

# Federal Democratic Republic of Ethiopia Environmental and Social Management Framework (ESMF)



**For**

## **Ethiopia COVID-19 Emergency Response Project**

**Addis Ababa, June 2020**

## List of Abbreviations

AMR	Antimicrobial Resistance
CDC	Centre for Diseases Prevention and Control
COVID-19	Coronavirus disease
EA	Environmental Assessment
ECERP	Ethiopia Covid-19 Emergency Response Project
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EOC	Emergency Operating Centre
EPHI	Ethiopian Public Health Institute
EPLAUA	Environmental Protection, Land Administration and Use Authority
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FDRE	Federal Democratic Republic of Ethiopia
FEPA	Federal Environmental Protection Authority
FEPA	Federal Environmental Protection Authority
FEPA	Federal Environmental Protection Agency
FCECC	Forest Environmental and Climate Change Commission
FMOH	Federal Ministry of Health
GoE	Government of Ethiopia
GTP	Growth and Transformation Plan
HCF	Health Care Facility
HCW	Health Care Waste
HCWM	Health Care Waste Management
HCWMNG	Healthcare Waste Management National Guideline
HCWMP	Health Care Waste Management Plan
HIV	Human Immunodeficiency Virus
HSDP	Health Sector Development Plan
HWMNG	Healthcare Waste Management National Guideline
HWMP	Health Waste Management Plan
IPPS	Infection Prevention and Patient Safety
MDG	Millennium Development Goals
MOH	Ministry of Health
MPA	Multiphase Programmatic Approach

OP	Operational Policy
PPE	Personnel Protective Equipment
POE	Point of Entry
RG	Risk group
PHEM	Public Health Emergency Management Unit (PHEM)
PHID	Public health infrastructure directorate
PPSD	Project Procurement Strategy for Development
PVC	Polyvinylchloride
RHB	Regional Health Bureau
SNNPRS	Southern Nations, Nationalities, and People's Regional State
SSAHUTLC	Sub-Saharan African Historically Underserved Traditional Local Communities
WHO	World Health Organization

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## **Executive Summary**

### **Project Background**

The World Bank will finance Ethiopia COVID-19 Emergency Response Project to prevent and to respond to the COVID-19 outbreak and will provide a support on renovation, establishing, and equipping isolation, treatment and quarantine centres. The proposed project i.e. Ethiopia Covid-19 Emergency Response Project (ECERP) component that encompasses i) Medical Supplies and Preparedness, ii) Capacity Building and Training Community, iii) Discussions and Information Outreach and iv) establishment of Quarantine, Isolation and Treatment Centers for COVID 19 including Project Implementation and Monitoring. Activities supported by the component of establishment of Quarantine, Isolation and Treatment Centers for COVID 19 include: (i) establishing, equipping isolation center with medical supplies and furniture and network installation (8 centers); and (ii) establish 15 isolation and treatment centers and furnish them.

### **Objectives of the Environmental social management framework (ESMF)**

The objective of this ESMF is to set forth a framework for identification, mitigation, monitoring and reporting environmental and social risks associated with Ethiopia COVID-19 Emergency Response Project.

### **Methodology**

While preparing the ESMF, review of relevant documents such as and national policies, laws, regulations pertinent to the project and the World Bank Environmental and Social Framework, EHSGs and WHO guideline.

### **Legal and Institutional Framework**

The Project activities will be implemented in compliance with the existing environmental and social management systems of Ethiopia and the Environmental and Social Standards of the World Bank (WB). The relevant Ethiopian legal frameworks include National Proclamations and guidelines pertinent to the project are listed below:

- Environmental Proclamation 299/2002, Environmental Impact Assessment
- Proclamation 513/2007, Solid Waste Management
- Proclamation 300/2002, Environmental Pollution Control
- ESIA Directive 1/ 2008, Directive to Determine Projects Subject to Environmental Impact
- ESIA Guideline, July 2000
- Waste Handling and Disposal Guideline, 1997



- The Guideline for Waste Handling and Disposal in Health Facilities (2006)
- Ethiopian Water Resources Management Proclamation, No. 197/2000
- Labour Proclamation 1156/2019
- Expropriation of Land holdings for Public Purposes, Payments of Compensation and Resettlement Proclamation (1161-2019)

### **World Bank Environmental and Social Standards**

The World Bank Environmental and Social Standards provide guidelines aimed at preventing and mitigating undue harm to people and to the environment, when implementing development projects. As result the World Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally and socially sound and sustainable, and thus to improve decision making. Environmental and Social Assessment is one of the Environmental and Social Standards that WBG uses to examine potential environmental and social risks and benefits associated with Bank lending operations.

These policies provide a platform for the participation of stakeholders in project design and implementation. During project preparation, the implications of the proposed project against the following World Bank's environmental and social framework's environmental and social standards has been examined:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts
- ESS2: Labor and Working Conditions
- ESS3: Resource Efficiency and Pollution Prevention and Management
- ESS4 Community Health and Safety
- ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities
- ESS8 Cultural Heritage
- ESS9 Financial Intermediaries
- ESS10 Stakeholder Engagement and Information Disclosure

The Project activities will also be implemented in compliance with the Environment, Health and Safety Guidelines (EHSGs)of the World Bank and pertinent WHO guidelines.

### **Anticipated Negative impacts of the Project Activities and remedial measures**

The project will have significant positive environmental, social and health impacts as it will contribute to improvement of Ethiopia's capacity for COVID-19 preparedness, monitoring, surveillance and response. However, the project activities can also have negative environmental, health and safety (EHS) risks and impacts that should be assessed and managed properly. The EHS risks include environmental and community health related risks from inadequate handling, transportation and disposal of infected medical wastes from COVID-19 quarantine, isolation and treatment centers; and occupational health and safety risks to the healthcare workers. The occurrence of this risk could be high in Ethiopian context the availability and supply of personal protective equipment for healthcare workers is in short supply and where there is limited sanitary and hygiene services (clean water, soap, disinfectants) and limited isolation capabilities at health facilities.

Proper operation of the medical facilities/ labs, quarantine, treatment and isolation centers will require adequate provisions for minimization of occupational health and safety risks, proper management and disposal of hazardous waste (including sharps disposal), use of approved disinfectants, proper quarantine procedure for COVID-19, appropriate chemical and infectious substance handling and transportation procedure, institutional/implementation arrangement for environmental and social risks, etc. Other notable risks associated with the project include marginalization of vulnerable groups such as women and disabled populations being unable to access health facilities and services during COVID-19 operation. The potential for increased incidences of Gender Based Violence (GBV) and Sexual Exploitation and Abuse particularly in quarantine isolation facilities is likely to arise and will require constant monitoring against this risk. Infrequent flow of accurate information on COVID-19 could contribute to heightened social tension among communities due to rumors being spread, as well as stigma associated with the virus which may result in communities staying away from tests or accessing other health services.

To address potential environmental and social risks and impacts, the client will follow the requirements of this Environmental and Social Management Framework (ESMF) and WHO as especially WHO guidelines relevant for COVID-19 which include: i) Infection prevention and control during health care when COVID-19 is suspected; ii) Infection Prevention and Control guidance for Long-Term Care Facilities in the context of COVID-19; iii) Infection Prevention and Control for the safe management of a dead body in the context of COVID-19; iv) Consideration for quarantine of individuals in the context of containment (COVID-19); iv) Health workers exposure risk assessment and management in the context of COVID-19; iv) Rational use of personal protective equipment for COVID-19; v) Advice on the use of masks in the context of

COVID-19; vi) Water, sanitation, hygiene and waste management for COVID-19; vii) Getting your workplace ready for COVID-19 and iv) Rights, Roles & Responsibilities of Health Workers, including key considerations for Occupational Safety & Health. The client implement will also the activities and action included in the Environmental and Social Commitment Plan (ESCP) and Stakeholders Engagement Plan (SEP) and allocate the resources necessary for implementation of the ESCP and the SEP in the proposed timeline. Some specific risks are outlined below.

**Impacts on Water resources:** Nearby rivers, streams and springs may be polluted, and silt may be deposited in the river courses due to the renovation/construction wastes, on-site makeshift toilets, fuel and lubricant from garages and construction machineries and sediments that may be generated due to movement of vehicles. To minimize these impacts, construction wastes would be regularly collected and disposed, and lubricant and oil released from garages and construction machineries would be contained and properly disposed on a site designated for this purpose.

**Impact on Air Quality:** Construction activities may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. To minimize air pollution from earthmoving machineries water would be sprayed on access roads and construction sites and loose soil would be compacted and construction machinery would be regularly maintained.

**Impact due to Noise, vibration and Dust:** During construction, noise and vibration may be caused by the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people. This would create occupational health risks to the patients, construction workers and communities. Planning activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that would result in least disturbance and construction activities during night time would be avoided to minimize impacts.

**Traffic accident due to moving machinery:** Material haulage trucks as well as pedestrians around the construction sites may create traffic congestion and may increase of traffic accident. Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes, establishment of speed limits, and on-site trained flag people wearing high-visibility vests would minimize impacts

**Temporary disruption of Quarantine, Isolation and Point of Entry Centers:** Since facilities under renovation will not be closed, they will experience shortages of working space, and water

pipes, telephone and electric cables may also be interrupted due to renovation/construction. Thus modifications of buildings in which medical services are provided may entail moving patients or equipment from one area or room to another. The contractor would relocate water pipes, telephone and electric cables from the construction site and contingency plan would be prepared to provide water and power to the community during interruption of power and water supply to the community to minimize impact.

**Risk associated with Poor Hygiene:** Poor hygiene, on the other hand, increases the risk for bacterial, viral, and parasitic infections, particularly the current pandemic disease of COVID 19 is more associated with poor hygienic. Utmost efforts will be made to ensure availability of adequate sanitary facilities and separation of personal hygiene areas. Besides basic hygiene services such as hand washing facilities and toilets with adequate supply of water for personnel considering people with disability.

**Risks associated with operation of Point of Entry, quarantine, and Isolation centers for COVID-19 disease:** If appropriate work processes, engineering, and administrative controls are not in place to avoid release of biological agents into the environment, and practices that can have serious impact on the community. As mitigation measures, the facility, containment devices, administrative controls, and procedures that constitute Point of Entry, quarantine, and Isolation centers for COVID-19 disease would be designed to maximize safe working conditions for laboratory personnel working with infectious agents. Personnel working in Point of Entry, quarantine, and Isolation centers must receive specific training in handling infectious agents and associated procedures and follow the WHO and CDC safety manual recommends a strategies to minimize risks associated to Point of Entry, quarantine, and Isolation centers. For instance, persons must wash their hands after working with potentially hazardous materials and before leaving the facilities, eating, drinking, smoking, and storing food must not be permitted in patient handling area areas, equipment would be routinely decontaminated, spills involving infectious materials must be contained, decontaminated, and cleaned up by trained staff.

**Release of Infectious Material from Quarantine, Isolation and Treatment centers:** There would be infectious martial including waste and will be release to the environment accidentally and intentionally resulting transmission of COVID 19 in community. The following mitigation strategies will be implemented as follow: train Health personnel in handling infectious material, ensure all COVID 19 patients are isolated and control their movement, manage visitor access and

movement, implementing administrative and engineering controls system and ensure healthcare are properly collected, treated and disposed.

**Community health risk due to improper COVID 19 waste management:** community health may be affected due to hazards associated with the operation of Point of Entry, Quarantine, Isolation and Treatment Centres. To protect general community from biological for example COVID 19 Virus, physical, and chemical releases. In addition improper COVID 19 infectious waste disposal can cause public health risks. It is therefore, WBG EHS Guidelines for Community Health and Safety elaborated in detail in impact chapter of this report is recommended to be used to minimize impact ensure health and safety of the nearby communities. Besides, the collection of waste would be made at least once in 24 hours, and it would be done in such a way to minimize nuisance of smell and dust during collection and all the waste collected must be carried away from the storage site to an approved disposal point.

**Occupational health and safety risks due to COVID 19 Virus:** As Quarantine, Isolation and Treatment and Point of Entry major function are to provide services on screening, isolation and treatment of COVID 19 Suspects and cases, they could be a potential source of COVID 19 infectious waste in gaseous, liquid or solid forms. While some OHS risks will be borne by new equipment or services introduced after renovation or construct of the centers, most other effects are existing and would only be exacerbated by increased scale of COVID 19 services.

**Health Hazard of Covid-19 virus:** To minimize the transmission of Covid-19 virus and other communicable diseases to personnel working during the construction phase and operation phase including people with disabilities, personal care givers, supporters and translators will be actively screened for and tested for COVID 19. Ensure availability of PPE, practicing respiratory hygiene and maintaining social distance.

**Impact of Improper management of waste:** During the operational phase of the Point of Entry, quarantine, and Isolation centers, it is anticipated that solid and liquid wastes are generated as non-hazards and infectious/hazardous waste. Therefore, improper and inadequate waste handling, decontamination and disposal can cause public health risks. To avoid the improper management of waste, waste management system would be established and implemented and all personnel working in laboratory would be trained on the waste handling, treatment and disposal. The mitigation measures would include the following strategies:

**Occupational health and safety risks:** during operation of the Point of Entry, quarantine, and Isolation centers may affect Occupational Health and Safety-Health and safety of healthcare providers, cleaning and other supporting staff personnel, and workers involved in waste management handling. To avoid this risk, following OSHA Safety Guidance standards recommendation all staff would be trained on safe work practices and guidelines and ensure that they adhere to them and on how to prevent and manage incidences, use personal protective equipment. Regular safety drills would constantly be demonstrated. Signs would be used to warn staff and/or visitors that are not involved in work of dangerous places. Building managers would develop evacuation procedures to handle emergency situations and building structure would be designed to make ease of evacuations.

**Point of Entry, quarantine, and Isolation centers waste management:** The operation of Point of Entry, quarantine, and Isolation centers generates both non-hazardous and hazardous wastes and the hazardous wastes expected from the laboratories and the centers (such as COVID 19 waste) would be infectious liquid and solid waste, pathological wastes, microbiological wastes, sharps, chemical and disposable wastes. So, it is important to design a waste management strategy that enables to handle hazardous wastes aseptically to protect staff, community and environment. Thus, mitigation strategies stipulated to manage wastes generated from the Point of Entry, quarantine, and Isolation centers encompasses waste minimization, segregation, packaging, colour coding, collection, handling, storage, transportation, treatment and disposal.

**Risk of Gender Based Violence (GBV):** The health consequences of violence against women include injuries, untimed/unwanted pregnancy, sexually transmitted infections (STIs) including HIV, pelvic pain, urinary tract infections, fistula, genital injuries, pregnancy complications, and chronic conditions as well as Mental health impacts. Thus as mitigation, the MOH and facilities provide training for target health care workers on preventing and responding to GBV, will ensure continuity of routine sexual and reproductive health services for women and their families, GBV services and legal protection and hotlines services are available free of charge and availing protective gears and psychosocial services. Moreover, the project's risk communication strategy and Stakeholder Engagement plan will include messaging around GBVSEA including no tolerance for (i) treatment for sexual favours, (ii) sexual exploitation and abuse, (iii) information on referral systems/service provision for survivors (medical, psychosocial, justice), and (iv) access to complaint mechanisms for survivors.

**Risk associated with disability:** People with disability are more at risk during the pandemic of COVID 19 and may also have greater difficulty accessing basic needs. Thus, to mitigate this risk, actively engaging people with disabilities in emergency risk management can significantly reduce their vulnerability and enhance the effectiveness of policies and practices. Ramps should be constructed or available in consideration of people with disabilities and protective gears should be made available for those who are going to participate in the construction and preparation of sites. Further, the project SEP for the project will include messaging around people-with-disabilities, including (i) support on non-COVID19 related treatment, (ii) accessible information, e.g. in brail, sound, or graphics, (iii) universal access for isolation centers, etc.

**Child and Forced Labor:** The child labour might harmful to physical and mental development including socially or morally dangerous. Similarly forced labour affects mentally, physically, socially or morally dangerous and harmful to workers as a result of the worst jobs and work in poor conditions including working extended hours. The following mitigation measure will be implemented: create awareness on negative impact of child labour and forced labor, implement strictly labour regulation and review the hiring policy and procedures and ensure that contractors should have a system of human resource management according to Ethiopian government labor law and WB ESS2.

**Infection Prevention and Control at COVID-19 facilities:** COVID-19 disease is transmitted between people through respiratory droplets and contact routes. Droplet transmission occurs when a person is in in close contact within 1 meter with someone who has respiratory symptoms (e.g. coughing or sneezing,) and is therefore personnel working at the COVID 19 facilities and visitors will be at risk as they have contact with COVID 19 patients and any contaminated materials. Therefore, to prevent the transmission of the COVID-19 virus, all healthcare workers, and visitors should Perform hand hygiene, avoid touching your eyes, nose, and mouth, use PPE, and maintain social distance at least 1 meter including practicing respiratory hygiene.

### **COVID 19 Waste Management**

According to the WHO and CDC currently there is no evidence to suggest that this waste needs any additional packaging or disinfection procedures. But as COVID 19 waste are highly infectious and needs safe handling, treatment and disposal. Thus, according to the WHO, WBG EHS and MOH Guidelines waste should be collected treated and disposed as follow:

**Waste Minimization:** The best practice is to ensure that each laboratory section minimizes their waste generation (all classes of wastes) to the barest possible minimum.

**Segregation:** Proper segregation of waste at source generation is essential, efficient and effective in managing HCW. Wastes from Point of Entry, quarantine, and Isolation centers would be segregated in accordance with WHO's recommendation, into separate and appropriate temporary storage color-coded containers/bags.

**Packaging:** The waste packaging would be implemented from its point of origin to the point at which it is treated and disposed and the packaging would be based on the type of wastes generated and the management includes: sharps would be placed in rigid, puncture-resistant containers made of glass, rigid plastic, or cardboard. Solid wastes would be placed in tear-resistant plastic bags. Liquid infectious wastes would be placed in capped bottles or flasks; large quantities would be placed in containment tanks.

**Colour Coding:** Colour coding is one of the efficient ways of achieving segregation of waste and it helps to minimize and avoid mixing different wastes. The color-coding system would be as follows: Black for non-hazardous waste, yellow for infectious waste, including safety boxes. Red for heavy metal or effluent. White for vials or glass bottles for recycling or reuse.

**Waste Collection and Handling:** waste would be collected in containers/bags and sealed when filled 3/4 full and all HCW would be sorted on site before collection and transportation using closed wheeled trolleys. All Infectious waste including COVID 19 and pathological waste would be collected using yellow bag with biohazard symbol, and all wastes would be placed leak-proof strong plastic bag or a container (capable of being autoclaved). Sharps waste would be collected with yellow puncture-proof container with biohazard symbol and would never be emptied or opened. Chemical waste would be collected using brown bags and labelled with appropriate hazard symbol. Non-hazardous waste would be collected using black bags/ inside a container or container which is disinfected after use. All personnel handling infectious/hazardous waste would be obligated to wear personal protective equipment (PPE) as required. All waste containers would be labelled with type of waste; name of the department, date of collection and, warning of hazardous nature.

**Waste Storage:** Point of Entry, quarantine, and Isolation centers would designate an area within its premises where waste can be temporarily stored until final collection for disposal and treatment. It is expected that Point of Entry, quarantine, and Isolation centers would manage the HCW it generates as follows: Infectious & Pathological waste storage, the storage place would be identified as an infectious waste area by using the biohazard sign, and floors and walls would be



sealed or tiled to allow easy disinfection. Chemical waste storage, when planning storage places for hazardous chemical waste, the characteristics of the different chemicals to be stored and disposed of would be considered (flammable, corrosive, explosive). The storage place would be an enclosed area and separated from other waste storage areas.

**Transportation:** Waste transportation involves conveying of wastes from the various points of generation within a laboratory to a temporary storage location and to treatment (incinerator) and disposal facility. All waste bags/containers would be intact and covered with lids and it would be transported using carts, or containers. Infectious waste can be transported together with used sharps waste using intact and leak-proof strong plastic bag or a container. Infectious waste would not be transported together with other hazardous and non-hazardous waste. Chemical waste would be transported separately in boxes to storage sites, and transport staff would always wear appropriate PPE.

**Waste treatment and disposal:** The hazardous wastes generated during laboratory operation would be managed on site of collection or generated using the methods of steam sterilization, incineration, thermal inactivation, gas/vapor sterilization, chemical disinfection, and sterilization by radiation in accordance with the HCWM guideline and best practices, World Health Organization (WHO) safe management of wastes from Healthcare Guideline and World Bank Groups guideline on Environmental health and safety guideline (WBG EHS).

**Non-Hazardous Waste:** This waste would be disposed of similarly to domestic in municipal waste collection. The liquid waste though would undergo a treatment in a septic tank packed with different level of gravels and coarse materials.

**Highly Infectious Wastes** (Items contaminated with blood and body fluids, including cotton, pathological wastes, culture wastes and other infectious wastes): These wastes would be autoclaved at a temperature of 121°C for at least 20 minutes at source. Or it would be treated in a concentrated solution of Sodium Hypochlorite before being disposed with other wastes.

**Liquid Waste (infectious & chemical wastes):** Collected body fluids, blood and other infectious liquids would be treated using 5% sodium hypochlorite (NaOCl –bleach) and drained into septic tank as well as liquid chemical waste would be diluted/neutralized and disposed to the sewer with water.

**Sharps** (Needles, syringes, blades, glass, etc.) This waste would be incinerated before being landfilled. In the alternative, they would be encapsulated and then landfilled.

Finally, all wastes would be incinerated using the two chambers/pyrolytic technology incinerator that is primarily designed for the pyrolysis of healthcare and chemical hazardous waste management. For those do not have this incinerator, the two chambers/pyrolytic technology incinerator would be constructed as part of the project in order to prevent environmental pollution. After incinerating the waste, the final ash waste would be disposed in an ash pit designed for disposal

**Impact of decommissioning:** Despite closure of the facilities and services are rare, decommissioning entails closure of the facilities and services such as quarry mines, construction materials storage facilities, leftover materials (sand, cement, iron bars etc..). To minimize impacts during decommissioning it important to prepare plan that would guide the contractor on how to safely demolish the building, and equipment and safely dispose demolished wastes.

### **ESMF Implementation Arrangement**

The MOH should identify and report the Regional Public health Institutes, Points of Entry and Isolation /Quarantine/ Treatment Centers which may benefit from the World Bank COVID-19 Emergency Response Project. At each Regional Public Health Institutes and at Each Isolation/Quarantine/Treatment Centers the client will assign EHS risk management focal persons. The focal persons at Regional Public Health Institutes and at Each Points of Entry, Isolation /Quarantine/ Treatment Centers will be trained on the relevant WHO guidelines and on the ESMF so that they could have awareness on the safe practices. The focal persons should prepare and implement site specific ES risk management tools and should monthly report to the federal project coordination unit on whether laboratories or Points of Entry, Isolation, Quarantine, and Treatment Centers have been run in compliance with the requirements of the WHO COVID-19 guidelines and the ESMF as well as gaps, if any, which need to be addressed. The federal project coordination will compile and share the reports on the same period to the Bank so that compliance with the EHS requirements could be monitored. Environment, Forest and Climate Change offices should review and clear the site specific environmental and social risk management tools and the adequacy of implementation process.

### **Stakeholder Engagement and Information Disclosure**

The Stakeholder Engagement Plan (SEP) is a plan for stakeholder engagement, including public information disclosure and consultation, throughout the entire project cycle to all affected stakeholders, including usage of different languages, addressing cultural sensitivities, and any challenges. The Risk Communication and Community Strategy has been used during the update of the SEP. The SEP also includes a mechanism by which people can raise concerns, provide feedback, or make complaints about project and any activities related to the project. The details strategies and activities for SEP Project are described in SEP document. The final version of the ESMF will be publicly disclosed by Ministry of Health by mid-June 2020.

**Grievance Redress Mechanism (GRM):** The project will establish complaint mechanism in the quarantine, treatment and isolation centers on any issues including reporting SEA and quality of services. Hotline services for complaint handling will be established and adequately communicated to the public including people in the treatment, isolation and quarantine centers. Further, Grievances will be handled at, the Woreda level by the Woreda Grievance Office and by MoH at national level.

The GRM will include the following steps:

Step 0: Grievance discussed with the respective health facility

Step 1: Grievance raised with the Woreda Grievance Office

Step 2: Appeal to the Regional (or, where available, Zonal) Grievance Office

Step 3: Appeal to the Ethiopia Independent Ombudsman and/or the Ministry of Health

Once all possible redress has been proposed and if the complainant is still not satisfied then they should be advised of their right to legal recourse. In the instance of the COVID 19 emergency, existing grievance procedures should be used to encourage reporting of co-workers if they show outward symptoms, such as ongoing and severe coughing with fever, and do not voluntarily submit to testing.

### **Capacity Building**

MOH should train pertinent stakeholders and environmental and social risk management focal persons on the ESMF of the project at least virtually. The estimated cost to implement the ESMF for ECERP is **1,739,500.00 US\$**.

**Monitoring and Reporting:** The focal persons at each isolation/quarantine, treatment center and points of entry will daily monitor compliance with the requirements of the ESMF and WHO guidelines. MOH will report to the Bank on the implementation of the ESMF monthly. MOH will be responsible for compliance monitoring and reporting on the on the implementation of this ESMF.

# **1. Introduction**

## **1.1 Background**

Ethiopia has a population of around 105 million, and is the second-most populous country in Africa after Nigeria. The government of Ethiopia has spent huge resources in the past two decades to strengthen health system and have achieved significant gains in improving the health status of Ethiopians. To this effect, Ethiopia has done well in meeting most of the MDG targets.

Although tangible progress has been made in improving health care and health services, there still exist many challenges in providing health services in satisfactory manner. Some of these challenges include inappropriate safe working environment; insufficient and inconsistent supply chain system; lack of instrumentation with state-of-the-art technologies that provides efficient service and maintenance system; weak or absent of information and Communication Technology (ICT) that enhance network communications and ensure smooth flow of information ; huge gaps in the implementation of Laboratory Quality Management System and attainment of accreditation to ISO standards; weak system for specimen referral linkage and testing services compounded with logistical impediments, and underdeveloped capacity and practices for monitoring and evaluation of the laboratory system's efficiency and effectiveness in addressing the basic needs of health care service delivery and poor public health researches and public health emergency management operations.

The proposed ECERP Project intends to fill critical gaps in addressing COVID-19 emergency response activities which aims to strengthen the prevention activities, rapid detection, preparedness and response to COVID-19 outbreak. The project will provide a support on renovation, establishing, and equipping isolation, treatment, quarantine and Point of Entry centres in the country.

## **1.2 Objectives of the ESMF**

The objective of preparing the ESMF is to track and ascertain proper assessment and mitigation of potential adverse environmental, health and social impacts that may result from the renovation activities of the proposed Point of Entry, quarantine, and Isolation centres project.

The ESMF will also Issues associated to Point of Entry, quarantine, and Isolation centres operations and its waste management. The ESMF is prepared based on the World Bank's environmental and social standards (ESS). The main principle is to prevent & alleviate harms that have both direct & indirect effect on the environment & the public. The ESMF will ensure project

activities in all stages of the project phase conform to the World Bank safeguard policies and national policies, regulations and guidelines of Ethiopia.

The specific objective of ESMF is to:

- propose the procedures to be followed in preparation of site-specific environment and social risk management tools
- identify indicative list of potential risks associated with the project activities and recommended mitigation measures;
- propose implementation and capacity building arrangement to be put in place for management of environmental and social risks and impacts

### **1.3 Methodology**

The following methods were used in the preparation of the ESMF:

- Review of project document
- Review of other relevant literature and government regulations and World Bank Environment and Social standards (ESS) and EHSs;
- Identification and analysis of potential environmental and social impacts likely to result from implementation of the proposed;
- Identification of appropriate mitigation measures for the negative environmental and social impacts

## **2. Project Description**

The overall aim of ECERP project is to strengthen the Ethiopian health care system, and to strengthen the Government of Ethiopia's capacity to prevent and respond to the COVID-19 outbreak.

### **2.1. Project Development Objective (PDO)**

The objective of the project is to strengthen the Government of Ethiopia's capacity to prevent and to respond to the COVID-19 outbreak and other immediately reportable disease outbreaks. The proposed Project intends to fill critical gaps in implementing the EPRP, strengthen the prevention activities, rapid detection, preparedness and response to COVID-19 outbreak. The budget will be utilized within 12 months to enhance preparedness activities for COVID-19 and strengthen the health system both at national and subnational level.

**The specific objectives of the project, aligned with Ethiopia's EPRP, are to:** (a) strengthen

coordination of preparedness and response operations at national and subnational levels; (b) reinforce screening procedures at the points of entry; (c) strengthen surveillance capacity for early detection of cases, alert/rumor management and follow up of contacts; (d) strengthen laboratory capacity for the diagnosis of COVID-19; (e) increase the capacity to rapidly isolate and provide optimized care for persons suspected or confirmed to have COVID-19; (f) implement optimal infection and control measures in healthcare settings and communities; (g) increase awareness and informed decision-making among communities through risk communication and community engagement among communities through risk communication and community engagement; and (h) provide and pre-position medical supplies and commodities, and other logistics for COVID-19 management.

