 Environmental and Social Management Plan

As part of the implementation process, the project will develop site specific ESMPs to address specific impacts associated with project activities. This plan will take into account the mitigation measures, monitoring and institutional measures to be taken during the implementation and operation of the subproject. The mitigation measures highlights solutions to reduce the negative impacts to the barest minimum. The monitoring will aid in measuring the success of the implementing mitigation measures. The ESMP will also provide a specific description of institutional arrangements, which defines responsibilities for implementing the mitigation and monitoring measures. The ESMPs will be developed prior to the implementing on any sub-project with E&S concerns.

5.3. Chance Find Procedures

In the event of finding previously unknown sites or feature of cultural value during project implementation, the following standard procedures for identification, protection from theft, treatment and recording should be followed. Specifically,

(a) Stop the activities in the area of the chance find.

(b) Delineate the discovered site or area.

(c) Secure the site to prevent any damage or loss of removable objects.

(d) Notify the Supervising Engineer who in turn will notify the responsible authorities.

(e) The Ministry of Tourism, in collaboration with responsible local authorities (where applicable), would oversee protecting and preserving the site before deciding on subsequent appropriate procedures.

(f) The Ministry of Tourism and National Museums and Monument Board will make decisions on how to handle the findings. This could include changes in the layout (such as when finding irremovable remains of cultural or archaeological importance), conservation, restoration, and salvage.

(g) The Ministry of Tourism shall communicate implementation of the authority decision concerning the management of the finding in writing.

(h) Construction work could resume only after permission is given from Ministry of Tourism or other responsible authorities concerned with safeguarding the cultural heritage.

These procedures must be referred to as standard provisions in construction contracts, Safeguards Procedures for Inclusion in the Technical Specifications for Contracts. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered. Relevant findings will be recorded in the Monitoring Reports and the World Bank Implementation Supervision Reports (ISRs), and Implementation Completion Reports (ICRs) will assess the overall effectiveness of the project's cultural property mitigation, management, and activities, as appropriate.

5.4. Labour Management Procedures

The project recognizes the need to protect the fundamental rights of workers since the workforce is an asset, and a sound worker-management relationship is a key ingredient in the sustainability of the project. Through a constructive worker-management relationship, and by treating the workers fairly and providing them with safe and healthy working conditions, the project will create tangible benefits, such as enhancement of the efficiency and productivity of their operations. Annex 6 shows the Labour Management Procedures adopted for the project.

5.5. HCWMP Procedure and Template

The HCWMP Procedure is a 6-step approach, which designates a HCWM coordinator as the Health-Care Waste Management Officer (HCWMO) at each HF to liaise with the Health facility management committee. The team will undergo training and subsequently conduct a survey on the current HCWM situation within the facility (hospital, Clinic, etc.,) in order to identify the necessary improvements. The HCWMO will be responsible in coordinating the survey and analyzing the results as well as reviewing and assessing the existing waste management situation at the facility. The HCWMO will also be responsible for drawing up a costed improvement action plan for implementation. Refer to Annex 7 for the WHO HCWMP Procedure and Annex 8 for the HCWMP Template. Further guidance is provided in Annex 9 detailing the Health Care Waste Management Guidance.

6. STAKEHOLDER CONSULTATION AND DISCLOSURE

6.1. Public Consultations

Stakeholder consultations are crucial component in the preparation and implementation of ESMF. Specifically, it aims to achieve the following objectives:

- To provide information about the project and its potential impacts to those interested in or beneficiaries or those affected by the project and solicit their opinion in that regard.
- To educate and solicit views from all stakeholders to enhance the implementation mechanisms and processes.
- To manage expectations and streamline misconceptions regarding the project.
- To ensure participation and acceptance of the project by all relevant stakeholders.

In pursuance of these objectives, the project has prepared a standalone Stakeholder Engagement Plan (SEP) inclusive of a Grievance Redress Mechanism (GRM). In line with this plan the project has started it stakeholder consultation and will continue through all the project phases to sensitize stakeholders about the project impact and mitigation measures. Due to the COVID – 19 pandemic, the recent public consultations were limited to the national level, cutting across all the necessary stakeholders; Ministry of Health (MoH), Ghana Health Service (GHS), Ministry of Finance (MoF), GARID and Korle Bu Teaching Hospital. Various techniques were used including a stakeholder workshop of the key stakeholders listed above, questionnaires and phone calls.

Annex 10 shows the stakeholders consulted and output of the consultations. Various literature was also perused in the preparation of the ESMF.

Further, the following guidelines suggested by the WB for project under preparation will be taken into consideration when conducting stakeholder consultation and engagement.

- Review the country COVID-19 spread in the project area, and the restrictions put in place by the government to contain virus spread.
- Review the SEP, particularly the approach, methods and forms of engagement proposed, and assess the associated potential risks of virus transmission in conducting various engagement activities.
- Be sure that all PIU and HCF members articulate and express their understandings on social behaviour and good hygiene practices, and that any stakeholder engagement events be preceded with the procedure of articulating such hygienic practices;
- Avoid public gatherings (taking into account national restrictions), including public hearings, workshops and community meetings, and minimize direct interaction between project agencies and beneficiaries / affected people.
- If smaller meetings are permitted, conduct consultations in small-group sessions, such as focus group meetings. If not permitted, make all reasonable efforts to conduct meetings through online channels, including WebEx, Zoom and Skype meetings.
- Diversify means of communication and rely more on social media and online channels. Where possible and appropriate, create dedicated online platforms and chat groups appropriate for the purpose, based on the type and category of stakeholders.

- Employ traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently.
- Employ online communication tools to design virtual workshops in situations where large meetings and workshops are essential, given the preparatory stage of the project.
- In situations where online interaction is challenging, information can be disseminated through digital platform (where available) like Facebook, Twitter, WhatsApp groups, Project weblinks/ websites, and traditional means of communications (TV, newspaper, radio, phone calls and mails with clear description of mechanisms for providing feedback via mail and / or dedicated telephone lines. All channels of communication need to clearly specify how stakeholders can provide their feedback and suggestions.

6.2. ESMF Disclosure

The EPA and World Bank policies require that environmental reports/ESIA documents for projects are made available to project affected groups, local NGOs and CSOs, and the public at large. Following clearance from the World Bank, the Government of Ghana would disclose the framework through print media advertisements and copies made available in selected public places. The advertisement would provide:

- a brief description of the Project.
- a list of venues where the ESMF report is on display and available for viewing.
- duration of the display period; and
- contact information for comments.

The ESMF would finally be disclosed in the national dailies and on the websites of all the key stakeholders; MoH, Ghana Health Service (GHS), GARID, Ministry of Finance (MoF) as well as the World Bank.

7. GRIEVANCE MECHANISM

7.1. Rationale and Objectives

The Project would have multiple stakeholders and implementing agencies and would use a combination of approaches in the delivery of services and benefits. These processes could lead to complaints, misunderstandings, conflicts and disputes. There would therefore be a grievance mechanism that would provide all direct and indirect beneficiaries, service providers and other stakeholders to raise their concerns. These stakeholders would be informed of the grievance mechanism in place during sensitisations and other interactions as well as the measures put in place to protect them against any reprisal for its use. The GRM procedure and its implementation arrangement is thoroughly described in a standalone Stakeholder Engagement Plan prepared under this project.

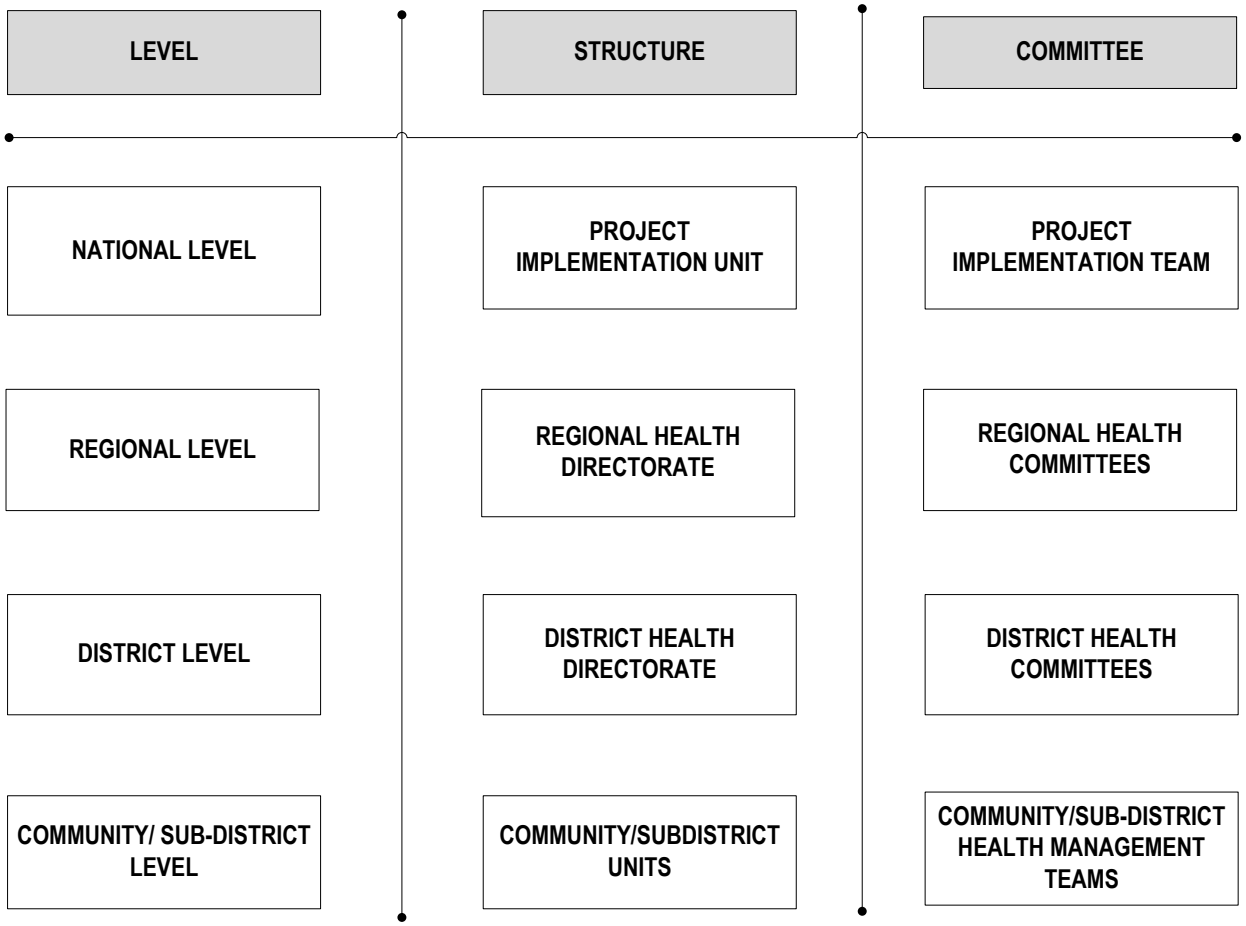
The objectives of the grievance process are to.
a. Provide affected people with avenues for making a complaint or resolving any dispute that may arise during the implementation of projects.
b. Ensure that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants; and
c. Avoid the need to resort to judicial proceedings.

7.2. Proposed Grievance Redress Mechanism

From the institutional arrangements, a Project Implementation Unit (PIU) has been established and managed by a Public Health Expert under the Office of the Minister of Health. The PIU will work in close collaboration and with key agencies involved in the preparedness and response agenda to implement the project, with a dedicated project monitoring and evaluation specialist, procurement specialist, environmental and social safeguards specialist, communications expert and finance specialist will be recruited or assigned.

The Project GRM will leverage the existing structures of the Ghana Health Service from the region to the community/sub-district structures as indicated in Figure 2. At the national level, a safeguards specialist will oversee grievances and would always liaise with the project implementation team to resolve grievances. At the regional, district and community/sub-district levels, dedicated officers will be assigned roles for up taking and ensuring the resolution of cases with the various health committees under the leadership of the various level heads. Escalated cases beyond the Project and the Ministry of Health would be handled by the Ghana Judicial System. The project will support a GRM system that would have functional toll-free numbers which complainants or PAPs can directly call. Complainants could also use other complaint update channel like email or dropped off written complaints at the PIU for redress.

Figure 2: Proposed GM Structure



The proposed GRM recommends four key steps as follows:

- Receive and register grievances or complaints.
- Acknowledge, assess and assign (acknowledge receipt of grievance, outline how grievance will be processed, assess eligibility, and assign responsibility)
- Propose response.
- Agreement on response
- If agreement is reached, implement agreement.
    - If agreement is not reached, review case and
    - If no agreement is reached under the review process, then the case can be referred to the law courts.

7.3. Recommended Grievance Redress Time Frame

Table 23 presents recommended timeframes for addressing grievance or disputes. Three levels of cases are envisaged for the project and this will have implications on the proposed time frames for resolution.

Level 1: Information verification and other minor cases

Level 2: Major cases to be handled under the Project's GRM.

Level 3: Escalated cases to be handled by other agencies outside the project and the Judicial System of the country.

Table 19. Proposed GM Time Frame

Step	Process	Time frame		
		Level 1	**Level 2**	**Level 3**
1	Acknowledgement of grievance	within 24 hours	within 24 hours	within 24 hours
2	Assess eligibility of grievance	Within 24 hours	Within 24 hours	Within 24 hours
3	Assign responsibility	Within 2 Days	Within 2 Days	Within 5 Days
4	Development of response	within 7 Days	within 14 Days	within 74 Days
5	Implementation of response if agreement is reached	within 7 Days	within 14 Days	within 46 Days
6	Close grievance	within 2 Days	within 2 Days	within 2 Days
7	Initiate grievance review process if no agreement is reached at the first instance	within 7 Days	within 7 Days	within 7 Days
8	Implement review recommendation and close	within 14 Days	within 21 Days	within 100 Days

7.4. Grievance Documentation and Reporting

Reported cases, resolved and escalated cases would be documented daily by the assigned grievance officers at the various levels and reported monthly, quarterly and yearly to the presiding level. The Safeguards Specialist at the PIU would exercise an oversight over the whole GRM and track the resolution of all grievances/cases.

Monthly case/grievance reports would be compiled by the Safeguards Specialist at the PIU and report to the Project Coordinator to inform management decisions. Quarterly reports would also be generated and reported to the MoH as part of the Project's Progress Reporting as well as the World Bank. Periodic reports would also be generated for stakeholders upon request irrespective of the period (e.g bi-annual, annual etc.)

8. PROJECT IMPLEMENTATION ARRANGEMENTS, RESPONSIBILITIES AND CAPACITY BUILDING

8.1. Institutional Arrangements

The COVID-19 Emergency Preparedness and Response is implemented through the Project Implementation Unit (PIU) under the Chief Director, Ministry of Health (MoH).

The MOH is the primary implementation agency for the EPRP and, for that matter, the ESMF. The MOH Director, Policy Planning, Monitoring and Evaluation (PPME), supported by the Director of Public Health, GHS under the Office of the Director General and Minister of Health, is responsible for overall project management. Responsibilities of project management include, but not limited to:

(i) collecting and compiling all data relating to their specific suite of indicators.

(ii) evaluating results.

(iii) providing relevant performance information; and

(iv) reporting results, financial, procurement statements and implementation of environmental and social mitigation measures as outlined in the ESMF.

An Environmental and Social Safeguard Officer (ESSO) acting as the Focal Point has been appointed for the Project. The ESSO is been supported by the Environment Safeguards Specialist and Social Safeguards Specialist of the GARID Project under the Ministry of Works and Housing as well as the Environment Safeguards Specialist and Social Safeguards Specialist of the GAMA Project under the Ministry of Sanitation and Water Resources. Additional staff have been assigned for the overall administration, procurement, financial management under this Project.

For effective monitoring and supervision, the following will be designated as focal persons with specific responsibilities at the regional, district and community levels.

- Project Coordinator;
- Environmental and Social Safeguard Officer/Focal Point;
- Health-Care Waste Management Officer (HCWMO)
- Health facilities management committee; and
- Contractors & Consultants

The Health Facility Management Teams or Committees have been set up at the health centres and consist of the Quality Assurance and the Infection Prevention and Control (IPC) teams. These teams or committees oversee the establishment and implementation of IPC programmes at the health facilities. The roles and responsibilities of the teams include but not limited to the following:

- Ensure the implementation of policies on IPC;
- Advise on procuring equipment and consumables for IPC;
- Ensure the maintenance of IPC equipment;
- Monitor, supervise, and evaluate IPC activities;
- Liaise with district in-service training coordinators on training programme(s) in IPC at the facility;
- Provide advice on IPC and related matters;
- Disseminate information on IPC; and
- Perform any other functions related to IPC.

Membership of the committees or teams also includes the following:

- Head of hospital or representative
- Health Service Administrator
- Biomedical Scientist
- Representative of Nurses
- Public Health Practitioner/Disease Control Officer
- Infection Prevention and Control Nurse
- Infection Prevention and Control Coordinator
- Pharmacist
- Biomedical Engineer/Equipment Technologist
- Environmental Health Officer
- Head of Catering Services
- Other members that may be co-opted as necessary

(i)

Other institutions which have the mandate and/or capacity to support the MoH with regards to the environmental and social management of the EPRP and the treatment and disposal of solid and liquid waste include:

- Ghana Health Service (GHS)
- Health Facilities Regulatory Agency (HeFRA)
- Ministry of Environment Science Technology and Innovation (MESTI)
- Ministry of Sanitation and Water Resources (MoSWR)
- Environmental Protection Agency. (EPA, Ghana)
- Ghana Atomic Energy Commission (GAEC)
- Department of Factories Inspectorate (DFI)
- Food and Drugs Authority (FDA)
- Ghana Standards Authority (GSA)
- Water Resources Commission (WRC)
- Minerals Commission.
- Metropolitan, Municipal and District Assemblies (MMDAs)
- Waste Management Services Providers (WMSP)
- Ministry of Gender &Social Protection
- Traditional Authorities/Landowners.

The role of the EPA in the implementation of this ESMF needs to be emphasized. The involvement and participation of EPA in the implementation of this ESMF is fundamental to achieving the desired environmental and social outcomes. As the lead environmental regulator and administrator of environmental regulations in the country, it oversees compliance with environmental assessment, establishes standards and guidelines to prevent pollution, facilitates public participation and engagement, and issues environmental permits for development

projects. MoH will collaborate with EPA on issues relating to the location of health facilities, management of liquid and solid wastes, public health and safety, and occupational health and safety, as well as procuring environmental permits for the construction and operation of the health facilities.

The Ministry has a health waste management policy titled "Health Care Waste Management Policy" which was initially developed in 2006 and update in 2020. The policy has since been revised to take the experiences from the Ebola Virus Disease response into consideration. The policy provides technical guidelines on classification of waste including safe health care waste handling and disposal system. Key among these classifications is the colour coding of waste in hazardous, infectious and general. Other topics discussed include segregation and containment of waste, internal and external storage of waste, Standards for disinfection of reusable health care waste containers, collection and transportation of health care waste and requirement for the transportation of radioactive waste.

Other topics covered under the policy among others include;

1. Contracting with waste management contractor
2. Treatment options for various waste streams
3. Waste minimization
4. Wastewater treatment and disposal

MoH will also work with the Ghana Atomic Energy Commission (GAEC) on issues relating to the management of radioactive waste, which should be managed in accordance with national requirements and guidelines from the International Atomic Energy Agency[18]. One of the institutes under GAEC is the Radiation Protection Institute (RPI). The Radiation Protection Instrument, 1993 (L. I. 1559) sets out the necessary regulations controlling the use of radiation sources, the sale of irradiating device or radioactive material and application of ionizing radiation to persons etc. The RPI is charged, among others, to authorize, inspect and control all activities and practices involving sealed radiation sources, ionizing radiation and other sources, radioactive materials and x-rays used in hospitals in Ghana; and implementation of safety culture by providing adequate human resource development in radiation and waste safety for management and operating organizations.

8.2. Environmental and Social Monitoring and Audit

An important part of the ESMF is monitoring of the construction and operation of the health facilities. The relevance of an environmental monitoring plan for a project is to provide room for judging the accuracy of impact assessment, implementation of mitigation measures and to allow for prompt remedial actions to be taken to correct deviations in the impacts and mitigation measures. It is also to help discover new impacts that might have been overlooked during the assessment of impacts so that appropriate mitigation measures are put in place to ensure efficiency and sustainability. Monitoring should involve two areas namely:

- Compliance monitoring.

[18] IAEA (2003). Management of Waste from the Use of Radioactive Materials in Medicine, Industry and Research. IAEA Draft Safety Guide DS 160 7 February 2003

- Impact monitoring; and

The aim of monitoring would be to:

- Improve E&S management practices.
- Check the efficiency and quality of the EA processes.
- Establish the scientific reliability and credibility of the EA for the project; and
- Provide the opportunity to report the results on safeguards and impacts and proposed mitigation measures implementation.

8.2.1.Compliance Monitoring

This is to verify that the required mitigation measures as set out in the appropriate E&S safeguard instrument are implemented. Compliance monitoring will involve inspections during renovation, refurbishment or construction works. The operational phase of the sub-projects will also be monitored. Compliance monitoring will be done by MoH with support from EPA. The Environmental and Social Specialist the PCU will lead the monitoring process to inspect contractors' compliance with the requirements of this ESMF.

8.2.2.Impact Monitoring

Monitoring of sub-projects impacts mitigation measures will be the duty of the Environmental and Social Focal Persons. They will monitor activities to ensure that works are proceeding in accordance with the laid down mitigation measures. The MoH should ensure that the contractor submits report on work progress and any challenges in observing the E&S safeguards.

A flow diagram depicting the sub-project environmental and social risk review, approval and monitoring processes is shown in annex 11.

Monitoring Indicators

The parameters, indicators, and frequency of monitoring during the construction and operational phases of the subprojects are provided in Tables 20 and 21 respectively.

Table 20. Construction Phase Monitoring

Likely impact	Indicator	Parameter	Frequency	Responsibility
Generation of construction waste	Heaps of construction waste	Volume of waste disposed of from project site	Monthly	• Supervising Project Engineer • WSMP • MMDAs • EPA
Impact on air quality	Dusty conditions	Total Suspended Particulates (µgm-3)	Monthly	• EPA • DFI • MMDAs

Likely impact	Indicator	Parameter	Frequency	Responsibility
		Particulate matter (PM_{10}) (µgm-3)	Weekly	
	Complaints from residents about air pollution recorded in GRM logbook	Number of complaints recorded	Weekly/Complaints shall be addressed immediately per GRM	
Noise generation and vibration	Noisy activities/conditions	Noise levels (dB(A)	Monthly	• Supervising Project Engineer • EPA • DFI • MMDAs
	Complaints from residents about noise nuisance recorded in GRM logbook	Number of complaints recorded.	Weekly/Complaints to be addressed immediately per GRM	
Disruption of utilities	Disruption of access to utilities	Length of time of disruption of access to utility	Record as and when it happens.	• Supervising Project Engineer • ECG • GWCL • WRC
	Complaints from residents about disruption of access to utilities	Number of complaints recorded.	Weekly/Complaints to be addressed immediately per GRM	
Increased traffic	Traffic congestion	Number of vehicles accessing the project site.	Daily	• Supervising Project Engineer • MMDA
		Number of accidents	Monthly/record accidents immediately they happen	
Public health and safety	Project related health and safety incidents in the community.	Number of project related health and safety incidents	Weekly/Record incidents immediately they happen.	• Supervising Project Engineer/MOH • DFI • GHS
	Complaints from residents about project related impacts/incide	Number of complaints recorded.	Weekly/	

Likely impact	Indicator	Parameter	Frequency	Responsibility
	nts Sensitization of workers and communities on STIs	 Number of sensitization programs on STIs organized	Complaints to be addressed immediately. Quarterly	
Occupational health and safety	Occupational health and safety incidents Use of PPE by workers Incidence of health and safety cases	Number/Rate of occupational incidents/accidents Number of workers using PPE. Number of workers sensitized on H&S	Weekly/record incidents immediately they happen. Monthly Monthly	• Supervising Project Engineer/MOH • DFI • GHS
Sexual Harassment and Exploitation	Compliance to contractor GBV action plan. Referral pathway functioning	Number of GBV related incidence	Weekly/record incidents immediately they happen. Monthly	• Supervising Project Engineer/MOH • E&S safeguards • MoGSP • MMDAs

Whiles implementation of mitigation measures is the responsibility of the project contractor(s), the Supervising Project Engineers, with the support of PPME Directorate of the MOH and the Environment Specialist and Social & Community Specialist and others as indicated shall be responsible for monitoring the impacts, effectiveness of the mitigation measures and the outcomes at various subproject sites. EPA and Factories and Inspectorate Directorate will monitor these impacts annually.

Table 21. Operational Phase Monitoring

Likely impact	Indicator	Parameter	Frequency	Responsibility
Infection Prevention and Control (IPC)	People having adequate knowledge on IPC measures	% of respondents with adequate knowledge on IPC measures disaggregated by gender	**Quarterly**	• MoH • GHS
Occupational health and safety	Incidence of occupational infections/ailments Usage of PPE among staff Sensitization of staff of facilities on occupational health and safety	Number/Rate of occupational incidents/accidents Records on workers' absenteeism due to occupational-related accident or disease % of workers using PPE. Number of workers sensitized on OH&S	Weekly Monthly Quarterly	• MoH • GHS • Environmental Safeguards Specialist • PIU • HeFRA
Community Engagement and Risk Communication	Regions have functional COVID-19 information centers	Number of regions with functional COVID-19 information centers	Quarterly	• MoH • GHS
	Community Health Teams (CHTs) implementing a community COVID-19 plan, including vaccine awareness campaign	Number of CHTs implementing a community COVID-19 plan	Monthly	• MoH • GHS
Vaccine deployment	Willingness to take up COVID-19 vaccination	% of respondents willing to take COVID-19 vaccination disaggregated by gender	Monthly	• MoH • GHS
	Districts meeting their COVID-19 vaccination coverage targets for fully vaccinated	% of districts meeting their COVID-19 vaccination coverage targets	Monthly	• MoH • GHS

Likely impact	Indicator	Parameter	Frequency	Responsibility
	persons			
	Cold chain storage equipment and sites functional	% of functional Cold chain storage equipment and sites	Monthly	• MoH • GHS
Laboratory confirmation	Designated laboratories with COVID-19 diagnostic equipment, test kits and reagents	% of designated laboratories with adequate COVID-19 diagnostic equipment/tools	Quarterly	• MoH • GHS
	Designated laboratories diagnosed suspected COVID-19 cases within 24 hrs	% of designated laboratories diagnosing suspected COVID-19 cases within 24 hrs	Quarterly	• MoH • GHS
Case Isolation and Treatment	Treatment centers completed with ICU beds and providing services (Number)		Quarterly	• MoH • GHS
Increased pressure on utilities	Consumption of electricity and water Efficiency in the consumption of electricity and water	Units of electricity and water consumed. Number of workers educated on efficient utility consumption.	Monthly Quarterly	• Environmental Safeguards Specialist/PPMED • HeFRA • ECG, Ghana • GWCL
Increased traffic	Traffic congestion	Number of vehicles accessing the facility in relation to available parking lots	Daily	• MoH Environmental Safeguards Specialist/PPMED • Security services • E&S safeguards
Generation of biomedical waste	Insanitary conditions at the facility	Quantity (kg/ton) of biomedical waste generated. Quantity (kg/ton) of biomedical waste disposed off	Monthly	• MoH • GHS • Environmental Safeguards Specialist/PPMED • EMA

Likely impact	Indicator	Parameter	Frequency	Responsibility
		Methods of biomedical waste management used		
Generation of liquid waste	Insanitary conditions at the facility	Volume of wastewater generated. Number of facilities with functional wastewater treatment plants	Monthly	• MoH • Environmental Safeguards Specialist • HeFRA • EPA
Public health and safety	Incidence of health care related ailments in the community Complaints from residents about health care related ailments Training of facility managers on COVID and other communicable diseases	Number of health care related health and safety incidents/cases Number of complaints recorded. Number of training programs held.	Weekly/Record incidents immediately they happen. Weekly/ Complaints to be addressed immediately. Quarterly	• MoH • GHS • Environmental Safeguards Specialist • PIU
Grievance Redress Mechanism	Complaints resolved within one week of having received them	% of complaints resolved in a week disaggregated by Gender	Monthly	• MoH • Social Safeguards Specialist/PPMED • MoGSP
	Complaints on/incidents of sexual harassment and abuse	No. of Complaints on gender-based Violence.	Monthly	• MoH • Social Safeguards Specialist/PPMED • MoGSP
	Complaints on/ incidents of community tensions	No. of Complaints on community tensions	Monthly	• MoH • Social Safeguards Specialist • PIU • GHS

During the operational phase, the MoH will be responsible for implementing the mitigation measures. The Environment Specialist and Social & Community Specialist, with the support of Regional Environmental and Social Management Focal Persons, shall be responsible for monitoring the indicators and the outcomes. However, due to the significant negative effect of potential impacts on the environment and human wellbeing, environmental and social monitoring of the facilities shall be undertaken by a competent authority such as the EPA, at least, on an annual basis.

8.3. Environmental and Social Auditing

The E&S audit is recommended for assessing the effectiveness of impacts identified, mitigation measures proffered, capacity available and the efficiency of monitoring mechanism in place for sub-projects. Sub-projects will be randomly selected and audited by an Independent Environmental Consultant.

The E&S audit will involve the following:

- Assessment of the current status of potential negative environmental and social impacts associated with sub-projects.
- Review compliance of implementation of sub-projects with the proposed mitigation measures in the ESMF.
- Review the extent to which the environmental safeguards implementation is mainstreamed into the whole project cycle.
- Review the effectiveness of the ESMF in project implementation.
- Review the effectiveness of the grievance redress mechanism.
- Propose additional remedial measures in case of non-performance of the ESMF, ESMP and other environmental and social management instruments.

Capacity Building

MoH will hire Social & Community specialist and Environment specialist for the implementation of social and environment standards. Due to the national nature of the EPRP, focal persons for environmental and social management will be designated in the PPME directorate in the regional offices of MoH. The Human Resource Directorate of MoH will work with the EPA to develop and deliver training programs to build/enhance the environmental and social management capacity of the focal persons. The areas for capacity building/enhancement may include, but not limited to:

- Environmental and social assessment in project planning and implementation.
- Social and environmental Screening of projects, including screening requirements; techniques and tools.
- Applicable environmental and social management policy and legal frameworks.
- Environmental and social monitoring of projects.
- Environmental and social reporting.

The capacity of the Regional Environmental and Social Management Focal Persons will be built continuously as they work with the regional offices of the EPA in the implementation of the EPRP and the ESMF, in particular.

8.4. Budget for ESMF Implementation

The implementation of the ESMF would have budget implications in terms of awareness creation, capacity improvement and training workshops as well as dissemination of ESMF to key stakeholders involved in the implementation of proposed interventions. The budget is estimated at UDS 2,897,600 (Table 22).

Table 22. Estimated Budget for ESMF Implementation

Activity	Description	Total Cost, US$
Planning and Designing Phase		
• EPA Permits for COVID EPRP works	• Registration of Permits and Enforcement of Mitigation measures	10,000
• Implementation of HCWMP	• Training of Health Facility Management Committees	160,000
	• Surveys	31,600
	• Preparation of HCWMP	316,000
	• Implementation of HCWMP	1,560,000
• Conflicts and tensions	• Implementation of SEP and GRM	10,000
• Awareness creation and Capacity building for National, Regional and MMDA Focal persons	• Training workshop/ seminars	20,000
• Awareness creation and capacity building for Contractors, • Supervising engineers.	• Training workshop/ seminars	10,000
• ESMF Dissemination and Disclosure	• Workshops and Newspaper	10,000
Access to isolation and quarantine centres	Make isolation and quarantine centres disability friendly	10,000
Surveillance of Adverse Events Following Immunization (AEFI)	Assess capacity to monitor AEFI	1,000
ESMF Implementation	Screening, Preparation TORs and ESMP, etc.	50,000
Construction Phase		
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centres hospitals	Generation of construction waste	Part of contractor's cost
	Noise generation and vibration	
	Increased traffic	
	Public health and safety	
	Gender-based violence and sexual harassment and exploitation	
	Employment and labour conditions	
	Incidence of crime and conflict	
	Occupational health and safety	
Operational Phase		
Sustainable Management and use of testing, treatment, quarantine and isolation centers	Provision of alternate source of utilities, sensitization/training of workers on sustainable energy and water practises	100,000
	Provision of traffic management structures such as speed ramps, safety signs, etc., to control speed in the vicinity of the facilities	2,000
	Generation and management of biomedical waste	50,000
	Generation and management of liquid waste	100,000
	Public health and safety	100,000
	Occupational health and safety	100,000
	Management of increase in community tension and unrest	2,000
	Management of risk of sexual harassment, exploitation and abuse	1,000
Infection control and waste management	Prevent Infections from medical waste	100,000

Enhance vaccine acceptance and uptake	Implement strategies to prevent low vaccination coverage	2,000
Information management, including vaccination information	Implement strategies to enhance planning, performance monitoring, evaluation and problem solving	2,000
Use alternate energy sources and refrigerants	Ensure refrigeration system complies with CCO on ODS Improve energy efficiency of refrigeration systems	100,000
Decommissioning Phase		
Discontinuing the use of private facilities as Isolation and treatment centers	Implement deep disinfection and cleaning of isolation and quarantine centers	50,000
		2,897,600

ANNEXES

ANNEX 1: GENERIC ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
Planning and Designing Phase					
Selection and sitting of quarantine and isolation centers. hospitals	Conflicts and tensions	• In line with the project SEP, adequate engagements will be held with communities living in proximity to areas identified to be used as isolation and treatment centers. • Grievance redress system will be decentralized and publicized as credible means for resolving community concerns.	MoH	Before and during the designation of facilities as isolation and quarantine centers	10,000
	Persons with disability may have difficulty in accessing and using isolation and quarantine centers	• Isolation, and treatment centers would be made disability friendly.	MoH	Before designating a facility as a treatment and isolation center	10,000
Procurement of goods and supplies e.g., ventilators, PPE, cleaning materials, vaccines, vaccine storage or vaccine distribution equipment,	Shortage of goods and supplies	• Procure according to recommended technical specifications as outlined in WHO guidelines, other good international industry practice (GIIP) and manufacturers requirements	MoH	Before and during project implementation	1,000,000
Vaccine deployment planning and coordination	• Inequitable distribution of vaccines • No proper identification of	• Plan deployment of the COVID-19 vaccine: o based on epidemiological need.	MoH/ GHS	Before arrival of first batch of vaccines	1,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
	target populations • Waste of resources • Poor vaccination coverage	○ recognizing vulnerable populations. ○ Recognizing community health and safety protection. • Ensure smooth deployment, implementation, and monitoring of COVID-19 vaccines by: ○ establishing a national immunization technical advisory groups (NITAG) to provide government with evidence-based recommendations and policy guidance specifically related to COVID-19 vaccines. ○ ensuring project's E&S focal point is represented on the NITAG. ○ strengthening relevant heath sector and multi sectoral coordinating mechanisms at national, and sub-national levels to play a critical role in the administration of vaccines to the local level			
	Potential human rights abuses by military or security personnel engaged for project activities, including deployment of vaccines e.g., sexual	• Assess risks and impacts of engaging such personnel. • Describe measures to manage such risks and impacts, guided by the principles of proportionality, GIIP and applicable law, in relation to hiring, screening, training, equipping and monitoring of such personnel.	MoH/ GHS		1,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
	exploitation and abuse (SEA), extortion	• Describe the standards, protocols and codes of conduct that need to be adopted for the selection and screening of such personnel to verify that they have not engaged in past unlawful or abusive behaviour, including sexual exploitation and abuse (SEA), sexual harassment (SH) or excessive use of force. • Describe plans to ensure that such personnel are adequately instructed and trained, prior to deployment and on a regular basis, on the use of force and appropriate conduct (including in relation to civilian-military engagement, SEA and SH, and other relevant areas). • Depending on the scope of risks, discuss the need for a third-party monitoring arrangement.			
Vaccine readiness and prioritization	• Inequitable distribution of vaccines • No proper identification of target populations • Waste of resources • Poor vaccination coverage	• Provide an assessment on whether the facilities are in a ready state to provide vaccines, according to the guidance provided by WHO on vaccine readiness. • Describe how a fair, equitable and inclusive policy for in-country vaccine access and allocation was/will be developed. • identify any risks for exclusion of certain groups or perception of exclusion and inequity. • Provide details on how the	MoH/ GHS	Before arrival of first batch of vaccines	1,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		government intends to reach out to disadvantaged and vulnerable groups to ensure access to vaccines. • Describe how procedures, protocols or other measures will be developed to ensure voluntary consent for vaccination (including communicating potential adverse impacts of the vaccine and what to do if such adverse impacts occur). • Describe how policies will be developed to ensure that there is no forced vaccination. • Assess the potential social and economic costs for individuals and households to get vaccinated, including direct and indirect costs such as transportation costs to reach vaccination center in rural areas. • Assess the communication plan of the government, and the capacity and resources to implement it in a manner that reaches out to different groups, including disadvantaged and vulnerable groups.			
Surveillance of Adverse Events Following Immunization (AEFI)	• Poor monitoring and management of adverse events following immunization (AEFI)	• Assess capacity to monitor AEFI. • If such capacity is low elaborate how the project would support the Borrower to design, establish and maintain a surveillance system of adverse events following immunization in line with	MoH/ GHS	Before arrival of first batch of vaccines	1,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		WHO guidelines as part of the proposed projects.			
Construction Phase					
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centres hospitals	Generation of construction waste	• Mark and allow persons to harvest trees and shrubs for firewood before and/or after site preparation works. • Implement waste minimization measures, including re-use of waste where appropriate and feasible. • Dispose of waste at approved waste dumpsites.	Project contractors	Monthly	To be included as part of contractor's cost
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centers, hospitals	Impact on air quality	• Clearing of vegetation will be limited to areas that will be required for construction works during a particular time to reduce dust releases. • Dust-generating earth movements will be slowed down during periods/days of strong winds. • Dusty work areas in or close to communities and sensitive receptors such as health facilities will be watered regularly to prevent the release of dust. • Access roads to project sites will be watered to suppress dust generation. • Sites cleared for construction works will be sprayed with water to reduce the generation of dust. • Stockpiles of sand and gravels will	Project contractors	Monthly Weekly/Complaints shall be addressed immediately per GRM	To be included as part of contractor's cost