### **2.1.1 Project Components**

The proposed Project will be a standalone operation for Ethiopia to address critical country-level needs for preparedness and response for COVID-19: While the GoE is one of the three recipients of the ACDCP (alongside African Union and the Government of Zambia), the proposed Project will be processed as a standalone operation that builds upon the ACDCP. The proposed Project will fill critical financing gaps that have been identified due to the new emergency preparedness and response needs created by COVID-19. Project design will include similar implementation arrangements and fiduciary systems as the ACDCP, as described below. The project will comprise of the following components:

#### **Component 1. Medical Supplies and Equipment [US\$61.3 million]:**

This component will finance the procurement of medical supplies and equipment needed for activities outlined in the EPRP such as (i) case management and infection; (ii) infection prevention and control; and (iii) other pillars of the strategic plan. This component will also allow for flexibility to allocate resources for the purchasing of essential pharmaceutical (insulin, antibiotics, etc.) and medical supplies as the availability of forex in the country becomes reduced due to the economic impact of the pandemic and the existing mechanisms are insufficient to address the critical health system needs (such as the SDG-PF described above).

#### **Component 2. Preparedness, Capacity Building and Training [US\$34 million]:**

This component will finance activities related to preparedness, capacity building and training, guided by the different pillars and activities of the EPRP. These include: (i) coordination at the national, subnational and regional/cross-country levels; (ii) EOC functionalization (including sub-national coordination and support for preparedness (EOC functionalization, training, supervision); (iii) human resources for supportive supervision and subnational support; (iv) vehicle rental, fuel

and other administrative-related costs for supportive supervision and monitoring; (v) support to points of entry; (vi) strengthening call/hotline centers; (vii) strengthening PHEM and community- and event-based surveillance for COVID-19; and (viii) building regional diagnostic capacity for COVID-19.

**Component 3. Community Discussions and Information Outreach [US\$13.5 million]:**

Activities supported by this component include: (i) risk communication and community engagement; (ii) behavioral and sociocultural risk factors assessments; (iii) production of RCCE strategy and training documents; (iv) production of communication materials; (v) establish an IEC production center (media and community engagement); and (vi) monitoring and evidence generation; and (vii) human resources for risk communication.

**Component 4. Quarantine, Isolation and Treatment Centres Establishment [US\$ 10.1 million]:**

Activities supported by this component include: (i) establishing, equipping isolation center with medical supplies and furniture and network installation (8 centers); and (ii) establish 15 isolation and treatment centers and furnish them.

**Table 1:** List of Site and Regions that Quarantine Renovation to be done

S.N	Site	Region	Quantity
1.	Metema 1	Amhara	1
2.	South Omo Kakuta	SNNPRS	1
3.	Mekele Dima	Tigray	1
4.	Ethio-Kenya Bole	Oromiya	1
5.	Togo Wuchale	Somali	1
6.	Semera Town	Afar	1
7.	Gambela Lare	Gambella	1
8.	Dewole Landport	Dire Dawa	1
9.	Benishangul Kumruk	Beneshangul Gumz	1

**Table 2:** List of Site and Regions that Isolation Renovation to be done

S.N	Site Name	Region	Quantity
1.	Basha Wolde	A.A	1
2.	Bahir Dar City	Amhara	1
3.	Hawasa Town	SNNPRS	1
4.	Mekele Airport	Tigray	1
5.	Jimma	Oromiya	1
6.	Jigjiga Airport	Somali	1
7.	Semera Town	Afar	1

8.	Gambella City	Gambella	1
9.	Dire Dawa City	Dire Dawa	1
10.	Asosa	Beneshangul Gumz	1
11.	Harari Town	Harari	1

Table 3: List of Site and Regions that Point of Entry Renovation to be done

S.N	Site Name	Region	Quantity
1.	Lugdi	Tigray	1
2.	Moyale	Oromiya	1
3.	Dawale	Somali	1
4.	Togo Wuchale	Somali	1
5.	Kumruk	Beneshangul Gumz	1

**Component 5. Project Implementation and monitoring [US\$3 million]:**

Implementing the proposed Project will require administrative and human resources that exceed the current capacity of the implementing institutions, in addition to those mobilized through the ACDCP. Component 5 will support these costs.



### **3. Social and Environmental Baseline Conditions**

#### **3.1 General Environmental Setting**

Ethiopia COVID-19 Emergency Response Project (ECERP), it will support to establish, renovate and equip isolation, treatment and Point of Entry canters. It will be implemented in the regions of Tigray (Mekele Dima, Mekele Airport, Lugdi), Afar (Semera Tow, Semera Town), Amhara (Metema Bahir Dar City), Oromia (Ethio-Kenya Bole, Jimma Moyale), Somali (Togo Wuchale, Jigjiga Airport, Togo Wuchale & Dawale), Benishangul (Benishangul Kumruk, Assosa, Kumruk), SNNPR (South Omo Kakuta Hawasa Town) and Gambella (Gambela Lare, Gambella City), Addis Aabab (Basha Wolde) and Dire Dawa (Dewole Landport, Dire Dawa City).

Under this chapter environmental and social base line conditions of the areas that is expected to be influence due to project implementation will be assessed. The main potential safeguard issues expected to arise due to the implementation of this project will be impacts on soil, air, water, and vegetation and the nearby communities during construction, operation and decommissioning phases of the project.

##### **3.1.1 Health Services in Ethiopia**

Health service provision in Ethiopia includes a wide range of providers in both the public and private sectors, such as public facilities managed by federal, regional state, zonal and woreda administration and private for-profit providers, NGOs, community-based and faith-based organizations and traditional care givers (WHO 2002). Currently there are 290 hospitals, 3962 health centers, and 16547 health posts under the regional and federal government which provides health care services. Ethiopian health care delivery system has three-tier, to deliver essential health services and ensure referral linkages.

The first tier is primary health care unit in woreda health system comprises health posts, health centres and primary hospital. Secondary health service includes general hospitals. Tertiary facilities form the highest level of healthcare in the country and include Specialist Hospitals, Teaching Hospitals and Federal Referral Hospitals.

##### **3.1.2 Isolation and Treatment, Quarantine, and Point of Entry Centers**

Ethiopia share large border size with South Sudan, Kenya, Sudan, Djibouti and Somali land. Currently as a part of hindering the COVID-19 importation, there has been health screening at 26 PoEs, four being international airports. Inherent nature of the border across the countries were they are far from the primary health care unit to transfer the suspected person for contagious diseases nor do the existing nearest health facilities have setup for the isolation facilities. The

PoEs are one of the key players in the cross border communicable diseases control and they needs to have the following capacities including but not limited to isolation/quarantine center, public health office coordination office at designated PoEs, surveillance system integrated into routine national surveillance system, medical service delivery, routine and emergency public health measures, contingency plans for public health emergencies at PoEs, vaccination services for travellers, public health checking counters, arrangement for transportation and Handling of human dead bodies.

## 4. Legal and Institutional Framework

In this section, pertinent Ethiopian and the World Bank legal and institutional framework has been assessed.

### 4.1 National Regulatory Framework

This section describes the legal and regulatory requirements for environmental impact assessment and management in Ethiopia. There are a number of relevant government policies that are related to giving direction towards a safe and healthy environment which depends largely on the effective management of the project.

#### 4.1.1 Constitution

The constitution of the Federal Democratic Republic of Ethiopia (FDRE) provides the overriding principles for all legislative frameworks in the country. The right of Ethiopian people to clean and healthy environment is enshrined in the constitution under the following articles.

- **Article 43.** The Right to Development identifies citizens' right to improved living standards and sustainable development and participate in national development and to be consulted with respect to policies and projects affecting their community.
- **Article 44.** Environmental Rights stipulations that all citizens have the right to a clean and healthy environment; and those who have been displaced or whose livelihoods have been adversely affected as a result of state programs have a right to commensurate monetary or alternative means of compensation, including relocation with adequate state assistance.
- **Article 92.** Environmental objectives are identified as government would endeavor to ensure that all Ethiopians live in a clean and healthy environment. The design and implementation of programs would not damage nor destroy the environment. Citizens also have a right to full consultation and to expression of views in the planning and implementation of environmental policies and projects that directly affect them. Government and citizens would have the duty to protect the environment.
- The National Conservation Strategy (1995) takes a holistic view of natural and cultural resources and seeks to present a coherent framework of plans, policies, and investments related to environmental sustainability. The Strategy consists of five volumes: Natural Resource Base, Policy and Strategy, Institutional Framework, Action Plan, and Compilation of Investment Program.

#### **4.1.2 Environmental Policy of Ethiopia**

The Environmental Policy of Ethiopia was approved by the Council of Ministers in 1997. It is comprised of 10 sector and 10 cross-sector components, one of which addresses Human Settlements, Urban Environment and Environmental Health. The Policy is based on the findings and recommendations of the National Conservation Strategy of Ethiopia. The Policy contains elements that emphasize the importance of mainstreaming socio-ecological dimensions in development programs and projects. The goal of the Environmental Policy of Ethiopia is to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through sound management of the environment and use of resources so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. The Environmental Policy provides a number of guiding principles that require adherence to the general principles of sustainable development. In particular, the need to ensure that Environmental Impact Assessment (ESIA) completes the following:

- Considers impacts on human and natural environments,
- Provides for early consideration of environmental impacts in project and program design,
- Recognizes public consultation processes as essential to effective management,
- Includes mitigation and contingency plans,
- Provides for auditing and monitoring,
- A legally binding requirement.

#### **4.1.3 Environmental Proclamations Regulation and Guidelines Relevant to this project**

**Proclamation 513/2007, Solid Waste Management** aims to promote community participation to prevent adverse impacts and enhance benefits resulting from solid waste management. It provides for preparation of solid waste management action plans by urban local governments.

**Proclamation 299/2002, Environmental Impact Assessment** makes ESIA's mandatory for implementation of major development projects, programs, and plans. The Proclamation is a tool for harmonizing and integrating environmental, economic, cultural, and social considerations into decision-making processes in a manner that promotes sustainable development. The proclamation clearly defines:

- Why there is a need to prepare ESIA's,
- What procedure is to be followed in order to implement ESIA

- The depth of environmental impact studies,
- Which projects require full ESIA reports,
- Which projects need partial or no ESIA report,
- To whom the report must be submitted.

**Proclamation 300/2002, Environmental Pollution Control** requires developmental activities to consider environmental impacts before their establishment. The proclamation requires ongoing activities to implement measures that reduce the degree of pollution to a set limit or quality standard. Thus, one of the dictates of the proclamation is to ensure, through inspection, the compliance of ongoing activities with the standards and regulations of the country through an environmental audit.

**Proclamation 295/2002, Establishment of Environmental Protection Organs** establishes the organizational requirements and identifies the need to establish a system that enables coordinated but differentiated responsibilities of environmental protection agencies at federal and regional levels. The proclamation indicates duties of different administrative levels responsible for applying federal law.

**Proclamation 159/2008, Prevention of Industrial Pollution Regulation:** As a follow up to Proclamation 300/2002, this regulation to prevent industrial pollution was developed by the Federal Environmental Protection Authority to ensure compatibility of industrial development with environmental conservation. This Proclamation includes comprehensive industrial pollution standards for a range of industrial and mining activities.

**Guideline for Environmental Management Plan May 2004:** This guideline outlines measures for preparation of an Environmental Management Plans for proposed developments in Ethiopia and institutional arrangements for implementation of Environmental Management Plans.

**Waste Handling and Disposal Guideline, 1997:** The Waste Handling and Disposal Guidelines have been in use by health facilities since 1997. The Guidelines are meant to help industry and local authorities handle medical waste situation at the local level.

**Expropriation of Land holdings for Public Purposes, Payments of Compensation and Resettlement Proclamation (1161-2019):** The GoE has issued a new proclamation (1161/2019) which addresses the public's concern on the previous proclamation (455/2000). The new proclamation has included many changes in provisions including the provision of livelihood restoration of PAPs beyond compensation of the lost asset and property. The new proclamation

defines the basic principles that have to be taken into consideration in determining compensation to a person whose landholding is going to be expropriated. The Proclamation is applicable on both rural and urban lands. The general condition for which land and property can be expropriated is for public purpose defined as use of land by the appropriate body or development plan to ensure the interest of citizens to acquire direct or indirect benefits from the use of the land and to consolidate sustainable socio-economic development.

As per the Proclamation No. 1161/2019(Article 13) valuation of displacement compensation for communal landholding is based on the use of the communal land; or the lost benefits and livelihood of the displaced people through identifying communal land clearly. The method of allocating the displacement compensation money or the use of it in kind to all members of the communal landholding community shall be clearly determined. In addition to compensation according to *Proclamation No. 1161/2019 Article 13(1)* ``displacement compensation shall be paid equivalent to 15 times the highest annual income he/she secured during the three years preceding the expropriation of the land`. Compensation will be in an amount sufficient to reinstate displaced people to their economic position prior to displacement; the regionally relevant administration is required to give another piece of land to any person who lost his land in favor of a public project (*Proclamation No1161/2019*). The assessment of compensation does not include the value of the land itself, but the property and any development made on the land because land is a public property and not subject to sale in Ethiopia.

A rural landholder whose landholding has been permanently expropriated (where substitute land is not available) shall be paid displacement compensation, in addition to compensation payable for property situated on the land and for permanent improvements made to such land, the land holder shall be paid displacement compensation which is equivalent to 15 times the highest annual income he generated during the last 3 years preceding the expropriation of the land(*Proclamation No. 1161/2019, Article 13*).

Complaints arising from landholding rights are resolved amicably through the establish complaint hearing body and apple council or in accordance with and administration laws of the regional state.

**Proclamation 200/2000, Public Health Proclamation;** Public Health Proclamation comprehensively addresses aspects of public health including among others, water quality control, waste handling and disposal, availability of toilet facilities, and the health permit and

registration of different operations. The Proclamation prohibits the disposal of untreated solid or liquid hazardous wastes into water bodies or the environment that can affect human health.

**Proclamation 189/2010, Ethiopian Food, Medicine and Health Care Administration (FMHACA) and Control Authority Establishment Council of Ministers** gives FMHACA the mandate to protect consumer health by ensuring the standard of health institutions and the hygiene and environmental health protection requirements for communities.

**Proclamation 661/2009, Food, Medicine and Health Care Administration and Control** provides provisions to:

- Ensure proper disposal of expired medicine and foods and raw materials,
- Ensure handling and disposal of trans-regional solid and liquid wastes from different institutions are not harmful to public health,
- Ensure the quality of trans-regional water supply for the public is up to the standard,
- Ensure availability of necessary hygienic requirements in public health institutions,
- Ensure any waste generated from health or research institutions is handled with special care and disposed of according to procedures that meet national standards,
- Ensure that untreated waste generated from septic tanks, seepage pits, and industries is not discharged into the environment, water bodies or water convergences.

**National Health Care Waste Management (HCWM) Strategic Action Plan 2015/16-2019/20** focuses on thematic areas:

- Legal and regulatory framework to provide guidance to health care managers on minimum operation requirements and the need to standardize HCWM practices in all healthcare facilities in the country;
- Process of operational research in pollution reduction and adoption of environmentally friendly technologies;
- Conduct behavioural changes targeting patients, care givers, visitors, and the community in the vicinity of health facilities.

**Health and Safety Guidelines for Public Health Laboratories in Ethiopia, 2010:** provides guidance on laboratory waste disinfectant, handling, and disposal and to serve as a helpful reference and guide for all public health laboratories in the country.

**National Hygiene and Sanitation Strategic Action Plan 2015/16-2019/20:** This Plan focuses scale up community led and school led total sanitation and hygiene and sanitation marketing, build adaptation and resilience to climate change in health sector. A separate national strategy is under development to address large-scale and communal off-site sanitation needs in urban areas in Ethiopia.

**Medicinal Waste Management and Disposal Directive, 2011** is applicable to (a) disposal of medicinal waste, but not to medical equipment or management of other healthcare waste generated by health institutions; and (b) all governmental, nongovernmental and private organizations involved in medicinal waste handling and disposal. The Directive requires disposal firms to have secured an appropriate disposal site depending on the Environmental Impact Assessment conducted with supPoint of the Federal Environmental Protection Authority. In addition, a disposal firm is required to have all the facility and practice standards prescribed under this Directive.

**The Guideline for Waste Handling and Disposal in Health Facilities (2006)** was developed to:

- Enable health professionals to protect themselves against health hazards which might be encountered as result of their occupation
- Create awareness among healthcare workers about the importance of safe disposal of waste generated at health facilities
- Prevent and control environmental pollution by waste carelessly disposed of from health facilities;

Provide technical support to health professionals and environmental health workers engaged in day-to-day health inspection and control activities.

**Labour Proclamation 1156/2019:** The Labour Proclamation (which was revised in 2019) provides the basic principles which govern labour conditions taking into account the political, economic and social policies of the Government, and in conformity with the international conventions and treaties to which Ethiopia is a party. The proclamation under its Part Seven, Chapter One, and Article 92 of this proclamation deals with occupational safety, health and working environment, prevention measures and obligations of the employers. Accordingly, the Proclamation obliges the employer to take the necessary measure for adequate safeguarding of the workers in terms of their health and safety. In addition, in this proclamation under its Part Six, Chapter1 and 2 described about women and young safety that women are not assigned on the



works that may risk to women health and also overnight work including night shift work. Regarding young employees, organizations do not hire young personnel less than 15 years old and if they hire young between age 15 and 18 years, they should not allow to work more than 7 hours per day and also overnight work including night shift work. Moreover, the Occupation Health and Safety Directive provides the limits for occupational exposure to working conditions that have adverse impacts on health and safety.

**Proclamation 200/2000, Public Health Proclamation;** Public Health Proclamation comprehensively addresses aspects of public health including among others, water quality control, waste handling and disposal, availability of toilet facilities, and the health permit and registration of different operations. The Proclamation prohibits the disposal of untreated solid or liquid hazardous wastes into waterbodies or the environment that can affect human health.

#### **4.1.4 Environmental and Social Impact Assessment Guidelines and Directives**

The former Ministry of Environment Forest Climate Change has published series of ESIA guidelines for the different sectors outlining the key issues, principles, procedures and processes to be adopted and adhered to avoid and/or mitigate potentially negative environmental and social impacts during project planning, implementation and operation by government, public and private entities. Some of the guidelines are generic and applicable in different sectors and there are also sector specific guidelines prepared for key environmental and social issues to adhere during the ESIA analysis in those specific sectors.

##### **Environmental Impact Assessment Guideline, May 2000**

The guideline provides the policy and legislative framework, the general ESIA process and key sectoral environmental issues, standards and recommendations for environmental management in key sectors such as agriculture, industry, transport, tannery, dams and reservoirs, mining, textiles, irrigation, hydropower and resettlement projects.

##### **Environmental and Social Management Plan Preparation Guideline, Nov. 2004**

This guideline provides the essential components to be covered in any environmental management plan (e.g., identified impacts, mitigation measures, monitoring, capacity building, etc.) Similar guidelines for the different sectors include the following:

- Environmental and Social Impact Assessment Guidelines for Dams and Reservoirs, 2004
- Environmental Impact Assessment Guideline for Fertilizer, 2004
- Guidelines for Social, Environmental and Ecological Impact Assessment and

- Environmental Hygiene in Settlement Areas, 2004

**Directive Issued to Determine Projects Subject to Environmental Impact Assessment,**

**Directive No.1/ 2008:** The directive was issued to identify and list out those investment projects subjected to mandatory Environmental Impact Assessment. The regions are entitled to issue similar directive to their own specific cases based on this directive. Extensive list of project types requiring ESIA are provided in this directive

**ESIA Procedural Guideline (draft), November 2003:** This guideline outlines the screening, review, and approval process for development projects in Ethiopia and defines the criteria for undertaking an ESIA. Similarly, **the ESIA Guideline, July 2000** provides essential information covering the following elements:

- Environmental Assessment and Management in Ethiopia;
- Environmental Impact Assessment Process;
- Standards and Guidelines;
- Issues for sector environmental impact assessment in Ethiopia covering agriculture, industry, transport, mining, dams and reservoirs, tanneries, textiles, hydropower generation, irrigation projects and resettlement;

**4.2 International Environmental Conventions**

Ethiopia has ratified several international/multilateral environmental conventions and many of the principles and provisions in those conventions have been well addressed in the national environmental policies and regulations. Some of these conventions include the following:

- Convention on Access to Information, Public Participation in Decision-making and, Access to Justice in Environmental Matters, Done at Aarhus, Denmark, On 25 June 1998,
- Cartagena Protocol on Bio-Safety to the Convention on Biological Diversity
- Convention on Biological Diversity, Rio, 5 June, 1992
- Kyoto Protocol to the United Nations Framework Convention on Climate Change
- United Nations Convention to Combat Desertification
- UN Framework Convention on Climate Change
- Convention for the Protection of the World Cultural and Natural Heritage Paris, 23 November 1972

Ethiopia is also party to the following four international conventions, which directly or indirectly deal with human health and the environment. These include:

- Persistent Organic Pollutants of Stockholm Convention, which tries to completely eliminate

organochlorine and other equally dangerous organohalogen chemicals from the earth.

- Bamako Convention, which prohibits the importation of hazardous wastes into, and their movement in, Africa.
- Basel Convention, which strictly regulates the movement of hazardous waste globally. Recently, it has incorporated the prohibition of the importation of hazardous wastes into developing countries from the Bamako Convention.
  - The first Prior Informed Consent or Rotterdam Convention, which tries to ensure that anybody buying a chemical has complete and accurate information about the nature and impacts of that chemical before he/she decides and notifies his/her consent in writing to the exporter.

### **4.3 World Bank Environmental and Social Standards**

According to the World Bank Environmental and Social standards, projects supported by the Bank through Investment Project Financing are required to meet the Environmental and Social Standards (ESS). The ESS is designed to help Clients to manage the risks and impacts of a project, and improve their environmental and social performance, through a risk and outcomes-based approach. Clients are required to manage environmental and social risks and impacts of the project throughout the project life cycle in a systematic manner, proportionate to the nature and scale of the project and the potential risks and impacts.

The client has prepared an environmental and social commitment plan (ESCP) outlining detailed commitments to support compliance with the ESS of the Environmental and Social Framework (ESF) of the Bank. The ESCP describes the different management tools that the Client will use to develop and implement the agreed measures and actions. These management tools will include, as appropriate, environmental and social management plans, environmental and social management frameworks, operational manuals, management systems, procedures and practices.

The ESMF will serve as an instrument to satisfy the Bank's ESS1 on Assessment and Management of Environmental and Social Risks and Impacts in the present context of the COVID 19 response project and it is applicable to ECERP project.

**Table 4: World Bank – Applicable Environmental and Social Standards**

World Bank Environmental and Social Standards (ESS)	Applicable	Explanation (Optional)
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Yes	<p>The project will finance procurement of drugs, supplies and medical equipment, the environmental risks will mainly be associated with the operation of the labs, the quarantine and isolation centers, and screening posts at land crossings, as well as with the appropriateness of the medical waste management system to be put in place by the client. Given that Ethiopia has limited experience in managing highly infectious medical wastes such as COVID-19, the project can be judged to have a high environmental risk and will require that appropriate precautionary measures are planned and implemented.</p> <p><b><i>The overall Environmental and social risk rating of the Project is “High”.</i></b></p> <p>There is a possibility for infectious microorganisms to be introduced into the environment if they are not contained within the laboratory or the quarantine facilities due to accidents/ emergencies e.g. a fire response or natural phenomena event (e.g., seismic). The expected healthcare infectious/hazardous waste also includes wastes generated from COVID-19 patients. Medical wastes can also include chemicals and other hazardous materials used in diagnosis and treatment. The contamination of the laboratory and quarantine facilities, and equipment may result from laboratory procedures: performing and handling of culture, specimens and chemicals. If the contamination is due to a highly infectious agents, it may cause severe human disease, present a serious hazard to workers, and may present a risk of spreading to the community. In sum, the medical wastes from COVID-19 could cause a high environmental and social risk, if they are not properly handled, treated or disposed</p> <p>Each medical facility/lab will apply infection control and waste management planning following the requirements of the ESMF. Site- and activity-specific considerations will be made based on these documents on an ongoing base, to be post-reviewed by the Bank for any sub-activity not considered of high risk.</p>
ESS2: Labor and Working Conditions	Yes	<p>Most activities supported by the project will be conducted by health- and laboratory workers, i.e. civil servants employed by the Government of Ethiopia. Activities encompass thereby treatment of patients as well as assessment of samples.</p> <p>The key risk is contamination with COVID-19 (or other contagious illnesses as patients taken seriously ill with COVID-19 are likely to suffer from illnesses which compromise the immunes sys The project will ensure the application of OHS measures as outlined in the ESMF (including ESMP and ICMWP) noted under ESS1 as well as WHO guidelines. tem, which can lead to illness and death of workers).</p> <p>This encompasses procedures for entry into health care facilities, including minimizing visitors and undergoing strict checks before</p>

		<p>entering; procedures for protection of workers in relation to infection control precautions; provision of immediate and ongoing training on the procedures to all categories of workers, and post signage in all public spaces mandating hand hygiene and PPE; ensuring adequate supplies of PPE (particularly facemask, gowns, gloves, handwashing soap and sanitizer); and overall ensuring adequate OHS protections in accordance with General EHSGs and industry specific EHSGs and follow evolving international best practice in relation to protection from COVID-19. Also, the project will regularly integrate the latest guidance by WHO as it develops over time and experience addressing COVID-19 globally.</p> <p>Thereby, child labor is forbidden in accordance with ESS2 and Ethiopian law, i.e. due to the hazardous work situation, for any person under the age of 18.</p> <p>The project may outsource minor works to contractors. The envisaged works will thereby be of minor scale and thus pose limited risks. The workers will not work in contaminated areas. Also, no large-scale labor influx is expected due to the same circumstance.</p> <p>In line with ESS2 as well as the Ethiopian law, prohibited is the use of forced labor or conscripted labor in the project, both for construction and operation of health care facilities. The project will also ensure a basic, responsive grievance mechanism to allow workers to quickly inform management of labor issues, such as a lack of PPE and unreasonable overtime via the Ministry of Health.</p>
ESS3: Resource Efficiency and Pollution Prevention and Management	Yes	<p>Medical wastes and chemical wastes (including water, reagents, infected materials, etc.) from the labs, quarantine, and screening posts to be supported (drugs, supplies and medical equipment) can have significant impact on environment and human health. Wastes that may be generated from medical facilities/ labs could include liquid contaminated waste, chemicals and other hazardous materials, and other waste from labs and quarantine and isolation centers including of sharps, used in diagnosis and treatment</p> <p>The client will follow measures specified in the WBG EHSGs and GIIP as per the ESS3 requirements to abate risks from using construction materials such as water, energy, raw materials, etc.</p> <p>Each beneficiary medical facility/lab, following the requirements of the ESMF to be updated for the Project, WHO COVID-19 guidance documents, and other best international practices, will prepare and follow an Infection Control and Medical Waste Management Plan (ICMWP) to prevent or minimize such adverse impacts. The ESMF and site-specific instruments (ESMPs) will include guidance related to transportation and management of samples and medical goods or expired chemical products. Resources (water, air, etc.) used in quarantine facilities and labs will follow standards and measures in line with CDC and WHO environmental infection control guidelines for medical facilities.</p>
ESS4 Community Health and Safety	Yes	<p>medical wastes and general waste from the labs, health centers, and quarantine and isolation centers have a high potential of carrying micro-organisms that can infect the community at large if they are not properly disposed of. There is a possibility for the infectious</p>

		<p>microorganism to be introduced into the environment if not well contained within the laboratory or due to accidents/ emergencies e.g. a fire response or natural phenomena event (e.g., seismic).</p> <p>Laboratories, quarantine and isolation centers, and screening posts, will thereby have to follow respective procedures with a focus on appropriate waste management of contaminated materials as well as protocols on the transport of samples and workers cleaning before leaving the work place back into their communities. the operation of quarantine and isolation centers needs to be implemented in a way that both, the wider public, as well as the quarantined patients are treated in line with international best practice as outlined in WHO guidelines referenced under ESS1.</p> <p>The project will ensure the avoidance of any form of Sexual Exploitation and Abuse by relying on the WHO Code of Ethics and Professional conduct for all workers in the quarantine facilities as well as the provision of gender-sensitive infrastructure such as segregated toilets and enough light in quarantine and isolation centers. In case quarantine and isolation centers are to be protected by security personnel, it will be ensured that the security personnel follow strict rules of engagement and avoid any escalation of situation, taking into consideration the above noted needs of quarantined persons as well as the potential stress related to it.</p> <p>The project will ensure that quarantine and isolation centers and screening posts are operated in a conflict-sensitive manner, avoiding any aggravation of local communal conflicts, including between host communities and refugees/IDPs.</p> <p>The project will ensure that any security personnel operating for quarantine and isolation centers and screening posts follow strict rules of engagement and avoid any escalation</p> <p>The project will thereby follow the provisions outlined in the ESMF, noted in ESS1.</p>
ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	No	All eventual construction will be undertaken within existing facilities and thus at this point ESS 5 inference permanent resettlement or land acquisition is not relevant.
ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	No	No major construction or rehabilitation activities are expected in this project and all works will be conducted within existing facilities. Hence, likely impacts of the project on natural resources and biodiversity are low Hence, ESS6 is not currently relevant for this project.
ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Yes	<p>Due to the country-wide rollout of activities, it is likely that it will also affect people meeting the criteria of ESS7, notably in the emerging regions and potentially pastoralists at its borders. The project will ensure respect of human rights, dignity, aspirations, identity, culture and livelihoods of SSAHUTLC and avoid adverse impacts on them or, when avoidance is not possible, minimize, mitigate or compensate for such impacts.</p> <p>This will be ensured via the Project's communication and outreach strategy as outlined under ESS10: the project will ensure that such communities are appropriately informed and can share in the benefits</p>