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		be watered to prevent the blowing of dust particles into the atmosphere during dry and windy periods; • Trucks carrying sand, aggregates and gravels to the sites and carting away excavated spoils and other waste will have to cover the loads with tarpaulin; • Vehicles and construction machinery will be serviced and maintained in accordance with manufacturers' specifications for efficient combustion to reduce exhaust emissions; • Access roads close to communities will be provided with speed breakers to reduce speed and dust generation.			
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centres, hospitals	Noise generation and vibration	• Construction works will be carried out during daytime, i.e., between 7am-5pm, so as not to expose residents of nearby communities to high-level noise at night; • Access to construction sites will be planned in such a way that construction-related traffic will, as much as possible, avoid residential areas. • Where noisy activities are to be undertaken, residents in nearby communities and facilities will be given prior notice of the planned works, the expected noise levels and vibration and the period during which they will occur. This is	Project contractors	Monthly Weekly/Complaints to be addressed immediately per GRM	To be included as part of contractor's cost

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		to help prepare the people psychologically for the resultant disturbance. • When construction activities are to be undertaken near sensitive receptors such as health facilities, prior information about the works should be given to the affected institutions so as to prepare them psychologically for the disturbance. • When construction activities are to be undertaken near sensitive receptors such as hospitals and schools for prolong periods, barricades/fences may be erected, where feasible, to absorb some of the noise and reduce the exposure of persons using the facilities. • Vehicles and machines used at the construction sites will be serviced and maintained regularly to reduce noise.			
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centers, hospitals	Disruption of utilities	• Utility lines that may be affected shall be relocated before commencement of construction works. • Residents of affected communities shall be informed of the relocation and the attendant disruptions in the utilities. • Where necessary, alternative access to utilities shall be provided.	MoH	Record as and when it happens. Weekly/Complaints to be	To be included as part of contractor's cost

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
				addressed immediately per GRM	
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centers hospitals	Increased traffic	• The Traffic Management Plan will be developed for safe access to construction sites with minimum negative impact on community safety; • Signboards to inform motorists and the public in advance of construction works should be erected; • Traffic wardens/flagmen should be employed to direct traffic to and from the project sites • The Contractor(s) will also ensure that excavations, trenches and other earth movements are provided with effective barriers and reflective signage to prevent any accidental approach by vehicles during the day and night; • Alternative access roads will be constructed to divert construction vehicles from public roads where feasible; • Upon completion of the works for which the temporary traffic arrangements have been made, the installations shall be removed	Project contractors	Daily Report /record accidents immediately they happen Monthly/record accidents immediately they happen.	To be included as part of contractor's cost
Repair refurbishment, renovation or leasing of damaged public	Public health and safety	• Fence off construction sites to prevent unauthorized entry to the construction areas and to protect members of the public from any activities undertaken by the	Project contractors	Weekly/Record incidents immediately they happen.	To be included as part of contractor's cost

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
or private buildings including hospitals, quarantine and isolation centres, hospitals		Contractor(s). • Implement dust suppression measures at sites; • Implement noise management measures such as regular servicing of vehicles and equipment. • Ensure disposal of construction waste at approved dumping place. • Avoid water stagnation in construction trenches to prevent breeding of mosquitoes and other disease-born vectors. • Provide flagmen at busy public and children crossing points on routes used by construction vehicles or trucks. • Provide adequate and standard signages to sensitize communities on ongoing construction works at vantage points especially on roads used by construction vehicles. • Sensitize project workers and communities on sexually transmitted infections (STIs) and other communicable diseases. • As a precaution to minimize the spread of COVID-19, contractors will be required to minimize interface between workers and communities' members		Weekly/ Complaints to be addressed immediately. Quarterly	

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centers, hospitals	Gender-based violence and sexual harassment and exploitation	• Strong and sanction embedded clauses in contractors' agreements on child labour, sexual harassment etc. • Conduct background check on workers before employment. • Demand code of conduct from contractors and supervising consultants • Sensitize contractors, supervising consultants and work on issues of GBV • Contractors ESMP includes actions to prevent GBV • Clear referral pathways to access service providers in place. • GBV sensitive GRM in place	Project Social Safeguard Specialist Contractor	Weekly/record incidents immediately they happen.	To be included as part of contractor's cost
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centers, hospitals	Employment and labour conditions	• Strong and sanction embedded clauses in contractors' agreements on child labour, payment above minimum wage rate and provision of other workers' benefits. • Include clauses in work contracts to as far as practicable utilize local labour and give equal opportunities to women and should not discriminate against vulnerable groups who have the capacity to work; • Include labour management procedures in ESMP for sub-projects.	Project Social Safeguard Specialist Supervising Consultant, Contractor	Weekly/record incidents immediately they happen.	To be included as part of contractor's cost

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centres, hospitals	Incidence of crime and conflict	• Grievance redress system will resolve localized conflicts; • Crimes such as theft, rape and defilement will be reported to the nearest police station directly or through the grievance redress system. • Contractors will maintain safe keeping of valuable rehabilitation materials	Project Social Safeguard Specialist Contractor, Supervision Consultants,	Weekly/record incidents immediately they happen	
Repair refurbishment, renovation or leasing of damaged public or private buildings including hospitals, quarantine and isolation centers, hospitals	Occupational health and safety	• The Contractor(s) will prepare Occupational Health and Safety Plan which will contain all measures and precautions necessary to ensure the health, safety and welfare of all persons entitled to be on the project sites; • All persons engaged in the construction works shall be provided with personal protective clothing such as hard boots, helmets, nose masks, anti-vibrational gloves ear-muffs and overalls; • Ensure the proper use of the protective clothing by all construction workers through appropriate training and enforcement; • Organize periodic training programs on workers' health and safety • Well-stocked first-aid kits and trained first-aid officers shall be maintained at all construction	Project contractors	Weekly/record incidents immediately they happen. Monthly Monthly	To be included as part of contractor's cost

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		sites; • Site supervisors will have to ensure that conditions on the sites do not unnecessarily expose the workers to potential hazards and risks, especially COVID-29 by implementing appropriate mitigation measures. • Contractors will be required to prepare guidelines or plan to avoid worker exposure to COVID-19 pandemic. Such plan will include provision to provide face mask, hand gloves and other protection materials for workers, facilities for regular hand washing and adjustment of work to contain appropriate social distancing.			
Operational Phase					
Management and use of testing, treatment, quarantine and isolation centers	Increased pressure on utilities	• Implement sustainable energy and water management system to reduce wastage and enhance efficient use of utilities. • Develop opportunities for the inclusion of non-renewable energy sources in the energy mix consumed at the facilities. For instance, installing solar lights for lighting of the premises. • Reduce reliance on utilities by drilling boreholes and installing gensets at the health care facilities. • Sensitize or train workers on	MoH	Monthly Quarterly	100,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		sustainable energy and water practises. • Energy saving and efficient gadgets will be used in the hospital facilities.			
Management and use of testing, treatment, quarantine and isolation centers	Increased traffic	• The Traffic Management Plan will be developed for safe access to the health facilities. • Traffic wardens/flagmen should be employed to direct traffic to and from the health facilities. • Traffic management structures such as speed ramps will be erected to control speed in the vicinity of the facilities. • Speed limits shall on imposed on vehicles accessing the facilities. • Car parking lots shall be provided within the facilities to prevent vehicles from parking along local roads	MoH	Daily	2000
Management and use of testing, treatment, quarantine and isolation centers	Generation of biomedical waste	• Biomedical Waste Management System shall be implemented to minimize the adverse impacts on the human, land and water environment. • Provision and use of PPE for all workers involved in waste management. • Waste segregation at source to aid effective management. • Treatment of infectious waste prior to disposal by steam sterilization (autoclaving), dry heat thermal	MoH	Monthly	50,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		treatment, chemical disinfection processes, etc. • Incineration of wastes; • Disposal of waste at landfill facilities			
Management and use of testing, treatment, quarantine and isolation centers	Generation of liquid waste	• Construction of sewerage and wastewater treatment plants to treat wastewater before being released into the environment	MoH	Monthly	100,000
Management and use of testing, treatment, quarantine and isolation centers	Public health and safety	• Educate fringe communities on unauthorized access and loitering and the potential health dangers the hospitals pose to them. • Proper management/disposal of biomedical waste will prevent air pollution due to bad odour. • Proper management/disposal of biomedical waste will prevent scavengers from collecting sharps and other equipment for reuse. • Proper wastewater management to prevent creation of insanitary conditions. • Proper traffic management to prevent accidents at the facilities. • Adequate stakeholder engagement in line with the project SEP. • As a precaution to minimize the spread of COVID from isolation and treatment centers to community, facility managers will	MoH	Weekly/Record incidents immediately they happen Weekly/ Complaints to be addressed immediately Quarterly	100,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		be trained and required to implement containment measures.			
	Occupational health and safety	• Facilities shall develop and implement Occupational Health and Safety Plans; in line with WHO protocols and World Bank Interim Note on COVID-19 Considerations in Construction/Civil Works Projects. • Provision and use of proper industry recommended Personal Protective Equipment (PPEs) by staff to protect them against infectious diseases, polluted air, and other hazards. • Proper management/disposal of biomedical solid and liquid waste • Training and education of best practices in hazardous waste handling, storage and disposal. • Training on proper equipment use methods. • Good housekeeping practices to maintain sanitary conditions at the facilities. • Proper job scheduling to reduce stress and musculoskeletal injuries. • Provision of right tools to workers for the right job; • Provision of health resources and services on site and referral mechanisms of ill/injured workers to health facilities	MoH	Weekly Monthly Quarterly	100,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		•			
Management and use of testing, treatment, quarantine and isolation centers	Increase in community tension and unrest	• Grievance redress system will be decentralized and publicized as credible means for resolving community concerns. • In line with the project SEP, adequate engagements will be held with communities living in proximity to areas identified to be used as isolation and treatment centers.	MoH	Monthly	2,000
Management and use of testing, treatment, quarantine and isolation centers	Risk of sexual harassment, exploitation and abuse	• Sensitize healthcare workers and patients at isolation and treatment centers on GBV issues. •	MoH	Monthly	1000
Infection control and waste management	Infections from medical waste	• Waste minimization, reuse and recycling • Use of incinerators results in emission of dioxins, furans and particulate matter. • Ensure proper delivery and storage of specimen, samples, reagents, pharmaceuticals and medical supplies. • Ensure proper storage and handling of specimen, samples, reagents, and infectious materials. • Ensure waste segregation, packaging, colour coding and labelling. • Onsite waste treatment and disposal	MOH	Throughout project implementation	100,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		• Ensure proper waste transportation to and disposal in offsite treatment and disposal facilities. • Proper handling of emergency events such as o Spillage. o Occupational exposure to infectious disease. o Exposure to radiation; o Accidental releases of infectious or hazardous substances to the environment. o Medical equipment failure. o Failure of solid waste and wastewater treatment facilities o Fires. o Other emergent events • Mortuary arrangements Implement good infection control practices (see WHO Infection Prevention and Control for the safe management of a dead body in the context of COVID-19) • Use mortuaries and body bags, together with appropriate safeguards during funerals (see WHO Practical considerations and recommendations for religious			

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		leaders and faith-based communities in the context of COVID-19)			
in-country supply chain and climate-friendly cold chain system	refrigerants may cause depletion of the ozone layer, contribute to GHG, require huge amount of energy	• Use of alternative refrigerants with zero or low climate impact in the refrigeration system • Use of more energy-efficient technology for the refrigeration system • To include relevant technical specifications as part of procuring cold storage/chain equipment and transport and/or stipulating performance standards for the cold chain service providers • Ensure that the refrigeration system including its maintenance and servicing, complies with the requirements of the CCO on ODS • Improve energy efficiency of refrigeration systems through maintenance of the refrigeration systems, implementation of procedures and best practices that reduces energy consumptions of chillers and refrigeration systems, e.g. closing the doors of cold rooms during operation, switching-off mobile refrigeration units while	MoH/ GHS	Throughout project implementation	100,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		opening doors of refrigerated trucks, parking refrigerated trucks in the shade, regular controls and monitoring of all equipment parameters, such as energy performance, pressure, and temperature. • Observe proper handling of refrigerants and during servicing and ensure that workers involved in servicing are trained to avoid leakage of refrigerant in the atmosphere and use PEEs to avoid exposure to refrigerants. •			
Vaccination delivery strategies	Low vaccination coverage	• Align vaccine strategies and sites with the preferences of target groups and the public to maximize uptake. • Operate a robust national vaccine safety monitoring and AEFI system. • Is there a need to devise non-traditional and perhaps novel immunization strategies for reaching priority target populations? • The final national vaccination strategy will be defined by the characteristics of vaccine products as they become available.	MoH/ GHS	Throughout project implementation	-

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		• to collaborate with programs and different sectors to leverage existing service delivery infrastructure. • to plan for, resource and implement Infection Prevention and Control (IPC) and environmental measures when providing vaccination, including the use of PPE by health workers.			
Enhance vaccine acceptance and uptake.	Low vaccination coverage.	• Provide an enabling environment by making vaccination easy, quick and affordable, in all relevant respects: • reduce barriers like distant vaccination centers, direct/indirect costs, time consuming processes etc. • build trust and acceptance of the vaccines through engagement of political decision-makers, immunization programme managers, community and religious leaders, health workers, civil society organizations, media outlets and digital platforms. • Harness social influences to promote favourable behaviours of both health professionals and the general population by: o Publicizing social norms in favour of vaccination o Highlighting new and emerging norms in favour of vaccination	MoH/ GHS	Throughout project implementation	2,000

Key Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures/actions	Responsibility	Timelines	Budget (US$)
		○ Leveraging the role of health professionals ○ Empowering health professionals to promote vaccination.			
Information management, including vaccination information.	Lack of evidence for planning, performance monitoring, evaluation and problems solving	• Design information system to evaluate program coverage to the most detailed level possible (Sub-district). • Update DHIMS online reporting system to capture performance data on immunization, isolation, treatment, screening etc., disaggregated by risk group, and standardization of data reporting from the local to the national level. • Technologies that facilitate data collection in real time may be employed. • Conduct analysis and monitoring of implementation coverage by risk groups. • Capture of digital address and other geo-referencing information that identifies inequalities may be employed.	GHS	Throughout project implementation	2,000
Decommissioning Phase					
Discontinuing the use of private facilities as Isolation and treatment centers	Exposure of new occupants to COVID-19	• Implement deep disinfection of isolation and quarantine centers • Ensure proper cleaning of of beddings and facilities in rooms.	MoH	Prior to handover of facilities to private owners	50,000

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
Construction Phase					
Generation of construction waste	• Mark and allow persons to harvest trees and shrubs for firewood before and/or after site preparation works; • Implement waste minimization measures, including re-use of waste where appropriate and feasible; • Dispose of waste at approved waste dumpsites.	Project contractors	Heaps of construction waste	Volume of waste disposed of from project site	Monthly
Impact on air quality	• Clearing of vegetation will be limited to areas that will be required for construction works during a particular time period to reduce dust releases. • Dust-generating earth movements will be slowed down during periods/days of strong winds. • Dusty work areas in or close to communities and sensitive receptors such as health facilities will be watered regularly to prevent the release of dust. • Access roads to project sites will be watered to suppress dust generation. • Sites cleared for construction works will be sprayed with water	Project contractors	Dusty conditions Complaints from residents about air pollution	Total Suspended Particulates (µgm-3) Particulate matter (PM_{10}) (µgm-3) Number of complaints recorded	Monthly Weekly/Complaints shall be addressed

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	to reduce the generation of dust. • Stockpiles of sand and gravels will be watered to prevent the blowing of dust particles into the atmosphere during dry and windy periods. • Trucks carrying sand, aggregates and gravels to the sites and carting away excavated spoils and other waste will have to cover the loads with tarpaulin. • Vehicles and construction machinery will be serviced and maintained in accordance with manufacturers' specifications for efficient combustion to reduce exhaust emissions. • Access roads close to communities will be provided with speed breakers to reduce speed and dust generation.		recorded in GRM logbook		immediately per GRM
Noise generation and vibration	• Construction works will be carried out during daytime, i.e., between 7am-5pm, so as not to expose residents of nearby communities to high-level noise at night; • Access to construction sites will be planned in such a way that construction-related traffic will, as much as possible, avoid residential areas; • Where noisy activities are to be undertaken, residents in nearby communities and facilities will be given prior notice of the planned works, the expected noise levels	Project contractors	Noisy activities/conditions Complaints from residents about noise nuisance recorded in GRM logbook	Noise levels (dB(A) Number of complaints recorded	Monthly Weekly/Complaints to be addressed immediately per GRM

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	and vibration and the period during which they will occur. This is to help prepare the people psychologically for the resultant disturbance. • When construction activities are to be undertaken near sensitive receptors such as health facilities, prior information about the works should be given to the affected institutions so as to prepare them psychologically for the disturbance. • When construction activities are to be undertaken near sensitive receptors such as hospitals and schools for prolong periods, barricades/fences may be erected, where feasible, to absorb some of the noise and reduce the exposure of persons using the facilities. • Vehicles and machines used at the construction sites will be serviced and maintained regularly to reduce noise.				
Disruption of utilities	• Utility lines that may be affected shall be relocated before commencement of construction works. • Residents of affected communities shall be informed of the relocation and the attendant disruptions in the utilities. • Where necessary, alternative access to utilities shall be	MoH	Disruption of access to utilities Complaints from residents about	Length of time of disruption of access to utility Number of complaints recorded	Record as and when it happens

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	provided.		disruption of access to utilities		Weekly/Complaints to be addressed immediately per GRM
Increased traffic	• The Traffic Management Plan will be developed for safe access to construction sites with minimum negative impact on community safety. • Signboards to inform motorists and the public in advance of construction works should be erected. • Traffic wardens/flagmen should be employed to direct traffic to and from the project sites. • The Contractor(s) will also ensure that excavations, trenches and other earth movements are provided with effective barriers and reflective signage to prevent any accidental approach by vehicles during the day and night. • Alternative access roads will be constructed to divert construction vehicles from public roads where feasible; • Upon completion of the works for which the temporary traffic arrangements have been made, the installations shall be removed	Project contractors	Traffic congestion	Number of vehicles accessing the project site. Number of accidents	Daily Report /record accidents immediately they happen. Monthly/record accidents immediately they happen.

Likely impact	**Mitigation measures/actions[19]**	**Responsibility**	**Indicator**	**Parameter**	**Frequency**
Public health and safety	• Fence off construction sites to prevent unauthorized entry to the construction areas and to protect members of the public from any activities undertaken by the Contractor(s). • Implement dust suppression measures at sites. • Implement noise management measures such as regular servicing of vehicles and equipment. • Ensure disposal of construction waste at approved dumping place. • Avoid water stagnation in construction trenches to prevent breeding of mosquitoes and other disease-born vectors. • Provide flagmen at busy public and children crossing points on routes used by construction vehicles or trucks. • Provide adequate and standard signages to sensitize communities on ongoing construction works at vantage points especially on roads used by construction vehicles. • Sensitize project workers and communities on sexually transmitted infections (STIs) and other communicable diseases. • As a precaution to minimize the spread of COVID-19, contractors will be required to minimize	Project contractors	Project related health and safety incidents in the community. Complaints from residents about project related impacts/incidents Sensitization of workers and communities on STIs	Number of project related health and safety incidents Number of complaints recorded. Number of sensitization programs on STIs organized	Weekly/Record incidents immediately they happen Weekly/ Complaints to be addressed immediately. Quarterly

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	interface between workers and community members				
Gender-based violence and sexual harassment and exploitation	• Strong and sanction embedded clauses in contractors' agreements on child labour, sexual harassment etc. • Conduct background check on workers before employment. • Demand code of conduct from contractors and supervising consultants • Sensitize contractors, supervising consultants and work on issues of GBV. • Contractors ESMP includes actions to prevent GBV. • Clear referral pathways to access service providers in place. • GBV sensitive GRM in place	Project Social Safeguard Specialist Contractor	Compliance to contractor GBV action plan Referral pathway functioning Sensitization of workers on GBV issues	GBV action plan in place Number of GBV cases reported Number of workers sensitize on GBV issues	Weekly/record incidents immediately they happen
Employment and labour conditions	• Strong and sanction embedded clauses in contractors' agreements on child labour, payment above minimum wage rate and provision of other workers' benefits. • Include clauses in work contracts to as far as practicable utilize local labour and give equal opportunities to women and should not discriminate against vulnerable groups who have the capacity to work. • Include labour management procedures in ESMP for sub-projects.	Project Social Safeguard Specialist Supervising Consultant, Contractor	Compliance to contractors' agreement contract Compliance to worker contract	Number of reported cases on employment discrimination Number of child labour incidence	Weekly/record incidents immediately they happen

Likely impact	**Mitigation measures/actions[19]**	**Responsibility**	**Indicator**	**Parameter**	**Frequency**
Incidence of crime and conflict	• Grievance redress system will resolve localized conflicts. • Crimes such as theft, rape and defilement will be reported to the nearest police station directly or through the grievance redress system. • Contractors will maintain safe keeping of valuable rehabilitation materials	Project Social Safeguard Specialist Contractor, Supervision Consultants,	Grievance Redress Mechanism set in place.	Number complaints received and resolved. Number of crime cases report.	Weekly/record incidents immediately they happen.
Occupational health and safety	• The Contractor(s) will prepare Occupational Health and Safety Plan which will contain all measures and precautions necessary to ensure the health, safety and welfare of all persons entitled to be on the project sites. • All persons engaged in the construction works shall be provided with personal protective clothing such as hard boots, helmets, nose masks, anti-vibrational gloves earmuffs and overalls; • Ensure the proper use of the protective clothing by all construction workers through appropriate training and enforcement. • Organize periodic training programs on workers' health and safety. • Well-stocked first-aid kits and trained first-aid officers shall be maintained at all construction sites.	Project contractors	Occupational health and safety incidents Use of PPE by workers Training of workers on health and safety	Number/Rate of occupational incidents/accidents Number of workers using PPE. Number of workers sensitized on H&S	Weekly/record incidents immediately they happen. Monthly Monthly

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	• Site supervisors will have to ensure that conditions on the sites do not unnecessarily expose the workers to potential hazards and risks, especially COVID-29 by implementing appropriate mitigation measures. • Contractors will be required to prepare guidelines or plan to avoid worker exposure to COVID-19 pandemic. Such plan will include provision to provide face mask, hand gloves and other protection materials for workers, facilities for regular hand washing and adjustment of work to contain appropriate social distancing.				
Operational Phase					
Increased pressure on utilities	• Implement sustainable energy and water management system to reduce wastage and enhance efficient use of utilities. • Develop opportunities for the inclusion of non-renewable energy sources in the energy mix consumed at the facilities. For instance, installing solar lights for lighting of the premises. • Reduce reliance on utilities by drilling boreholes and installing gensets at the health care facilities.	MoH	Consumption of electricity and water Efficiency in the consumption of electricity and water	Units of electricity and water consumed. Number of workers educated on efficient utility consumption.	Monthly Quarterly

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	• Sensitize or train workers on sustainable energy and water practises. • Energy saving and efficient gadgets will be used in the hospital facilities.				
Increased traffic	• The Traffic Management Plan will be developed for safe access to the health facilities. • Traffic wardens/flagmen should be employed to direct traffic to and from the health facilities. • Traffic management structures such as speed ramps will be erected to control speed in the vicinity of the facilities. • Speed limits shall on imposed on vehicles accessing the facilities • Car parking lots shall be provided within the facilities to prevent vehicles from parking along local roads	MoH	Traffic congestion	Number of vehicles accessing the facility in relation to available parking lots.	Daily
Generation of biomedical waste	• Biomedical Waste Management System shall be implemented to minimize the adverse impacts on the human, land and water environment. • Provision and use of PPE for all workers involved in waste management. • Waste segregation at source to aid effective management. • Treatment of infectious waste prior to disposal by steam sterilization (autoclaving), dry	MoH	Insanitary conditions at the facility	Quantity (kg/ton) of biomedical waste generated at facility. Quantity (kg/ton) of biomedical waste disposed of from the facility.	Monthly

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	heat thermal treatment, chemical disinfection processes, etc. • Incineration of wastes. • Disposal of waste at landfill facilities			Methods of biomedical waste management used	
Generation of liquid waste	• Construction of sewerage and wastewater treatment plants to treat wastewater before being released into the environment	MoH	Insanitary conditions at the facility	Volume of wastewater generated. Number of facilities with functional wastewater treatment plants	Monthly
Public health and safety	• Educate fringe communities on unauthorized access and loitering and the potential health dangers the hospitals pose to them. • Proper management/disposal of biomedical waste will prevent air pollution due to bad odour. • Proper management/disposal of biomedical waste will prevent scavengers from collecting sharps and other equipment for reuse. • Proper wastewater management to prevent creation of insanitary conditions. • Proper traffic management to prevent accidents at the facilities. • Adequate stakeholder engagement in line with the	MoH	Incidence of health care related ailments in the community Complaints from residents about health care related ailments Training of facility managers on COVID and other	Number of health care related health and safety incidents/cases Number of complaints recorded.	Weekly/Record incidents immediately they happen Weekly/ Complaints to be addressed immediately.

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	project SEP. • As a precaution to minimize the spread of COVID from isolation and treatment centers to community, facility managers will be trained and required to implement containment measures.		communicable diseases	Number of training programs held.	Quarterly
Occupational health and safety	Facilities shall develop and implement Occupational Health and Safety Plans; in line with WHO protocols and World Bank Interim Note on COVID-19 Considerations in Construction/Civil Works Projects. • Provision and use of proper industry recommended Personal Protective Equipment (PPEs) by staff to protect them against infectious diseases, polluted air, and other hazards. • Proper management/disposal of biomedical solid and liquid waste • Training and education of best practices in hazardous waste handling, storage and disposal; • Training on proper equipment use methods. • Good housekeeping practices to maintain sanitary conditions at the facilities. • Proper job scheduling to reduce stress and musculoskeletal injuries.	MoH	Incidence of occupational infections/ailments Usage of PPE among staff Sensitization of staff of facilities on occupational health and safety	Number/Rate of occupational incidents/accidents Records on workers' absenteeism due to occupational-related accident or disease Number of workers using PPE. Number of workers sensitized on OH&S	Weekly Monthly

Likely impact	Mitigation measures/actions[19]	Responsibility	Indicator	Parameter	Frequency
	• Provision of right tools to workers for the right job. • Provision of health resources and services on site and referral mechanisms of ill/injured workers to health facilities				Quarterly
Increase in community tension and unrest	• Grievance redress system will be decentralized and publicized as credible means for resolving community concerns. • In line with the project SEP, adequate engagements will be held with communities living in proximity to areas identified to be used as isolation and treatment centers.	MoH	Complaints on/ incidents of community tensions	No. of Complaints on /incidents of community tensions	Monthly
Risk of sexual harassment, exploitation and abuse	• Sensitize healthcare workers and patients at isolation and treatment centers on GBV issues. •	MoH	Complaints on/incidents of sexual harassment and abuse	No. of Complaints on/incidents of sexual harassment and abuse	Monthly
Land acquisition, restriction of land use and involuntary resettlement	• In an unlikely event that this occurs, Abbreviated/ Resettlement Action Plan may be prepared to manage the situation	MoH	Lands acquired. Compensations paid	No. of PAPs compensated.	Monthly

ANNEX 2: SCREENING FORM FOR POTENTIAL ENVIRONMENTAL & SOCIAL SAFEGUARDS ISSUES

This form is to be used by the MOH to screen potential environmental and social environmental and social risk levels of a proposed subproject, determine the relevance of Bank environmental and social standards (ESS), propose its E&S risk levels, and the instrument to be prepared for the sub project.

Subproject Name	
Subproject Location	
Subproject Proponent	
Estimated Investment	
Start/Completion Date	

Questions	**Answer**		**ESS relevance**	**Due diligence / Actions**
	yes	no		
Does the subproject involve civil works including new construction, expansion, upgrading or rehabilitation of healthcare facilities and/or associated waste management facilities?			ESS1	ESIA/ESMP, SEP
Does the subproject involve land acquisition and/or restrictions on land use?			ESS5	RAP/ARAP, SEP
Does the subproject involve acquisition of assets to hold patients (including yet-to-confirm cases for medical observation or isolation purpose)?			ESS5	
Is the subproject associated with any external waste management facilities such as a sanitary landfill, incinerator, or wastewater treatment plant for healthcare waste disposal?			ESS3	ESIA/ESMP, SEP
Is there sound regulatory framework, institutional capacity in place for healthcare facility infection control and healthcare waste management?			ESS1	ESIA/ESMP, SEP

Does the subproject involve recruitment of workforce including direct, contracted, primary supply, and/or community workers?			ESS2	LMP, SEP
Does the subproject involve transboundary transportation of specimen, samples, infectious and hazardous materials?			ESS3	ESIA/ESMP, SEP
Does the subproject involve use of security personnel during construction and/or operation of healthcare facilities?			ESS4	ESIA/ESMP, SEP
Is the subproject located within or in the vicinity of any ecologically sensitive areas?			ESS6	ESIA/ESMP, SEP
Are there any vulnerable groups present in the subproject area and are likely to be affected by the proposed subproject negatively or positively?			ESS7	Vulnerable Groups Plan/IPDP
Is the subproject located within or in the vicinity of any known cultural heritage sites?			ESS8	ESIA/ESMP, SEP
Does the project area present considerable Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) risk?			ESS1	ESIA/ESMP, SEP
Does the subproject carry risk that disadvantaged and vulnerable groups may have unequitable access to project benefits?			ESS1	ESIA/ESMP, SEP
Is there any territorial dispute between two or more countries in the subproject and its ancillary aspects and related activities?			OP7.60 Projects in Disputed Areas	Governments concerned agree
Will the sub project and its ancillary aspects and related activities involve the use or potential pollution of, or be located in international waterways[20]?			OP7.50 Projects on International Waterways	Notification (or exceptions)

Conclusions:

1. Proposed Environmental and Social Risk Ratings (High, Substantial, Moderate or Low). Provide Justifications.

[20] International waterways include any river, canal, lake or similar body of water that forms a boundary between, or any river or surface water that flows through two or more states.

2. Proposed E&S Instruments.

ANNEX 3: INFECTION CONTROL: CONSIDERATIONS AND TOOLS TO ASSIST IN E&S SCREENING AND RISK RATING

In the context of global COVID-19 outbreak, many countries have adopted a containment strategy that includes extensive testing, quarantine, isolation and treatment either in a medical facility or at home.

A COVID-19 response project may include the following activities:

- construction of and/or operational support to medical laboratories, quarantine and isolation centers at multiple locations and in different forms, and infection treatment centers in existing healthcare facilities
- procurement and delivery of medical supplies, vaccines, equipment and materials, such as reagents, chemicals, and Personal Protective Equipment (PPEs)
- mass deployment of a safe and effective vaccine
- transportation of potentially infected specimens from healthcare facilities to testing laboratories.
- construction, expansion or enhancing of health care facilities, vaccine cold storage units, healthcare waste and wastewater facilities.
- training of medical workers and volunteers
- community engagement and communication

1. Screening E&S Risks of Medical laboratories

Many COVID-19 projects include capacity building and operational support to existing medical laboratories. It is important that such laboratories have in place procedures relevant to appropriate biosafety practices. WHO advises that non-propagative diagnostic work can be conducted in a Biosafety Level 2 (BSL-2) laboratory, while propagative work should be conducted at a BSL-3 laboratory. Patient specimens should be transported as Category B infectious substance (UN3373), while viral cultures or isolates should be transported as Category A "Infectious substance, affecting humans" (UN2814). The process for assessing the biosafety level of a medical laboratory (including management of the laboratory operations and the transportation of specimens) should consider both biosafety and general safety risks. OHS of workers in the laboratory and potential community exposure to the virus should be considered.

The following documents provide further guidance on screening of the E&S risks associated with a medical laboratory. They also provide information for assessing and managing the risks.

- *WHO; Prioritized Laboratory Testing Strategy According to 4Cs Transmission Scenarios*
- *WHO Covid-19 Technical Guidance: Laboratory testing for 2019-nCoV in humans*:
- *WHO Laboratory Biosafety Manual, 3rd edition*
- *USCDC, EPA, DOT, et al; Managing Solid Waste Contaminated with a Category A Infectious Substance* (August 2019)

2. Screening E&S Risks of Quarantine and Isolation Centers

According to WHO:

- Quarantine is the restriction of activities of or the separation of persons *who are not ill but who may have been exposed to* an infectious agent or disease, with the objective of monitoring their symptoms and ensuring the early detection of cases.
- Isolation is the separation of *ill or infected persons* from others to prevent the spread of infection or contamination.

Many COVID-19 projects include construction, renovation and equipping of quarantine and isolation centers at Point of Entry (POE), in urban and in remote areas. There may also be circumstances where tents are used for quarantine or isolation. Public or private facilities such as a stadium or hotel may also be acquired for this purpose.

In screening for E&S risks associated with quarantine and isolation, the following may be considered:

- contextual risks such as conflicts and presence or influx of refugees
- construction and decommissioning related risks.
- land or asset acquisition
- use of security personnel or military forces.
- availability of minimum requirements of food, fuel, water, hygiene
- whether infection prevention and control, and monitoring of quarantined persons can be carried out effectively.
- whether adequate systems are in place for waste and wastewater management
- provision of accurate information to ill, infected, or exposed persons in a simple, accessible and culturally appropriate manner

The following documents provide further guidance regarding quarantine of persons.

- WHO; Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19)
- WHO; Key considerations for repatriation and quarantine of *travellers* in relation to the outbreak of novel coronavirus 2019-nCoV
- WHO; Preparedness, prevention and control of coronavirus disease (COVID-19) for refugees and migrants in non-camp settings

3. SCREENING E&S RISKS OF TREATMENT CENTERS AND FOR DEPLOYMENT OF VACCINES

WHO has published a manual that provides recommendations, technical guidance, standards and minimum requirements for setting up and operating severe acute respiratory infection (SARI) treatment centers in low- and middle-income countries and limited-resource settings, including the standards needed to repurpose an existing building into a SARI treatment center, and specifically for acute respiratory infections that have the potential for rapid spread and may cause epidemics or pandemics.