		<p>of the project in an inclusive and culturally appropriate manner (i.e. prevention and treatment).</p> <p>In case whole SSAHUTLC communities will be addressed by quarantine provisions, site-specific approaches will ensure adequate consideration of their specific cultural needs, to the satisfaction of the Bank.</p> <p>The project will exclude any activities which would require FPIC.</p>
ESS8 Cultural Heritage	Yes	No construction or rehabilitation activities are expected in this project. Hence, likely impact of the project on cultural heritage is low.
ESS9 Financial Intermediaries	No	Financial Intermediaries (FIs) are not involved in this project.
ESS10 Stakeholder Engagement and Information Disclosure	Yes	<p>The project will establish a structured approach to engagement with stakeholders that is based upon meaningful consultation and disclosure of appropriate information, considering the specific challenges associated with COVID-19. In instances where there is a likelihood of more vulnerable groups in attendance, such as the elderly and those with compromised immune systems or related pre-existing conditions, stakeholder engagement should minimize close contact. People affected by Project activities should be provided with accessible and inclusive means to raise concerns and grievances.</p> <p>The project will fully Implement the Stakeholder Engagement Plan (SEP) consistent with ESS10, including the use of different, culturally appropriate communication approaches to ensure communication also with the most vulnerable, including illiterate and people with disabilities.</p> <p>The project will ensure that accessible grievance arrangements are made publicly available to receive and facilitate resolution of concerns and grievances in relation to the Project, consistent with ESS10.</p> <p>The project will ensure that case management in quarantine and isolation centers is managed systematically, allowing patients to access information as well as patients' relatives to get necessary information about the quarantined; if feasible by enabling two-way-communication.</p> <p>To ensure this approach, the project has included a component on "Risk communication and Community Engagement" (RCCE), funded with more than 10m USD, encompassing behavioral and sociocultural risk factors assessment, production of RCCE strategy and training documents, production of communication materials, media and community engagement, and documentation. The prepared Stakeholder Engagement Plan (SEP) describes the framework for these activities, following the guidance provided in WHO "Pillar 2: Risk communication and community engagement". The SEP will be updated and re-disclosed after the preparation of the RCCE.</p>

#### **4.3.1 Comparison of the World Bank Environmental and Social Standards and National Policies**

The national (Ethiopian) requirements for hazardous waste management and occupational health and safety broadly derive from the six basic legislations that set legally binding rules which should be met by the project proponents. This legislation includes Proclamation 300/2002 on Environmental Pollution Control, Proclamation 513/2007 on Solid Waste Management, Public Health Proclamation 200/2000, Food Medicine and Health Care Administration and Control Proclamation no.661/2009, Ethiopian Water Resources Management Proclamation, No. 197/2000 and the FDRE Labour Proclamation no. 1156/2019: which are briefly reviewed in the preceding sections. From the perspectives of hazardous waste management generated from health care facilities the labs, health centers, and quarantine and isolation centers have a high potential of carrying micro-organisms that can infect the community at large if not, the significant national laws that set the key requirements involve the Public health proclamation 200/2000 and the Food Medicine and Health Care Administration and Control Proclamation no.661/2009. According to the Public Health Proclamation 200/2000, any solid, liquid and other wastes generated from hospitals (i.e. health care facilities) should be handled with special care and their disposal procedures should meet the standards set by the public health authorities. Moreover, the Food, Medicine and Health Care Administration and Control Proclamation no.661/2009 of Ethiopia stipulates that handling and disposal of solid and liquid wastes derived from different institutions must not be harmful to public health; emphasis is on ensuring the availability of necessary hygiene requirements in controllable health-related institutions. In addition, it indicates that any waste generated from health care facilities must be handled with special care and their disposal procedures must meet the standards set by the relevant executive organ.

A comparison of the requirements of the World Bank Environmental and Social Standards or International best practice standards such as ESS1: Assessment and Management of Environmental and Social Risks and Impacts with the national law is similar with national Proclamation 299/2002, Environmental Impact Assessment makes ESIA mandatory for implementation of major development projects, programs, and plans. The Proclamation is a tool for harmonizing and integrating environmental, economic, cultural, and social considerations into decision-making processes in a manner that promotes sustainable development.

A comparison of the requirements of the World Bank Labour and Working Conditions (ESS2) and Expropriation of Land holdings for Public Purposes, Payments of Compensation and Resettlement Proclamation (1161-2019) have similar objective. The proclamation clearly defines



use and administration of urban and rural land. It outlines Payments of Compensation and Resettlement for Expropriation of Land holdings for Public Purposes and a grievance mechanism and dispute resolution system. The law provides that land holder have priority right to develop their land holdings according to land use plan. The law provides for the obligation to pay compensation to landholders if the holder is displaced or to provide replacement land with compensation for lost assets.

From the perspectives of Community Health and Safety, the significant national laws that set the key requirements involve the Public health proclamation 200/2000. According to the Public Health Proclamation 200/2000, Public Health Proclamation comprehensively addresses aspects of public health including among others, water quality control, waste handling and disposal, availability of toilet facilities, and the health permit and registration of different operations. The Proclamation prohibits the disposal of untreated solid or liquid hazardous wastes into water bodies or the environment that can affect human health.

To enforce these framework laws of the proclamations, the FMoH and the Food Medicine Health Care Administration and Control Authority has issued two important pieces of documents that elaborate and describe the requirements for Health Care Waste Management at national level. These are the Ethiopian Health Care Waste Management National Guideline (November 2008) and the Ethiopian Medicines Waste Management and Disposal Guideline (August 2011). These directive and guideline documents set the national minimum practices that health care facilities should apply in managing their health care wastes. On the other hand, the IFC EHS (World Bank Group) and WHO guidelines related to health care facilities are usually considered as benchmark International Good Practice Standards. More specifically, in relation to the proposed project activities, the IFC EHS guideline for Healthcare Facilities appear to be directly applicable as international best practice requirements to the proposed project.

A comparison of the detailed requirements of the International best practice standards (i.e. the WHO and IFC EHS guidelines indicated above) with the national guidelines for health care waste management reveals that there is a great similarity in the set of requirements for the approaches, methods and procedures outlined for managing the health care wastes. The health care waste minimization, segregation, colour coding & collection, packaging, storage, sterilization, handling, transport and final disposal requirements of the FMoH Health Care Waste Management National Guideline are broadly identical to those specified in different sections of the WHO and IFC EHS

guidelines. Therefore, a comparison of the National HCWM requirements with the International best practice standards do not show any major gap in addressing the proper handling of the highly infectious waste anticipated to be generated by the proposed project activities.

Regarding emission levels released from Health Care Facilities, the above-mentioned national guideline for HCW doesn't set standards for emission released from medical waste incinerators and associated wastewater treatment facilities. As a matter of fact, there is no such emission standard for medical waste incinerators and effluent treatment plants set by the competent national authorities (i.e. EPFCCC, MoH). However, there are such standards that can be drawn from International best practices. For example, according to the UNEP-POPs-BAT/BEP Guideline for Waste Incinerators, it is stated that with a suitable combination of primary and secondary measures, PCDD/PCDF performance levels in air emissions no higher than 0.1 ng I-TEQ/Nm<sup>3</sup> (at 11% O<sub>2</sub>) are associated with best available techniques. It is also noted that best available techniques for discharges of waste water from effluent treatment plants are associated with PCDD/PCDF concentration levels well below 0.1 ng I-TEQ/l. accordingly, this is taken as the performance standards for air effluent emissions from incinerators and waste water treatments of HCF associated with best available techniques. On the other hand, the IFC EHS guideline for Health Care Facilities also provides emission levels for air and effluent releases as shown in the following table 4 (*Air Emission Levels for Hospital Waste Incineration Facilities*).

## **5. Environmental and Social Impacts and Mitigation Measures**

### **5.1 Positive Impacts**

Most of the impacts of Ethiopia COVID-19 Emergency Response Project will be positive and include improvements in health conditions. The project will positively impact on the prevention and control of COVID 19 disease as well as a health of the Ethiopian people through easing access to quality medical care on COVID 19 disease. Renovation of the existing facilities and construction of new centers and installation of medical equipment will enable currently the centers to provide new or improved services on COVID 19 diseases healthcare program. In addition to this enabling provision of new healthcare services and resultant increase in visiting patients may create additional short and long-term job opportunities for health professionals, janitors, security guards, etc.

### **5.2 Negative Impacts and Proposed Mitigation Measures**

#### **5.2.1 Impacts Specific to Proposed Project**

The proposed Point of Entry, quarantine, and Isolation centers for COVID-19 disease will be renovated within existing hospital compounds. Therefore, new and temporary access roads and changes in natural ground slopes and landform are unlikely to occur. Many of the negative impacts during construction will be minor, short term and localized whereas impacts from the operation activities due to the release of medical waste could be sometimes severe and long term if proper mitigation measures are not introduced to minimize them. To avoid, minimize, and/or compensate adverse impacts it is necessary to formulate mitigation measures. The mitigation measures identified in this section are general and may not be enough to address the adverse impacts of the specific sub-projects but only guide the implementing organizations and project units to identify appropriate mitigation measures. Therefore, site specific environment and social risk/impact management plan will be prepared and implemented.

#### **5.2.2 Impacts during Renovation Phase**

In the construction activity of the project impacts will be typical of any building construction works and the following are potential impacts related to the construction activities. The impacts listed below could be properly addressed if the contractors sign and collect the environmental guideline annexed to this ESMF (Annex 5)

#### **5.2.3 Impacts on Water resources**

Nearby rivers, streams and springs may be polluted and silt may be deposited in the river courses due to the renovation/construction wastes, on-site makeshift toilets, fuel and lubricant from

garages and construction machineries and sediments that may be generated due to movement of vehicles. For sites with water shortages, such impacts could overburden the already available water source for the community living around the project site. The nature of these impacts will be moderate, localized and short term.

#### **5.2.4 Mitigation Measure on Impacts of Water resources**

To minimize these impacts, construction wastes would be regularly collected and disposed off and lubricant and oil released from garages and construction machineries would be contained and properly disposed off on a site designated for this purpose. Construction and decommissioning activities may also include the generation of sanitary wastewater discharges in varying quantities depending on the number of workers involved. Adequate portable or permanent sanitation facilities serving all workers would be provided at all construction sites. Sanitary wastewater in construction and other sites would be managed using septic systems. The WBG EHS guideline recommended the septic systems to be:-

- Properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface or groundwater.
- Well maintained to allow effective operation.
- Installed in areas with sufficient soil percolation for the design wastewater loading rate.
- Installed in areas of stable soils that are nearly level, well drained, and permeable, with enough separation between the drain field and the groundwater table or other receiving waters.

#### **5.2.5 Impact on Air Quality**

Construction activities may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. A secondary source of emissions may include exhaust from diesel engines of earth moving equipment, as well as from open burning of solid waste on-site. Air pollution from vehicle emissions will be short term, moderate, and localized.

#### **5.2.6 Mitigation Measure on the Impact of Air Quality**

To minimize the Impact of on air quality, appropriate mitigation measure should be taken according to the WBG EHS guideline that techniques to consider for the reduction and control of air emissions during construction includes but not limited to:

- Dust suppression techniques would be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements. To minimize air pollution from earthmoving machineries water would be sprayed on access roads and construction sites and loose soil would be compacted and construction machinery would be regularly maintained.
- Selectively removing potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition

### **5.2.7 Impact due to Noise, vibration and Dust**

During construction, noise and vibration may be caused by the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people. This will create occupational health risks to the patients, construction workers and communities. These are risks associated with non-compliance to national labor laws. Dust, vehicular emission, noise and vibration could hamper the health of local residents, hospital community, patients and construction workers. Besides, vibrations due to movement of construction machineries could affect laboratory and hospital equipment and surrounding buildings. In addition, dust from construction could affect the quality of hospitals and laboratory diagnosis services.

### **5.2.8 Mitigation Measure on Impact due to Noise, vibration and Dust**

To minimize the Impact of noise, vibration and dust, appropriate mitigation measure should be taken. Thus, existing medical equipment would be relocated to the rooms where vibration due to construction machineries is minimal. Some of the WBG EHS guideline recommended noise reduction and control strategies include:

- Planning activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance. Construction activities during night time would be avoided.
- Using noise control devices, such as temporary noise barriers and exhaust muffling devices for combustion engines. Noise due to construction machineries would be minimized by introducing silencer to the construction machineries
- Avoiding or minimizing movement through community residence

Workers would wear ear mufflers and other safety equipment's /PPE/. Similarly, the contractor would also be advised to follow the contractor guideline indicated in the ESIA report of the project

and the consultant during construction would supervise such guideline are strictly followed by the contractor.

### **5.2.9 Traffic accident due to moving machinery**

Material haulage trucks as well as pedestrians around the construction sites may create traffic congestion and may increase of traffic accident. Vehicle traffic and use of lifting equipment in the movement of machinery and materials on a construction site may pose temporary hazards, such as physical contact, spills, dust, emissions, and noise. Heavy equipment operators have limited fields of view close to their equipment and may not see pedestrians close to the vehicle.

### **5.2.10 Mitigation Measure on Traffic accident due to moving machinery**

To minimize the Traffic accident due to moving machinery appropriate mitigation measure should be taken as per The WBG EHS guideline (i.e. sub section- moving machineries), It clearly sets techniques for the prevention and control of these impacts, these include:

- Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes, establishment of speed limits, and on-site trained flag people wearing high-visibility vests or outer clothing covering to direct traffic
- Ensuring the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle
- Ensuring moving equipment is outfitted with audible back-up alarms
- Using inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations.

### **5.2.11 Temporary disruption of Quarantine, Isolation and Point of Entry Centers**

The construction and or renovation activities of the proposed centers will be conducted in the premises of the existing facilities and the services that provide by the centers will not be closed. In addition to this, water pipes, telephone and electric cables may be interrupted due to renovation/construction. So that if activities are not properly managed, it will create risks to clients/patients and staff and it may also adversely impact on the existing day to day operation of the centers and they will experience shortages of working space. In addition to this, modifications of buildings in which medical services are provided may entail moving patients or

equipment from one area or room to another. This may cause temporary disruption in delivery of health services to patients

### **5.2.12 Mitigation for Temporary disruption of Quarantine, Isolation and Point of Entry Centers**

To minimize these types of health impacts, WBG EHS Guideline recommend measures to protect workers, patients and community from general site hazards associated with site under construction as follow:

- Restricting access to the site, through a combination of institutional and administrative controls, with a focus on high risk structures or areas depending on site-specific situations, including fencing, signage, and communication of risks to the workers, and patients as well as local community.
- Removing hazardous conditions from construction sites that cannot be controlled affectively with site access restrictions, such as covering openings to small confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials
- Make modifications of buildings in which medical services are provided before starting the construction or renovation and move equipment during out of working hours or other convenient time in consultation with staff and clients
- Ensure that the contractor would relocate water pipes, telephone and electric cables from the construction site and contingency plan would be prepared to provide water and power to the community during interruption of power and water supply to the community to minimize impact.

### **5.2.13 Risk associated with Poor Hygiene**

Poor hygiene, on the other hand, increases the risk for bacterial, viral, and parasitic infections, particularly the current pandemic disease of Corona is more associated with poor hygienic. So that serious medical conditions of COVID 19 disease that can develop on behalf of poor hygiene include gastroenteritis, food poisoning, hepatitis A, influenza, common cold, giardiasis, roundworm, and threadworm. In addition to this poor hygiene practice at Point of Entry, quarantine, and Isolation centers will make the condition worst.

#### **5.2.14 Mitigation Measure of Risk associated with Poor Hygiene:**

Utmost efforts will be made to ensure availability of adequate sanitary facilities and separation of personal hygiene areas for both sexes. If this is not possible in case of scarce resources, a schedule will be made available to ensure that women have adequate access. Ensuring menstrual hygiene products are available for girls and women during menses. Moreover, Point of Entry, quarantine, and Isolation centers will allow basic hygiene services such as hand washing facilities and toilets with adequate supply of water for people with disability.

#### **5.2.15 Potential Impacts Associated with Point of Entry, Quarantine, and Isolation Centers**

Health hazards typically associated with large development projects are those relating to poor safety practice and infectious waste management and communicable diseases (COVID 19) of most concern during Point of Entry, quarantine, and Isolation centers operation phase. Communicable diseases especially Coronavirus disease that has high rate transmission in the population and a pandemic, pose a significant public health threat worldwide, and community hazards associated with health care facility environments, particularly related to hazardous healthcare waste, and at associated waste disposal sites (e.g. landfills). Moreover, as Point of Entry, quarantine, and Isolation centers mainly provide services for COVID 19 suspect cases there might be unrecognized asymptomatic and pre-symptomatic infections likely contribute to transmission in these and other healthcare settings. The risk posed by COVID-19 depends on characteristics of the virus, including how easily it spreads between people; the severity of resulting illness; and the medical or other measures available to control the impact of the virus (for example, vaccines or medications that can treat the illness) and the relative success of these. As there are not yet vaccines or treatments for COVID-19, safety practices become the most important response strategy.

#### **5.2.16 Mitigation Measure for Risk Associated with Point of Entry, Quarantine, and Isolation Centres during Operation Phase**

During the operation phase of the centers will implement appropriate mitigation measures as follow:

- Provision of adequate training for HCWs;
- Establishing a surveillance process for acute respiratory infections potentially caused by COVID-19 virus among HCWs;



- Ensuring that HCWs and the public understand the importance of promptly seeking medical care;
- Monitoring HCW compliance with standard precautions and providing mechanisms for improvement as needed.
- Ensure that cleaning and disinfection procedures are followed consistently and correctly.
- Reduce facility risk: when possible, limit points of entry and manage visitors, screen everyone entering the facility for COVID-19 symptoms, implement source control for everyone entering the facility, regardless of symptoms.
- Isolate symptomatic patients as soon as possible: Set up separate, well-ventilated triage areas, place patients with suspected or confirmed COVID-19 in private rooms with the door closed and with private bathrooms (as possible).
- Reserve AIIRs for patients with COVID-19 undergoing aerosol generating procedures and for care of patients with pathogens transmitted by the airborne route (e.g., tuberculosis, measles, varicella).
- Protect healthcare personnel; Emphasize hand hygiene, install barriers to limit contact with patients at triage, cohort patients with COVID-19, limit the numbers of staff providing their care, prioritize respirators for aerosol generating procedures (ensuring an adequate patient-to-staff ratio
- Performing hand hygiene frequently with an alcohol-based hand rub
- Avoiding touching your eyes, nose, and mouth;
- Practicing respiratory hygiene
- Use Personal Protective Equipment (PPE); wearing a medical mask;
- Maintaining social distance (a minimum of 1 metre).
- appropriate personal protective equipment, or other physical containment devices must be used whenever: procedures with a potential for creating infectious aerosols or splashes are conducted.
- Eye and face protection (goggles, mask, face shield or other splatter guard) is used for anticipated splashes or sprays of infectious or other hazardous materials
- Gloves must be worn to protect hands from exposure to hazardous materials. Glove selection would be based on an appropriate risk assessment.

## **5.2.17 Occupational Health and Safety on Point of Entry, Isolation and Treatment Centres**

Occupational health and safety impacts during the operation of the laboratory, Point of Entry, Isolation and Treatment Centres are common. Health and safety hazards in health facilities may affect healthcare providers, cleaning and other supporting staff personnel, and workers involved in waste management handling, treatment and disposal. Typical hazards which would be prevented with proper safety gear and practices include:

- Exposure to infections and diseases (blood-borne pathogens, and other potential infectious materials)
- Exposure to hazardous materials and or waste
- Fire safety

General health and safety hazards occurring in HCFs include manual handling injuries, such as sprains and strains from lifting materials, falls, trips, and slips; injuries caused by moving objects; and mental stress. Moreover, as current pandemic of COVID 19, Health workers are at the front line of any outbreak response and as such are exposed to hazards that put them at risk of infection with an outbreak pathogen (COVID-19). Hazards include pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout, stigma, and physical and psychological violence.

Moreover, as Quarantine, Isolation and Treatment and Point of Entry major function are to provide services on screening, isolation and treatment of COVID 19 Suspects and cases, they could be a potential source of COVID 19 infectious waste in gaseous, liquid or solid forms. These could pose unsafe conditions for healthcare staff and the communities. Of particular concern are janitors handling infectious waste (including sharps) without adequate protective equipment, storage of sharps in containers that are not puncture-proof and management of chemicals waste at the centers. While some OHS risks will be borne by new equipment or services introduced after renovation or construct of the centers, most other effects are existing (hence cumulative) and would only be exacerbated by increased scale of COVID 19 services. Infection and Prevention Control Protocol described in annex 3.

### **5.2.17.1 Exposure to Infections / Diseases**

Current evidence suggests that the virus that causes COVID-19 is transmitted between people through close contact and droplets. People most at risk of acquiring the disease are those who are in contact with or care for patients with COVID-19. This inevitably places health care workers

(HCWs) at high risk of infection. Protecting HCWs is of paramount importance to healthcare system. Understanding how HCW exposure to COVID 19 virus translates into risk of infection is critical for informing infection prevention and control (IPC) recommendations. In addition to this, healthcare providers 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.

Therefore, it is important that all procedures incorporate practices that minimize the creation of splashes and aerosols. Whenever aerosol generating procedures are used, the use of engineering controls and PPE greatly reduces exposure to aerosols and

#### **5.2.17.2 Exposure to Hazardous Materials and Waste**

Healthcare 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 occupational health and safety guidance provided in the General EHS Guidelines.

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 materials such as flammable liquids, solid materials and loose electrical connections etc could cause serious fire incidents in Point of Entry, Isolation and Treatment Centres Flammable liquids are volatile in nature and liberate vapours at ambient or elevated temperatures that can ignite in presence of sparks, hot plates, naked flames or other hot surfaces. A breakdown in the containment of pathogenic organisms may be the indirect result of fire, or electrical accidents. It is therefore essential to maintain high standards of safety in these fields in any Point of Entry, Isolation and Treatment Centres and all safety equipment should be available and staff should be also trained fire accident prevention and accident management

#### **5.2.18 Mitigation Measures for Occupational Health and Safety Risks**

The safety or Infection Prevention and Control officer must be tailored to reflect the specific Occupational Health and Safety hazards present in the facility. The project activities will be carried out by 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. Health personnel must receive training regarding the safety standard, Infection Prevention and Control, and other safety practices, including exposure detection, physical and health hazards associated with chemicals, and protective measures.

- Develop and maintain a written hazard communication program for the workplace, including lists of hazardous chemicals present; labelling of containers of chemicals in the workplace, as well as of containers of chemicals being shipped to other workplaces; preparation and distribution of material safety data sheets (MSDSs) to workers and downstream employers; and
- Provide training for staff regarding hazards of chemicals and protective measures.
- Employers must make MSDSs available to workers. They must also train their workers in the hazards caused by the chemicals workers are exposed to and the appropriate protective measures that must be used when handling the chemicals.
- All workers with reasonably anticipated” exposure to blood or other potentially infectious materials (OPIM).
- Provide information and training before the worker begins work that may involve occupational on Infections Prevention and Control
- Provide vaccine for a worker such as hepatitis B vaccination and PEP services
- The Blood borne Pathogens standard also requires advance
- Provide information and training for all workers how to handle COVID 19, human immunodeficiency virus (HIV) or other high infectious microorganisms
- Employer must develop a written exposure control plan (ECP) to provide a safe and healthy work environment,
- Provide Training how to use and care for PPE properly, and the limitations of PPE for workers with occupational exposures.
- Avail all the Personal Protective Equipment (PPE) based risk assessment and occupational exposures.
- Employers to ensure that each affected worker uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.
- The employer must provide respirators that are appropriate and suitable for the purpose intended. And selection of respirators for use in the workplace;

- Arrange medical evaluations of workers required to use respirators; fit testing for tight-fitting respirators; proper use of respirators during routine and emergency situations;
- When workers are using large equipment, their potential exposure to electrical hazards associated with this equipment must be assessed by employers and appropriate precautions taken.
- Worker exposure to wet floors or spills and clutter can lead to slips/trips/falls and other possible injuries and employers must assure that these hazards are minimized.
- employers to implement appropriate protective measures to assure the safety of workers due to fire accident
- To minimize the transmission of Covid-19 virus to personnel working at each facility should be actively screened for and tested for COVID 19 and they should practices the following:
  - Performing hand hygiene frequently with an alcohol-based hand rub
  - Avoiding touching your eyes, nose, and mouth;
  - Practicing respiratory hygiene
  - Use Personal Protective Equipment (PPE); wearing a medical mask;
  - Maintaining social distance (a minimum of 1 metre).

### **5.2.19 Community Health and Safety**

Community health and safety issues during the construction, operations, and decommissioning of HCFs are generally common to those of most industrial facilities. Health hazards typically associated with large development projects are those relating to poor hazardous/ infectious waste management and communicable diseases of most concern during the laboratory, Point of Entry, quarantine, and Isolation centres operation phase. Communicable diseases pose a significant public health threat worldwide, and community hazards associated with health care facility environments, particularly related to hazardous healthcare waste, necessitate that members of the public receive adequate information regarding potential infection hazards within the facility, and at associated waste disposal sites (e.g. landfills). As COVID-19 is transmitted between people through close contact and droplets, people most at risk of acquiring the disease are those who are in contact with or care for patients with COVID-19. Besides, the operation of Point of Entry, quarantine, and Isolation centres operation also might have high risk if they do not manage their waste properly.

### **5.2.20 Mitigation Measure for Risk associated with Community Health and Safety**

To minimize the transmission of Covid-19 virus and other communicable diseases to the community there will be health education system on the transmission and prevention mechanisms of Covid-19 virus and other communicable diseases as well as actively screened for and tested for COVID 19 to minimize the transmission of virus to people. In addition to this, the following practice are important:

- Performing hand hygiene frequently with an alcohol-based hand rub
- Avoiding touching your eyes, nose, and mouth;
- Practicing respiratory hygiene
- Use Personal Protective Equipment (PPE) such as wearing a medical mask;
- Maintaining social distance (a minimum of 1 metre)

The operation of quarantine and isolation centers needs to be implemented in a way that both, the wider public, as well as the quarantined patients are treated in line with international best practice as outlined in WHO guidelines referenced under ESS1. This includes the following requirements:

- Infrastructure: there is no universal guidance regarding the infrastructure for a quarantine facility, but space should be respected not to further enhance potential transmission and the living placement of those quarantined should be recorded for potential follow up in case of illness
- Accommodation and supplies: quarantined persons should be provided with adequate food and water, appropriate accommodation including sleeping arrangements and clothing, protection for baggage and other possessions, appropriate medical treatment, means of necessary communication if possible, in a language that they can understand and other appropriate assistance. Further information is also included in the CDC Interim Infection Prevention and Control Recommendations for patients with confirmed COVID-19 or persons under investigation for COVID-19 in Healthcare Settings.
- Communication: establish appropriate communication channels to avoid panic and to provide appropriate health messaging so those quarantined can timely seek appropriate care when developing symptoms.
- Respect and Dignity: quarantined persons should be treated, with respect for their dignity, human rights and fundamental freedoms and minimize any discomfort or distress associated with such measures, including by treating all quarantined persons with courtesy and respect; taking into consideration the gender, sociocultural, ethnic or

religious concerns of quarantined persons. The project will ensure that any security personnel operating for quarantine and isolation centers and screening posts follow strict rules of engagement and avoid any escalation

- The project will ensure the avoidance of any form of Sexual Exploitation and Abuse by relying on the WHO Code of Ethics and Professional conduct for all workers in the quarantine facilities as well as the provision of gender-sensitive infrastructure such as segregated toilets and enough light in quarantine and isolation centers. The project will also ensure via the above noted provisions, including stakeholder engagement, that quarantine and isolation centers and screening posts are operated effectively throughout the country, including in remote and border areas, without aggravating potential conflicts between different groups, including host communities and refugees/IDPs.
- In case quarantine and isolation centers are to be protected by security personnel, it will be ensured that the security personnel follow strict rules of engagement and avoid any escalation of situation, taking into consideration the above noted needs of quarantined persons as well as the potential stress related to it.

#### **5.2.21 Release of Infectious material from quarantine, Isolation and Treatment centers**

In the quarantine, Isolation and Treatment center, there would be infectious material including waste generated and there might be release to the environment accidentally and intentionally. In addition to this some patient will escape from the facility without permission the healthcare personnel and they will transmit COVID 19 to community. Thus, these might be potential means for infectious agents to infect the community and possibly cause human health impacts.

#### **5.2.22 Mitigation Measures for Release of Infectious material from quarantine, Isolation and Treatment centres**

The following mitigation strategies would be implemented to prevent Release of Infectious material and waste management from quarantine, Isolation and Treatment centres

- Health personnel working in quarantine, Isolation and Treatment center would receive specific training in handling infectious pathogenic and waste management and would be supervised by IPC officer in handling infectious materials, associated procedures and waste management.
- Ensure facility will ensure the practices are in place to minimize exposures to respiratory pathogens including SARS-CoV-2, the virus that causes COVID-19.

- Ensure all COVID 19 patients are isolated and control their movement in the healthcare facility including at quarantine centres
- Manage Visitor Access and Movement within and outside the Facility and develop procedures for monitoring, managing and training all visitors,
- All visitors should perform frequent hand hygiene and follow respiratory hygiene and cough etiquette precautions while in the facility, especially common areas.
- Passively screen visitors for symptoms of acute respiratory illness before entering the healthcare facility and in the community
- Implementing administrative controls: Administrative controls and policies for the prevention and control of transmission of COVID-19 due to the healthcare setting so that the Administrative controls ensure no one entry or get out from the facility without permission of the security
- Use environmental and engineering controls system to prevent release of COVID 19 from healthcare to the community
- Ensure healthcare waste are properly collected, treated and disposed
- Provide training to the community on the infection prevention

### **5.2.23 Impact of Improper Healthcare Waste Management**

During the operational phase of the Point of Entry, Quarantine, and Isolation Centers, it is anticipated that solid and liquid wastes are generated on a daily basis. Mainly the wastes to be generated will be domestic waste and infectious/hazardous waste. Since laboratory and centers activities involve certain medical examinations and also there will be a need for usage of different sorts of chemicals or reagents, it can be predicted that different types of hazardous wastes would be generated. Therefore, improper and inadequate waste decontamination and disposal can cause public health risks due to environmental pollution (i.e. impaired air quality, contamination of water courses) and infections when people rummage through improperly dumped infectious waste.

The National FMOH guideline for Healthcare waste management classifies Infectious waste to consist of the following: sharps (needles, scalpels, etc.), laboratory cultures and stocks, blood and blood products, pathological wastes, and wastes generated from patients in isolation because they are known to have infectious diseases. Medical wastes can also include chemicals and other hazardous materials used in patient diagnosis and treatment. These constitute a grave risk, if they are not properly handled, treated or disposed and otherwise are allowed to get mixed with other municipal waste. The types of healthcare waste expected from the Point of Entry, Quarantine,



and treatment and Isolation Centers will be sharps, blood and blood products, pathological wastes, liquid hazardous/infectious, chemical waste and nonhazardous wastes see below table 5 for expected wastes from the Point of Entry, Quarantine, and Treatment and Isolation Centers.

Improper waste collection and accumulation of waste can be cause of infection and may lead to occupational hazard. It is therefore, the collection of waste would be made at least once in 24 hours, and it would be done in such a way to minimize nuisance of smell and dust during collection and all the waste collected must be carried away from the storage site to an approved disposal point. In addition laboratory and centers would have standard operation and decontamination procedure manuals and clearly displayed at appropriate point(s) with the facility.

**Table 5: Waste Expected from the Point of Entry, Quarantine, and Treatment and Isolation Centers**

Type of waste	Waste description
Biohazard solid waste	Items contaminated with blood and body fluids, including cotton, infected blood, patient samples and specimens
Microbiology Waste	Cultures; stocks and microorganisms; dishes and devices used for culture
Pathological waste	Human tissues, organs or fluids; body parts; unused blood products.
Sharps	Needles; syringes; scalpels; blades; glass, etc.
Disposables	Disposables other than sharps, e.g. Gloves, valves, and any other infected plastics
Liquid Waste (hazards & infectious)	Waste generated in the laboratories hazardous and infectious liquid
Chemical Waste	Chemicals used in the production of biological, laboratory reagents; film developer; disinfectants that are expired or no longer needed; solvents; outdated, contaminated and discarded chemicals

### 5.2.24 Mitigation Measure for Impact of Improper Healthcare Waste Management

As the Impact of Improper Healthcare Waste Management high in staff, the community and environment, appropriate technologies and methods would be used to treat and dispose risks due to healthcare waste. The proposed laboratories, Point of Entry, Isolation and Treatment Centres would adhere to the application of the following guidelines to minimize impact emanating from healthcare waste. The basic principles and practices for effective healthcare waste management described in Chapter six and laboratories and all centres should implemented according to the services they provided. The following major mitigation measures are highlighted below.

- Ensure that each HCF minimizes their waste generation (all classes of wastes) to the barest possible minimum.
- Follow waste collection guideline that is extremely important particularly to avoid over spilling of waste out of collection containers.

- Segregate Waste which is a proper segregation of waste at source generation (at each medical unit/department) is essential, efficient and effective in managing HCW.
- Infectious waste would be contained from its point of origin to the point at which it is treated and no longer infectious.
- All waste bags or containers would be labelled with basic information in the local language of the area where the HCF is located and or in English.
- Healthcare Waste should be treated according to The Ethiopia Healthcare Waste Management National Guideline 2008 categorises HCW in Ethiopia into nine classes. The treatment are described at section 5.4 guideline for waste treatment and disposal.
  - Healthcare waste should be disposed after treatment and the following practice should be applied when disposing healthcare waste
  - The recommended types of final disposal methods are: conventional sewer system for discharge of treated liquids and grounded solids; or landfill disposal of treated solids and incinerator ash.
  - The Ministry responsible for environment and MOH would ensure that only treated infectious wastes are buried in landfills.
  - Burial sites would be fenced to prevent access by community members or animals. Burial would not be used in areas with high water tables. The bottom of the pit would be at least 1.5 meters higher than the groundwater level.
  - Facilities would secure the services of reputable waste handlers to ensure, to the extent possible, that final disposal of health care waste is performed according to applicable federal and local regulations.

### **5.2.25 Risk of Gender Based Violence**

According to WHO report, over 35% of women globally will face sexual and/or intimate partner violence in their lifetime (WHO, 2010). The presence of armed actors, displacement, broken social and protective networks and lack of services create an environment where women are at acute risk. The health consequences of violence against women include injuries, untimed/unwanted pregnancy, sexually transmitted infections (STIs) including HIV, pelvic pain, urinary tract infections, fistula, genital injuries, pregnancy complications, and chronic conditions. Mental health

impacts for survivors of gender-based violence include Post Traumatic Stress Disorder, depression, anxiety, substance misuse, self-harm and suicidal behaviour, and sleep disturbances. In addition, the pandemic of COVID 19 also makes more women and children at risks. In this fact, the following risk might be happened during the implementation of the project:

- Projects with a large influx of workers may increase the demand for sex work—even increase the risk for trafficking of women for the purposes of sex work—or the risk of forced early marriage in a community where marriage to an employed man is seen as the best livelihood strategy for an adolescent girl.
- Risk of incidents of sex between laborers and minors, even when it is not transactional, can also increase.
- Abusive behavior can occur not only between project-related staff and those living in and around the project site, but also within the homes of those affected by the project.
- Increased risk of violence is experienced when women are confronted with traveling long distances to access work opportunities or forced to travel at night.

#### **5.2.26 Mitigation Measures of Gender Based Violence**

The Ministry of Health works to mainstream gender values and strategies during program design, planning and implantation. Similar, regional health bureau and operate in other government structures. This will allow Government of Ethiopia and, particular the Ministry to monitor factors that may predispose individuals for violence and sexual harassment. GBV-related reports will be analyses and risks will be assessed periodically. Contractors will be required to adopt GBV risk mitigation measures renovation/construction undertaking. Moreover during the operation phase all facilities should follow and implement the national and international guideline to avoid GBV.

- Oversight through an independent Third Party Monitor organization for monitoring the implementation of the GBV Action Plan and ensuring all parties are meeting their responsibilities
- Develop a GBV Action plan including the Accountability and Response Framework as part of the Environmental and Social Management Plan during the project implementation

The Ministry promotes a zero-tolerance policy for sexual harassment, and to deliver periodic training for target health care workers on preventing and responding to GBV and associated physical, psychosocial and mental health conditions. Health facilities supported under this grant will ensure continuity of routine sexual and reproductive health services for women and their families. Additionally, GBV services and other legal protection and hotlines services are available

free of charge. Health care leaders and managers should ensure protective services for such individuals by availing protective gears and psychosocial services.

During these period, care providers will be alerted/trained on risks of GBV and mental breakdown and information exchange for notifying GBV incidents at the quarantine sites particularly among women, children and people with disability and special needs. In Point of Entry, quarantine, and Isolation centers, will have gender segregated facilities including separate washrooms and adequate light. Moreover, the command chain of law enforcement officers will be alerted on GBV incidents and manage sexual harassment cases. It is also encouraged health professional and security staffs to be composed of both sexes so as to help victims of sexual harassment and GBV to freely report incidents and ensuring confidentiality. Any service provider with incident report will notify to the Point of Entry, quarantine, and Isolation centers supervisor/ coordinator. The Point of Entry, quarantine, and Isolation centers supervisors/ coordinators will ensure that the appropriate care is provided to the victim and report the case to the Protection Team.

During stay at home orders, media alerts and educational messages will be aired for community to limit domestic GBV that may rise because of factors such as decrease in household income or role-shift in decision making to one gender). When people with disabilities are isolated in quarantine and isolation centers translation, care and support will be availed using other support and network mechanisms.

### **5.2.27 Risk associated with disability**

According to the global report, an estimated 15% of the world's population live with some form of disability, yet they are among the most vulnerable and neglected in any type of emergency. People with disabilities are disproportionately affected in emergencies and experience particularly high rates of mortality in these contexts (WHO 2016). Emergencies can increase the vulnerability of people with disabilities, as people with disabilities may be less able to protect themselves from hazards. As the current pandemic of COVID 19 disease, people with disability are more at risk, moreover, workers with disability are more at risk during renovation due to shortage of PPE, hygiene facilities (toilet, bathing, dressing and hand wash facility). Furthermore, since facilities under renovation will not be closed, they will experience shortages of working space, it will create risks to clients especially for people with disability.

### **5.2.28 Mitigation Measure for Risk associated with disability**

To minimize these types of health impacts on people with disability, the WHO Guidance note on disability and emergency risk management for health recommend measures to protect People with disability from hazards associated with site under construction as follow:

- Conduct site specific risk assessment for prevention, preparedness, and response,
- Actively engaging people with disabilities in emergency risk management and promote self-help and raise disability awareness on COVID 19 disease
- Ensure equitable access for health and related services, such as hand washing facilities and toilets with adequate supply of water
- The construction supervisor will monitor good construction practices such as the following, and report any deviation:
  - Stairs should be constructed in consideration area for staff and clients of people with disabilities (for those who walk and use wheel chair). To avoid any gender based violence the isolation and quarantine sites should have segregated areas, including toilets, bathing and dressing, and adequate lighting for safety.
  - Sign language displays and audio of messages, signs and directions should be available to address people with hearing and sight loss.
  - Protective gears should be made available for those who are going to participate in the construction and preparation of sites.
  - Avoid crowded environments to the maximum extent possible and minimize physical contact with other people. Consider
  - Staff and volunteers are often uncertain about how to engage with people with disabilities. In addition, carers of people with disabilities may lack knowledge and information about the appropriate and effective actions they could take in emergency contexts to support people with disabilities, particularly in resource-poor settings.
  - To avoid any gender based violence the isolation and quarantine sites should have segregated areas, including toilets, bathing and dressing, and adequate lighting for safety. The sites should also have a separate triage and admission rooms for women and children
  - Protective gears should be made available for those who are going to participate in the construction and preparation of sites.

### **5.2.29 Risk of Child labor and Forced Labor**

The child labour is defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development. It refers to work that: is mentally, physically, socially or morally dangerous and harmful to children; and/or interferes with their schooling. The worst forms of child labour involve children being enslaved, separated from their families, exposed to serious hazards and illnesses and/or left to fend for themselves on the streets of large cities often at a very early age. Moreover, the COVID-19 pandemic has increased the vulnerability of those children already at risk as growing economic vulnerability will increase the threat of child labour, child trafficking, and sexual exploitation. Projects with a large the demand of labor during construction, contractor will hire children with cheap labor cost. Moreover, the projects with a large influx of workers may increase the demand for sex work resulting for trafficking of children for sex work.

Moreover, forced labour can be understood as work that is performed involuntarily and under the menace of any penalty. It refers to situations in which persons are coerced to work through the use of violence or intimidation, or by more subtle means such as manipulated debt, retention of identity papers or threats of denunciation to immigration authorities. According to recent estimates, there are 24.9 million people are estimated to be in conditions of forced labour around the world, including 16 million people in the private sector. The forced labour disproportionately impacts women and children who are thought to make more victims at the community. A recent study by Oxfam showed that women are overwhelmingly concentrated in the worst jobs, work in poor conditions, and are far more likely to be food insecure than men as a result of low wages and debt (Oxfam 2018).

- Address procurement systems, including requirements to establish controls over hiring and procurement services including outsourcing and engagement of contractors.
- Explore how organization/contractors can operate in a socially responsible manner.
- Provide guidance to organizations on integrating sustainability in hiring.
- Ensure that employers/contractors should have a system of human resource management according to Ethiopian government labor law, which is free from workers subjected to exploitative recruitment practices, Work and life under duress, and Impossibility of leaving an employer.

### **5.2.30 Mitigation Measure for Risk of Child labor and Forced Labor**

- Conduct awareness creation workshop at the community and project workers on impact of child labour
- Implement strictly labour regulation and review the hiring policy and procedures
- Expand public education and awareness campaigns on violence against children, including prevention, such as parenting tips to prevent child maltreatment, ways to identify warning signs of potential violence at home, how to access services, and how a neighbour or friend can assist someone experiencing abuse.
- Address procurement systems, including requirements to establish controls over hiring and procurement services including outsourcing and engagement of contractors.
- Explore how organization/contractors can operate in a socially responsible manner.
- Provide guidance to organizations on integrating sustainability in hiring.
- Ensure that employers/contractors should have a system of human resource management according to Ethiopian government labor law, which is free from workers subjected to exploitative recruitment practices, Work and life under duress, and Impossibility of leaving an employer.

### **5.2.31 Potential impacts on Sub-Saharan African Historically Underserved Traditional Local Communities**

Since the project activities could be rollout out throughout the country, it is likely that it may affect people meeting the criteria of ESS7, especially in the emerging regions and potentially pastoralists at its borders. This project will therefore ensure respect of human rights, dignity, aspirations, identity, culture and livelihoods of Sub-Saharan African Historically Underserved Traditional Local Communities (SSAHUTLC) and avoid adverse impacts on them or, when avoidance is not possible, minimize, mitigate or compensate for such impacts. This client will ensure this via the Project's communication and outreach strategy as outlined under ESS10: and will also ensure that such communities are appropriately informed and can share in the benefits of the project in an inclusive and culturally appropriate manner (i.e. prevention and treatment). In case where SSAHUTLC communities will be addressed by quarantine provisions, site-specific approaches will ensure adequate consideration of their specific cultural needs, to the satisfaction of the Bank. The project will exclude any activities which would require FPIC.

### **5.2.32 Impacts during decommissioning**

Decommissioning entails closure of the auxiliary facilities and services such as quarry mines, construction materials storage facilities, leftover materials (sand, cement, iron bars etc.). Decommissioning impacts for a project of this nature are likely to be minor, localised and short term. To minimize impacts of the decommissioning activities it is important to prepare an environmental management plan that will guide the contractor on how to safely demolish the laboratory building and Point of Entry, quarantine, and Isolation and treatment centres facilities to safely dispose demolished wastes. According to this plan the contractor at the time of demolishing and dismantling the laboratory and Point of Entry, quarantine, and Isolation and treatment centers facilities is expected to fence the site to prevent the site from being accessed by humans and animals and all workers should use appropriate PPE.

### **5.3 Infection Prevention and Control in COVID-19 facilities**

According to current evidence, Coronavirus disease (COVID-19) is transmitted between people through respiratory droplets and contact routes (Liu J, et al. 2020). Droplet transmission occurs when a person is in close contact (within 1 m) with someone who has respiratory symptoms (e.g. coughing or sneezing,) and is therefore at risk of having his/her mucosae (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets (which are generally considered to be > 5-10 µm in diameter). Droplet transmission may also occur through fomites in the immediate environment around the infected person (Ong et al. 2020).<sup>7</sup> Therefore, transmission of the COVID-19 virus can occur by direct contact with infected people and indirect contact with surfaces in the immediate environment or with objects used on the infected person (e.g. stethoscope or thermometer).

Airborne transmission is different from droplet transmission as it refers to the presence of microbes within droplet nuclei, which are generally considered to be particles < 5µm in diameter, and which result from the evaporation of larger droplets or exist within dust particles. They may remain in the air for long periods of time and be transmitted to others over distances greater than 1 m. In the context of COVID-19, airborne transmission may be possible in specific circumstances and settings in which procedures that generate aerosols are performed (i.e. endotracheal intubation, bronchoscopy, open suctioning, administration of nebulized treatment, manual ventilation before intubation, turning the patient to the prone position, disconnecting the patient from the ventilator, non-invasive positive-pressure ventilation, tracheostomy, and cardiopulmonary resuscitation).



Thus, the following recommendation for infection prevention of COVID-19 disease adopted from WHO and CDC will be implemented at Point of Entry (POE), isolation and treatment centers for COVID-19 disease. Annex 3 shows the template for preparation of site-specific infection control and waste management plan. Besides, a protocol for infection prevention and control has been included in Annex 3. Both annexes have been adopted from the World Bank streamlined COVID-19 ESMF template.

### **5.3.1 Minimize Chance for Exposures**

Ensure facility will ensures the practices are in place to minimize exposures to respiratory pathogens including SARS-CoV-2, the virus that causes COVID-19. Measures should be implemented before patient arrival, upon arrival, throughout the duration of the patient's visit, and until the patient's room is cleaned and disinfected.

Ensure facility will:

- Consider limiting points of entry to the facility.
- Take steps to ensure all persons with symptoms of COVID-19 or other respiratory infection (e.g., fever, cough) adhere to respiratory hygiene and cough etiquette, hand hygiene, and triage procedures throughout the duration of the visit.
  - Post visual (e.g., signs, posters) at the entrance and in strategic places (e.g., waiting areas, elevators, cafeterias) to provide patients and HCP with instructions (in appropriate languages) about hand hygiene, respiratory hygiene, and cough etiquette.
  - Instructions should include how to use tissues to cover nose and mouth when coughing or sneezing, to dispose of tissues and contaminated items in waste receptacles, and how and when to perform hand hygiene.
  - Provide supplies for respiratory hygiene and cough etiquette, including alcohol-based hand rub (ABHR) with 60-95% alcohol, tissues, and no-touch receptacles for disposal, at healthcare facility entrances, waiting rooms, and patient check-ins.
  - Install physical barriers (e.g., glass or plastic windows) at reception areas to limit close contact between triage personnel and potentially infectious patients.
  - Consider establishing triage stations outside the facility to screen patients before they enter.
- Ensure rapid safe triage and isolation of patients with symptoms of suspected COVID-19 or other respiratory infection (e.g., fever, cough).
  - Prioritize triage of patients with respiratory symptoms.

- Triage personnel should have a supply of facemasks and tissues for patients with symptoms of respiratory infection. These should be provided to patients with symptoms of respiratory infection at check-in. Source control (putting a facemask over the mouth and nose of a symptomatic patient) can help to prevent transmission to others.
- Ensure that, at the time of patient check-in, all patients are asked about the presence of symptoms of a respiratory infection and history of travel to areas experiencing transmission of COVID-19 or contact with possible COVID-19 patients.
- Isolate the patient in an examination room with the door closed. If an examination room is not readily available ensure the patient is not allowed to wait among other patients seeking care.
  - Identify a separate, well-ventilated space that allows waiting patients to be separated by 6 or more feet, with easy access to respiratory hygiene supplies.
  - In some settings, patients might opt to wait in a personal vehicle or outside the healthcare facility where they can be contacted by mobile phone when it is their turn to be evaluated.
- Incorporate questions about new onset of respiratory symptoms into daily assessments of all admitted patients. Monitor for and evaluate all new fevers and respiratory illnesses among patients.
- Place any patient with unexplained fever or respiratory symptoms on appropriate Transmission-Based Precautions and evaluate.

### **5.3.2 Adhere to Standard and Transmission-Based Precautions**

Standard Precautions assume that every person is potentially infected or colonized with a pathogen that could be transmitted in the healthcare setting. Elements of Standard Precautions that apply to patients with respiratory infections, including COVID-19, are summarized below.

- Attention should be paid to training and proper donning (putting on), doffing (taking off), and disposal of any PPE.
- This document does not emphasize all aspects of Standard Precautions (e.g., injection safety) that are required for all patient care;
- HCP who enter the room of a patient with known or suspected COVID-19 should adhere to Standard Precautions and use a respirator or facemask, gown, gloves, and eye protection.
- When available, respirators (instead of facemasks) are preferred; they should be prioritized for situations where respiratory protection is most important and the care of

patients with pathogens requiring Airborne Precautions (e.g., tuberculosis, measles, varicella).

### **Hand Hygiene**

- HCP should perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and after removing PPE, including gloves. Hand hygiene after removing PPE is particularly important to remove any pathogens that might have been transferred to bare hands during the removal process.
- HCP should perform hand hygiene by using ABHR with 60-95% alcohol or washing hands with soap and water for at least 20 seconds. If hands are visibly soiled, use soap and water before returning to ABHR.
- Healthcare facilities should ensure that hand hygiene supplies are readily available to all personnel in every care location.

### **Personal Protective Equipment**

- Employers should select appropriate PPE and HCP must receive training on and demonstrate an understanding of:
  - when to use PPE
  - what PPE is necessary
  - how to properly don, use, and doff PPE in a manner to prevent self-contamination
  - how to properly dispose of or disinfect and maintain PPE
  - the limitations of PPE.

Any reusable PPE must be properly cleaned, decontaminated, and maintained after and between uses. Facilities should have policies and procedures describing a recommended sequence for safely donning and doffing PPE. The PPE recommended when caring for a patient with known or suspected COVID-19 includes:

- **Respirator or Facemask**
  - Put on a respirator or facemask (if a respirator is not available) before entry into the patient room or care area.
  - N95 respirators or respirators that offer a higher level of protection should be used instead of a facemask when performing or present for an aerosol-generating procedure (See Section 4). See appendix for respirator definition.

- Disposable respirators and facemasks should be removed and discarded after exiting the patient's room or care area and closing the door. Perform hand hygiene after discarding the respirator or facemask.
- If reusable respirators (e.g., powered air purifying respirators [PAPRs]) are used, they must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use.
- When there is adequate respirators, facilities should use of respirators for patients with known or suspected COVID-19.

### **Eye Protection**

- Put on eye protection (i.e., goggles or a disposable face shield that covers the front and sides of the face) upon entry to the patient room or care area. Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
- Remove eye protection before leaving the patient room or care area.
- Reusable eye protection (e.g., goggles) must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use. Disposable eye protection should be discarded after use.

### **Gloves**

- Put on clean, non-sterile gloves upon entry into the patient room or care area. Change gloves if they become torn or heavily contaminated.
- Remove and discard gloves when leaving the patient room or care area, and immediately perform hand hygiene.

### **Gowns**

- Put on a clean isolation gown upon entry into the patient room or area. Change the gown if it becomes soiled.
- Remove and discard the gown in a dedicated container for waste or linen before leaving the patient room or care area. Disposable gowns should be discarded after use. Cloth gowns should be laundered after each use.
- If there are shortages of gowns, facility should prioritize to:
  - aerosol-generating procedures

- care activities where splashes and sprays are anticipated
- high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of HCP.

### **5.3.3 Patient Care**

- For patients with COVID-19 or other respiratory infections, evaluate need for hospitalization. If hospitalization is not medically necessary, home care is preferable if the individual's situation allows.
- If admitted, place a patient with known or suspected COVID-19 in a single-person room with the door closed. The patient should have a dedicated bathroom.
- As a measure to limit HCP exposure and conserve PPE, facilities could consider designating entire units within the facility, with dedicated HCP, to care for known or suspected COVID-19 patients. Dedicated means that HCP are assigned to care only for these patients during their shift.
  - During times of limited access to respirators or facemasks, facilities could consider having HCP remove only gloves and gowns (if used) and perform hand hygiene between patients with the same diagnosis (e.g., confirmed COVID-19) while continuing to wear the same eye protection and respirator or facemask (i.e., extended use).
- Limit transport and movement of the patient outside of the room to medically essential purposes.
  - Consider providing portable x-ray equipment in patient cohort areas to reduce the need for patient transport.
- To the extent possible, patients with known or suspected COVID-19 should be housed in the same room for the duration of their stay in the facility
- Patients should wear a facemask to contain secretions during transport. If patients cannot tolerate a facemask or one is not available, they should use tissues to cover their mouth and nose.
- Personnel entering the room should use PPE
- Whenever possible, perform procedures/tests in the patient's room.
- Once the patient has been discharged or transferred, HCP, including environmental services personnel, should refrain from entering the vacated room until sufficient time has elapsed for enough air changes to remove potentially infectious particles. After this time

has elapsed, the room should undergo appropriate cleaning and surface disinfection before it is returned to routine use.

#### **5.3.4 Take Precautions When Performing Aerosol-Generating Procedures**

- Some procedures performed on patient with known or suspected COVID-19 could generate infectious aerosols. In particular, procedures that are likely to induce coughing (e.g., sputum induction, open suctioning of airways) should be performed cautiously and avoided if possible.
- If performed, the following should occur:
  - HCP in the room should wear an N95 or higher-level respirator, eye protection, gloves, and a gown.
  - The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for the procedure.
  - AGPs should ideally take place in an AIIR.
  - Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.

#### **5.3.5 Collection of Diagnostic Respiratory Specimens**

- When collecting diagnostic respiratory specimens (e.g., nasopharyngeal swab) from a possible COVID-19 patient, the following should occur:
  - HCP in the room should wear an N-95 or higher-level respirator (or facemask if a respirator is not available), eye protection, gloves, and a gown.
  - The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for specimen collection.
  - Specimen collection should be performed in a normal examination room with the door closed.
  - Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.

#### **5.3.6 Manage Visitor Access and Movement within the Facility**

- Establish procedures for monitoring, managing and training all visitors, which should include:

- All visitors should perform frequent hand hygiene and follow respiratory hygiene and cough etiquette precautions while in the facility, especially common areas.
- Passively screen visitors for symptoms of acute respiratory illness before entering the healthcare facility
  - Post visual alerts (e.g., signs, posters) at the entrance and in strategic places (e.g., waiting areas, elevators, cafeterias) advising visitors not to enter the facility when ill.
- Informing visitors about appropriate PPE use according to current facility visitor policy
- Visitors to the most vulnerable patients (e.g., oncology and transplant wards) should be limited; visitors should be screened for symptoms prior to entry to the unit.
- Limit visitors to patients with known or suspected COVID-19. Encourage use of alternative mechanisms for patient and visitor interactions such as video-call applications on cell phones or tablets. If visitation must occur, visits should be scheduled and controlled to allow for the following:
  - Facilities should evaluate risk to the health of the visitor (e.g., visitor might have underlying illness putting them at higher risk for COVID-19) and ability to comply with precautions.
  - Facilities should provide instruction, before visitors enter patients' rooms, on hand hygiene, limiting surfaces touched, and use of PPE according to current facility policy while in the patient's room.
  - Visitors should not be present during AGPs or other specimen collection procedures.
  - Visitors should be instructed to only visit the patient room. They should not go to other locations in the facility.
- All visitors should be actively assessed for fever and respiratory symptoms upon entry to the facility. If fever or respiratory symptoms are present, visitor should not be allowed entry into the facility.
- Determine the threshold at which screening of persons entering the facility will be initiated and at what point screening will escalate from passive (e.g., signs at the entrance) to active (e.g., direct questioning) to restricting all visitors to the facility.

- If restriction of all visitors is implemented, facilities can consider exceptions based on end-of-life situations or when a visitor is essential for the patient's emotional well-being and care.
- Limit points of entry to the facility.