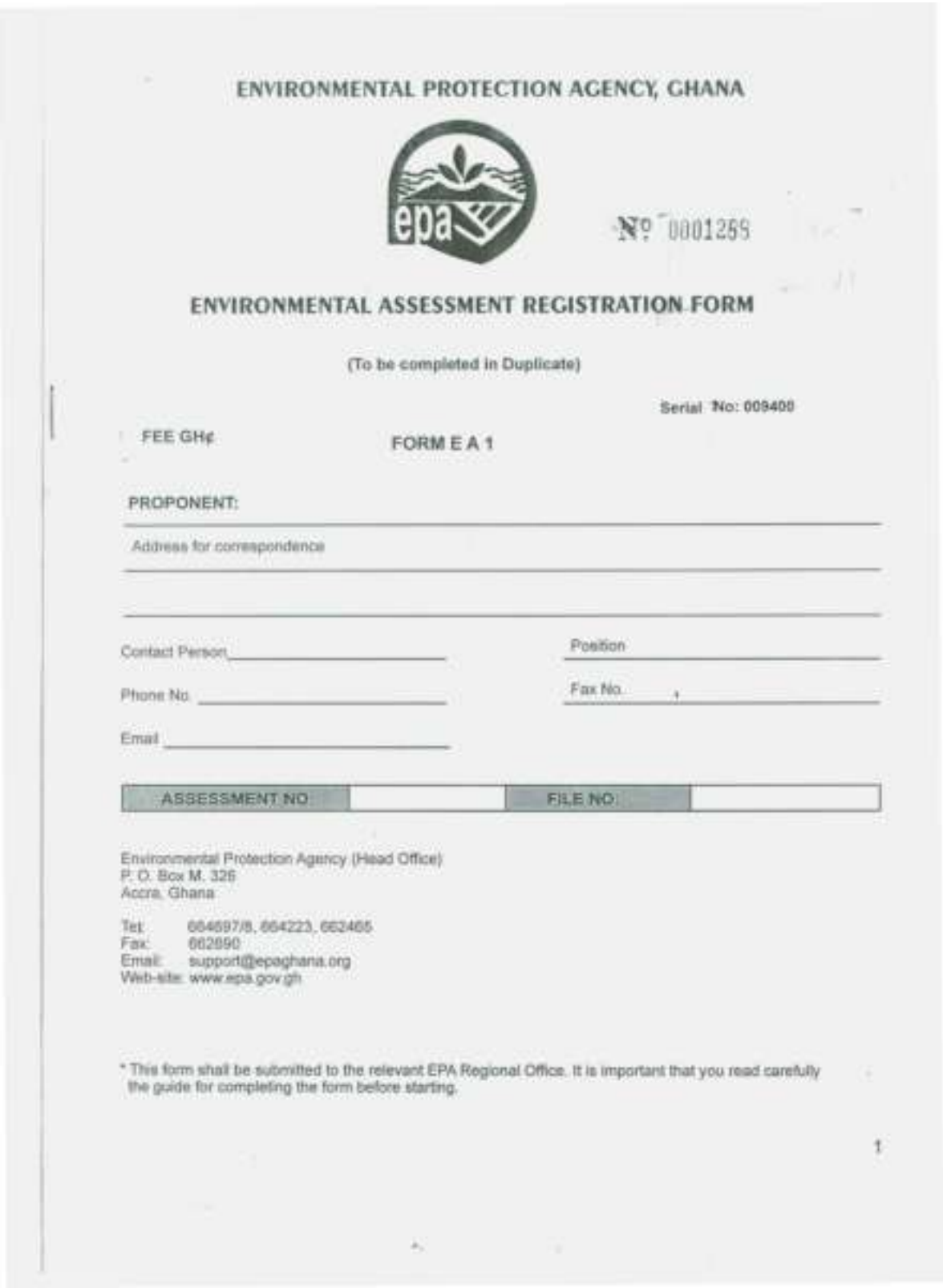
- *WHO Severe Acute Respiratory Infections Treatment Centre*
- *WHO Covid-19 Technical Guidance: Infection prevention and control / WASH*

- *WBG EHS Guidelines for Healthcare Facilities*
- *WHO: Diagnostics, therapeutics, vaccine readiness, and other health products for COVID-19*

4. SCREENING E&S RISKS RELATING TO LABOR AND WORKING CONDITIONS

A COVID-19 project may include different types of workers. In addition to regular medical workers and laboratory workers who would normally be classified as direct workers, the project may include contracted workers to carry out construction and community workers (such as community health volunteers) to provide clinical support, contact tracing, and data collection, etc. The size of the workforce engaged could be considerable. Risks for such a workforce will range from occupational health and safety to types of contracts and terms and conditions of employment. Further details relevant to labor and working conditions for COVID-19 projects are discussed in the *LMP template for COVID-19*.

ANNEX 4: ENVIRONMENTAL ASSESSMENT REGISTRATION FORM (FORM EA 1)



ENVIRONMENTAL PROTECTION AGENCY, GHANA

epa

No. 0001255

ENVIRONMENTAL ASSESSMENT REGISTRATION FORM

(To be completed in Duplicate)

Serial No: 009400

FEE GH¢

FORM E A 1

PROPONENT: _____

Address for correspondence _____

_____

Contact Person _____ Position _____

Phone No. _____ Fax No. _____

Email _____

ASSESSMENT NO.		FILE NO.	

Environmental Protection Agency (Head Office)
P. O. Box M. 326
Accra, Ghana

Tel: 664597/8, 664223, 662465
Fax: 662690
Email: support@epaghana.org
Web-site: www.epa.gov.gh

* This form shall be submitted to the relevant EPA Regional Office. It is important that you read carefully the guide for completing the form before starting.

1

GUIDE FOR COMPLETING AN ENVIRONMENTAL ASSESSMENT REGISTRATION FORM

The Environmental Assessment Registration Form is designed to provide enough relevant information to enable the EPA to set an appropriate level of assessment for a proposal referred to it. Failure to provide detailed information in a comprehensive manner may delay the assessment process. It is not expected that this form will be appropriate for all purposes and, depending on your proposal, a lengthier document may be necessary in addition to this form.

PROPOSAL

A simple, brief description of the proposal or proposed undertaking is required and must include: input processes, end results, outputs quantities and timing. Please include flow diagram if available.

LOCATION

A map site plan is essential.

It should indicate the geographical coordinates of site (Longitude and Latitude), evaluation and slope of the site, any nearby areas or features of environmental significance (e.g. proposed or declared reserves, water courses, wetlands), and adjacent land uses, including the nearest homes or areas zones residential.

SERVICES

Details of water supply, storm water drainage, power corridors, access to and impact on roads and transport can all be of significant and should be noted where relevant.

ENVIRONMENTAL IMPACT

Criteria for assessing a project and setting a level of assessment are:

1. The character of the receiving environment
2. The potential impact of the proposal
3. Resilience of the environment to cope with change
4. Confidence of predicting impact
5. Plans, policies or other procedures which provides ways to manage potential environment impact
6. The input of other statutory decisins-making bodies
7. Degree of public interest

The following potential environment impacts may be relevant:

- effect on geomorphology, land stability and landscape
- effect on drainage and water quality (surface and ground)
- effect on biota
- effect on access and transport systems
- effect on existing services including power, water, and telephone
- effect on existing community facilities
- effect on existing contingency plans for safety and emergency services
- effect of emission (gas, dust, noise and heat)
- management of solid and fluid waste and storm water
- impact on adjacent land uses including any conservation and recreation aspects
- impact of construction and operational activities
- visual impact
- social impact

Proponents would be required to pay appropriate processing and permit fees in accordance with the Environmental Assessment (Amendment) Regulations. 2002 (L.I 1703)

Any false information provided constitutes an offence under the Environmental Assessment Regulations. 1999, L.I 1652 (section 29d)

2

1. PROPOSED UNDERTAKING / DEVELOPMENT

Title of proposal (General classification of undertaking)

.....

Description of proposal (undertaking, unit processes (flow diagram), raw materials, list of chemicals (source, types and quantities), storage facilities, wastes/by-products (soil, liquid and gaseous)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Scope of proposal (size of labour force, equipment and machinery, installed/production capacity, product type, area covered by facility/proposal, market)

.....

.....

.....

.....

.....

.....

2. PROPOSED SITE

Location (attach a site plan/map)

Plot/House No. ..... Street/Area Name: .....

Town: ..... District/Region: .....

Major Landmarks (if any) .....

Current zoning .....

Distance to nearest residential and/or other facilities

.....

.....

Adjacent land uses (existing and proposal)

.....

.....

Site description (immediate activities should be described)

.....

.....

.....

.....

3

3. **INFRASTRUCTURE AND UTILITIES**

Structures (buildings and other facilities proposed or existing on site)

Access to water (source, quantity)

Access to power (type, source and quantity)

Drainage provisions in the project area

Nearness to water body

Access to project site

Other major utilities proposed or existing on site (e.g. Sewerage, etc)

4. **ENVIRONMENTAL IMPACTS**

Potential environmental effects of proposed undertaking (Both constructional and operational phases)

4

5. **OTHER ENVIRONMENTAL ISSUES**

Potential significant risk and hazards associate with the proposal (including occupational health and safety). State briefly relevant environmental studies already done and attach copies as appropriate

.....

.....

.....

.....

6. **CONSULTATIONS**

Views of immediate adjourning neighbours and relevant stakeholders (provide evidence of consultation)

.....

.....

.....

.....

7. **MANAGEMENT OF IMPACTS AND ENVIRONMENTAL ENHANCEMENT MEASURES**

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

ATTACHMENTS

Tick appropriate boxes indicating that the following required documents have been attached:

- ☐ Authentic site plan (signed by a licensed surveyor and certified by Survey Depart.)
- ☐ Block plan of the site.
- ☐ Photographs of the site.
- ☐ Zoning letter from Town Country Planning Department

DECLARATION

I, ... Hereby declare that the information provided on this form is true to the best of my knowledge and shall provide any additional information that shall come to my notice in the course of processing the application. I also declare that information provided is true.

....

Signature Date

* Use additional sheets where spaces provided in 3, 4 and 5 are inadequate.

6

ANNEX 5:DRAFT TERMS OF REFERENCE FOR ESMP

Sub-project's environmental and social management plan (ESMP) consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The plan also includes the actions needed to implement these measures. To prepare an ESMP, the Consultant

(a) Identify the set of responses to potentially adverse impacts.

(b) Determine requirements for ensuring that those responses are made effectively and in a timely manner; and

(c) Describe the means for meeting those requirements. More specifically, the ESMP will include the following components.

Mitigation

The ESMP identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental and social impacts to acceptable levels. The plan includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient.

Specifically, the ESMP:

- Identifies and summarizes all anticipated significant adverse environmental and social impacts (including those involving indigenous people or involuntary resettlement);
- Describes--with technical details--each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate.
- Estimates any potential environmental and social impacts of these measures; and
- Provides linkage with any other mitigation plans (e.g., for involuntary resettlement, Indigenous peoples, or cultural property) required for the project.

Monitoring Environmental and social monitoring during project implementation provides information about key environmental and social aspects of the project, particularly the environmental and social impacts of the project and the effectiveness of mitigation measures. Such information enables the borrower and the Bank to evaluate the success of mitigation as part of project supervision and allows corrective action to be taken when needed. Therefore, the ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the ESIA report and the mitigation measures described in the ESMP.

Specifically, the monitoring section of the ESMP provides:

- a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and
- monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Capacity Development and Training

To support timely and effective implementation of environmental and social project components and mitigation measures, the ESMP draws on the ESIA's assessment of the existence, role, and capability of environmental and social units on site or at the agency and ministry level. If necessary, the ESMP recommends the establishment or expansion of such units, and the training of staff, to allow implementation of ESIA recommendations. Specifically, the ESMP provides a specific description of institutional arrangements--who is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). most ESMPs cover one or more of the following additional topics:

(a) Technical assistance programs,

(b) Procurement of equipment and supplies, and

(c) Organizational changes.

Implementation Schedule and Cost Estimates

For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides.

(a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and

(b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

Integration of ESMP with the Project

ESMP should be specific in its description of the individual mitigation and monitoring measures and its assignment of institutional responsibilities, and it must be integrated into the project's overall planning, design, budget, and implementation.

ANNEX 6: LABOUR MANAGEMENT PROCEDURES

The project recognizes the need to protect the fundamental rights of workers since the workforce is an asset, and a sound worker-management relationship is a key ingredient in the sustainability of the project. Through a constructive worker-management relationship, and by treating the workers fairly and providing them with safe and healthy working conditions, the project will create tangible benefits, such as enhancement of the efficiency and productivity of their operations. The objectives of the labour management procedure are:

- To promote the fair treatment, non-discrimination, and equal opportunity of workers.
- To establish, maintain, and improve the worker-management relationship.
- To promote compliance with national employment and labour laws.
- To protect workers, including vulnerable categories of workers such as women.
- To promote safe and healthy working conditions, and the health of workers.
- To avoid the use of forced and child labour.

Types and Number of Project Workers

The project will engage the following categories of workers:

- Direct Workers: These are people employed or engaged directly by the project to work specifically in relation to the project. A significant number of people who will work under this project are public servants.
- Contracted workers: people employed or engaged through third parties to perform work related to the project. The precise number of project workers who will be employed are not known as of now. This will become known as and when implementation begins. Project activities may include minor construction and rehabilitation and will engage Civil Works Contractors and Workers.
- Community Workers: people engaged from the community where the particular activity is taken place or nearby communities.

Potential Labour Risks

Given the nature of the project activities, no major labour risks are envisaged.

Labour risks associated with Civil Works contractor workers at subproject level: Subprojects will be implemented by local contractors and most contracted workers will be hired locally. All contractors will be required to have a written contract with their workers materially consistent with objective of ESS2, in particular about child and forced labour.

Labour risks including labour influx and associated Sexual Exploitation and Abuse, Sexual Harassment, child labour and forced labour are considered low given the nature of project activities. Since civil works to be supported under the project will be very small in

scale and prioritized by local communities themselves, the risk of forced labour is expected to be small. Nonetheless, the contractor will be required in the contract to commit against the use of forced labour, and project staff in charge of contractor supervision will monitor and report the absence of forced labour.

Occupational Health and Safety (OHS) risks are low to moderate and will depend on the type of subproject works to be implemented. However, since the civil contractors' workers are likely to be unskilled and untrained local population, however, risk remains that some accidents may occur that lead to injuries. All contractors will be required to develop and implement written labour management procedures, including procedures to establish and maintain a safe working environment as per requirements of ESS2. All contractors will be required under the Environmental and Social Management Plan (ESMP) to ensure workers will use basic safety gears, receive basic safety training and other preventive actions as provided.

Employment Risks. Workers will be hired by the project, either directly as project staff or indirectly as part of contractors or service providers. There is a risk of unaccounted working hours and lack of compensation for overtime will continue.

Working Conditions and Management of Worker Relationship

The project will adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of the Environment and Social Standard 2: Labour and Working Conditions and national laws.

The project will provide workers with documented information that is clear and understandable, regarding their rights under national labour and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur.

Project workers will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labour and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation, and benefits. This information and documentation will be provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur.

The project will not make employment decisions based on personal characteristics unrelated to inherent job requirements. The project will base the employment relationship on the principle of equal opportunity and fair treatment and will not discriminate with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment

or retirement, and disciplinary practices. The project will take measures to prevent and address harassment, intimidation, and/or exploitation, especially in regard to women.

The project will provide a grievance mechanism for workers to raise workplace concerns. The project will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism will involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism will also allow for anonymous complaints to be raised and addressed. The mechanism will not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

Protecting the Work Force

Child Labour: The project will not employ children in any manner that is economically exploitative or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Under the Ghana Children Act 1998, the minimum age for admission of children into employment is fifteen (15). However, children may be employed at the age of thirteen (13) to do light work. The minimum age for engagement of persons in hazardous work is eighteen (18). The minimum age for employment or engagement set out in the World Bank's Environmental and Social Standard 2 is age 14. The project will comply with the World Bank's minimum age and children under the age of 18 will not be employed under this project. The project will also ensure that children under the age of 18 are not be employed in hazardous work. All work of persons under the age of 18 will be subject to an appropriate risk assessment and regular monitoring of health, working conditions, and hours of work.

Forced Labour: The project will not employ forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labour, such as indentured labour, bonded labour, or similar labour-contracting arrangements. The project will not employ trafficked persons. These requirements will be enshrined in the safeguard code of conduct declaration forms that will be signed by contractors.

Gender-based violence and sexual exploitation: The project will consider stringent arrangement to avoid GBV cases. The project will ensure that contract for contractors and workers code of conduct will include clauses on avoidance of sexual harassment and strong sanction regime for such cases. The contractors will be required to conduct background check on workers before employment and further sensitize contractors, supervising consultants, and workers on issues of GBV. The project will establish clear referral pathways to deal with an unlikely event of a GBV case.

Occupational Health and Safety Considerations

Occupational health and safety impacts during the construction and decommissioning of health care facilities (HCF) are common to those of most civil construction facilities. General health and safety hazards occurring in HCFs include manual handling injuries, such as sprains and strains from lifting and carrying patients; falls, trips, and slips; injuries caused by moving objects; and mental stress. HCF health and safety hazards may affect health care providers, cleaning and maintenance personnel, and workers involved in waste management handling, treatment, and disposal. Industry specific hazards include the following:

- Exposure to infections and diseases.
- Exposure to hazardous materials / waste.
- Exposure to radiation and vibrations
- Fire safety.

Community Health and Safety Considerations

Community health and safety issues during the construction, operation, and decommissioning of HCFs are generally common to those of most industrial facilities. Community hazards associated with health care facility environments, particularly related to hazardous health care waste, necessitate that members of the public receive adequate information regarding potential infection hazards within the facility, and at associated waste disposal sites.

Annex 7: HCWM Procedures to be applied in Health-care Facilities

The following procedures provide guidance for the implementation of HCWM plans in HCFs. The plan should consist of but not limited to following:

1. The duties and responsibilities for each category of staff within the HCF who will generate HCW or be involved in their management;
2. An estimation of the quantities of hazardous and non-risk HCW generated annually;
3. The human resources, equipment and budget required annually to implement the HCWM plan;
4. A manual synthesising all the procedures for the management of HCW in the establishment with a special mention for the categories of HCW requiring specific treatment, such as autoclaving, before final disposal. This manual should also contain time-tables including frequency of waste collection from each ward and department, a map of the HCF showing the different collection points, storage and treatment locations;
5. Monitoring procedures to trace HCW inside the HCF and to ensure HCWM rules are respected;
6. Procedures to be followed by the HCF staff should be displayed at strategic points (i.e. nurse rooms, bin locations, temporary and central storage points, etc);
7. Training courses and programmes for all categories of HCF staff;
8. Contingency plans for storage or disposal of hazardous HCW in the event of a breakdown of the treatment/disposal facility;
9. Emergency procedures in case of spillage/accidents should also be foreseen.

For the smooth implementation of a HCWM plan within major hospitals the development of a HCWM plan can be divided into six majors steps. In minor health-care facilities, proper assignments and rigorous managerial procedures are often sufficient to ensure a smooth implementation of a limited but efficient HCWM plan. The six majors steps are describe in details below.

Step 1. Designate a coordinator

The preparation of a HCWM plan must begin with commitments from the Director of the HCF and senior directors who should designate a Health-Care Waste Management Officer (HCWMO) with overall responsibility for the development and the monitoring of the HCWM plan as well as the day-today operation of the HCWM system. Because (too) many committees already exist in the many HCFs, one does not recommend to create a HCWM committee at Hospital level but to assign already existing *Infection Control Committees* with the approval and periodic review of the HCWM plan.