### **5.3.7 Implement Engineering Controls**

- Design and install engineering controls to reduce or eliminate exposures by shielding HCP and other patients from infected individuals. Examples of engineering controls include:
  - physical barriers or partitions to guide patients through triage areas
  - curtains between patients in shared areas
  - air-handling systems (with appropriate directionality, filtration, exchange rate, etc.) that are installed and properly maintained

### **5.3.8 Implementing administrative controls**

Administrative controls and policies for the prevention and control of transmission of COVID-19 within the health care setting =

Administrative measures related to health care workers will be implemented as follow:

- provision of adequate training for HCWs;
- ensuring an adequate patient-to-staff ratio;
- establishing a surveillance process for acute respiratory infections potentially caused by COVID-19 virus among HCWs;
- ensuring that HCWs and the public understand the importance of promptly seeking medical care;
- monitoring HCW compliance with standard precautions and providing mechanisms for improvement as needed

### **5.3.9 Using environmental and engineering controls**

These controls address the basic infrastructure of the health care facility and aim to ensure adequate ventilation in all areas in the health care facility, as well as adequate environmental cleaning. Additionally, separation of at least 1 metre should be maintained between all patients. Both spatial separation and adequate ventilation can help reduce the spread of many pathogens in the health care setting. Ensure that cleaning and disinfection procedures are followed consistently and correctly. Cleaning environmental surfaces with water and detergent and applying commonly used hospital disinfectants (such as sodium hypochlorite) is effective and



sufficient. Manage laundry, food service utensils and medical waste in accordance with safe routine procedures.

#### **5.3.10 Monitor and Manage Exposed Healthcare Personnel**

- Facilities providing healthcare should implement sick leave policies for HCP that are non-punitive, flexible, and consistent with public health guidance.
- Movement and monitoring decisions for HCP with exposure to COVID-19 should be made in consultation with public health authorities.
- Refer to the Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease 2019 (COVID-19) for additional information.

#### **5.3.11 Train and Educate Healthcare Personnel**

- Provide HCP with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that HCP are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention of contamination of clothing, skin, and environment during the process of removing such equipment.

#### **5.3.12 Environmental Infection Control**

- Dedicated medical equipment should be used when caring for patients with known or suspected COVID-19.
  - All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected according to manufacturer's instructions and facility policies.
- Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly.
- Routine cleaning and disinfection procedures (e.g., using cleaners and water to pre-clean surfaces prior to applying an EPA-registered, hospital-grade disinfectant to frequently touched surfaces or objects for appropriate contact times as indicated on the product's label) are appropriate for SARS-CoV-2 in healthcare settings, including those patient-care areas in which aerosol-generating procedures are performed.
- Management of laundry, food service utensils, and medical waste should also be performed in accordance with routine procedures.

### **5.3.13 Establish Reporting System**

- Facility will implement mechanisms and policies that promote situational awareness for facility staff including infection control, healthcare epidemiology, facility leadership, occupational health, clinical laboratory, and frontline staff about known or suspected COVID-19 patients and facility plans for response.
- Facility will communicate and should designate specific persons within the healthcare facility who are responsible for communication with public health officials and dissemination of information to HCP.
- Facility will communicate information about known or suspected COVID-19 patients to appropriate personnel before transferring them to other departments in the facility (e.g., radiology) and to other healthcare facilities.

### **5.3.14 Guidance for Laboratory Testing COVID 19 Specimens**

According to CDC recommendation, all laboratories should perform a site-specific and activity-specific risk assessment to identify and mitigate risks. Risk assessments and mitigation measures are dependent on:

- The procedures performed
- Identification of the hazards involved in the process and/or procedures
- The competency level of the personnel who perform the procedures
- The laboratory equipment and facility
- The resources available

Follow Standard Precautions when handling clinical specimens, all of which may contain potentially infectious materials. Standard Precautions include hand hygiene and the use of personal protective equipment (PPE), such as laboratory coats or gowns, gloves, and eye protection. Follow routine laboratory practices and procedures for decontamination of work surfaces and management of laboratory waste

#### **5.3.14.1 Procedures with a High Likelihood to Generate Droplets or Aerosols**

For procedures with a high likelihood to generate aerosols or droplets, use either a certified Class II Biological Safety Cabinet (BSC) or additional precautions to provide a barrier between the specimen and personnel. Examples of these additional precautions include PPE, such as a surgical mask or face shield, or other physical barriers, like a splash shield; centrifuge safety cups; and sealed centrifuge rotors to reduce the risk of exposure to laboratory personnel. Site- and

activity-specific biosafety risk assessments should be performed to determine if additional biosafety precautions are warranted based on situational needs, such as high testing volumes, and the likelihood to generate infectious droplets and aerosols.

#### **5.3.14.2 Specimens Management for COVID-19 Diagnosis**

All specimens collected for laboratory investigations should be regarded as potentially infectious. HCWs who collect, handle, or transport clinical specimens should adhere rigorously to the following standard precaution measures and biosafety practices to minimize the possibility of exposure to pathogens.

- Ensure that HCWs who collect specimens use appropriate PPE (i.e. eye protection, a medical mask, a long-sleeved gown, and gloves). If the specimen is collected during an aerosol-generating procedure, personnel should wear a particulate respirator at least as protective as N95,
- Ensure that all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures;<sup>8</sup>
- Place specimens for transport in leak-proof specimen bags (secondary containers) that have a separate sealable pocket for the specimen (a plastic biohazard specimen bag), with the patient's label on the specimen container (the primary container), and a clearly written laboratory request form;
- Ensure that laboratories in health care facilities adhere to appropriate biosafety practices and transport requirements, according to the type of organism being handled;
- Deliver all specimens by hand whenever possible. DO NOT use pneumatic-tube systems to transport specimens;
- Document clearly each patient's full name, date of birth and "suspected COVID-19" on the laboratory request form. Notify the laboratory as soon as possible that the specimen is being transported.
- . Patient specimens from suspected or confirmed cases should be transported as UN3373, Biological Substance Category B, when they are transported for diagnostic or investigational purposes

#### **5.3.14.3 Laboratory biosafety to coronavirus disease (COVID-19)**

The purpose of this document is to provide interim guidance on laboratory biosafety related to the testing of clinical specimens of patients that meet the case definition of the novel pathogen identified in Wuhan, China, that is, coronavirus disease 2019 COVID-19. It is essential to ensure

that health laboratories adhere to appropriate biosafety practices. Any testing for the presence of the virus responsible for COVID-19 or of clinical specimens from patients meeting the suspected case definition<sup>1</sup> 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. For general information on laboratory biosafety guidelines, see the WHO Laboratory biosafety manual, 3rd edition in the interim before the 4th edition is released.

#### **5.3.14.4 Biosafety at routine COVID 19 Laboratory procedures**

Non-culture-based diagnostic laboratory work and PCR analysis on clinical specimens from patients who are suspected or confirmed to be infected with the virus responsible for COVID-19 should be conducted adopting practices and procedures described for conventional clinical and microbiology laboratories. However, all manipulations of potentially infectious materials, including those that may cause splashes, droplets, or aerosols of infectious materials (for example, loading and unloading of sealed centrifuge cups, grinding, blending, vigorous shaking or mixing, sonic disruption, opening of containers of infectious materials whose internal pressure may be different from the ambient pressure) should be performed in appropriately maintained and validated BSCs or primary containment devices, by personnel with demonstrated capability. Examples of routine laboratory procedures include:

- Diagnostic testing of serum; blood (including haematology and clinical chemistry); respiratory specimens such as nasopharyngeal and oropharyngeal swabs, sputum and/or endotracheal aspirate or bronchoalveolar lavage; stool; or other specimens;
- Routine examination of mycotic and bacterial cultures developed from respiratory tract specimens. When handling and processing specimens, core requirements , including GMPP, should be followed at all times, including but not limited to those under the following subheadings.

#### **5.3.14.5 Disinfectants for COVID 19 Virus**

While little is known about this novel virus, the comparable genetic characteristics between the virus responsible for COVID-19 and MERS-CoV suggest that the COVID-19 virus may be susceptible to disinfectants with proven activity against enveloped viruses, including sodium hypochlorite (bleach; for example, 1000 parts per million [ppm] (0.1%) for general surface disinfection and 10 000 ppm (1%) for disinfection of blood spills); 62-71% ethanol; 0.5% hydrogen peroxide; quaternary ammonium compounds; and phenolic compounds, if used according to the manufacturer's recommendations.

Other biocidal agents such as 0.05–0.2% benzalkonium chloride or 0.02% chlorhexidine digluconate can be less effective. Particular attention should be paid not only to the selection of the disinfectant but also the contact time (for example, 10 minutes), dilution (that is, concentration of the active ingredient) and expiry date after the working solution is prepared. In general coronaviruses are known to persist on inanimate surfaces such as metal, glass or plastic for up to a maximum of 9 days so update all biosafety procedure and practice with recent scientific findings.

#### **5.4 Safe management of a dead body in the context of COVID-19**

This section focus how to prevent and control Infection during management of a dead body due to COVID-19 disease. The following measure should be taken

- Ensure that personnel who interact with the body (health care or mortuary staff, or the burial team) apply standard precautions, including hand hygiene before and after interaction with the body, and the environment; and use appropriate PPE according to the level of interaction with the body, including a gown and gloves. If there is a risk of splashes from the body fluids or secretions, personnel should use facial protection, including the use of face shield or goggles and medical mask;
- Prepare the body for transfer including removal of all lines, catheters and other tubes;
- Ensure that any body fluids leaking from orifices are contained;
- Keep both the movement and handling of the body to a minimum;
- Wrap body in cloth and transfer it as soon as possible to the mortuary area;
  - There is no need to disinfect the body before transfer to the mortuary area;
  - Body bags are not necessary, although they may be used for other reasons (e.g. excessive body fluid leakage); and
- No special transport equipment or vehicle is required.
- Environmental surfaces, where the body was prepared, should first be cleaned with soap and water, or a commercially prepared detergent solution;
- After cleaning, a disinfectant with a minimum concentration of 0.1% (1000 ppm) sodium hypochlorite (bleach), or 70% ethanol should be placed on a surface for at least 1 minute.<sup>7</sup> Hospital-grade disinfectants may also be used as long as they have a label claim against emerging viruses and they remain on the surface according to manufacturer's recommendations;

## **5.5 Quarantine of individuals in the context of containment for coronavirus disease (COVID-19)**

### **5.5.1 Quarantine of persons**

The quarantine of persons 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. Quarantine is different from isolation, which is the separation of ill or infected persons from others to prevent the spread of infection or contamination. Quarantine is included within the legal framework of the International Health Regulations (2005),

- Authorities must provide people with clear, up-to-date, transparent and consistent guidelines, and with reliable information about quarantine measures.
- Constructive engagement with communities is essential if quarantine measures are to be accepted.
- Persons who are quarantined need to be provided with health care; financial, social and psychosocial support; and basic needs, including food, water, and other essentials. The needs of vulnerable populations should be prioritized.
- Cultural, geographic and economic factors affect the effectiveness of quarantine. Rapid assessment of the local context should evaluate both the drivers of success and the potential barriers to quarantine, and they should be used to inform plans for the most appropriate and culturally accepted measures.

### **5.5.2 When to use quarantine**

Introducing quarantine measures early in an outbreak may delay the introduction of the disease to a country or area or may delay the peak of an epidemic in an area where local transmission is ongoing, or both. However, if not implemented properly, quarantine may also create additional sources of contamination and dissemination of the disease. In the context of the current COVID-19 outbreak, the global containment strategy includes the rapid identification of laboratory-confirmed cases and their isolation. WHO recommends that contacts of patients with laboratory-confirmed COVID-19 be quarantined for 14 days from the last time they were exposed to the patient.

For the purpose of implementing quarantine, a contact is a person who is involved in any of the following from 2 days before and up to 14 days after the onset of symptoms in the patient:

- Having face-to-face contact with a COVID-19 patient within 1 meter and for >15 minutes;

- Providing direct care for patients with COVID-19 disease without using proper personal protective equipment;
- Staying in the same close environment as a COVID-19 patient (including sharing a workplace, classroom or household or being at the same gathering) for any amount of time;
- Travelling in close proximity with (that is, within 1 m separation from) a COVID-19 patient in any kind of conveyance; and other situations, as indicated by local risk assessments.

## **5.6 COVID 19 Waste Management**

The safe and sustainable management of healthcare waste is a public health imperative and a responsibility of partners working in the health sector. Improper management of healthcare waste poses a significant risk to patients, health-care workers, the community and the environment. (Chartier, 2014). Even though COVID 19 waste is highly infectious, currently, there is no evidence to suggest that COVID 19 waste needs any additional packaging or disinfection procedures. Thus all healthcare waste are highly infectious and needs safe handling and treatment including disposal, and the key to effective management of HCW is identification and segregation of the waste. It ensures that the correct disposal procedures are taken, personnel safety is maintained, environmental harm is minimized, and recycling consumes the least resources. This topic focuses on the best practices as regards proper acceptable waste management practices for healthcare based on the standards recommended by the WHO Safe management of wastes from healthcare guideline, WBG EHS Guidelines and Ethiopian Healthcare waste Management guideline and are discussed in this chapter

### **5.6.1 Waste Minimization**

The best practice is to ensure that all units in each HCF minimizes their waste generation (all classes of wastes) to the barest possible minimum. Appropriate plans, strategies and actions would be established to ensure adequate HCW minimization at source and encouraging the use of recyclable materials and products.

### **5.6.2 Waste Segregation**

Proper segregation of waste at source generation (at each medical unit/department) is essential, efficient and effective in managing HCW. It helps in reducing the quantity of waste requiring treatment prior to final disposal and ultimately reduces the cost of waste treatment/management. Segregation involves putting different classes of wastes into separate and appropriate temporary

storage color-coded containers/bags as recommended by the Health Care Waste Management National Guidelines. *Packaging*

Infectious waste would be contained from its point of origin to the point at which it is treated and no longer infectious. The packaging would be appropriate for the type of waste involved. The following guidelines would be included for packaging sharps and other health care wastes:

- Sharps (sharp items or items with sharp corners) would be placed in rigid, puncture-resistant containers made of glass, metal, rigid plastic, or cardboard.
- Liquid infectious wastes would be placed in capped or tightly stopped bottles or flasks; large quantities may be placed in containment tanks.
- Solid or semisolid wastes would be placed in tear-resistant plastic bags judged by their thickness or durability.
- There would be special packaging characteristics for some treatment techniques: incineration requires combustible containers, and steam sterilization requires packaging materials that allow steam penetration and evacuation of air.

#### **5.6.2.1 Colour Coding**

Colour coding is done by using colours to differentiate waste classes from one other. It is efficient and helps in the process of waste segregation at source. It is also simple, easy to use and thus can be understood even by illiterate patients particularly at health posts where illiteracy level is high. Colour coding is one of the efficient ways of achieving segregation of waste and for sorting out items such as paper, plastic, glass and metal for recycling. It is important that all HCF in Ethiopia use the same colour coding scheme as this helps to minimize and avoid a waste class from mixing with other waste classes. This is also advocated in the Ethiopia National Healthcare Wastes Management Guidelines document. As expected, there will be a wider range of waste classes generated at secondary and tertiary healthcare facilities when compared to primary healthcare facilities. Thus is expected that the use of a broader colour scheme be applied at the former when compared to the latter. For the sake of uniformity and homogenous colour coding for SHC must be an expanded version from that used in the Health Posts.

The following guidelines would be included for the color-coding system:

- **Black:** All bins or bags containing non-risk HCW.
- **Yellow:** Any kind of container filled with infectious HCW, including safety boxes.
- **Red:** Any kind of container filled with heavy metal or effluent.



- **White:** Any container or bin filled with drug vials, ampoules, or glass bottles for glass recycling or reuse. This system is used only where a municipal glass recycling system is available.

In resource limited HCFs, red containers can be omitted and heavy metals and other effluents can be handled as any other infectious waste using yellow receptacles. However, heavy metals and other effluents would not be incinerated. Regarding the disposal of pharmaceutical wastes, please refer to the Medicines Waste Management and Disposal Directive 2011. Health workers must properly segregate waste at the point of use and ensure proper segregation bins and safety boxes are available at all injection sites.

#### **5.6.2.2 Labelling**

An important aspect of color coding is labelling. All waste bags or containers would be labelled with basic information in the local language of the area where the HCF is located and or in English. Basic label information would include type of waste in the container; name of the ward/facility, date of collection and, warning of hazardous nature. In general, labelling is important in order to

- identify the source of HCW or date of generation in case of an accident or improper segregation of the waste, ensure that the workers responsible for HCW management handle the different types of wastes safely, Ensure that each staff member feels more responsible for what they put into the bag/receptacle
- Ensure that segregation is done properly
- Ensure that Medical Departments gather data on the amount of waste produced in each department.

#### **5.6.3 Collection of Healthcare Waste**

Collection of waste is extremely important particularly to avoid over spilling of waste out of collection containers. Collection must be done promptly and routinely or as often as required. This will reduce the probability of contaminated wastes coming into contact with the public. Collection of waste must be done by approved and trained personnel fully equipped with appropriate PPEs and conveying machinery such as trollies and carts. Point of Entry, quarantine, and Isolation centers staff must be actively involved in collection of waste as would the waste handlers. They would ensure that their containers/bags (Bins/boxes and collection receptacles) are never more than three-quarter full before sealing them at their points of generation. They would also ensure that such collection containers are appropriately labelled.

**Table 5: Summary of WHO recommended segregation and collection scheme**

Waste categories	Colour of container and markings	Type of container	Collection frequency
<b>Infectious waste</b>	Yellow with biohazard symbol (highly infectious waste would be additionally marked HIGHLY INFECTIOUS).	Leak-proof strong plastic bag placed in a container (bags for highly infectious waste would be capable of being autoclaved).	When three-quarters filled or at least once a day.
<b>Sharps waste</b>	Yellow, marked <b>SHARPS</b> with biohazard symbol.	Puncture-proof container.	When filled to the line or three-quarters filled.
<b>Pathological waste</b>	Yellow with biohazard symbol.	Leak-proof strong plastic bag placed in a container.	When three-quarters filled or at least once a day.
<b>Pharmaceutical &amp; Chemical waste</b>	Brown, labelled with appropriate hazard symbol.	Plastic bag or rigid container.	On demand.
<b>Radioactive waste</b>	Labelled with radiation symbol.	Lead box.	On demand.
<b>General health-care waste</b>	Black	Plastic bag inside a container or container which is disinfected after use.	When three-quarters filled or at least once a day.

### 5.6.3.1 Handling

When handling waste, handlers would wear protective clothing at all times including face masks, aprons, boots, and heavy-duty gloves, as required.

### 5.6.3.2 Sharps:

- When handling sharps, do not recap or bend needles attached to the syringe.
- Immediately place the syringe in a safety box.
- If needle removers are used, needle removal must take place immediately after the injection.

### Safety boxes:

- Safety boxes must be fully and properly assembled before use.
- Safety boxes must be sealed and collected when they are  $\frac{3}{4}$  full, and must never be emptied or opened.
- Place sharps containers (i.e., safety boxes) as close to the point of use as possible and practical, ideally within arm's reach.
- Mark or label safety boxes so that people will not unknowingly use them as a garbage container for discarding other items.
- Do not shake safety box to settle their contents and make room for more sharps.
- Do not place safety boxes in high traffic areas (corridors outside patient rooms or procedure rooms) where people could bump into them or be stuck by someone carrying sharps to be disposed of.

- Do not place containers on the floor or anywhere they could be knocked over or easily reached by a child.

#### **Infectious waste bins:**

Infectious waste bins would be covered before collection. Bins would be cleaned and disinfected with 0.5% chlorine solution after emptying and before reuse.

#### **5.6.3.3 Waste Storage**

Storage is classified into internal and external. Consideration for storage must be based on the classification or type of waste being dealt with and the potential risk of infection to health-care workers and waste disposal staff.

The following rules would be observed for proper storage of HCW in Ethiopia

- Initial packaging and storage would take place where HCW is generated.
- Storage of waste may then be moved to a temporary on-site storage location
- Non-risk HCW would always be stored in a separate location from the infectious/hazardous HCW in order to avoid cross-contamination.

**Internal (Primary) Storage:** Internal storage is the temporary placement of waste at the point of generation before transfer to external storage points. A storage location for the HCW would be designated inside the facility. The waste in the bin-liners or containers would be stored in a separate area, room or building appropriate to the quantity of waste produced bearing in mind the frequency of collection. Segregation of hazardous waste from general waste would be maintained in storage. They would be planned periodic cleaning and disinfection of temporary storage areas and the containers. The storage time for HCW before it is transferred to external storage facilities would ensure that during cold/rain season 48 hours and during hot season 24 hours.

**External (Secondary) Storage:** External storage refers to the transit point where waste is stored after removal from primary storage to the time it is collected and transported for treatment and final disposal. These are locations in special areas or in the grounds of the facility where larger containers are used to store waste until it goes for final disposal either on or off-site. The external storage is usually situated within the facility. The frequency of removal of waste stored depends on the volume and nature of waste generated Storage is classified into internal and external. Consideration for storage must be based on the classification or type of waste being dealt with and the potential risk of infection to health-care workers and waste disposal staff.

Each facility must designate an area within its premises where waste can be temporarily stored until final collection for disposal and onward treatment. It is expected that facility must manage the HCW it generates. Such a general storage location would be located at the back of the facility and away from the view of the public. It is also important to educate patients who patronise the laboratory on how to dispose of certain personal wastes. Patients would be encouraged to dispose of their waste in appropriate manners. For instance, when blood samples are taken, cotton wool is usually given to the patient to cover the puncture. Such cotton wool could be contaminated, and it is important such a waste is disposed of properly. In this case, it would be disposed of in a yellow bag rather than in a black bag.

#### **5.6.3.4 Transportation**

A protocol for transportation of infectious substances is annexed (Annex 4). Consideration for transportation must be based on the classification or type of waste being dealt with and the potential risk of infection to health-care workers and waste disposal staff. Transportation is classified into On-site transport and Off-site transport, since the waste generated from Point of Entry, quarantine, and Isolation centers should be treated at facility, off-site transport is negligible. So that On-site transport involves conveying of wastes from the various points of generation within a laboratory to a temporary storage location also within the same area.

The following would be adhered to when carrying out *On Site transportation*

- Every effort would be made to avoid unnecessary handling of HCW;
- All waste bags would in-place and intact at the end of transportation;
- Carts, containers, or vehicles used for the transportation of health-care waste would not be used for the transportation of any other material;
- Waste that has the potential to leak must be double bagged;
- Waste bags would be placed in containers (e.g. cardboard boxes or wheeled, rigid, lidded plastic or galvanized bins), before being placed directly into the transportation vehicle
- A trolley, bin, or wheelbarrow may be used for transporting safety boxes and bins.
- The collected waste would not be left even temporarily anywhere other than at the designated storage room.
- Containers would be covered with lids during storage and transport.
- Carts would be used for transporting bags of infectious waste within the facility.

#### **5.6.3.5 Collection and treatment of liquid health-care waste**

Segregation, minimization and safe storage of hazardous materials are just as important for liquid wastes as they are for solid wastes. Typically, a system of sewer pipes linked to form a sewerage

system will collect wastewater from around a facility and carry it below ground to a central location for treatment or disposal. This treatment plant is located at a facility, and wastewater collected from medical areas by pipe system and passed into septic tanks. The basic principle of effective wastewater management is a strict limit on the discharge of hazardous liquids to sewers. Chemical waste, such as formaldehyde and glutaraldehyde and pharmaceuticals, would not be discharged into wastewater but would be collected separately and treated as a chemical health-care waste.

Pretreatment is recommended for wastewater streams from departments, and the pretreatment could include acid–base neutralization, filtering to remove sediments, or autoclaving samples from highly infectious patients. Non-hazardous chemicals can be discharged to the sewer without pretreatment. Collected body fluids, blood and rinsing liquids from procedures might be highly infectious so that it would be treated using 5% sodium hypochlorite (NaOCl – bleach) before disposal. Sodium hypochlorite would never be mixed with detergents or used for disinfecting ammonia-containing liquids, because it might form toxic gases. Lime milk (calcium oxide) can be used to destroy microorganisms in liquid wastes with high organic content requiring disinfection (e.g. stool during a cholera outbreak). Onsite treatment of healthcare sewage will produce a sludge that contains high concentrations of pathogens, and would be treated before disposal.

#### **5.6.4 Waste Treatment Methods**

The Ethiopia Healthcare Waste Management National Guideline 2008 categorises HCW in Ethiopia into nine classes. The treatment options are based on the Healthcare Waste Management National Guideline (HCWMNG). In Ethiopia, burning in low-cost incinerators, burying or applying chemical disinfectant of HCW is for the present moment is probably the most affordable and acceptable options for smaller health care facilities. However, this option is not environmentally satisfactory, and would only be considered as a short-term solution. The following HCW treatment technologies /facilities are recommended to minimize HCW impacts.

**Steam sterilization (autoclaving):** Steam sterilization in an autoclave is one of the most common forms of sterilization. It involves the use of saturated steam within a pressure vessel at temperatures high enough to kill infectious agents in the waste. Sterilization is accomplished primarily by steam penetration. Steam sterilization is most effective with low-density material such as plastics. In general, contaminated items or wastes would be sterilized for 30 minutes at 121°C with a pressure of 106 KPa. Do not begin timing until the autoclave has reached the desired temperature and pressure. Before sterilization, the items to be treated would be decontaminated, cleaned, and dried carefully.

**Burning and Incineration:** Incineration converts combustible materials into non-combustible residue or ash. Gases are ventilated through the incinerator stacks, and the residue or ash is disposed of in a sanitary landfill or a pit prepared for this purpose (i.e. ash pit). If incinerators are properly designed, maintained, and operated, they are effective in killing organisms present in infectious waste. In health care facilities without an incinerator, burning of paper waste in a protected pit can be used as an alternative short term solution. However, when using this method the area needs to be protected so as to prevent access of an authorized persons or animals.

**Thermal inactivation:** involves the treatment of waste with high temperatures to eliminate the presence of infectious agents. This method is usually used for large volumes of infectious waste. Liquid waste is collected in a vessel and heated by heat exchangers or a steam jacket that surrounds the vessel. The types of pathogens in the waste determine the temperature and duration of treatment. This method requires higher temperatures and longer treatment cycles than steam treatment.

**Gas/vapor sterilization:** Gas/vapor sterilization uses gaseous or vaporized chemicals as the sterilizing agents—ethylene oxide is the most commonly used agent.

**Chemical disinfection/high-level disinfection (HLD):** Chemical disinfection is the preferred treatment for liquid infectious wastes but can also be used for treating solid infectious waste. Disinfectants are often hazardous and toxic, and many are harmful to the skin and mucous membranes. Users would therefore wear protective clothes including gloves and goggles. Small amounts of disinfectants can be discharged into sewers without pre-treatment, provided there is an adequate sewage treatment process; large amounts of disinfectants would never be discharged into sewers. No disinfectants would be discharged into natural water bodies.

### **5.6.5 Waste Disposal Methods**

**Disposal of hazardous ash:** Fly ash and bottom ash from incineration is generally considered to be hazardous, because of the possibility of heavy metal content and dioxins and furans. It would preferably be disposed in sites designed for hazardous wastes, e.g. designated cells at engineered landfills, encapsulated and placed in specialized monofill sites, or disposed in the ground in an ash pit.

**Sharp waste disposal:** Even after decontamination, sharp waste may still pose physical risks. There may also be risk of reuse. Decontaminated sharp waste can be disposed of in safe sharp pits on the health-care facility premises or encapsulated by mixing waste with immobilizing

material like cement before disposal. These procedures are only recommended in cases where the waste is handled manually and the landfill for general waste is not secured.

### **5.7 Generic Environmental and Social Management and Monitoring plan for ECERP project**

ESMP for the individual facility (Point of Entry, quarantine, and Isolation and treatment centers) projects (Sub-Projects) will be prepared by modifying the ESMF the detail activities are summarised in table 6 below. A template for preparation of site specific ESMP has been included in Annex 3 (which is adopted from the World Bank COVID-19 ESMF template).