Step 2. Conduct a HCWM Survey

A survey should be conducted on the current HCWM situation *within* the hospital in order to identify the necessary improvements. In close cooperation with head nurses from the medical departments, the HCWMO should be responsible in coordinating the survey and analysing the results as well as reviewing and assessing the existing waste management situation. In the same way the mission carried out this analysis at national level, every HCWMO should do it in his/her HCF:

1. Compile general information: types of waste generated in the health-care establishment, number of beds, occupancy rates, number of medical departments, etc;
2. Conduct a waste generation survey: waste composition, waste quantity, sources of generation and number of beds in use. The survey results should be presented in the form of average daily quantities of waste generated (in kg) in each HCW category from each department;
3. Conduct a critical review of existing waste management practices, (i.e. segregation, storage, collection, transport, treatment and disposal);

4. Quantify the number of trolleys, containers and other equipment used in waste handling, collection and transportation;
5. Identify the costs related to waste management;
6. Assess existing safety (e.g. protective clothing) and security measures (e.g. in case of spills and chemicals accidents);
7. Evaluate the contingency measures applied in case of a breakdown of HCW treatment units or during close down for planned maintenance (e.g. safe procedures for handling laboratory wastes in case of breakdown of the autoclave);
8. Raise awareness amongst health-workers;
9. Prepare drawings or sketches of the HCF showing, storage areas for hazardous and other types of waste, on-site treatment facilities, waste collection trolleys routes through the HCF (e.g. routes for transportation of general and hazardous waste outside medical department), areas for washing and disinfecting waste collection trolleys, etc;
10. Prepare drawings of each medical department, floor or building showing: location of individual HCW collection points (at least for medical waste, sharps and domestic waste), location of temporary storage areas/containers, routes for internal transport of waste in medical departments (at least for hazardous waste), location of equipment for disinfection;
11. Prepare drawings and specifications of: PE waste bags (thickness, width and length), containers (for medical waste and sharps, etc.), trolleys and wheeled containers for internal collection and, transport, protective clothing to be used in the handling of each category of waste (e.g. gloves, masks, plastic aprons, overalls, boots…).

Step 3. Set-up an Action Plan

Making recommendations

Based on the results obtained from Steps 1 and 2, the *Infection Control Committee* and the HCWMO should prepare recommendations on how to improve HCWM in the HCF. These recommendations should include staff responsibilities and roles, training needs, staff and equipment resources. The following are basic actions for achieving the goals of the WHO minimal programme to improve the management of HCW:

1. Assessment of waste production (waste generation and composition);
2. Assessment of the local handling, treatment and disposal options;
3. Segregation of HCW into hazardous and general (or municipal) waste;
4. Establishment of internal rules for waste handling (e.g. storage, colour coding or signs, bag/container filling, closing and labelling);
5. Ensuring workers' training and safety at work (e.g. training on the safe use of chemicals for waste disinfection);
6. Assignment of responsibilities within the health-care establishment;
7. Choice of suitable or better treatment and disposal options.

Setting priorities for HCWM improvements

Medical departments should first focus on the safe practices/procedures for HCW segregation, internal collection and storage. *These measures have the greatest impact in reducing poor hygiene practices*. Improvements with respect to waste segregation, internal storage and collection in medical departments should consist, at least, of the following:

a) Segregation

1. Separation of health-care waste into three categories (general waste, hazardous health-care waste and sharps);
2. Colour coding of bags/containers to differentiate between waste categories;
3. Use of posters and checklists to help segregate the waste;

4. Use of labels for closed yellow-bagged waste;
5. Use of holders to contain highly infectious waste bags/containers;
6. Existence of safety measures (protective clothing etc.) and emergency response (in case of needle-stick injuries, etc.);
7. Awareness-raising and hands-on training.

b) Internal Storage

1. Separate temporary storage areas and containers for hazardous and general wastes;
2. Temporary storage areas/containers located away from patient areas;
3. Fixed collection schedule for temporary stored bagged waste;
4. Periodic cleaning and disinfection of temporary storage areas and containers.

c) Internal transport

1. Fixed collection schedule for each waste category (three-bin system) dedicated trolleys and wheeled containers (leak proof with cover) for collection and transport of hazardous waste;
2. Colour coding system or (if not feasible) coloured signs for trolleys and wheeled containers to differentiate between trolleys for general and hazardous waste;
3. Periodic disinfection and cleaning of trolleys and wheeled containers;
4. Existence of safety measures (e.g. protective clothing) and emergency response (e.g. in case of spills,
5. occupational injuries);
6. Awareness-raising and hands-on training.

Costs associated with HCWM improvements

The cost of HCWM improvements depends upon the nature of the improvements; e.g. the total cost of introducing segregation of waste includes the cost of purchasing plastic bags and containers, of trolleys and wheeled containers and their maintenance, and of separate transportation. Waste minimization, segregation and recycling can greatly assist in the cost reductions increasingly required by HCFs, by reducing disposal costs.

As a general guideline, the final cost of HCWM improvements may consist of the following:

1. Capital investment cost (e.g. purchase of trolleys and wheeled containers);
2. Operating costs: labour, consumables (e.g. purchase of plastic bags);
3. Cost of maintaining equipment or improving buildings (e.g. creation in medical departments of separate temporary storage areas for yellow and black-bagged waste);
4. Costs of contracted HCWM services (e.g. collection of segregated waste by contractual services);
5. Treatment and disposal costs (by private or public sector);
6. Miscellaneous.

Implementing the proposed HCWM improvements

(Arrangements for the implementation of HCWM improvements should be stated in the HCWM plan. A work plan or protocol comprising practical approaches/steps for safe implementation of waste management improvements in each medical department should be *developed by the HCWMO /Infection Control Committee* in close cooperation with the head nurses of medical departments.

It may be preferable to test the proposed HCWM improvements first in one or two departments.
This approach also provides practical training for staff. Subsequently, the improvements can be extended to other parts of the HCF. The work plan for implementation of HCWM improvements in each medical department may include the following:

1. Methods and timetable for implementing HCWM improvements and definition of responsibilities and roles;
2. Checklists to assist nurses during the implementation process;
3. Training and awareness-raising activities to introduce procedures for implementation of planned activities.

4. The following subjects may be considered for training and awareness-raising activities: 1) proper procedures and precautions for segregation, handling, storage and disposal of hazardous HCW, 2) proper emergency procedures during a hazardous HCW spill or exposure, 3) health hazards associated with mishandling hazardous HCW, 4) organizational process for reporting hazardous materials and waste spills or exposures;
5. Detailed information on safety practices and emergency response in case of incidents or accidents associated with HCWM (e.g. occupational injuries, spillage of hazardous waste, exposure to cytotoxics) and in case of disease outbreaks (e.g. cholera);
6. Health surveillance and control (e.g. immunization against HBV and tetanus) and provision of information on rapid access to post exposure prophylaxis;
7. Measures to control and monitor the implementation of waste management improvements. By reviewing performance data every few months modifications can be made to the waste management system;
8. Contingency measures, including instructions on storage or evacuation of HCW in case of breakdown of treatment units or during close down for planned maintenance.

Step 4. Draft the HCWM plan

(Based on the results of the situation assessment phase and its recommendations, the HCWMO should then draft the HCWM plan. If necessary, he/she should ask for advice, information and support from the MOH.
The content of the draft of the HCWM plan can be as simple or as complex as desired by the management of the health-care institution.

However, all HCWM plans should address the following three aspects:
Clear and open examination of the current HCWM situation (Step 2).

Analysis of what resources are available for improving HCWM and the possible options for improvements (Step 3).
Preparation of a detailed set of arrangements to implement the proposed waste management improvements including:

- arrangements for training staff;
- acquiring new waste storage;
- handling;
- treatment and disposal equipment;
- a timetable for implementation (Step 3).

An HCWM plan should show its linkage with other hospital management plans, if they exist (e.g. safety management plan, security management plan, emergency preparedness plan, and equipment investment plan). Weakness in the linkages with these management plans and lack of cooperation and coordination with related executive officers may affect the effectiveness of the HCWM improvements/plan.

Step 5. Approve the HCWM plan and start implementation

The draft of the HCWM plan should be discussed by the Executive Committee and submitted for approval by the institution's management. Once approved, the implementation of the HCWM plan should be of the responsibility of the Director of the HCF. The HCWMO or the Infection Control Committee, in charge of monitoring the operation of the HCWM system, may also be delegated by the
Director the responsibility for the HCWM plan implementation.

Step 6. Review the HCWM plan

Operation of the HCWM system in HCFs cannot be efficient nor optimized in the long run unless there is a *periodic review of the HCWM plan.* With respect to the process of review it is recommended that a periodic review (e.g. every 2 years) of the HCWM plan be carried out by the Infection Control Committee.

The infection Control Committee meets periodically (e.g. monthly) to monitor the implementation of the HCWM plan and determine whether the approved HCWM improvements need review or adjustment.

ANNEX 8: INFECTION CONTROL AND WASTE MANAGEMENT PLAN (ICWMP) TEMPLATE

1. Introduction

1.1 Describe the project context and components.

1.2 Describe the targeted healthcare facility (HCF):

- Type: E.g., general hospital, clinics, inpatient/outpatient facility, medical laboratory, quarantine or isolation centers;
- Special type of HCF in response to COVID-19: E.g., existing assets may be acquired to hold yet-to-confirm cases for medical observation or isolation.
- Functions and requirement for the level infection control, e.g., biosafety levels.
- Location and associated facilities, including access, water supply, power supply.
- Capacity: beds

1.3 Describe the design requirements of the HCF, which may include specifications for general design and safety, separation of wards, heating, ventilation, and air conditioning (HVAC), autoclave, and waste management facilities.

2. Infection Control and Waste Management

2.1 Overview of infection control and waste management in the HCF

- Type, source and volume of healthcare waste (HCW) generated in the HCF, including solid, liquid and air emissions (if significant)
- Classify and quantify the HCW (infectious waste, pathological waste, sharps, liquid and non-hazardous) following WBG *EHS Guidelines* for Healthcare Facilities and pertaining GIIP.
- Given the infectious nature of the novel coronavirus, some wastes that are traditionally classified as non-hazardous may be considered hazardous. It's likely the volume of waste will increase considerably given the number of admitted patients during COVID-19 outbreak. Special attention should be given to the identification, classification and quantification of the healthcare wastes.
- Describe the healthcare waste management system in the HCF, including material delivery, waste generation, handling, disinfection and sterilization, collection, storage, transport, and disposal and treatment works.
- Provide a flow chart of waste streams in the HCF if available.
- Describe applicable performance levels and/or standards.
- Describe institutional arrangement, roles, and responsibilities in the HCF for infection control and waste management.

2.2 Management Measures

- Waste minimization, reuse and recycling: HCF should consider practices and procedures to minimize waste generation, without sacrificing patient hygiene and safety considerations.
- Delivery and storage of specimen, samples, reagents, pharmaceuticals and medical supplies: HCF should adopt practice and procedures to minimize risks associated with delivering, receiving and storage of hazardous medical goods.
- Waste segregation, packaging, colour coding and labelling: HCF should strictly conduct

waste segregation at the point of generation. Internationally adopted method for packaging, colour coding and labelling the wastes should be followed.

- Onsite collection and transport: HCF should adopt practices and procedures to timely remove properly packaged and labelled wastes using designated trolleys/carts and routes. Disinfection of pertaining tools and spaces should be routinely conducted. Hygiene and safety of involved supporting medical workers such as cleaners should be ensured.
- Waste storage: A HCF should have multiple waste storage areas designed for different types of wastes. Their functions and sizes are determined at design stage. Proper maintenance and disinfection of the storage areas should be carried out. Existing reports suggest that during the COVID-19 outbreak, infectious wastes should be removed from HCF's storage area for disposal within 24 hours.
- Onsite waste treatment and disposal (e.g., an incinerator): Many HCFs have their own waste incineration facilities installed onsite. Due diligence of an existing incinerator should be conducted to examine its technical adequacy, process capacity, performance record, and operator's capacity. In case any gaps are discovered, corrective measures should be recommended. For new HCF financed by the project, waste disposal facilities should be integrated into the overall design and ESIA developed. Good design, operational practices and internationally adopted emission standards for healthcare waste incinerators can be found in pertaining EHS Guidelines and GIIP.
- Transportation and disposal at offsite waste management facilities: Not all HCF has adequate or well-performed incinerator onsite. Not all healthcare wastes are suitable for incineration. An onsite incinerator produces residuals after incineration. Hence offsite waste disposal facilities provided by local government or the private sector are probably needed. These offsite waste management facilities may include incinerators, hazardous wastes landfill. In the same vein, due diligence of such external waste management facilities should be conducted to examine its technical adequacy, process capacity, performance record, and operator's capacity. In case any gaps are discovered, corrective measures should be recommended and agreed with the government or the private sector operators.
- Wastewater treatment: HCF wastewater is related to hazardous waste management practices. Proper waste segregation and handling as discussed above should be conducted to minimize entry of solid waste into the wastewater stream. In case wastewater is discharged into municipal sewer sewerage system, the HCF should ensure that wastewater effluent comply with all applicable permits and standards, and the municipal wastewater treatment plant (WWTP) can handle the type of effluent discharged. In cases where municipal sewage system is not in place, HCF should build and properly operate onsite primary and secondary wastewater treatment works, including disinfection. Residuals of the onsite wastewater treatment works, such as sludge, should be properly disposed of as well. There're also cases where HCF wastewater is transported by trucks to a municipal wastewater treatment plant for treatment. Requirements on safe transportation, due diligence of WWTP in terms of its capacity and performance should be conducted.

3. Emergency Preparedness and Response

Emergency incidents occurring in a HCF may include spillage, occupational exposure to infectious materials or radiation, accidental releases of infectious or hazardous substances to the environment, medical equipment failure, failure of solid waste and wastewater treatment facilities, and fire. These emergency events are likely to seriously affect medical workers, communities, the HCF's operation and the environment.

Thus, an Emergency Response Plan (ERP) that is commensurate with the risk levels is recommended to be developed. The key elements of an ERP are defined in ESS 4 Community Health and Safety (para. 21).

4. Institutional Arrangement and Capacity Building

A clearly defined institutional arrangement, roles and responsibilities should be included. A training plan with recurring training programs should be developed. The following aspects are recommended:

- Define roles and responsibilities along each link of the chain along the cradle-to-crave infection control and waste management process.
- Ensure adequate and qualified staff are in place, including those in charge of infection control and biosafety and waste management facility operation.
- Stress the chief of a HCF takes overall responsibility for infection control and waste management.
- Involve all relevant departments in a HCF, and build an intra-departmental team to manage, coordinate and regularly review issues and performance;
- Establish an information management system to track and record the waste streams in HCF; and
- Capacity building and training should involve medical workers, waste management workers and cleaners. Third-party waste management service providers should be provided with relevant training as well.

5. Monitoring and Reporting

Many HCFs in developing countries face the challenge of inadequate monitoring and records of healthcare waste streams. HCF should establish an information management system to track and record the waste streams from the point of generation, segregation, packaging, temporary storage, transport carts/vehicles, to treatment facilities. The HCF is encouraged to develop an IT based information management system should their technical and financial capacity allow.

As discussed above, the HCF chief takes overall responsibility, leads an intra-departmental team, and regularly reviews issues and performance of the infection control and waste management practices in the HCF. Internal reporting and filing systems should be in place.

Externally, reporting should be conducted per government and World Bank requirements.

Table ICWMP

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Budget
General HCF operation – Environment	General wastes, wastewater, and air emissions				
General HCF operation – OHS issues	- Physical hazards. - Electrical and explosive hazards.				

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Budget
	- Fire. - Chemical use. - Ergonomic hazard. - Radioactive hazard.				
HCF operation - Infection control and waste management plan					
Waste minimization, reuse and recycling					
Delivery and storage of specimen, samples, reagents, pharmaceuticals, and medical supplies					
Storage and handling of specimen, samples, reagents, and infectious materials					
Waste segregation, packaging, colour coding and labelling					
Onsite collection and transport					
Waste storage					
Onsite waste treatment and disposal					
Waste transportation to and disposal in offsite treatment and disposal facilities					
HCF operation – transboundary					

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Budget
movement of specimen, samples, reagents, medical equipment, and infectious materials					
Emergency events	- Spillage. - Occupational exposure to infectious. - Exposure to radiation. - Accidental releases of infectious or hazardous substances to the environment. - Medical equipment failure. - Failure of solid waste and wastewater treatment facilities. - Fire. - Other emergent events	Emergency response pllan			
Operation of acquired assets for holding potential COVID-19 patients	•				
To be expanded	•				

ANNEX 9: HEALTH CARE WASTE MANAGEMENT GUIDANCE

Significant environmental and social issues associated with HCF include the following:

- Waste management.
- Emissions to air; and
- Wastewater discharges.

(a)Waste Management

Waste from health care facilities can be divided into two separate groups. The first consists of general waste, similar in composition to domestic waste, generated during administrative, housekeeping, and maintenance functions. The second group consists of specific categories of hazardous health care waste. Health care facilities should establish, operate and maintain a *health care waste management (HCWM) system* adequate for the scale and type of activities and identified hazards. Facility operators should undertake regular assessment of quantities of waste generated and categories to facilitate waste management planning. HCWM systems should include the following components:

Waste Minimization, Reuse, and Recycling

Facilities should consider practices and procedures to minimize waste generation, without sacrificing patient hygiene and safety considerations, including:

- Source reduction measures:
  - (i) Consider options for product / material substitution to avoid products containing hazardous materials that require the product to be disposed as hazardous or special waste (e.g., mercury or aerosol cans), and preferring products with less packaging or products that weigh less than comparable products that perform the same function.
  - (ii) Use of physical rather than chemical cleaning practices (e.g. using microfiber mops and cloths), where such practices do not affect disinfection and meet relevant standards for hygiene and patient safety

- Waste toxicity reduction measures:

Consider options for product / material substitution for equipment containing mercury or other hazardous chemicals; products that may become hazardous waste when disposed; products made of polyvinyl chloride (PVC); halogenated compounds; products that off-gas volatile organic compounds (VOCs), or products that contain persistent, bio-accumulative, and toxic (PBT) compounds; products that contain substances which are carcinogenic, mutagenic or reproductive toxins (CMR)

- Use of efficient stock management practices and monitoring (e.g. for chemical and pharmaceutical stocks), including:
  - (i) Small / frequent orders for products that spoil quickly and strict monitoring of expiry dates; and
  - (ii) First in first out basis.

- Maximization of safe equipment reuse practices, including: Reuse of equipment following sterilization and disinfection (e.g., sharp edge containers).

Waste Segregation Strategies

At the point of generation, waste should be identified and segregated. Non-hazardous waste, such as paper and cardboard, glass, aluminium and plastic, should be collected separately and recycled. Food waste should be segregated and composted. Infectious and/or hazardous wastes should be identified and segregated according to its category using a color-coded system. If different types of waste are mixed accidentally, waste should be treated as hazardous. Other segregation considerations include the following:

- Avoid mixing general health care waste with hazardous health care waste to reduce disposal costs.
- Segregate waste containing mercury for special disposal. Management of mercury containing products and associated waste should be conducted as part of a plan involving specific personnel training in segregation and clean up procedures.
- Segregate waste with a high content of heavy metals (e.g., cadmium, thallium, arsenic, lead) to avoid entry into wastewater streams.
- Separate residual chemicals from containers and remove to proper disposal containers to reduce generation of contaminated wastewater. Different types of hazardous chemicals should not be mixed.
- Establish procedures and mechanisms to provide for separate collection of urine, faeces, blood, vomits, and other wastes from patients treated with genotoxic drugs. Such wastes are hazardous and should be treated accordingly.
- Aerosol cans and other gas containers should be segregated to avoid disposal via incineration and related explosion hazard.
- Segregate health care products containing PVC to avoid disposal via incineration (see Air Emissions below) or in landfills.