**Table 6: Generic Environmental and Social Management plan for ECERP Project**

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
<b>During Construction phase</b>					
Renovation design for, Point of Entry (POE), isolation and treatment centers	Renovation design fault	Improve and approved design against WBG EHS guideline for facility design, WHO Laboratory safety manual.	Consultants/ MOH/EPHI	Before construction	5,000.00
General construction activities demolishing existing building	Impact on the staff and other staff on patients- Construction activities such as demolishing existing building will create risks to patients and staff and may also adversely impact on the existing laboratory diagnosis affecting the day to day operation of the hospital	Impact on the staff and on patients- Construction activities will create risks to patients and staff and may also adversely impact on the existing laboratory diagnosis and other activities affecting the day to day operation of the hospital and the centers	Contractor	During construction phase	25, 000.00 (1,000 per site)
General construction activities – hazardous waste management	Soil contamination from cement, paints, lubricants, and fuels	Fuel and lubricants would be carefully collected and disposed in an environmentally safer way at the site designated for this purpose; Contain construction wastes on lined surfaces and dispose wastes in a pit prepared for this purpose.	contractors	During construction phase	25, 000.00 (1,000 per site)
General construction activities – general pollution management	Water pollution From construction wastes as well as on-site make shift toilets	- Collect and dispose wastes in designated disposal sites as required by the Local Authority -Provide appropriate and approved temporary toilets	Contractors	During construction phase	25, 000.00 (1,000 per site)
General construction activities- traffic	Air pollution due to emissions from	- Applying Dust suppression techniques as recommended in WBG EHS guideline	Contractor	During construction phase	25,000.00 (1,000 per site)



Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
and construction machines	construction machinery and from dust	-Water would be sprayed on access roads and construction sites and loose soil would be compacted and construction machinery would be regularly maintained as recommended by dealers			
General construction activities- traffic and construction machines	Noise & vibration disturbances due to movement of heavy plant and equipment	- Planning activities in consultation with local communities - Construction activities during night time would be avoided.	Contractor	During construction phase	25,000.00 (1,000 per site)
General construction activities- traffic and moving machinery	Traffic accident due to moving machinery	Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes, establishment of speed limits, and on-site trained flag people wearing high-visibility vests or outer clothing covering to direct traffic	contractor	During construction phase	25,000.00 (1,000 per site)
General construction activities – Labor	Accidents to staff and public on construction sites and project activity areas	<ul style="list-style-type: none"> <li>• Provide appropriate protective clothing for staff and ensure they use them</li> <li>• Provide appropriate signs for staff and public.</li> <li>• Provide first aid boxes.</li> <li>• Acquire appropriate workman's compensation and insurance for staff</li> </ul>	Contractor	During construction phase	50,000.00 (2,000 per site)
General construction activities	Risk associated with Poor Hygiene	<ul style="list-style-type: none"> <li>• Ensure availability of adequate sanitary facilities and separation of personal hygiene areas</li> <li>• Ensure hand washing facilities and toilets with adequate supply of water</li> </ul>	Contractor /MOH/Woreda Health Office	During construction phase	37,500.00 (1,500.00 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
General construction activities	Health Hazard of Covid-19 virus	<ul style="list-style-type: none"> <li>• Provide orientation on COVID 19 for staff</li> <li>• Practice</li> <li>• Performing hand hygiene frequently with an alcohol-based hand rub</li> <li>• Avoiding touching your eyes, nose, and mouth;</li> <li>• Practicing respiratory hygiene</li> <li>• Use Personal Protective Equipment (PPE); wearing a medical mask;</li> <li>• Maintaining social distance (a minimum of 1 metre)</li> </ul>	Contractor /MOH/Woreda Health Office	During construction phase	62,500.00 (2,500.00 per site)
<b>During Operation Phase</b>					
General HCF operation – Environment	Occupational health and safety risks on health care providers and supportive staff due to improper work procedures and healthcare waste management	<ul style="list-style-type: none"> <li>- Provide personal Protection equipment</li> <li>- Implement engineering control systems like primary and secondary barriers</li> <li>- Organize and implement medical surveillance which includes medical service and immunization programs</li> <li>- Provide health and safety training</li> <li>- Adopting and implementing safety manuals aligned with OSH guideline and WHO laboratory biosafety manual.</li> <li>- develop and implement safety standards.</li> </ul>	Administration of the respective laboratory, Point of Entry, quarantine, and Isolation centers for COVID-19 disease	During Operation Phase	50,000.00 (2,000 per site)
General HCF operation – Waste management	improper laboratory General HCF operation – Environment can lead water and soil contamination	<ul style="list-style-type: none"> <li>- Provide colour coded waste bins for the different types of waste generated</li> </ul>	Administration of the respective laboratory, Point of Entry, quarantine, and Isolation centers for COVID-19 disease	During Operation Phase	25,000.00 (1,000 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
	Improper waste management Point of Entry (POE), isolation and treatment centers	Develop and implement appropriate plan, strategies and action plan for waste minimization and segregation -Use appropriate facilities and methods as stipulated in the WBG EHI guideline to collect, and transport wastes, treat and dispose them using appropriate technologies and disposal facilities such as incineration, autoclave and sanitary landfill	Administration of the respective Point of Entry, quarantine, and Isolation centers for COVID-19 disease	During Operation Phase	37,500.00 (1,500.00 per site)
	Poor practices of waste handling at Point of Entry (POE), isolation and treatment centers	Laboratory staff s and supportive staffs would be trained on waste management and handling during operation.	Administration of the respective Point of Entry, quarantine, and Isolation centers for COVID-19 disease	During Operation Phase	37,500.00 (1,500.00 per site)
	Contamination of, Point of Entry (POE), isolation and treatment centers	Laboratory, Point of Entry (POE), isolation and treatment centers would have standard operation and decontamination procedure manuals and decontaminate clearly displayed accordingl	Administration of the respective Point of Entry, quarantine, and Isolation centers for COVID-19 disease	During Operation Phase	5,000.00 (200.00 per site)
	Failure waste drainage system, Point of Entry (POE), isolation and treatment centers	- Use WBG EHS guideline recommendations for the septic systems - Use appropriate waste drainage system leading to septic tank or public sewerage facilities or treatment technologies such as activated sludge and sanitary facilities, if available the town municipality	Administration of the respective Point of Entry, quarantine, and Isolation centers for COVID-19 disease		5,000.00 (200.00 per site)
	accidental health care waste spillage, Point of Entry (POE), isolation and treatment centers	-Use contingency containment facilities to collect accidental health care waste spillage - Training workers on the correct transfer and handling of fuels and chemicals and the response to spills	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	50,000.00 (2,000 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
		Provide emergency materials like chemical and biological spill kits and MSDS.			
	Improper waste disposal management Point of Entry (POE), isolation and treatment centers	-Proper selection of disposal sites -Adhering to recommended waste disposal practices (i.e. WBG EHS guideline)	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	12,500.00 (500.00 per site)
General HCF operation – Environment – Healthcare workers	Risk of Gender Based Violence, gender based sexual violence affects the individual and the community and workplace at large.	<ul style="list-style-type: none"> <li>• Provide training to healthcare providers on risks of GBV and mental breakdown and information exchange for notifying GBV incidents</li> <li>• Encourage health professional and security staffs to be composed of both sexes so as to help victims of sexual harassment and GBV to freely report incidents and ensuring confidentiality.</li> <li>• Ensure that any service provider with incident report will notify to the center supervisor/ coordinator.</li> <li>• Provide the victim and report the case to the Protection Team.</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During operation phase	50,000.00 (2,000 per site)
General HCF operation – Environment – Healthcare workers	Risk associated with disability	<ul style="list-style-type: none"> <li>- Stairs should be available consideration of staff and clients with disabilities</li> <li>- Sign language displays and audio of messages, signs and directions should be available.</li> <li>- Deliver consultations for staff and clients with disability for COVID-19 related needs.</li> <li>- Provide training to healthcare providers on risks of disability</li> <li>- Provide PPE for staff and visitors.</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During operation phase	50,000.00 (2,000 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
General HCF operation – Environment – Healthcare workers	Risk associated with Poor Hygiene	<ul style="list-style-type: none"> <li>Ensure availability of adequate sanitary facilities and separation of personal hygiene areas</li> <li>Ensure hand washing facilities and toilets with adequate supply of water</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During construction phase	37,500.00 (1,500.00 per site)
General HCF operation – Environment – Healthcare workers	Health Hazard of Covid-19 virus and other infectious diseases	<ul style="list-style-type: none"> <li>Provide training on IPC on COVID 19 for staff and practice: <ul style="list-style-type: none"> <li>Performing hand hygiene frequently with an alcohol-based hand rub</li> <li>Avoiding touching your eyes, nose, and mouth;</li> <li>Practicing respiratory hygiene</li> <li>Use PPE; wearing a medical mask;</li> <li>Maintaining social distance (a minimum of 1 metre)</li> </ul> </li> <li>Perform risk assessment</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During construction phase	112,500.00 (4,500.00 per site per year)
Waste treatment and disposal	Air pollution from aerosol generated activities , health care waste incineration and volatile chemicals	<ul style="list-style-type: none"> <li>Ensure proper handling of specimen and laboratory waste by personnel as recommended in WHO biosafety Manual.</li> <li>Ensure adequate ventilation in laboratories and treatment areas</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	12,500.00 (500.00 per site)
		Use appropriate efficient incinerator to treat health care wastes containing organic compounds	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	25,000 (1,000.00 per site)
. Operation phase of laboratories, Point of Entry, quarantine, and Isolation centers for COVID-19 disease release	Environmental pollution and community health risks due to improper waste disposal and specimen handling and transportation	<ul style="list-style-type: none"> <li>Adhere to good microbiological techniques as recommended in WHO Biosafety Manual</li> <li>Provide appropriate protective clothing to all staff throughout the waste management chain to prevent infection</li> <li>Establish recommended laboratory specimen collection and transportation</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	125,000.00 (5,000.00 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
waste to environment		<p>systems as recommended in the HCWMP/LWMP</p> <ul style="list-style-type: none"> <li>-Conduct civic health education to patients and the general public</li> <li>-Dispose HCW and LW in designated places, following approved disposal methods, as recommended in the HCWMP/LWMP</li> <li>-Secure all waste throughout the waste management chain and provide adequate security to prevent scavenging</li> </ul>			
		Develop and implement risk management strategies for biological, physical, and chemical releases during laboratory operation that aligned with WBG EHS Guidelines for Community Health and Sa	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	25,000 (1,000.00 per site)
Safety practice during operation phase of laboratories, Point of Entry, quarantine, and Isolation centers for COVID-19 disease	Impact of improper Safety practice during operation phase of laboratories, Point of Entry, quarantine, and Isolation centers for COVID-19 disease	<p>Minimize risk by meeting the requirements indicating in the bio-safety manual of WHO explained above.</p> <p>Adhering to WBG EHS Guideline recommendations for Facility Design: -</p> <ul style="list-style-type: none"> <li>Ventilation systems that provide isolation and protection from airborne infections; provide adequate potable water supplies of to reduce risks of exposure</li> <li>Provision of hazardous material and waste storage and handling areas;</li> <li>Develop and implement chemical hygiene plan</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	25,000 (1,000.00 per site)
Operation of Point of Entry, quarantine, and Isolation centers for COVID-19 disease	Potential impacts associated with operation of Point of Entry, quarantine, and Isolation centers for COVID-19 disease	<p>All procedures involving on handling of patient suspected or confirmed COVID 19 disease should be performed according to WHO guideline for Infection prevention and control during healthcare when COVID-19 is suspected</p> <ul style="list-style-type: none"> <li>•</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	25,000 (1,000.00 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
		<ul style="list-style-type: none"> <li>Standard precautions include hand and respiratory hygiene, the use of appropriate PPE</li> <li>according to a risk assessment, injection safety practices, safe waste management, proper linens, environmental cleaning, and sterilization of patient-care equipment.</li> <li>Personnel working at Point of Entry, quarantine, and Isolation centers would receive specific training on Infection prevention and control during healthcare on COVID-19 disease</li> </ul>			
Safety practice during handling of specimens at laboratories, Point of Entry, isolation or treatment centers for COVID-19 disease	Impact of handling of infectious COVID 19 materials and specimens	<ul style="list-style-type: none"> <li>Use robust and leak-proof specimen containers</li> <li>Personnel would be trained on specimen and waste handling, transport and storage.</li> <li>Use triple package during transportation of infectious materials</li> <li>Follow working procedure during handling package during transportation of infectious COVID 19 materials</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	25,000 (1,000.00 per site)
Safety practice during operation phase of Point of Entry, quarantine, and Isolation centres Operation	Potential risks associated with Point of Entry, quarantine, and Isolation centres Operation	<ul style="list-style-type: none"> <li>Provision of training for HCWs;</li> <li>Establishing a surveillance process for COVID-19 virus among HCWs;</li> <li>Emphasize hand hygiene, install barriers to limit contact with patients at triage,</li> <li>ensuring an adequate patient-to-staff ratio</li> <li>Performing hand hygiene frequently with an alcohol-based hand rub</li> <li>Avoiding touching your eyes, nose, and mouth;</li> <li>Practicing respiratory hygiene</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	125,000.00 (5,000.00 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
		<ul style="list-style-type: none"> <li>• Use Personal Protective Equipment</li> <li>• Maintaining social distance (a minimum of 1 metre).</li> </ul>			
Safety practice during operation phase of laboratories,	Release of Infectious material from quarantine, Isolation and Treatment centers	<ul style="list-style-type: none"> <li>• Train Health personnel in handling infectious material</li> <li>• Ensure all COVID 19 patients are isolated and control their movement</li> <li>• Manage Visitor Access and Movement within and outside the Facility and develop procedures for monitoring, managing and training all visitors,</li> <li>• Perform passively screen visitors for symptoms of acute respiratory illness in the community</li> <li>• Implementing administrative controls:</li> <li>• Use environmental and engineering controls system</li> <li>• Ensure healthcare are properly collected, treated and disposed</li> <li>• Provide training to the community on the infection prevention</li> </ul>	Woreda Health office and Administration of the respective quarantine, and Isolation centers for COVID-19 disease	During Operation Phase	37,500.00 (1,500.00 per site)
Providing services at Point of Entry, isolation or treatment centres	Lack of Emergency management systems can cause fire, devastation, injury and death	<ul style="list-style-type: none"> <li>• Develop and implement emergency management plans.</li> <li>• -Regular drills would constantly follow on various possible incidences. This will test the response of the involved stakeholders. Such drills will keep them alert and they will become more responsive to in the case of incidences.</li> <li>• -Use signage to warn staff and/ or visitors that are not involved in laboratory work of dangerous places.</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	25,000 (1,000.00 per site per year)



Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
		<ul style="list-style-type: none"> <li>-Develop evacuation procedures to handle emergency situations.</li> <li>-Provide emergency materials like first aid kits, chemical and biological spill kits, emergency shower and eye wash, fire controlling systems,</li> <li>-Develop and implement emergency reporting systems</li> <li>-Develop and implement Medical insurance and compensation</li> <li>-Develop and implement chemical management plan.</li> </ul>			
HCF operation - considerations for differentiated treatment for groups of higher sensitivity or vulnerable	Impact of HCF operation - considerations for differentiated treatment for groups of higher sensitivity or vulnerable (potentially the elderly, those with pre-existing conditions, or the very young)	<ul style="list-style-type: none"> <li>provision of adequate training for HCWs;</li> <li>ensuring an adequate patient-to-staff ratio;</li> <li>ensure that all patients cover their nose and mouth with a tissue or elbow when coughing or sneezing;</li> <li>offer a medical mask to patients with suspected COVID-19 while they are in waiting/public areas or in cohorting rooms;</li> <li>perform hand hygiene after contact with respiratory secretions.</li> <li>hand hygiene includes either cleansing hands with an alcohol-based hand rub or with soap and water;</li> <li>ensure that environmental cleaning and disinfection procedures are followed consistently and correctly.</li> </ul>	Administration of the respective Point of Entry, quarantine, and Isolation centers	During Operation Phase	25,000.00 (1,000.00 per site)
<b>During Decommissioning Phase</b>					
	Creation of stagnant water pools at the lower spot of the dismantled	Fill back lower spots that may creation stagnant water and apply the WBG EHS	Contractor/ Regional Health Bureau/Woreda		12,5000.00 (500.00 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
Decommissioning of interim laboratories, Point of Entry, quarantine, and Isolation centers for COVID-19 disease	laboratory buildings during commissioning creates favorable condition for mosquito breeding	recommended techniques for control of malaria and / other vectors	Health Office/ Regional EFCCC	During Operation Phase	
	Surface water siltation from backfilling and restoration activities	Use water sprays on roads and working sites and compact loose soils.	Contractor/ Regional Health Bureau/Woreda Health Office/ Regional EFCCC	During Operation Phase	30,000.00 (1,200.00 per site )
	Cumulative Impact due to Healthcare Waste	Existing institutions that are releasing health care wastes would treat their waste by using high temperature incinerator of higher efficiency to minimize cumulative impact.	Contractor/ Regional Health Bureau/Woreda Health Office/ Regional EFCCC	During Operation Phase	25,000.00 (1,000.00 per site)
	Impact on workers safety	-Provide appropriate protective clothing to the work force engaged in dismantling the laboratory buildings and ensure they use this equipment during project decommissioning - prepare environmentally management plan that will guide the contractor on how to safely demolish the laboratory building and facilities to safely dispose demolished wastes	Contractor/ Regional Health Bureau/Woreda Health Office/ Regional EFCCC	During Operation Phase	25,000.00 (1,000.00 per site)

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Indicative Budget (USD) for implementation
Decommissioning of medical equipment	Decommissioning of medical equipment Impact on workers safety and environment	Follow WBG guidelines and manufacturer instruction for decommissioning equipment	MOH/Regional Health Bureau/ Administration of the respective hospitals/ Point of Entry, quarantine, and Isolation centers for COVID-19 disease, EFCC	During Operation Phase	50,000.00 (2,000.00 per site)
<b>Total estimated cost</b>					<b>1,739,500.00</b>

**Note:**

- *Table above would be considered as the main frame to guide preparation of social and environmental Management Plans of the laboratory projects (Sub-project) taking into consideration activities and the sites specific to the sub-project.*
- *Since the ESMF is generic framework and not site specific, it will not be accurate to include cost of the proposed mitigation measures in the in the ESMF table indicated above.*
- *As this is an estimated cost, the detail cost of the proposed mitigation measures will be estimated at the time of the preparation of the ESIA/ESMP of specific sub projects at different locations of the regional states*
- Specific medical wastes management approach will be assessed when ESIA/ESMP for each Point of Entry (POE), isolation and treatment centres for COVID-19 disease will be prepared based on site-specific condition

## **5.8 ESMF Monitoring, Supervision and Reporting for ECERP Project**

Reporting on progress and issues in the implementation of this ESMF will be documented in the project quarterly reports and annual project implementation reports. At the MOH Project implementation unit, an environmental and social safeguards focal person will be assigned who, in coordination with the regional level focal person, will be responsible for overseeing safeguards compliance during construction and operation of the Point of Entry, quarantine, and Isolation and treatment centers. At Regional level, an environmental and social safeguard focal person will be assigned who will be responsible for monitoring and reporting on the preparation and implementation of ESMP and ESIA throughout the sub-project duration. Safeguard focal person will supervise and review environmental and social safeguard compliance as the activities described in section 7.3.1.

**Table 7: Generic Environmental and Social Monitoring Plan of the proposed Project**

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
<b>During Construction</b>					
Renovation Design	Renovation design fault of Point of Entry, quarantine, and Isolation and treatment centers for COVID-19 disease	During design planning consider the standard requirements indicated in WBG EHS guideline, and OSHA safety guidance which includes: <ul style="list-style-type: none"> <li>• Adequate spaces for woks and staff</li> <li>• Infectious diseases and occupational health hazards prevention and control systems</li> <li>• Emergency management systems</li> <li>• Waste disposal systems</li> </ul>	approved design against WBG EHS guideline, and OSH safety guidance	once	MOH/EPHI/Contractor
Overall impact management	All impacts	Preparation of Simple environmental and social mitigation Measures	Approved Environmental management plan	Once to approve Environmental management plan	FECCC
Soil	Soil contamination	Contain construction wastes on lined surfaces and dispose wastes in a pit prepared for this purpose.	-Presence of appropriate (lined & covered areas)	Monthly	Woreda FECC Office & Health Office
Water Pollution	Water pollution from construction wastes as well as on-site make shift toilets	Collect and dispose wastes in designated disposal sites as required by the Local Authority Provide appropriate and approved temporary toilets	-Number of times waste is collected and disposed of on designated sites -Number of temporary toilets	Monthly	Environmental Woreda FECC Office & Health Office
	Temporary loss of access to services such as water telephones and electricity	Identify and divert locations water pipes, telephone and electric cables before construction and	Number of service facilities identified and diverted	Once/ initially	Woreda Administration
Air pollution	-Air pollution due to emissions from construction machinery and from dust	- Applying Dust suppression techniques as recommended in WBG EHS guideline -Water would be sprayed on access roads and construction sites and loose soil would be compacted	- Observation of method adherence to WBG EHS guideline  -Total area sprayed with water and compacted	-Daily  -Monthly	Woreda FECC Office & Health Office

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
Noise & vibration	Noise & vibration disturbances due to movement of heavy plant and equipment	- Planning activities in consultation with local communities - Perform construction and maintenance works during official government working hours	Number of complaints against noise and vibration due to operation during unauthorized working hours	-Monthly	Woreda FECC Office
Health	Impact on hospital staff and on patients	-construction machineries would have silencer that minimize noise reaching the hospital workers and patients	Check hearing ability of patients and workers	Every month	Woreda health office
Traffic accident	Traffic accident due to moving machinery	Segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the of one-way traffic routes, establishment of speed limits,	-Presence of appropriate sign in appropriate location	-Monthly	Woreda FECC Office & Health Office
General HCF operation – Environment – Healthcare workers	Risk associated with Poor Hygiene	<ul style="list-style-type: none"> <li>Ensure availability of adequate sanitary facilities and separation of personal hygiene areas</li> <li>Ensure hand washing facilities and toilets with adequate supply of water</li> </ul>	available adequate sanitary facilities and separation of personal hygiene areas	-Monthly  -Monthly	Woreda FECC Office & Health Office
General HCF operation – Environment – Healthcare workers	Health Hazard of Covid-19 virus and other infectious diseases	<ul style="list-style-type: none"> <li>Provide training on IPC on COVID 19 for staff and practice: <ul style="list-style-type: none"> <li>- Performing hand hygiene frequently with an alcohol-based hand rub</li> <li>- Avoiding touching your eyes, nose, and mouth;</li> <li>- Practicing respiratory hygiene</li> <li>- Use PPE; wearing a medical mask;</li> <li>- Maintaining social distance (a minimum of 1 metre)</li> </ul> </li> </ul>	Provided training on IPC on COVID 19 for Staff and practice and safety practice  PPE utilization	weekly  -Daily  -weekly	Woreda FECC Office & Health Office

**During Operation**

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
Water and Soil contamination from Waste spillage	improper Design fault of Laboratory , Point of Entry, quarantine, and Isolation centers for COVID-19 disease waste management can lead water and soil contamination	- Use WBG EHS guideline recommendations for the septic systems	-Presence of drainage line properly connect to a functioning septic tank or public drainage	-Monthly	Woreda FECC Office & Health Office
		- Use appropriate waste drainage system leading to septic tank/public sewerage facilities /treatment technologies such as activated sludge and sanitary facilities, if available the town municipality	- Presence of appropriate treatment technologies adhering to WBG EHS guideline	-Monthly	Woreda FECC Office & Health Office
		Develop and implement appropriate plan, strategies and action plan for waste minimization and segregation	Presence of approved plan, strategies and action plan Presence of performance audit records	-Monthly	Woreda FECC Office & Health Office
		Laboratory staff s and supportive staffs would be trained on waste management and handling during operation.	Number of staffs trained on HCWM.	-Monthly	Woreda FECC Office & Health Office
		Laboratory would have standard operation and decontamination procedure manuals and clearly displayed at appropriate point (s) with the laboratory	Presence of approved SOP or manuals	-Monthly	Woreda FECC Office & Health Office
		-Proper selection of disposal sites -Adhering to recommended waste disposal practices (i.e. WBG EHS guideline)	Observation of appropriate waste disposal designated sites	-Quarterly	Woreda FECC Office & Health Office
		-Use contingency containment facilities to collect accidental health care waste spillage	- Presence of standard procedures for spill control	- Quarterly	Safety Officer/ Laboratory Manager

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
		- Training workers on the correct transfer and handling of fuels and chemicals and the response to spills	- Number of staffs trained on spill management	- Quarterly	Safety Officer/ Laboratory Manager
Air pollution	Air pollution from aerosol generated activities, health care waste incineration and volatile chemicals	- Ensure proper handling of specimen and use standard laboratory practice to avoid/minimize release of aerosols and organic solvents to atmosphere (use of bio-safety cabinet) as recommended in WHO Biosafety Manual.	Percentage of trained laboratory staffs  presence of regularly maintained BSC Presence of approved standards laboratory practices	Monthly	-Laboratory Manager/ Supervisor  Environmental Management Office  Woreda FECC Office
		- Ensure adequate ventilation in POE, Isolation and treatment areas	-Number of functional ventilation systems in place	Monthly	Environmental Management Office  Woreda FECC Office
		Use appropriate incinerator to treat health care wastes containing organic compounds	Observing the appropriateness of incinerator used and incineration practice	Monthly	Woreda FECC Office
		Provide fume hood if necessarily for chemical processing	Presence of regularly maintained fume hood	Quarterly	Woreda FECC Office
Occupational health and Safety issues	Occupational health and safety risks on health care providers and supportive staff due to improper work procedures, healthcare waste management	- - Adopting and implementing safety guideline or manuals from OSH guideline and WHO laboratory biosafety manual.	presence of approved guideline or manual and effectiveness evaluation records	Monthly	Woreda FECC Office & Health Office
		Provide appropriate PPE for all staffs	-Number of workers properly utilizing PPE		



Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
		Provide continuous training for all staffs on biosafety and biosecurity	number of trained staffs Presence of training Evaluation records	annually	Woreda Health Office
		- Organize and implement medical surveillance which includes medical service and immunization programs	presence of effective medical services and immunization programs	annually	Woreda Health Office Safety Officer/ Lab Manager
		- develop and implement safety standards.	Presence of approved safety standards	Annually	Safety Officer/ Lab Manager/ Woreda Health Office
		Implement engineering control systems like primary and secondary barriers	-Presence appropriate primary and secondary barriers. -Regular Maintenance records	Annually	Regional health bureau/ Woreda Health Office
Community Health and environmental risks	- Environmental pollution and community health risks due to improper waste disposal and specimen handling and transportation.	- Adhere to good microbiological techniques as recommended in WHO Biosafety Manual -	evaluation record as the laboratory practices adhered to WHO biosafety manual	daily	Woreda FECC Office Woreda Health Office Safety Officer/ Lab Manager
		Develop and implement Risk management strategies for biological, physical, and chemical releases during laboratory operation that aligned with WBG EHS Guidelines for Community Health and Sa	Presence of risk management strategies	Throughout the project implementation	Regional health bureau/ regional environmental protection authority
		Implement triple packaging systems for secure transportation of specimen Provide appropriate cars for sample transportation ( see also annex 4)	Presence of appropriate triple packaging box Presence of car for sample transportation	daily	Woreda FECC Office Woreda Health Office

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
					Safety Officer/ Lab Manager
		-Conduct civic health education to patients and the general public	- Number of awareness meetings Conducted	daily	Woreda FECC Office Woreda Health Office Safety Officer/ Lab Manager
		Develop and implement chemical hygiene plan	Presence of appropriate chemical management plans	Throughout the project implementation	Woreda FECC Office Woreda Health Office Safety Officer/ Lab Manager
		Secure all waste throughout the waste management chain and provide adequate security to prevent scavenging	-Presence of designated and secured disposal sites and water quality compliance to national standard	daily	Woreda FECC Office Woreda Health Office Safety Officer/ Lab Manager
	Risk due to poor laboratory practice	Minimize risk by meeting the requirements indicating in the bio-safety manual of WHO explained above.	Observation of laboratory practice against the WHO standard	Throughout the project implementation	RHB
During quarantine, Isolation and Treatment centres operation	Release of Infectious material from quarantine, Isolation and Treatment centers	• Train Health personnel in handling infectious material	# of trained health personnel	daily	IPC/Safety Officer/ facility coordinator
		• Control the movement of visitor and COVID 19 patients	Available access control System at facilities	daily	IPC/Safety Officer/ facility coordinator
		• Implementing administrative and engineering controls system	Availability of administrative and	daily	IPC/Safety Officer/ facility coordinator

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
			engineering controls system at facility		
		<ul style="list-style-type: none"> <li>Ensure healthcare waste are properly collected, treated and disposed</li> </ul>	Waste management system	daily	IPC/Safety Officer/ facility coordinator
		<ul style="list-style-type: none"> <li>Provide training to the community on the infection prevention</li> </ul>	the infection prevention training provided to the community	quarterly	IPC/Safety Officer/ facility coordinator
General HCF operation – Environment – Healthcare workers	Risk associated with Poor Hygiene	<ul style="list-style-type: none"> <li>Ensure availability of adequate sanitary facilities and separation of personal hygiene areas</li> <li>Ensure hand washing facilities and toilets with adequate supply of water</li> </ul>	available adequate sanitary facilities and separation of personal hygiene areas	- daily	Woreda FECC Office & Health Office
General HCF operation – Environment – Healthcare workers	Risk of Gender Based Violence, gender based sexual violence affects the individual and the community and workplace at large.	<ul style="list-style-type: none"> <li>Provide training to healthcare providers on risks of GBV</li> <li>Ensure that any service provider with incident report will notify to the center supervisor/ coordinator.</li> <li>Provide the victim and report the case to the Protection Team.</li> </ul>	<ul style="list-style-type: none"> <li>Provided training to healthcare providers on risks of GBV</li> <li>Provided report the case to the Protection Team.</li> </ul>	quarterly	Woreda FECC Office & Health Office
General HCF operation – Environment – Healthcare workers	Risk associated with disability	<ul style="list-style-type: none"> <li>Stairs should be available consideration of staff and clients with disabilities</li> <li>Sign language displays and audio of messages, signs and directions should be available.</li> <li>Deliver consultations for staff and clients with disability for COVID-19 related needs.</li> <li>Provide training to healthcare providers on risks of disability</li> <li>Provide PPE for staff and visitors.</li> </ul>	- Stairs available for staff and clients with disabilities	- quarterly	Woreda FECC Office & Health Office
General construction	Child and Forced labor on GB	<ul style="list-style-type: none"> <li>Conduct awareness creation workshop at the community</li> </ul>	<ul style="list-style-type: none"> <li>awareness creation workshop Conducted</li> </ul>	quarterly	Woreda labor Office & Health Office

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
activities – Labor		<ul style="list-style-type: none"> <li>Implement strictly labour regulation and review the hiring policy and procedures</li> <li></li> <li>Ensure that contractors should have a system of human resource management according to Ethiopian government labor law.</li> </ul>	<ul style="list-style-type: none"> <li>hiring policy and procedures available</li> <li>Contractors' human resource management system.</li> </ul>		
General HCF operation – Environment – Healthcare workers	Health Hazard of Covid-19 virus and other infectious diseases	<ul style="list-style-type: none"> <li>Provide training on IPC on COVID 19 for staff and practice: <ul style="list-style-type: none"> <li>Performing hand hygiene frequently with an alcohol-based hand rub</li> <li>Avoiding touching your eyes, nose, and mouth;</li> <li>Practicing respiratory hygiene</li> <li>Use PPE; wearing a medical mask;</li> <li>Maintaining social distance (a minimum of 1 metre)</li> </ul> </li> </ul>	<p>Provided training on IPC on COVID 19 for</p> <p>Staff and practice and safety practice</p> <p>PPE utilization</p>	<p>quarterly</p> <p>-Monthly</p> <p>daily</p>	Woreda FECC Office & Health Office
Emergency preparedness and response	Lack of emergency management at Point of Entry, quarantine, and Isolation centers for COVID-19 disease can cause fire, devastation, injury and death	-Develop and implement emergency management plans.	Presence of emergency plan	Quarterly	Woreda FECC Office & Health Office
		-Regular drills exercise would constantly follow on various possible incidences. This will test the response of the involved stakeholders. Such drills will keep them alert and they will become more responsive to in the case of incidences.	Presence of training records or photographs on drill exercise	Quarterly	Woreda FECC Office & Health Office
		-Develop and implement chemical management plan.	Presence of approved plan	Quarterly	Woreda FECC Office & Health Office
		-Develop and implement Medical insurance and compensation	Percentage of injured workers that received medical services and compensation	Quarterly	Public servants social security agency and regional health bureau
		-Develop evacuation procedures to handle emergency situations.	Presence of evacuation procedures	Quarterly	Woreda FECC Office & Health

Project Stage/ Components	Impacts	Mitigation Measures	Monitoring Indicator	Frequency of monitoring per site	Institution to Monitor
					Office
		-Provide emergency materials like first aid kits, chemical and biological spill kits, emergency shower and eye wash, fire controlling systems,	Availability of appropriate emergency materials at facility levels	monthly	Woreda FECC Office & Health Office
		-Develop and implement emergency reporting systems	Presence of records	Quarterly	Woreda FECC Office & Health Office
		-Use signage to warn staff and/ or visitors that are not involved in laboratory work of dangerous places.	Presence of posted signage on appropriate places	Quarterly	Woreda FECC Office & Health Office
<b>During Decommissioning</b>					
Water	-Creation of stagnant water Pools conducive to mosquito breeding	Fill lower spots that may be created during dismantling and restoration of site	Check the creation of stagnant Extent water pools	Throughout the decommissioning phase	Woreda health office
Health and safety	Accidents during dismantling and restoration of site	Twice during dismantling and restoration of sites Provide appropriate protective clothing to the work force engaged in dismantling the laboratory prepare environmentally management plan that will guide the contractor on how to safely demolish the laboratory building and facilities to safely dispose demolished wastes.	No. of accidents in a month	Throughout the decommissioning phase	Woreda FECC Office & Health Office
	Impact on workers safety	-Provide appropriate protective clothing to the work force engaged in dismantling the laboratory buildings and ensure they use this equipment during project decommissioning -	Provided PPE	Throughout the decommissioning phase	Woreda FECC Office & Health Office
	Impact on workers safety	prepare environmentally management plan that will guide the contractor on how to safely	Available record of environmentally management plan	Throughout the decommissioning phase	Woreda FECC Office & Health

<b>Project Stage/ Components</b>	<b>Impacts</b>	<b>Mitigation Measures</b>	<b>Monitoring Indicator</b>	<b>Frequency of monitoring per site</b>	<b>Institution to Monitor</b>
		demolish the laboratory building and facilities to safely dispose demolished wastes			
Medical equipment	Environmental pollution	Follow WBG guidelines and manufacturer instruction for decommissioning equipment	Availability of appropriate of records decommissioning	Throughout the decommissioning phase	Woreda FECC Office & Health Office

## **6. ESMF process and implementation arrangement**

### **6.1 Sub-project Screening and Approval Process**

The objective of screening sub projects is to assess any potential safeguard issues early in the design and preparation process and rate the ES risk depending on the level, and scope of potential environmental and social impacts. The screening of the project subprojects will be done by completing screening checklist tables indicated in Annex 1.

#### **Step 1: Sub-project Identification**

The initial step will be sub-project or business plan identification. Sub-projects and business plans will be identified by the client. In this project, the Ministry of Health has already identified the sub-projects and specific sites of these sub-projects have already been decided.

#### **Step 2: Screening and Checking Eligibility of subprojects**

At this stage the sub-projects will be subjected to screening process by the Ethiopian the focal persons to be deployed by MoH against environmental and social checklist indicated to check their eligibility for the project financing.

In checking the eligibility of the sub projects the questions in Annex 2 would be answered as “Yes” or “No”. If the answer to any one of the questions in the annex is ‘Yes’, then the subproject will be redesigned to be acceptable or stopped if redesigning is not possible. If on the contrary the answer is ‘No’ for all the above questions, then one must proceed to the next step.

The following activities will not be eligible for this project financing (Exclusion list):

- Laboratory activities that may require BSL3 lab facilities
- Activities that may cause long term, permanent and/or irreversible (e.g. loss of major natural habitat) adverse impacts
- Activities that have high probability of causing serious adverse effects to human health and/or the environment not related to treatment of COVID-19 cases
- Activities that may have adverse social impacts and may give rise to significant social conflict
- Activities which would require Free Prior Informed Consent.
- Activities that may affect lands or rights of indigenous people or other vulnerable minorities,

- Activities that may involve permanent resettlement or land acquisition, adverse impacts on cultural heritage
- Activities that may affect lands or rights of indigenous people or other vulnerable minorities,

Furthermore, EHS focal persons would assess the significance of potential impacts using environmental and social impact rating checklist below. The checklist must be filled, and number of potential impacts marked as None, Low, Medium, High and Unknown and will be used to determine individual and the overall impact rating of the sub-project. The table 9 below is a guidance to determine what action would be taken before proceeding to the next level based on the results.

**Table 8: Rating and classification of potential impacts of Sub-projects**

For sub-projects with no impact (All impact rating becomes 'None')	These types of subprojects would be labeled as ' <b>subprojects of no environmental and social concern</b> '. These types of sub-project without further delay has to be approved and cleared by Woreda or Regional office responsible for environment
For sub-projects with low, medium and/or one high impact	These types of subprojects would be labeled as ' <b>Sub-projects of medium environmental and social concern</b> '. In this case, incorporate potential mitigation measures into the design of the subprojects would be integrated and ESMP would be prepared.
Subprojects cause more than one high potential impact plus more than two unknown impacts	These types of subprojects would be labeled as ' <b>subprojects of high environmental and social concern</b> '. In this case, ESMP would be prepared and/or conducting additional ESIA assessment may also be required.
Subprojects where it is difficult to predict the potential impacts, i.e., subprojects which have two or more unknown potential impacts	These types of subprojects would be labeled as ' <b>subprojects of unknown environmental and concern</b> ' because of the many unpredictable potential impacts. In this case, ESMP would be prepared and/or additional assessment will be required

For sub-projects labelled as 'unknown' and/or 'high' environmental and social concern, the need to conduct additional assessment would be decided through discussion among federal and regional safeguard specialists.

### **Step 3: Approval of the screening reports**

At this stage environmental and social screening reports will be reviewed and approved by the Environment, Forest and Climate Change offices as. If the sub-project has high or medium



environmental and social concerns, MoH would ensure that all the necessary mitigation measures are incorporated in the ES risk management tool t before approval.

#### **Step 4: ESIA/ESMP/infection control and waste management plan preparation**

The Regional Health bureaus will work closely with Regional Environment, Forest and Climate Change Agencies to prepare appropriate site specific environmental and social risk management tools and in review and approval of the tools to be prepared for Point of Entry, quarantine, and Isolation and treatment centers. If Regional Environment, Forest and Climate Change Agencies advises that the subprojects, do not require full ESIA, an environmental and social management plan/ infection control and waste management plan will be prepared

The Regional Environment, Forest and Climate Change Agencies will review within 15 days the ESIA and may decide to:

- a. Accept the document - with conditions relating to implementation;
- b. Accept the documents with required and/or recommended amendments; or
- c. Reject the document with comments as to what is required to submit an acceptable ESIA and ESMP.

If a full ESIA is not required, the beneficiary health facilities/regional bureaus will then prepare and submit the ESMP (which will be based on generic E&S management and monitoring plan included in this ESMF) to Environmental Protection Authority for review and clearance. Environmental Protection Authority review and clear the ESMP as soon as possible to minimize implementation delay.

#### **Consultation and Disclosure of Subprojects Information**

Before the approval of the subprojects, the project implementing unit should properly consult the stakeholders and make ESMP and or ESIA available for public review at a place accessible to local people and in a form, manner and language they can understand. The public will be invited to comment on these reports prior to their approval. The public should also participate and be consulted at all levels of environmental and social assessments including eligibility checks, screening, scoping, impact identification and rating.

#### **Step 5: Subproject ESMP implementation, monitoring, supervision and reporting.**

The client will ensure that an appropriate environmental and social safeguards compliance monitoring and reporting system will be established. The goals of implementation monitoring are to:

- measure the success rate of the project;
- verify the accuracy of the environmental and social impact predictions;
- determine the effectiveness of measures to mitigate adverse effects of projects on the environment;
- determine whether interventions have resulted in dealing with negative impacts; determine whether further interventions are needed, or monitoring is to be extended in some areas;

## **6.2 ESMF Implementation Arrangement**

### **6.2.1 Institutional Arrangements**

Ministry of Health is expected to deploy qualified staff and resources to support management of environmental and social risks including E&S specialists. The MoH should identify and report the Regional Public health Institutes, Points of Entry and Isolation /Quarantine/ Treatment Centers which may benefit from the World Bank COVID-19 Emergency Response Project. At each Regional Public Health Institutes and at Each Isolation/Quarantine/Treatment Centers the client will assign EHS risk management focal persons. The focal persons at Regional Public Health Institutes and at Each Points of Entry, Isolation /Quarantine/ Treatment Centers will be trained on the relevant WHO guidelines and on the ESMF so that they could have awareness on the safe practices. The focal persons should prepare and implement site specific ES risk management tools and should monthly report to the federal project coordination unit on whether laboratories or Points of Entry, Isolation, Quarantine, and Treatment Centers have been run in compliance with the requirements of the WHO COVID-19 guidelines and the ESMF as well as gaps, if any, which need to be addressed. The federal project coordination will compile and share the reports on the same period to the Bank so that compliance with the EHS requirements could be monitored. Environment, Forest and Climate Change offices should review and clear the site specific environmental and social risk management tools and the adequacy of implementation process. An internationally renowned health agency (Africa CDC or WHO) will regularly review the Project's implementation, monitoring, and reporting provisions made under the Project. MoH is expected to prepare and submit to the Bank regular monitoring reports on the environmental, social, health and safety (ESHS) performance of the Project, including, but not limited to, stakeholder engagement activities and grievances.

The roles and responsibilities of project staff and associated agencies in the implementation of this ESMF is as follows. This ESMF does not cover the roles and responsibilities associated with implementation of the subsequent ESMPs and/or stand-alone management plans; those will be defined for each the project subsequent management plan that is developed in the project inception phase, as required per this ESMF.

#### **6.2.1.1 Ministry of Health**

The Implementing entity for this project is the Ethiopian Ministry of Health (MOH). The MOH is responsible for:

- Ensuring that the required assessment (ES assessment or targeted assessment, as above) and assessment report and the required management plan(s) (an ESMP and/or stand-alone management plan, as above) are developed, disclosed for public consultation and approved, and management measures are adopted and integrated during project implementation;
- Project planning, coordination, management, monitoring, evaluation and reporting.
- Reporting, fairly and accurately, on project progress against agreed work plans in accordance with the reporting schedule and required formats;
- Maintaining documentation and evidence that describes the proper and prudent use of project resources in conformity to the signed Project Document and in accordance with applicable regulations and procedures (e.g. SES);
- Ensuring all requirements of WBs SES and national regulatory/policy frameworks and relevant international standards have been addressed (e.g. mitigation of identified adverse social and environmental impacts);
- Procurement of goods and services, including human resources required to ensure compliance with this ESMF;

#### **6.2.1.2 The Ethiopian Public Health Institute (EPHI)**

EPHI will also serve as the key technical and implementing entity. It will both support the PCD and directly implement certain technical activities and procurement of laboratory equipment and ICT systems. The EPHI will report directly to the State Minister, and it will share the project's technical and financial updates with the MOH steering committee, PCD-GMU and Office of the State Minister of Programs.. EPHI's role includes the following:

- Provide oversight on all matters related to safeguards;

- Inform all the stakeholders and right-holders involved in, or potentially impacted, positively or negatively, by the projects,
- Ensure that the Compliance Review and the Stakeholder Response Mechanisms are operational during the lifetime of the projects;
- Ensure adherence to the SES for project activities implemented using funds channelled through UNDP's accounts, and undertake appropriate measures to address any shortcomings;
- Verify and document that all WB SES requirements have been addressed;
- Provide technical guidance on implementation of this ESMF and administrative assistance in recruiting and contracting expert safeguards services (as required) and monitor adherence of each project to the ESMF and WB standards.

#### **6.2.1.3 The Grant Management Unit**

The Grant Management Unit will be responsible for carrying out stakeholder engagement activities, while working closely together with other entities, such as local government units, media outlets, health workers, etc. The stakeholder engagement activities will be documented through quarterly progress reports or best practices, to be shared with the World Bank and disseminated in relevant forums.

- Supervise and manage implementation of measures defined in this ESMF;
- Assign specific responsibilities for implementation of this ESMF, including monitoring, and community consultations on the draft management plans to a staff member(s) of the PMO;
- Maintain relevant records associated with management of environmental and social risks, including updated SESP, impact assessments, a log of grievances together with documentation of management measures implemented;
- Report to the Implementing Partner, the Project Steering Committee, and UNDP CO on the implementation of the ESMF;
- Ensure that all service providers are informed of their responsibilities for the day to day compliance with the ESMF.

#### **6.2.1.4 Steering Committee**

The Steering Committee provides strategic guidance to implementation of the project including oversight for safeguards and the implementation of this ESMF. It is also responsible for taking corrective action as needed to ensure the project achieves the desired results. In order to ensure ultimate accountability, Steering Committee decisions should be made in accordance with

standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

### 6.2.1.5 Capacity Building

Specialists with relevant expertise in social and environmental safeguards will be engaged to support the completion of the targeted assessment(s) of economic and other risks, and the subsequent development of ESMP and any management plans. These experts will offer an induction session for Grant Management Units on safeguards responsibilities and approaches.

The MOH/EPHI will provide advice to project teams as needed to support the implementation of this ESMF and the preparation, implementation and monitoring of social and environmental management plans/measures.

The Steering Committee will have the final responsibility for the integration of ESMP/ management plan(s) in the execution of the project. The integration of those plans will need to consider particular institutional needs within the implementation framework for application of the ESMP, including a review of the required budget allocations for each measure, as well as the authority and capability of institutions at different administrative levels (e.g. Woreda, regional, and national), and their capacity to manage and monitor ESMP implementation. Where necessary, capacity building and technical assistance activities will be included to enable proper implementation of the ESMP. The training topics, target trainees and anticipated cost for training are summarized in table below.

**Table 8: Training activities with estimated cost for implementation**

No	Training topic	Target group	Estimated Cost(in USD)
1	COVID-19 Infection Prevention and Control Recommendations	ES focal persons and pertinent healthcare staff	2000
2	Laboratory biosafety guidance related to the COVID-19	ES focal persons and pertinent healthcare staff	1000
3	Specimen collection and shipment	ES focal persons and pertinent healthcare staff	500
4	Standard precautions for COVID-19 patients	ES focal persons and pertinent healthcare staff	500
5	Risk communication and community engagement	ES focal persons and pertinent healthcare staff	1000
6	WHO and Africa CDC guidelines on quarantine including case management	ES focal persons and pertinent healthcare staff	1000

## **7 Stakeholder Engagement and Information Disclosure**

### **7.1 Public Consultation and Stakeholder Engagement**

The Project is prepared under the World Bank's Environment and Social Framework (ESF). As per the Environmental and Social Standard (ESS) and Stakeholders Engagement and Information Disclosure, the implementing agencies should provide stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation.

Cooperation and negotiation with the stakeholders throughout the Project development often also require the identification of persons within the groups who act as legitimate representatives of their respective stakeholder group, i.e. the individuals who have been entrusted by their fellow group members with advocating the groups' interests in the process of engagement with the Project. Community representatives may provide helpful insight into the local settings and act as main conduits for dissemination of the Project-related information and as a primary communication/liaison link between the Project and targeted communities and their established networks.

The project updated the Stakeholder engagement plan that was prepared during preparation. The updated SEP provides detailed information on the affected groups, the various communication channels/approaches including information on two-way communication, and a key summary on the Risk Communication and Community Engagement Strategy. The approaches taken will thereby ensure that information is meaningful, timely, and accessible to all affected stakeholders, including usage of different languages, addressing cultural sensitivities, as well as challenges deriving from illiteracy or disabilities. Due to the expected country-wide implementation of activities, the differences of areas and socioeconomic groups will equally be taken into consideration during rollout of the RCCE. It will be important that care management in quarantine and isolation centers is managed systematically, allowing patients to access information as well as patients' relatives to get necessary information about the quarantined; if feasible by enabling two-way-communication.

The SEP will be fully Implemented throughout the project period in consistence with ESS10, including the use of different, culturally appropriate communication approaches to ensure communication also with the most vulnerable, including illiterate and people with disabilities. The project will ensure that case management in quarantine and isolation centers is managed

systematically, allowing patients to access information as well as patients' relatives to get necessary information about the quarantined; if feasible by enabling two-way-communication.

Due to the emergency and the need to address issues related to COVID19, no dedicated consultations beyond public authorities and health experts, including Africa CDC, have been conducted so far. However, in line with COVID19 parameters, project stakeholder consultation and engagement activities during the preparation phase will not be deferred but rather will be designed to be fit for purpose to ensure effective and meaningful consultations to meet project and stakeholder needs. To this end the project within the social distancing and other parameters set by the national government, the Project Implementation Unit will make all reasonable efforts to conduct meetings with stakeholders through diversifying means of communication, including based on type and category of stakeholders. This will include online channels, such as zoom, webex, and skype, and where these are not available, to employ TV, radio, newspaper, dedicated phone lines, public announcements, or mail. The channels used to undertake the stakeholder engagement will depend upon the technological and cultural circumstances of the affected stakeholders and will provide them with clear mechanisms to give their feedback and suggestions.

Moreover, Public consultation will be conducted according to the Stakeholder Engagement Plan (SEP) document which was developed for the ECERP project based on the requirement of this ESS10 Standard. Based on the public consultation findings, the project will implement action items recommended to improve risk communication and community engagement (RCCE) during Covid-19 emergency. Public consultation will be conducted according to the updated Stakeholder Engagement Plan (SEP) which developed for the ECERP project based on the requirement of the ESS10 Standard and government regulations. Based on the public consultation findings, the project will implement action items recommended to improve risk communication and community engagement (RCCE) during Covid-19 emergency.

MoH will establish a structured approach to engagement with stakeholders that is based upon meaningful consultation and disclosure of appropriate information, considering the specific challenges associated with COVID-19. In instances where there is a likelihood of more vulnerable groups in attendance, such as the elderly and those with compromised immune systems or related pre-existing conditions, stakeholder engagement should minimize close contact. People affected by Project activities should be provided with accessible and inclusive means to raise concerns and grievances. To ensure this approach, the project has included a component on

“Risk communication and Community Engagement” (RCCE), funded with more than 10m USD, encompassing behavioral and sociocultural risk factors assessment, production of RCCE strategy and training documents, production of communication materials, media and community engagement, and documentation.

In order to meet best practice approaches, including in line with COVID-19 restrictions and related parameters, the project will apply the following principles for stakeholder engagement to an extent possible:

- *Openness and life-cycle approach*: public consultations for the project(s) will be arranged during the whole lifecycle, carried out in an open manner, free of external manipulation, interference, coercion or intimidation;
- *Informed participation and feedback*: information will be provided to and widely distributed among all stakeholders in an appropriate format; that is accessible and understandable, taking into account cultural sensitivities, languages or dialects of their choice, preferred means of communication, literacy levels of stakeholders, and special needs of stakeholders with disabilities and stakeholders that are members of other vulnerable groups opportunities are provided for communicating stakeholders’ ongoing feedback, for analyzing and addressing comments and concerns;
- *Inclusiveness and sensitivity*: stakeholder identification is undertaken to support better communications and build effective relationships. The participation process for the projects is inclusive. All stakeholders at all times will be encouraged to be involved in the consultation process. The project will provide equal access to information to all stakeholders taking into consideration cultural sensitivities and literacy levels. Sensitivity to stakeholders’ needs is the key principle underlying the selection of engagement methods. Special attention is given to vulnerable groups, women, children, people with disabilities and preexisting medical condition, elderly, refugees & IDPS and the cultural sensitivities of diverse ethnic groups.

## **7.2 Grievance Redress Mechanism (GRM)**

A grievance redress mechanism is an accessible and inclusive system, process, or procedure that receives and acts upon complaints and suggestions for improvement in a timely fashion and facilitates resolution of concerns and grievances arising in connection with a project. An



effective grievance mechanism provides project-affected parties with redress and helps address issues at an early stage.<sup>1</sup>

Effective grievance handling mechanisms (GRM) play an important role in the process of addressing complaints and disputes arising from issues during project implementation. It will be developed and applied to meet the needs of affected people, being cost-effective, accessible, designed to take into account culturally appropriate ways to handle community concerns, and working based on a well-defined time schedule.

Grievance Redress Mechanisms (GRMs) can be used as a tool to stay engaged with communities and share information when other direct measures for stakeholder engagement and consultations are more limited during the outbreak of infectious diseases like COVID19 pandemic. The existence of the grievance mechanism will be communicated to all stakeholder groups via the channels used to reach these groups for stakeholder consultations, including advertising it in local radios, newspapers and/or local noticeboards. The Project will provide a summary of the implementation of the grievance mechanism to the public on a regular basis, after removing identifying information on individuals to protect their identities.

Effective grievance handling mechanisms (GRM) play an important role in the process of addressing complaints and disputes arising from issues during project implementation. It will be developed and applied to meet the needs of affected people, being cost-effective, accessible, designed to take into account culturally appropriate ways to handle community concerns, and working based on a well-defined time schedule.

### **7.2.1 Description of GRM for COVID-19 Emergency Response Project**

The project will develop and apply a functional GRM to meet the needs of affected people, be cost-effective, accessible, designed to take into account culturally appropriate ways to handle community concerns, and work based on a well-defined time schedule. The project will also establish complaint and feedback mechanisms in the quarantine, treatment and isolation centres on any issues including reporting SEA and quality of services. Hotline services for complaint handling has been established and adequately communicated to the public including people in the treatment, isolation and quarantine centres. The national and local call centres have been established and running the national toll-free numbers # 8335, and #953. Eleven health bureaus and city administrations also have local call centres. Further, the MoH, EPHI and professional

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<sup>1</sup> World Bank 2018c: 12.

societies have launched Covid-19 messaging groups on web pages. Further, Grievances will be handled at the Woreda level by the Woreda Grievance Office and on the regional level by BoH and national level by MoH.

The project will also establish complaint and feedback mechanisms in the quarantine, treatment and isolation centres on any issues including reporting SEA and quality of services. Hotline services for complaint handling has been established and adequately communicated to the public including people in the treatment, isolation and quarantine centres. The national and local call centres have been established and running the national toll-free numbers # 8335, and #953. Eleven health bureaus and city administrations also have local call centres. Further, the MoH, EPHI and professional societies have launched Covid-19 messaging groups on web pages. Further, Grievances will be handled at the Woreda level by the Woreda Grievance Office and on the regional level by BoH and national level by MoH.

### **7.3 Description of GRM for COVID-19 Emergency Response Project**

The GRM will include the following steps:

Step 0: Grievance discussed with the respective health facility

Step 1: Grievance raised with the Woreda Grievance Office

Step 2: Appeal to the Regional (or, where available, Zonal) Grievance Office

Step 3: Appeal to the Ethiopia Independent Ombudsman and/or the Ministry of Health

Once all possible redress has been proposed and if the complainant is still not satisfied then they should be advised of their right to legal recourse. In the instance of the COVID 19 emergency, existing grievance procedures should be used to encourage reporting of co-workers if they show outward symptoms, such as ongoing and severe coughing with fever, and do not voluntarily submit to testing.

At present, MOH Communication and Public Relation Directorate has produced a draft guide for Covid-19 communication and public reporting at all levels, i.e., national, regional, zonal and Woreda levels. The guide describes structures and accountability processes, and mechanisms ensure accuracy of information released by MOH structures and local traditional media outlets. Moreover, the guide promotes the use of authentic verifiable sources on information and mentioned credible information sources such as the WHO, CDC and Johns Hopkins University web pages. Educational materials are produced by MOH and professional societies and translated in four local languages (Amharic, Tigrigna, Oromiffa and Somali). Additionally, the Minister and other Authorities periodically share updates to the wider public including using sign languages to reach to people with hearing limitation.

The MOH Directorate reviews public feedback and grievances shared on social media and use the social media analysis to inform content messaging. Additionally, MOH has launched a dedicated toll-free call centre/hotline established for Covid-19 response. The public has access to call centres at central/Federal, and regional levels and free of charge. Stakeholders, primarily the Ministry, Media and the emergency operation center (EOC) currently promote use of the call centre and publicised the telephone numbers dedicated for this purpose. MOH recommends every facility to conduct patient satisfaction surveys and clinical audits to identify limitation and best practices and incorporate the feedback from patients and clinical audit findings to improve quality of care processes and protocols.

Main features of the GRM are detailed in Table below and the full details of the GRM will be agreed upon during project inception.

**Table 9: Outline for Grievance Redress Mechanism for COVID-19 Emergency Response Project**

Engagement methods and actions	Objectives	Key Stakeholders being engaged	Time
<b>Mechanism for redress of grievances from communities in and surrounding the project site</b>			
Step 1: The grievance mechanism is communicated to all stakeholder groups via the channels used to reach these groups for stakeholder consultations, including advertising it in local radios, newspapers and/or local noticeboards. Providing ECERP project' contact details to the project affected communities	Make project information accessible to affected communities and resolve any complaints as soon as possible	The project affected communities, women and children	Immediately after inception workshop
Step 2: Affected stakeholders submit complaint to the GRM committees or the ECERP project Office/facility head			Any time during the project implementation
Step 3: GRM committee assess complaint and determine the corrective action communicate If the grievance beyond the capacity of the GRM committee, communicate to the ECERP project Office/facility head			Two weeks after received the complaint
Step 4: The GRM committees explain/clarify/resolve complaints			Two weeks after received the complaint
<b>Mechanism for redress of public complaints</b>			
Step 1: provide the hotline for established Covid-19 response.	Make project information	Project affected	Immediately after inception workshop

Step 2: present complaint if any to the GRM committee or the ECERP project Office/facility head	accessible to affected communities and resolve any complaints as soon as possible	people, male or female, Han or Ethnic minorities	Any time during the project implementation
Step 3: <b>Determine a corrective action</b>			Two weeks after received the complaint
Step 4: communicate with the complainants and resolve problems			Two weeks after received the complaint

**7.4 Disclosure Policies and Procedures**

In terms of methodology, it will be critical that the various project activities are inclusive and culturally sensitive, thereby ensuring that the affected or likely to be affected by the project and other interested parties will have meaningful opportunities to participate in project design and benefits. An inclusive information disclosure strategy will include household-outreach and focus-group discussions in addition to village consultations, ensuring usage of languages appropriate for the respective affected communities, the use of verbal communication or pictures instead of text, where literacy is in issue, etc. Likewise, the project will need to adapt the methods of stakeholder engagement to COVID19 physical distancing and other national requirements with recognition that the situation is developing rapidly.