On-site Handling, Collection, Transport and Storage

- Seal and replace waste bags and containers when they are approximately three quarters full. Full bags and containers should be replaced immediately.
- Identify and label waste bags and containers properly prior to removal.
- Transport waste to storage areas on designated trolleys / carts, which should be cleaned and disinfected regularly.
- Waste storage areas should be located within the facility and sized to the quantities of waste generated, with the following design considerations:
    - (i) Hard, impermeable floor with drainage, and designed for cleaning / disinfection with available water supply.
    - (ii) Secured by locks with restricted access.
    - (iii) Designed for access and regular cleaning by authorized cleaning staff and vehicles.
    - (iv) Protected from sun, and inaccessible to animals / rodents.

(v) Equipped with appropriate lighting and ventilation.

(vi) Segregated from food supplies and preparation areas.

(vii) Equipped with supplies of protective clothing, and spare bags / containers.

- Unless refrigerated storage is possible, storage times between generation and treatment of waste should not exceed 48 hours during cool season and 24 hours during hot season.
- Store mercury separately in sealed and impermeable containers in a secure location.
- Store cytotoxic waste separately from other waste in a secure location; and
- Store radioactive waste in containers to limit dispersion, and secure behind lead shields.

Transport to External Facilities

- Transport waste destined for off-site facilities according to existing guidelines for transport of hazardous wastes / dangerous goods.
- Transport packaging for infectious waste should include an inner, watertight layer of metal or plastic with a leak-proof seal. Outer packaging should be of adequate strength and capacity for the specific type and volume of waste.
- Packaging containers for sharps should be puncture-proof.
- Waste should be labelled appropriately, noting the substance class, packaging symbol (e.g., infectious waste, radioactive waste), waste category, mass / volume, place of origin within hospital, and final destination; and
- Transport vehicles should be dedicated to waste and the vehicle compartments carrying waste sealed.

Treatment and Disposal Options

Facilities receiving hazardous health care waste should have all applicable permits and capacity to handle specific types of health care waste. Wastes from each category should be treated according to the appropriate treatment methods and technologies. When selecting a waste disposal technology, operators should consider other potential health and environmental issues that may be generated by the treatment. The main types of treatment and disposal technologies and techniques available for health care waste are described below.

Incineration is a high temperature dry oxidation process to reduce organic, combustible waste to significantly smaller quantities of inorganic, incombustible matter. Incineration may produce gaseous air emissions, ash residues, and wastewater. Depending on the amount of waste generated and the other factors, HCFs may operate on-site incinerators, or waste may be transported to an off-site incineration facility. Incinerators should have permits to accept health care waste and be properly operated and maintained. Further guidance on incineration is contained in the 'Emissions to Air' section, below.

Chemical disinfection involves the addition of chemicals to kill pathogens in health care waste. Waste should be mechanically shredded prior to treatment. Treatment involves the use and handling of hazardous chemicals, in addition to disposal of hazardous residues following treatment.

Wet thermal treatment disinfects waste by exposing shredded waste to high temperatures / pressure steam inside an exposure tank. Wastewater discharges and odour may result. Autoclaving is a type of wet thermal disinfection process typically used to sterilize reusable

medical equipment. Dry thermal disinfection involves the shredding, heating, and compacting waste in a rotating auger. Air emissions and wastewater may be generated, and residues require disposal.

Microwave irradiation involves the destruction of microorganisms through the microwave heating action of water contained within the waste. Following irradiation, waste is compacted and disposed of as part of the municipal waste stream. Contaminated wastewater may also be generated.

Land disposal involves the disposal of health care waste into landfill facilities. Properly designed and operated sanitary landfills will protect against air and groundwater contamination. Disposal of waste into open dumps is not considered good practice and should be avoided. Pre-treatment of waste prior to land disposal may involve encapsulation (filling containers with waste and an immobilizing material and sealing the containers).

Inertization involves mixing waste with substances (e.g., cement) to minimize leaching of toxic waste into ground or surface water.

(b) Emissions to Air

Sources of air emissions at HCFs may include exhaust air from heating, ventilation, and air conditioning (HVAC) systems, ventilation of medical gases and fugitive emissions released from sources such as medical waste storage areas, medical technology areas, and isolation wards. Emissions may include exhaust from medical waste incineration if this waste management option is selected by the facility. In addition, air emissions may result from combustion related to power generation.

Exhaust air, including isolation wards, laboratories, and waste storage and treatment facilities) may be potentially contaminated with biological agents, pathogens, or other toxic materials, and should be treated by conveying the exhaust air to combustion air to render it non-toxic and non-contagious before discharge. Condensate and blowdown liquids should be classified as health care wastewater and treated accordingly (see 'Wastewater' below). A stack sufficiently tall to eliminate door nuisances and optimize dispersion should be used. Stack heights for all waste treatment facilities should be determined in accordance with existing national guidelines.

Incineration

Large general hospitals may be equipped with their own incinerator plant, which is the major source of emissions to air and wastewater. Typically, only a relatively small portion of medical waste should be incinerated, and the need for a hospital waste incinerator (HWI) should be carefully evaluated against other technologies and techniques for waste management and disposal discussed above. Pollutants potentially emitted from HWIs include:

- Heavy metals.
- Organics in the flue gas, which can be present in the vapor phase or condensed or absorbed on fine particulates.
- Various organic compounds (e.g., polychlorinated dibenzo-p-dioxins and furans [PCDD/Fs], chlorobenzenes, chloroethylenes, and polycyclic aromatic hydrocarbons [PAHs]), which are generally present in hospital waste or can be generated during combustion and post-combustion processes;

- Hydrogen chloride (HCl) and fluorides, and potentially other halogens-hydrides (e.g., bromine and iodine);
- Typical combustion products such as sulphur oxides (SO_X), nitrogen oxides (NO_X), volatile organic compounds (including non-methane VOCs) and methane (CH_4), carbon monoxide (CO), carbon dioxide (CO_2), and nitrous oxide (N_2O).

Pollution prevention and control measures include:

- Application of waste segregation and selection including removal of the following items from waste destined for incineration: halogenated plastics (e.g., PVC), pressurized gas containers, large amounts of active chemical waste, silver salts and photographic / radiographic waste, waste with high heavy metal content (e.g., broken thermometers, batteries), and sealed ampoules or ampoules containing heavy metals;
- Incinerators should have permits issued by authorized regulatory agencies and be operated and maintained by trained employees to ensure proper combustion temperature, time, and turbulence specifications necessary for adequate combustion of waste. This includes implementation of operational controls including combustion and flue gas outlet temperatures (combustion temperatures should be above 850 °C while flue gases need to be quenched very quickly to avoid formation and reformation of POPs) as well as use of flue gas cleaning devices meeting international standards.

Secondary air pollution control measures for hospital waste incinerators include the following:

- Wet scrubbers to control acid gas emissions (e.g. hydrochloric acid [HCl], sulphur dioxide [SO_2, and fluoride compounds]). A caustic scrubbing solution will increase the efficiency for SO_2 control.
- Control of particulate matter may be achieved through use of cyclones, fabric filters, and / or electrostatic precipitators (ESP). Efficiencies depend on the particle size distribution of the particulate matter from the combustion chamber. Particulate matter from hospital incinerators is commonly between 1.0 to 10 micrometres (µm). ESPs are generally less efficient than baghouses in controlling fine particulates and metals from HWI.
- Control of volatile heavy metals depends on the temperature at which the control device operates. Fabric filters and ESP typically operate at relatively high temperatures and may be less effective than those that operate at lower temperatures. Venturi quenches and venturi scrubbers are also used to control heavy metal emissions. The volatile heavy metals usually condense to form a fume (less than 2 µm) that is only partially collected by pollution control equipment.
- Management of incineration residues such as fly ash, bottom ash and liquid effluents from flue gas cleaning as a hazardous as they may contain high concentrations of POPs.

(c.) Wastewater

Process Wastewater

Wastewater from HCFs often has a quality like urban wastewater. Contaminated wastewater may result from discharges from medical wards and operating theatres (e.g., body fluids and excreta, anatomical waste), laboratories (e.g. microbiological cultures, stocks of infectious agents), pharmaceutical and chemical stores; cleaning activities (e.g. waste storage rooms), and x-ray development facilities. Wastewater may also result from treatment disposal technologies and techniques, including autoclaving, microwave irradiation, chemical disinfection, and incineration

(e.g., treatment of flue gas using wet scrubbers which may contain suspended solids, mercury, other heavy metals, chlorides, and sulphates).

Depending on the effectiveness of hazardous waste management practices (waste segregation strategies described above), hazardous health care wastes may enter the wastewater stream, including microbiological pathogens (wastewater with a high content of enteric pathogens, including bacteria, viruses, and helminths/parasitic worms), hazardous chemicals, pharmaceuticals, and radioactive isotopes. Pollution prevention measures to minimize the generation of wastewater include the following:

- Waste segregation measures should be employed to minimize entry of solid waste into the wastewater stream, including:
    (i) Procedures and mechanisms for separate collection of urine, faeces, blood, and vomit from patients treated with genotoxic drugs to avoid their entry into the wastewater stream (as described above under waste segregation for hazardous and other wastes);
    (ii) Collection of large quantities of pharmaceuticals for separate treatment or return to manufacturer. Small quantities of mild, liquid pharmaceuticals, excluding antibiotics or cytotoxic drugs, may be discharged to sewer systems with a large water flow.

Municipal Wastewater Treatment

If wastewater is discharged to sanitary sewage treatment systems, the HCF should ensure that wastewater characteristics follow all applicable permits, and that the municipal facility can handle the type of effluent discharged.

On-site Wastewater Treatment

In cases where wastewater is not discharged to sanitary sewage systems, HCF operators should ensure that wastewater receives on-site primary and secondary treatment, in addition to chlorine disinfection.

Techniques for treating wastewater in this sector include source segregation and pre-treatment for removal / recovery of specific contaminants such as radio isotopes, mercury, etc.; skimmers or oil water separators for separation of floatable solids; filtration for separation of filterable solids; flow and load equalization; sedimentation for suspended solids reduction using clarifiers; biological treatment, typically aerobic treatment, for reduction of soluble organic matter ; biological or chemical nutrient removal for reduction in nitrogen and phosphorus; chlorination of effluent when disinfection is required; dewatering and disposal of residuals as hazardous medical / infectious waste. Additional engineering controls may be required for (i) removal of active ingredients (antibiotics and miscellaneous pharmaceutical products, among other hazardous constituents), and (ii) containment and treatment of volatile constituents and aerosols stripped from various unit operations in the wastewater treatment system.

Wastewater generated from use of wet scrubbers to treat air emissions should be treated through chemical neutralization, flocculation, and sludge settling. Sludge should be considered hazardous and may be treated off-site in a hazardous waste facility or encapsulated in drums with mortar and landfilled. Sludge treatment should include anaerobic digestion to ensure destruction of

helminths and pathogens. Alternatively, it can be dried in drying beds before incineration with solid infectious wastes.

Other Wastewater Streams & Water Consumption

Contaminated streams should be routed to the treatment system for industrial process wastewater.

Occupational Health and Safety Considerations

Occupational health and safety impacts during the construction and decommissioning of health care facilities (HCF) are common to those of most civil construction facilities. General health and safety hazards occurring in HCFs include manual handling injuries, such as sprains and strains from lifting and carrying patients; falls, trips, and slips; injuries caused by moving objects; and mental stress. HCF health and safety hazards may affect health care providers, cleaning and maintenance personnel, and workers involved in waste management handling, treatment, and disposal. Industry specific hazards include the following:

- Exposure to infections and diseases.
- Exposure to hazardous materials / waste.
- Exposure to radiation; and
- Fire safety.

(a) Exposure to Infections / Diseases

Health care providers and personnel may be exposed to general infections, blood-borne pathogens, and other potential infectious materials during care and treatment, as well as during collection, handling, treatment, and disposal of health care waste.

The following measures are recommended to reduce the risk of transferring infectious diseases to health care providers:

- Formulate an exposure control plan for blood-borne pathogens.
- Provide staff members and visitors with information on infection control policies and procedures.
- Establish Universal / Standard Precautions to treat all blood and other potentially infectious materials with appropriate precautions, including:
    - (i) Immunization for staff members as necessary (e.g., vaccination for hepatitis B virus)
    - (ii) Use of gloves, masks, and gowns.
    - (iii) Adequate facilities for hand washing. Hand washing is the single most important procedure for preventing infections (e.g., nosocomial and community). Hand washing should involve use of soap / detergent, rubbing to cause friction, and placing hands under running water. Washings of hands should be undertaken before and after direct patient contacts and contact with patient blood, body fluids, secretions, excretions, or contact with equipment or articles contaminated

by patients. Washing of hands should also be undertaken before and after work shifts; eating; smoking; use of personal protective equipment (PPE); and use of bathrooms. If hand washing is not possible, appropriate antiseptic hand cleanser and clean cloths / alcohol-based antiseptic towelettes should be provided. Hands should then be washed with soap and running water as soon as practical.

(iv) Procedures and facilities for handling dirty linen and contaminated clothing and preparing and handling food.

(v) Appropriate cleaning and waste disposal practices for the health care workplace

The following recommendations should be implemented when using and handling of needles / sharps:

(i) Use safer needle devices and needleless devices to decrease needlestick or other.

sharps exposures

(ii) Do not bend, recap, or remove contaminated needles and other sharps unless

such an act is required by a specific procedure or has no feasible alternative.

(iii) Do not shear or break contaminated sharps.

(iv) Have needle containers available near areas where needles may be found.

(v) Discard contaminated sharps immediately or as soon as feasible into appropriate containers.

(vi) Used disposable razors should be considered contaminated waste and disposed of in appropriate sharps containers.

In addition to the above recommendations, the following measures are applicable to personnel involved in waste management to reduce the risk of transferring infectious diseases:

- Implement immunization for staff members, as necessary (e.g., vaccination for hepatitis B virus, tetanus immunization and Covid-19 when vaccine becomes available);
- Provide adequate supplies of PPE for personnel involved in waste management including overalls/industrial aprons, leg protectors, boots, heavy duty gloves, helmets, visors /face masks and eye protection (especially for cleaning of hazardous spills), and respirators (for spills or waste involving toxic dust or incinerator residue) as necessary.
- Provide washing facilities for personal hygiene, particularly at waste storage locations.

(b)Exposure to Hazardous Materials and Waste

HCF workers may be exposed to hazardous materials and wastes, including glutaraldehyde (toxic chemical used to sterilize heat sensitive medical equipment), ethylene oxide gas (a sterilant for medical equipment), formaldehyde, mercury (exposure from broken thermometers), chemotherapy and antineoplastic chemicals, solvents, and photographic chemicals, among others. In addition to the guidance provided above, hazardous materials and wastes should be handled according to existing national occupational health and safety guidelines.

(c.) Waste Anaesthetic Gas (WAG) Exposure

Health care workers may be at risk of toxic exposure to nitrous oxide; the halogenated agents, halothane (fluothane), enflurane (ethrane), isoflurane (forane); and other substances typically used as inhalation anaesthetics. Recommended measures to control exposure to waste anaesthetic gas (WAG used in the operating room for example) include use of a scavenging unit attached to the anaesthesia unit. The scavenging unit may have a charcoal filter that absorbs halogenated anaesthetic gases, but not nitrous oxide. Spent charcoal filters should be disposed of as hazardous waste. If there is no scavenging unit, or if the scavenging unit does not have a filter, vacuum lines are used to collect WAGs which are subsequently vented outside and dispersed.

(d.) Radiation

Occupational radiation exposure may result from equipment emitting X-rays and gamma rays (e.g., CT scanners), radiotherapy machines, and equipment for nuclear medicine activities. HCF operators should develop a comprehensive plan to control radiation exposure in consultation with the affected workforce. This plan should be refined and revised as soon as practicable based on assessments of actual radiation exposure conditions, and radiation control measures should be designed and implemented accordingly.

(e) Fire Safety

The risk of fire in health care facilities is significant due to the storage, handling, and presence of chemicals, pressurized gases, boards, plastics, and other flammable substrates. Additional recommendations for fire safety include:

- Installation of smoke alarms and sprinkler systems.
- Maintenance of all fire safety systems in proper working order, including self-closing doors in escape routes and ventilation ducts with fire safety flaps.
- Training of staff for operation of fire extinguishers and evacuation procedures.
- Development of facility fire prevention or emergency response and evacuation plans with adequate guest information (this information should be displayed in obvious locations and clearly written in relevant languages).

Community Health and Safety Considerations

Community health and safety issues during the construction, operation, and decommissioning of HCFs are generally common to those of most industrial facilities. Community hazards associated with health care facility environments, particularly related to hazardous health care waste, necessitate those members of the public receive adequate information regarding potential infection hazards within the facility, and at associated waste disposal sites (e.g., landfills).

ANNEX 10: STAKEHOLDERS CONSULTED AND CONSULTATION OUTCOMES

Public Consultation

A. Stakeholders Consulted

Name	**Organisation**	**Contact**	**E-Mail**
Nana Kwabena Adjei-Mensah	Chief Director - MoH	-	Kadjeimensah@gmail.com
Dr. Patrick Kuma-Aboagye	Director General - GHS	-	-
Dr. Emmanuel Odame	MoH – Project Coordinator	0208868792	*joeankra@yahoo.com*
Mr. Nicholas Gyabaah	Head, PIU	0242215645	ngyabaah@yahoo.co.uk
Daniel Ayindigo	MoH - Head, Financial Management.	0244578594	ayindigo@yahoo.co.uk
Dr. Badu Sarkodie	Public Health Specialist	0244417911	Sarks60@yahoo.co.uk
Samuel Kofi Boateng	MoH – Project Accountant	0209223585	skeabbp@gmail.com
Romeo Tetteh Kofi	MoH - Procurement Focal Point	0268716607	rotteteh@hotmail.com
Daniel Degbotse	MoH – M&E Focal Person	0203667453	ofoedegbotse@hotmail.com
Rahilu Haruna	MoH – Project Secretariat	0277191703	Senrahi@yahoo.com
Kwabena Kwakye Kontor	MoH	-	Kwakye.kontor@gmail.com
Ben Ampomah Nkansah	MoH	0242383921	bnkansahbb@gmail.com
Kwame Ampomsah Sarfo	MoH	0244232246 8	sakwame@gmail.com
Sally E. P. Tetteh	MoH	0266150510	scapgh@yahoo.com
Daniel Osei	KBTH	0244364221	dnaoosei@gmail.com
Sauda Ahmed	MoF	0244973278	sahmed@mofep.gov.gh
Ebenezer K Donkor	MoF	0241551340	Covid19response@mofep.gov. gh
Enerst Sekyere	MoF	0246557410	ksekyere@mofep.gov.gh
Yaa Asantewaa Asante	MoF	0249299995	yasante@mofep.gh

Name	Organisation	Contact	E-Mail
Kwadwo Ohene Sarfoh	GARID – Project Coordinator	0246489796	oksarfoh@yahoo.com
Clifford Odame	GARID – Financial Management Specialist	0244023417	odamegyan@gmail.com
Elliott Bartrop-Sackey	GARID – Procurement Specialist	0204352808	ebartropsackey@gmail.com
Abdul-Rahim Abdulai	GARID – Social Safeguards Specialist	0245544143	Mingo8876@gmail.com
Romeo Adomah-Darteh	GARID – Environmental Safeguards Specialist	0244715772	romeoadarteh@yahoo.com
Kwabena Badu Yeboah	Head, Environmental Assessment and Audit	0501301399	Yeboah1863@yahoo.com

B. Output of Stakeholder Consultations.

1. PDO: The project development objective is to enhance the Government of Ghana's preparedness and build capacity to prevent, contain and respond to the COVID-19 outbreak and other reportable disease outbreaks. Does this mean CSM outbreak in Upper West qualifies under this project?

Response

Yes, CSM qualifies under this project for various reasons.

a. A CSM outbreak could become an epidemic if not attended to early and decisively.

b. A CSM outbreak or epidemic situation could bring about divided attention in terms of financial and human resources. This could affect the Covid-19 response.

c. A CSM outbreak or epidemic situation could bring about desperation particularly on the part of the affected population and all efforts aimed at implementing Social/Physical Distancing, wearing of mask and other precautions aimed at

preventing the spread of Covid -19 will come to naught.

2. Please list and briefly outline the objectives of country specific Key Health policy, legal and administrative frameworks relevant to the project.

Response

a. Public Health Act, 2012, Act 851.
   i. Part one provides for how to deal with Communicable Diseases and Covid-19 is a communicable disease. This part provides among others the following:
      - Declaration of infected area, order for evacuation
      - Stopping of vehicles
      - Sales within an infected area
      - Post-mortem examination
      - Disinfection
      - Destruction of buildings
      - Destruction of animals
      - Removal and detention of infected persons or disposal of corpse
      - Isolation of contacts
      - Compensation Board
      - Time for bringing claims.
      - Presumption of knowledge of disease
      - Penalty
      - Regulations
      - 17. Regulations as to diseases of a communicable nature
   ii. Part two provides for vaccination.
   iii. Part three provides for quarantine.

b. National Health Policy: The main objective of the National Health policy is to ensure that every Ghanaian have access to all services including promotive, preventive, curative, rehabilitative and palliative care and services.

c. Community- based Health Planning and Services (CHPS): The Primary Health Care was designed at the district level as a three-tier system: Level A, B and C which were designed to work seamlessly to provide appropriate quality health services supported by a system of referrals to the appropriate levels where additional care may be needed. At the community level is the CHPS level where community Health Workers work alongside community leaders to bring basic health care close to the communities. The CHOs provide preventive, promotive and treatment (minor ailments) services. The CHO provide among others immunisation, contact tracing, home visiting and emergency delivery services.

d. Health Sector Medium Term Development Plan 2018-2021: The Medium-Term plan reflects the health sector policy direction for the period 2018-2021. It has four main objectives. Objective 1,2 and four has implications for Covid-19 response. Objective 1

provides for access to health services; objective two deals with reduction of morbidity, disability and mortality among others and objective four provide for the prevention and control of communicable diseases. Key priorities in the medium-term plan among others include;

- Strengthening Public Health Emergency preparedness and response (evidence base solutions for prevention, detection, and response)
- Strengthen surveillance against all diseases including vector borne and zoonotic diseases locally and those affecting neighbouring countries.
- Reduce the threat of communicable and non-communicable disease.
- Promote healthy environment, food safety and personal hygiene

3. Please identify the divisions/departments/agencies under MoH and their role in and capacity for the implementation of the Project.

Response

a. Ghana Health Service is responsible for the provision of primary and secondary level health services. It is also responsible for provision of public health services throughout the country. Per MOUs signed with the Ministry of Health, The Christian Health Association of Ghana, Ahmadiyya Moslem Mission, and the Quasi-government institutions in the country are integrated into the Government health service delivery structure. Most are by this MOU part of the Ghana Health Service Delivery Structure. A few of the quasi-government institutions collaborate at a higher level (tertiary) by the nature of the services they provide.

b. The Teaching Hospitals by their establishment provide specialized health care services. They invariably are the final referral point in the country. Their functions are therefore supplementary to the Ghana Health service. They also provide Public Health and specialized outreach services in collaboration with the Ghana Health services.

c. The Psychiatric Health Services provides specialized psychiatric services. They also provide some general clinical services for the population in their catchment areas. All hospitals in Ghana as a policy has Psychiatric units that provides domiciliary services in addition to basic psychiatric services at the facilities.

d. The PPME of the Ministry of Health provides leadership in the formulation of policies, planning, monitoring, and evaluating performances of service delivery agencies. Key directorates such as procurement and supply, finance, Technical and human resource directorate play major role in managing processes that facilitate the functioning of the service delivery agencies.

4. Please indicate other relevant institutions and their mandates and roles in the implementation of the project.

Response

e. Nogouchi Centre for Medical Research: It is the leading medical research centre in Ghana. It is the leading centre for testing of Covid-19 samples. It is also providing leadership in ensuring that other centers are capacitated to test for Covid 19.

f. Veterinary Laboratories of the Ministry of Agriculture has the capacity to initiate testing of Covid 19.

g. Other Laboratories identified are within the existing public Health structure. They include the Public Health reference Laboratory, University of Allied Health Sciences, and the Cape Coast Teaching Hospital

h. Other Ministries such as the Ministry of Information is responsible for mass communication of National Covid 19 response: Ministries of interior and defence provide security; Ministries of local government, Gender responsible for social mobilisation.

i. Ministry of Finance is responsible for Resource mobilisation.

5. List and briefly outline the objectives of other relevant international and regional conventions and policies relevant to the project.

Response

a. WHO: Provides technical assistance and guidance to the national response.

b. West Africa Health Organisation (WAHO): Provides technical support and mobilization of financial support for member countries.

c. World Bank and its affiliates: Provides financial and technical support.

d. UNICEF: Provision of both financial and technical support in the area of child health and COVID 19 Response

e. USAID: Provision of financial and technical support

6. Please provide the current health profile of Ghana in terms of (a) Infrastructure (b) personnel and (c) disease burden.

Response

(a) Infrastructure

Region	**CHPS**	**Clinic**	**District Hospital**	**Health Centre**	**Hospital**	**Maternity Home**	**Regional Hospital**	**Teaching Hospital**	**Grand Total**
Ahafo	130	18	3	20	7	7			185
Ashanti	1113	185	24	152	127	70		1	1672
Bono	300	67	6	59	11	19	1		463
Bono East	274	34	3	39	12	5			367
Central	425	106	3	68	27	35		1	665
Eastern	842	90	10	129	29	27	1		1128
Greater Accra	695	460	1	33	118	91	1	1	1400
North East	96	9	2	19	2				128
Northern	312	53	9	59	18	7		1	459
Oti	172	11	2	36	6	2			229
Savannah	117	16	3	26		2			164

Region	CHPS	Clinic	District Hospital	Health Centre	Hospital	Maternity Home	Regional Hospital	Teaching Hospital	Grand Total
Upper East	363	55	2	60	8	2	1		491
Upper West	324	21	2	70	10	5	1		433
Volta	316	45	8	118	19	11		1	518
Western	402	131	4	54	30	16	1		638
Western North	250	39	5	26	12	21			353
Grand Total	6131	1340	87	968	436	320	6	5	9293

(b) personnel

Nurses and Midwives	79,285.00
Doctors	4,390.00
Pharmacist	705.00
Biomedical Scientist	994.00
public Health officers /Disease Control	2,791.00
clinical Psychologist	40.00

(c) Disease Burden.

Summary information on endemic NTDs, target population and specific control strategies

Focus disease	Year of Inception	No. of Districts Targeted	Geographic Coverage	Target Population	Population covered	Key strategies used
Lymphatic Filariasis	2001	74	100%	12 million	12 million	MDA, Case Management
Onchocerciasis	1974	73	100%	4 million	8.8 million	MDA
Schistosomiasis	2008	170	170 (100%)	7 million	7 million	MDA
Trachoma	2001	29	29	2.6 million	2.6 million	Surveillance
Buruli Ulcer	1999	89	42	17,7 million	8.4 million (47%)	Case detection & management

Focus disease	**Year of Inception**	**No. of Districts Targeted**	**Geographic Coverage**	**Target Population**	**Population covered**	**Key strategies used**
HAT	2008	14	14	1.1 million	Data not available	Case detection & management
Leishmaniasis	2006	5	5	400,000	Data not available	Case detection & management
Leprosy	1980	9	9	720,000	N/A	Case detection & management
Soil Transmitted Helminthiasis	2007	170	170	6 million	6 million	MDA
Guinea Worm	1989	170	170	25 million	25 million	Case detection, management & containment

The top 20 causes of death and disability in Ghana (MoH, 2013)

Leading causes of death	**% of total**	**Leading causes of DALYS [1]**	**% of total**	**Leading risk factors for DALYS**	**% of total**	**Years lost due to disability**	**% of total**
Lower respiratory tract infections	9	Malaria	10.5	Unsafe sex	19.9	Depressive disorders	10.7
Malaria	8.8	Lower respiratory tract infection	6.8	Raised blood pressure	13.6	Low back and neck pains	8.7

Cerebrovascular disease	8.5	HIV/AIDS	6.6	Childhood underweight	10.6	Iron deficiency anaemia	8.3
HIV/AIDS	7.9	Neonatal sepsis	4.9	Household air pollution from solid fuels	10.4	Vision problems	6
Ischaemic heart disease	5.3	Complications of preterm birth	4.7	Overweight or obesity	8.9	Skin diseases	4.6
Protein energy malnutrition	3.7	Protein energy malnutrition	4.3	Unsafe water source	7.4	Malaria	3.4
Neonatal sepsis	3.5	Neonatal sepsis	3.7	Raised blood sugar	7.1	Chronic obstructive pulmonary disease	3.3
Complications of preterm birth	3.3	Haemoglobinopathies	3.1	Iron deficiency	7	Schistosomiasis	2.9
Road traffic injuries	3.1	Cerebrovascular disease	3.1	Alcohol use	6.9	Migraine	2.7
Neonatal encephalopathy	2.6	Congenital anomalies	2.8	Air pollution	5.3	Anxiety disorders	2.4
Diabetes mellitus	2.5	Road traffic injuries	2.8	Poor sanitation	5.1	Diabetes mellitus	2.3
Haemoglobinopathies	2.3	Iron deficiency anaemia	2.6	Kidney problems	4.5	Other muscular-skeletal disorders	2
Diarrhoeal diseases	2.2	Diarrhoeal diseases	2.5	Low intake of fruits	3.7	Haemoglobinopathies	1.8
Meningitis	2.1	Meningitis	2.3	Suboptimal breastfeeding	3.6	Kidney disease	1.7
Tuberculosis	1.9	Depression	2.2	Low vegetable intake	3.5	Schizophrenia	1.6
Congenital anomalies	1.9	Ischaemic heart disease	2.1	Drug abuse	3.3	Drug abuse	1.5
Hypertensive heart disorders	1.6	Low back and neck pains	1.8	Diet low in whole grains	3	Gynaecological diseases	1.4

Chronic obstructive pulmonary disease	1.5	Diabetes mellitus	1.4	Poor hygienic practices	3	Osteoarthritis	1.4
Other cardiovascular diseases	1.3	Tuberculosis	1.3	Cigarette smoking	2.5	Mental retardation	1.4
Iron deficiency anaemia	1.3	Skin diseases	1.3	High cholesterol	2.3	Bipolar disorders	1.3

7. Please provide the current situation of the Corona virus pandemic in terms of (i) Infrastructure (ii) personnel and (iii) disease burden as at 22/04/2020.

Response

a. One Hundred and twelve (112) new cases of COVID-19 were recorded in Ghana as at the last count on the 22nd April 2020.

b. One hundred and five (94%) of these new cases were recorded in Greater Accra. Remaining cases recorded in Ashanti (5) and Northern (2) regions

c. Cumulative number of recorded COVID-19 cases as at April 22, 2020 was 1,154. As reported, 402 of cases were from the routine surveillance, 637 from enhanced surveillance and 115 from travellers under mandatory quarantine

d. Male constitute 60% of total cases

Region	New Cases	Cumulative total
Greater Accra	105	987
Ashanti	5	67
Eastern	0	51
Northern	2	13
Volta	0	10
Upper East	0	8
Upper West	0	8
Central	0	7
North East	0	2
Western	0	1
Total	112	1,154

Summary Activities and Cases

Total Samples collected on 22-04-2020	4324
Total confirmed cases	1,154
Confirmed from Routine surveillance	402
Confirmed cases from enhanced surveillance	637
Confirmed cases from travelers under quarantine	115
Total Deaths among confirmed cases	9

8. Please provide information of any external waste management facilities such as third-party sanitary landfills, incinerators, or wastewater treatment plants that are relevant to the project supported facilities.

Response

Third party waste disposal companies such as Zoom lion and Waste Alliance provide specialized medical waste disposal services for the teaching hospitals and some regional hospitals. These waste disposal takes care of the final disposal responsibilities. They have installed various state of the art equipment that enable them safely to dispose of such waste.

9. Please provide information on some of the environment and social impacts that may arise with cognizance to the Project Components and activities as outlined in the Project Appraisal Document.

Response

Potential Environment &Social Issues and Risks	**Proposed Mitigation Measures**
Sample collection through contact tracing	Adequate and readily availability of appropriate PPE
• Sample transport	Provision of appropriate sample collection containment
• Laboratory handling of samples	Strict adherence to laboratory protocols and safety precautions
• Waste disposal (chemical or biological)	Adherence to waste disposal protocols as provided for in policy
• Treatment of patients	Provision of appropriate PPEs, effective triaging, and capacity to recognize suspected cases and isolate
• Inadequate Ventilation	Provide adequate space for patients and provide additional ventilation space
• Social attachment through handshake, hugging and coughing	Encourage social/physical distancing and discourage handshaking and hugging. Use appropriate face mask regularly
• Inappropriate use and disposal of fomites	Prompt and appropriate treatment of fomites through washing, effective disposal and or disinfection

10. Provide us with infection control and waste management process as well as the roles and responsibilities along each link of the chain.

Response

The Ministry of Health has a general IPC policy which was augmented with IPC guidelines developed for Ebola Viral Disease. Additional guidelines have since the outbreak of COVID-19 been developed and disseminated to the peripheral health service delivery points. Guidelines on effective triaging, early recognition and isolation of suspected patients, precautions on how to prevent droplet and or contact airborne spread. Further guidelines include;

a. Administrative Controls to minimize spread of disease.
b. Hand washing with soap under running water
c. Appropriate use of PPEs
d. Environmental cleaning and disinfection procedures
e. Medical devices and equipment, laundry and medical waste should be managed by in accordance with safe routine procedure managed.
f. Adequate ventilation for patients
g. Use of medical mask by all health workers.
h. Ensuring exclusive management of suspected cases by HCWs
i. Wearing of Googles or face masks and Nonsterile long-sleeved gown.
j. Disposal of PPE and hand hygiene facilities
k. Use of Ethyl alcohol 70% to rub hand s regularly.
l. Access to prompt laboratory testing

The Ministry has a health waste management policy titled "Health Care Waste Management policy" which was initially developed in 2006 and updated in 2020. The policy has since been revised to take the experiences from the Ebola Virus Disease response into consideration. The policy provides technical guidelines on classification of waste including safe health care waste handling and disposal system. Key among these classifications is the colour coding of waste in hazardous, infectious and non-hazardous. Other topics discussed include segregation and containment of waste, internal and external storage of waste, Standards for disinfection of reusable health care waste containers, collection and transportation of health care waste and requirement for the transportation of radioactive waste.

Other topics covered under the policy among others include;

- Contracting with waste management contractor
- Treatment options for various waste streams
- Waste minimization
- Wastewater treatment and disposal

11. Please provide us with the Guidelines for the preparation of Infectious Diseases and Waste Management Plan/Medical Waste Management Plan.

Response

The health care waste policy provides for facilities at all levels to develop and implement a waste management plan taking into consideration the following;

a. The waste Management Policy is available to staff.
b. The Policy on the safe disposal of immunization waste is available.
c. Waste Management Posters Reminding staff of appropriate waste disposal procedures are on display.
d. Broken glass and crockery are disposed of in a safe manner, according to local arrangements.
e. Used batteries are segregated for 'Special Waste Collection'.
f. Cardboard boxes are stored flat, in a safe manner, prior to collection.
g. Waste bins are foot operated and in good working order and lined with the correct colour bag (s).
h. Waste bins are always in clean condition.
i. Waste bins are correctly labelled, and additional information to users are appropriately displayed.
j. Contents of yellow, black, red and brown bags signifying various categories of waste are appropriate.
k. Waste bags are securely sealed when ¾ full and correctly labelled.
l. Bags waiting for collection are safely stored away from the public.
m. If heavy gauge bags are required, an appropriate cord tie is used to secure the bag.
n. Random member(s) of staff understand the waste Management Policy.
o. Records on HCW types and quantities collected for disposal.
p. Records on external transportation are kept.
q. Feedback information on external treatment and final disposal sites are kept

11. What appropriate structures can be considered for receiving and addressing grievances?

Response

The functional Ghana Health Service structure can be used for grievance management. The structure includes;

- National Level: Ghana Health Service Council, Office of the Director General and Deputy Director General and Eight National Divisional Directors
- Regional Level: 10 Regional Directors of Health Service supported by Regional Health Management Teams and Regional Health Committees
- District Level: District Directors of Health Services, supported by the District Health Management Teams and District Health Committees

- Sub-district Level: Sub District Health Management Teams
- Community Level: Community Health Management Teams

APPENDIX 11: FLOW DIAGRAM OF SUB-PROJECT ENVIRONMENTAL AND SOCIAL RISK REVIEW, APPROVAL AND MONITORING