Moreover, the ESMF will be disclosed by the client and the external website of World Bank on and the final (cleared) ESMF will be disclosed at the Government’s website to make it accessible to any person interested to refer this document. The Ministry of Health will also distribute this document to relevant government institutions. Besides, for purpose of discloser key findings of the draft ESMF and the mitigation strategies for the findings will be communicated to local community, Woreda and stakeholders at region.

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## Annexes

### Annex 1: Environmental and Social Screening Form

This form is to be used by Ministry of Health for 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
Is there any territorial dispute between two or more countries in the subproject and its ancillary aspects and related activities?			<i>OP7.60 Projects in Disputed Areas</i>	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 <sup>2</sup> ?			<i>OP7.50 Projects on International Waterways</i>	Notification (or exceptions)

**Conclusions:**

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

Provide Justifications.....  
.....  
.....

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<sup>2</sup> 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.



## Annex 2: Subproject Eligibility Screening Checklist

Subproject Name: \_\_\_\_\_

Region: \_\_\_\_\_; Zone: \_\_\_\_\_; Woreda: \_\_\_\_\_; Kebele: \_\_\_\_\_

No	Will the sub-project:	yes	No
1	Require BSL3 lab facilities		
2	Cause long term, permanent and/or irreversible (e.g. loss of major natural habitat) adverse impacts		
3	Have high probability of causing serious adverse effects to human health and/or the environment not related to treatment of COVID-19 cases		
4	Have adverse social impacts and may give rise to significant social conflict		
5	Affect lands or rights of indigenous people or other vulnerable minorities and would require Free Prior Informed Consent.		
6	Involve permanent resettlement or land acquisition, adverse impacts on cultural heritage		

### Recommendations:

- Sub-project is not eligible and rejected: \_\_\_\_\_
- Sub-project is eligible and approved: \_\_\_\_\_

## Annex 3: Templates for Preparation of Site Specific Infection Control and Waste Management Plan (ICWMP), Environmental and Social Management Plan (ESMP) and Infection Control and Prevention Protocol

### I. Template for Infection Control and Waste Management Plan (ICWMP)

#### 1.1 Describe the targeted healthcare facility (HCF):

- Type: E.g. general hospital, clinics, inpatient/outpatient facility, medical laboratory;
- *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

#### 1.2 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.

#### 1.3 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 WGB 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 consideration.
- 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 the hazardous medical goods.
- Waste segregation, packaging, color coding and labeling: HCF should strictly conduct waste segregation at the point of generation. Internationally adopted method for packaging, color coding and labeling 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 incinerator 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 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 the 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) is capable of handling the type of effluent discharged. In cases where municipal sewage system is not in place, HCF should build and proper 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 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.

### **Emergency Preparedness and Response**

Emergency incidents occurred in an 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, community, 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.

### **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 an HCF takes overall responsibility for infection control and waste management;
- Involve all relevant departments in a healthcare facility, and build an intra-departmental team to manage, coordinate and regularly review the 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.

### **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. 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 system should be in place.

**Table of ICWMP**

Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Budget
General HCF operation – Environment					
General HCF operation – OHS issues					
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, color coding and labeling					
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 movement of specimen, samples, reagents, medical equipment, and infection materials					
Emergency events					
<i>To be expanded</i>					

## II. ESMP Template

A full-fledged ESMP shall include other key elements such as institutional arrangement, capacity building and training plan, and background information. The Borrower may incorporate pertaining sections in the ESMF into this ESMP, with necessary updates.

The matrix stress lifecycle management of E&S risks, including planning and design, construction, operational and decommissioning stages. Because COVID-19 is a latest threat to global public health, preparedness and responses vary across countries. Nonetheless, avoiding and minimizing chances of infection and protecting public health sit at the core. Properly managing E&S risks associated with COVID-19 responses serves the purpose. Thus, professional efforts should be made throughout the project lifecycle. The issues and risks presented in the matrix are based on studies of COVID-19 responses thus far, issues of similar Bank financed healthcare sector projects. They should be expanded and/or updated during the project environmental and social assessment process, including stakeholder engagement. Many pertaining mitigation measures and good practices are well documented in WBG EHS Guidelines, WHO guidelines and other GIIPs. They should be followed in general, taken into account country context. Proper

stakeholder engagement including close involvement of medical and healthcare waste management professional should be conducted in determining the mitigation measures. The Infection Control and Waste Management Plan is considered part of this ESMP. The ESMP should make reference to pertaining E&S instruments as required by ESF, including LMP and RAP.

Key Activities	Potential E&S Issues and Risks	Proposed Mitigation Measures	Responsibilities	Timeline	Budget
Identify the type, location and scale of healthcare facilities (HCF)					
Identify the needs for new construction, expansion, upgrading and/or rehabilitation					
Identify the needs for ancillary works and associated facilities, such as access roads, construction materials, supplies of water and power, sewage system.					
Identify the needs for acquisition of land and assets (incl. acquiring existing assets such as hostel, stadium to hold potential patients)					
Identify onsite and offsite waste management facilities, and waste transportation routes and service providers					
Identify needs for transboundary movement of samples, specimen, reagent, and other hazardous materials.					
Identify needs for workforce and type of project workers					
Identify the needs for using security personnel during construction and/or operation of HCF					
HCF design – general					
HCF design - considerations for differentiated treatment for groups of higher sensitivity or vulnerable (potentially the elderly, those with preexisting conditions, or the very young)					

Clearing of vegetation and trees; Construction activities near ecologically sensitive areas/spots					
General construction activities Foundation excavation; borehole digging					
General construction activities -					
General construction activities – general pollution management					
General construction activities – hazardous waste management					
General construction activities – Labor issues					
General construction activities – Occupational Health and Safety (OHS)					
General construction activities- traffic and road safety					
General construction activities – security personnel					
General construction activities – land and asset					
General construction activities - Labor					
General construction activities -					
General construction activities – cultural heritage					
General construction activities – emergency preparedness and response					
Construction activities related to <i>onsite</i> waste management facilities, including temporary storage, incinerator, sewerage system and wastewater treatment works					
Construction activities related to demolition of existing structures or facilities (if needed)					
<b>Activities</b>	<b>Potential E&amp;S Issues and Risks</b>	<b>Proposed Mitigation Measures</b>	<b>Responsibilities</b>	<b>Timeline</b>	<b>Budget</b>
General HCF operation – Environment					
General HCF operation – OHS issues					
HCF operation – Labor issue					

HCF operation - considerations for differentiated treatment for groups of higher sensitivity or vulnerable (potentially the elderly, those with preexisting conditions, or the very young)					
HCF operation - considerations for those with disabilities, taking into consideration the principle of universal access as and when appropriate;					
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, color coding and labeling					
Onsite collection and transport					
Waste storage					
Onsite waste treatment and disposal					
Waste transportation to and disposal in offsite treatment and disposal facilities					
Transportation and disposal at offsite waste management facilities					
HCF operation – transboundary movement of specimen, samples, reagents, medical equipment, and infection materials					
Operation of acquired assets for holding potential COVID-19 patients					
Emergency events					
Decommissioning of interim HCF					
Decommissioning of medical equipment					
Regular decommissioning					

### III. Infection and Prevention Control Protocol

(Adopted from World Bank COVID-19 ESMF template that has adapted it from the CDC Interim Infection Prevention and Control Recommendations for patients with confirmed COVID-19 or persons under investigation for COVID-19 in Healthcare Settings) (COVID-19)

## HEALTH CARE SETTINGS

- 1. Minimize Chance of Exposure (to staff, other patients and visitors)**
  - Upon arrival, make sure patients with symptoms of any respiratory infection to a separate, isolated and well-ventilated section of the health care facility to wait, and issue a facemask
  - During the visit, make sure all patients adhere to respiratory hygiene, cough etiquette, hand hygiene and isolation procedures. Provide oral instructions on registration and ongoing reminders with the use of simple signs with images in local languages
  - Provide alcohol-based hand sanitizer (60-95% alcohol), tissues and facemasks in waiting rooms and patient rooms
  - Isolate patients as much as possible. If separate rooms are not available, separate all patients by curtains. Only place together in the same room patients who are all definitively infected with COVID-19. No other patients can be placed in the same room.
- 2. Adhere to Standard Precautions**
  - Train all staff and volunteers to undertake standard precautions - assume everyone is potentially infected and behave accordingly
  - Minimize contact between patients and other persons in the facility: health care professionals should be the only persons having contact with patients and this should be restricted to essential personnel only
  - A decision to stop isolation precautions should be made on a case-by-case basis, in conjunction with local health authorities.
- 3. Training of Personnel**
  - Train all staff and volunteers in the symptoms of COVID-19, how it is spread and how to protect themselves. Train on correct use and disposal of personal protective equipment (PPE), including gloves, gowns, facemasks, eye protection and respirators (if available) and check that they understand
  - Train cleaning staff on most effective process for cleaning the facility: use a high-alcohol based cleaner to wipe down all surfaces; wash instruments with soap and water and then wipe down with high-alcohol based cleaner; dispose of rubbish by burning etc.
- 4. Manage Visitor Access and Movement**
  - Establish procedures for managing, monitoring, and training visitors
  - All visitors must follow respiratory hygiene precautions while in the common areas of the facility, otherwise they should be removed
  - Restrict visitors from entering rooms of known or suspected cases of COVID-19 patients. Alternative communications should be encouraged, for example by use of mobile phones. Exceptions only for end-of-life situation and children requiring emotional care. At these times, PPE should be used by visitors.
  - All visitors should be scheduled and controlled, and once inside the facility, instructed to limit their movement.
  - Visitors should be asked to watch out for symptoms and report signs of acute illness for at least 14 days.

## CONSTRUCTION SETTINGS IN AREAS OF CONFIRMED CASES OF COVID-19

- 1. Minimize Chance of Exposure**
  - Any worker showing symptoms of respiratory illness (fever + cold or cough) and has potentially been exposed to COVID-19 should be immediately removed from the site and tested for the virus at the nearest local hospital
  - Close co-workers and those sharing accommodations with such a worker should also be removed from the site and tested



- Project management must identify the closest hospital that has testing facilities in place, refer workers, and pay for the test if it is not free
- Persons under investigation for COVID-19 should not return to work at the project site until cleared by test results. During this time, they should continue to be paid daily wages
- If a worker is found to have COVID-19, wages should continue to be paid during the worker's convalescence (whether at home or in a hospital)
- If project workers live at home, any worker with a family member who has a confirmed or suspected case of COVID-19 should be quarantined from the project site for 14 days, and continued to be paid daily wages, even if they have no symptoms.

## **2. Training of Staff and Precautions**

- Train all staff in the signs and symptoms of COVID-19, how it is spread, how to protect themselves and the need to be tested if they have symptoms. Allow Q&A and dispel any myths.
- Use existing grievance procedures to encourage reporting of co-workers if they show outward symptoms, such as ongoing and severe coughing with fever, and do not voluntarily submit to testing
- Supply face masks and other relevant PPE to all project workers at the entrance to the project site. Any persons with signs of respiratory illness that is not accompanied by fever should be mandated to wear a face mask
- Provide handwash facilities, hand soap, alcohol-based hand sanitizer and mandate their use on entry and exit of the project site and during breaks, via the use of simple signs with images in local languages
- Train all workers in respiratory hygiene, cough etiquette and hand hygiene using demonstrations and participatory methods
- Train cleaning staff in effective cleaning procedures and disposal of rubbish

## **3. Managing Access and Spread**

- Should a case of COVID-19 be confirmed in a worker on the project site, visitors should be restricted from the site and worker groups should be isolated from each other as much as possible;
- Extensive cleaning procedures with high-alcohol content cleaners should be undertaken in the area of the site where the worker was present, prior to any further work being undertaken in that area.

## Annex 4 Protocol for transportation of infectious substances

### Introduction

Infectious substances are transported for a variety of different reasons, within countries and across international borders. It is obligatory upon shippers to ensure packaging and shipping conditions meet regulatory requirements to preserve the integrity of materials and facilitate their timely arrival at destination. The protocol provides information for classifying infectious substances for transportation and ensuring their safe packaging. They stress the importance of developing a working relationship between those involved – the sender, the carrier and the receiver – in order to provide for safe and expeditious transPoint of these materials. This Protocol provides practical guidance to facilitate compliance with applicable international regulations for the transPoint of infectious substances and patient specimens by all modes of transport, both nationally and internationally. It is adopted from WHO Guidance on regulations for the transPoint of infectious substances 2015–2016.

### General preparation of shipments for transport

Because of the differences in the hazards posed by Category A infectious substances (UN 2814 and UN 2900) and Category B infectious substances (UN 3373), there are variations in the packaging, labelling and documentation requirements for the two categories. The packaging requirements are determined by UNCETDG and are set out as Packing Instructions P620 and P650, reproduced. The requirements are subject to change and regular upgrade by the organizations mentioned.

The current packaging requirements are described below.

**Note 1:** Hand carriage of Category A and Category B infectious substances and transPoint of these materials in diplomatic pouches are strictly prohibited by international air carriers.

**Note 2:** Inner packaging containing infectious substances shall not be consolidated with inner packagings containing unrelated types of goods.

Shippers of infectious substances shall ensure that packages are prepared in such a manner that they arrive at their destination in good condition and present no hazard to persons or animals during transport.

### Basic triple packaging system

This system of packaging shall be used for all infectious substances. It consists of three layers as follows:

- **Primary receptacle.** A primary watertight, leak-proof receptacle containing the specimen. The receptacle is packaged with enough absorbent material to absorb all fluid in case of breakage or leakage.
- **Secondary packaging.** A second durable, watertight, leak-proof packaging to enclose and protect the primary receptacle(s). Several cushioned primary receptacles may be placed in one secondary packaging, but sufficient additional absorbent material shall be used to absorb all fluid in case of breakage or leakage.
- **Outer packaging.** Secondary packaging are placed in outer shipping packaging with suitable cushioning material. Outer packaging protect their contents from outside influences, such as physical damage, while in transit. The smallest overall external dimension shall be 10 x 10 cm.

Each completed package is normally required to be correctly marked, labelled and accompanied with appropriate shipping documents (as applicable). The requirements for these aspects are described below.

### Packaging, labelling and documentation requirements for infectious substances in Category A Packaging

An infectious substance category A which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals.

Infectious substances in Category A may only be transported in packaging that meets the United Nations class 6.2 specifications and complies with Packing Instruction P620 This ensures that strict performance criteria are met; tests for compliance with these criteria include a 9-metre drop test, a puncture test, a pressure test and a stacking test. The outer packaging shall bear the United Nations packaging specification marking (Figure 2), which indicates that the packaging has passed the performance tests to the satisfaction of the competent authority.

The primary receptacle or the secondary packaging shall be capable of withstanding a pressure differential of not less than 95 kPa. The United Nations packaging specification marking alone does not indicate that a test for this has been undertaken, and packaging users should ask their suppliers whether the completed package meets this requirement. There is no comprehensive list of suppliers of packaging that comply with Packing Instruction P620. However, an Internet search using a suitable international or national search engine usually provides appropriate information, as well as access to national regulations. Search phrases such as “UN packaging” and “UN infectious substance packaging” produce extensive results. Carriers and forwarding agents should also be able to supply details of local suppliers or local companies that can provide such information.

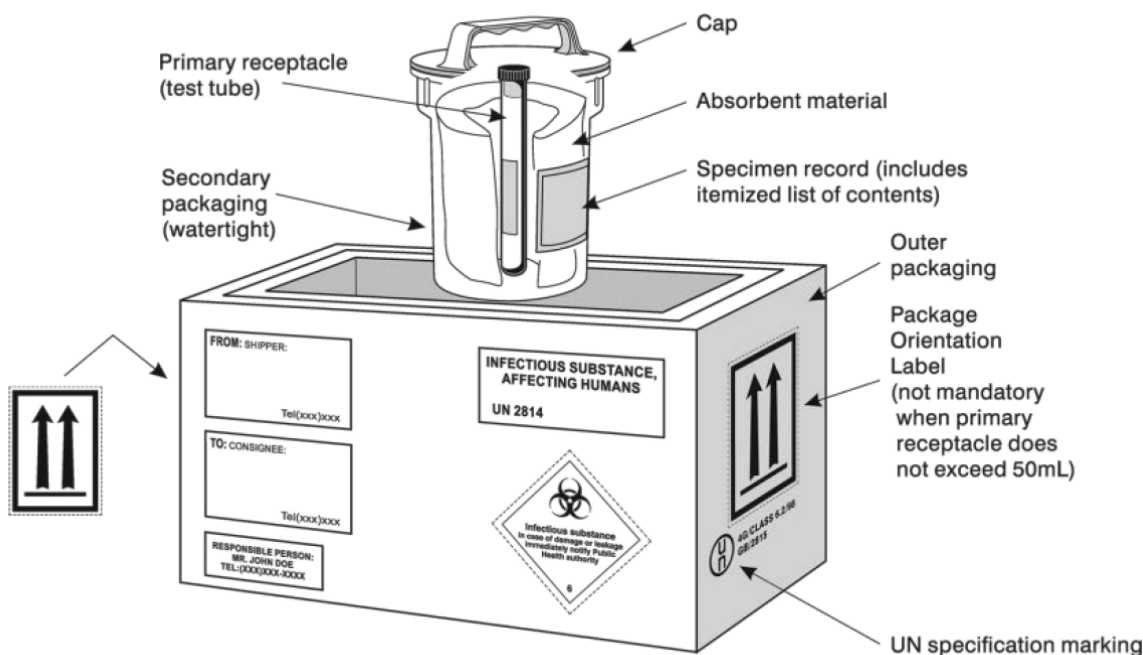


Figure 1. Example of triple packaging system for the packaging and labelling of Category A infectious substances

### Marking

Packages are marked to provide information about the contents of the package, the nature of the hazard, and the packaging standards applied. All markings on packages or overpacks shall be placed in such a way that they are clearly visible and not covered by any other label or marking. Each package shall display the following information on the outer packaging or the overpack.

- the shipper’s (sender’s, consignor’s) name and address
- the telephone number of a responsible person, knowledgeable about the shipment
- the receiver’s (consignee’s) name and address
- the United Nations number followed by the proper shipping name (UN 2814 “INFECTIOUS SUBSTANCE, AFFECTING HUMANS” or UN 2900 “INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only”, as appropriate). Technical names need not be shown on the package.
- temperature storage requirements (optional)

- when dry ice or liquid nitrogen is used: the technical name of the refrigerant, the appropriate United Nations number, and the net quantity.

### Labelling

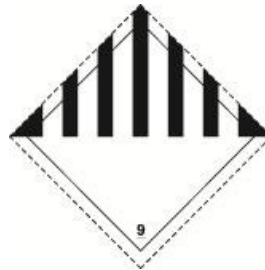
There are two types of labels:

1. hazard labels in the form of a square set at an angle of 45° (diamond- shaped) are required for most dangerous goods in all classes;
2. handling labels in various shapes are required, either alone or in addition to hazard labels, for some dangerous goods. Specific hazard label(s) shall be affixed to the outside of each package for all dangerous goods to be shipped (unless specifically exempted).



**Figure 2.** Hazard label for Category A infectious substances and for genetically modified microorganisms and organisms that meet the definition of an infectious substance, Category A

Minimum dimensions: 100 × 100 mm (for small packages: 50 × 50 mm) No. of labels per package: 1  
 Colour: Black and white The words “INFECTIOUS SUBSTANCE” shall be shown. The statement “In case of damage or leakage immediately notify a Public Health Authority” is required in some countries



**Figure 3 .** Hazard label for certain noninfectious genetically modified microorganisms and organisms (UN 3245) and for carbon dioxide, solid (dry ice) (UN 1845); substances packed in dry ice (see section on Refrigerants) shall bear this label in addition to the primary risk label (e.g. the label shown in Figure 2)

### Shipping empty packaging'

Before an empty package is returned to the shipper, or sent elsewhere, it must be appropriately disinfected or sterilized to nullify any hazard. Any label or marking indicating that it had contained an infectious substance shall be removed or covered.

**SHIPPER'S DECLARATION FOR DANGEROUS GOODS**

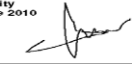
<b>Shipper</b> Dr XY Orange, tel 0789 456 123 Childrens' hospital 4, Splendid Street 12345 Beautycity Nicecountry		Air Waybill No. 543 7654 9076 Page 1 of 1 Pages Shipper's Reference Number <small>(optional)</small>				
<b>Consignee</b> Dr AB Normal, tel 03210 987 4568 Virobactung Laboratories 6, Many Way 98765 Myplace Hercountry						
<small>Two completed and signed copies of this declaration must be handed to the operator.</small>						
<b>TRANSPORT DETAILS</b> This shipment is within the limitations prescribed for: <small>(Delete non-applicable)</small>		<b>WARNING</b> Failure to comply in all aspects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties.				
Airport of Departure: Amleaving						
Airport of Destination: Willgetthere		Shipment Type <small>(Delete non-applicable)</small> NON-RADIOACTIVE <del>RADIOACTIVE</del>				
<b>NATURE AND QUANTITY OF DANGEROUS GOODS</b>						
<b>Dangerous Goods Identification</b>						
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group	Quantity and Type of Packing	Packing Inst.	Authorization
UN 2814	Infectious substance, affecting humans (Ebola Virus)	6.2		50ml	620	
UN 1845	Dry ice	9		20kg All packed in one fibreboard box	954	
<small>*Additional Handling Information</small> Emergency contact: Dr Orange tel 0789 456 123						
I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.				Name/Title of Signatory: Dr XY Orange Goods Dispatch Place and Date: Beautycity 18 June 2010 Signature <small>(see warning above)</small> 		

Figure 4. Example of a completed shipper's Declaration for Dangerous Goods

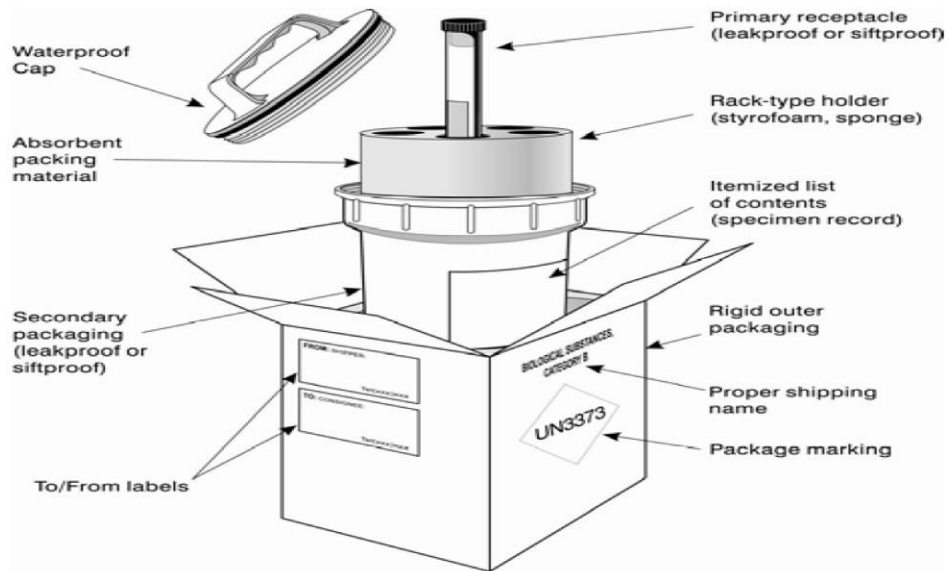
**Packaging, labelling and documentation requirements for infectious substances in Category B**  
**Packaging**

**Category B:** An infectious substance which does not meet the criteria for inclusion in Category A. Infectious substances in Category B shall be assigned to UN 3373

The triple packaging system continues to apply, including for local surface transport. Testing documents are not required, however. It may be possible to source packagings locally rather than finding an authorized supplier, provided that the packaging manufacturer and the shipper can comply fully with the requirements of P650. As for P620, there is no comprehensive list of suppliers of packagings that comply with Packing Instruction P650. However, an Internet search using a suitable international or national search engine usually provides appropriate information, as well as access to national regulations. Search phrases such as "UN packaging" and "UN infectious substance packaging" produce extensive results. Carriers and forwarding agents should also be able to supply details of local suppliers or local companies that can provide such information.

To ensure correct preparation for transport, packaging manufacturers and subsequent distributors shall provide clear instructions to the consignor or persons preparing packages (e.g. patients) on how the packaging should be filled and closed.

For surface transport there is no maximum quantity per package.



**Figure 5: Example of the triple packaging system for the packing and labelling Category B infectious substances (adopted from WHO)**

For air transport:

- no primary receptacle shall exceed 1 litre and the outer packaging must not contain more than 4 litres (for liquids)
- except for packages containing body parts, organs or whole bodies, the outer packaging must not contain more than 4 kg (for solids).

Provided all the requirements of P650 are met, there are no other transport requirements. P650 incorporates all that is needed to make a shipment for Category B infectious substances.

### Marking

Each package shall display the following information:

- for air: the shipper's (sender's, consignor's) name, address and telephone number
- for air: the telephone number of a responsible person, knowledgeable about the shipment
- the receiver's (consignee's) name, address and telephone number
- the proper shipping name ("BIOLOGICAL SUBSTANCE, CATEGORY B") adjacent to the diamond-shaped mark shown in Figure 10
- temperature storage requirements (optional).

The marking shown in Figure 10 is used for shipments of Category B infectious substances.



**Figure 6. Marking for infectious substances of Category B**

- Minimum dimension: the width of the line forming the square shall be at least 2 mm, and the letters and numbers shall be at least 6 mm high. For air transport, each side of the square shall have a length of at least 50 mm
- Colour: none specified, provided the mark is displayed on the external surface of the outer packaging on a background of contrasting colour and that it is clearly visible and legible
- The words "BIOLOGICAL SUBSTANCE, CATEGORY B" in letters at least 6 mm high shall be displayed adjacent to the mark.

**Note: For air transport:**

- when dry ice (solid carbon dioxide) is used (see section on Refrigerants), the label shown in Figure 4 shall be applied
- for cryogenic liquids (see section on Refrigerants) the labels shown in Figures 5 and 6 shall also be affixed.

**Documentation**

Dangerous goods documentation (including a shipper's declaration) is not required for Category B infectious substances. The following shipping documents are required. To be prepared and signed by the shipper (sender, consignor):

- for international shipments: a packing list/proforma invoice that includes the shipper's and the receiver's address, the number of packages, detail of contents, weight, value (Note: the statement "no commercial value" shall appear if the items are supplied free of charge)
- an import and/or export permit and/or declaration if required.

To be prepared by the shipper or the shipper's agent:

- an air waybill for air transport or equivalent documents for road, rail and sea journeys.

**Refrigerants**

Refrigerants may be used to stabilize infectious substances in Categories A and B during transit.

- Packed infectious substances requiring cooling assigned to packing instructions P620 or P650 shall meet the appropriate requirements of that packing instruction.
- Ice, ice pads or dry ice shall be placed outside the secondary receptacle or in an outer packaging or in an overpack.
- Wet ice shall be placed in a leak-proof container; the outer packaging or overpack shall also be leak-proof.
- Dry ice must not be placed inside the primary or secondary receptacle because of the risk of explosions. A specially designed insulated packaging may be used to contain dry ice. The packaging must permit the release of carbon dioxide gas if dry ice is used. Packing instruction P003 (ICAO/IATA PI954) shall be observed.
- The secondary receptacle shall be secured within the outer package to maintain the original orientation of the inner packages after the refrigerant has melted or dissipated.
- If dry ice is used to ship infectious substances in Category A, the details shall appear on the shipper's Declaration for Dangerous Goods. If dry ice is used to ship infectious substances in Category B or Exempt samples, the shipper's Declaration of Dangerous Goods is not required. In any case, the outermost packaging shall carry the hazard label for dry ice (see Figure 4), the appropriate markings, including the UN number and the proper shipping name followed by the words "AS COOLANT", *for example: UN 1845, CARBON DIOXIDE, SOLID, AS COOLANT.* and an indication of the net quantity of dry ice in kilograms.
- If liquid nitrogen is used as a refrigerant, special arrangements shall be made in advance with the carrier. Primary receptacles shall be capable of withstanding extremely low temperatures, and packaging and documentation requirements for liquid nitrogen shall be observed. In particular, the outermost packaging shall carry the hazard label for liquid nitrogen (see Figure 5). For air transport, the handling label for cryogenic liquids shall also be affixed (see Figure 6) – this is not considered further in these guidelines.
- When shipping with liquid nitrogen, "dry shippers" can be used. Correctly prepared "dry shippers" do not contain free liquid nitrogen. While liquid nitrogen is a regulated dangerous good, a properly prepared "dry shipper" is not. When shipping with "dry shippers", the dangerous goods label for

class 2 (non-flammable, non-toxic gases) is NOT required. Shippers must properly mark and label the outside of dry shipper packages containing infectious substances. Appropriate documentation should discuss the presence of infectious substances. For Category A this information will be included in the Dangerous Goods Declaration. For Category B and Exempt packages this information should be provided on the Air Waybill.

### **Training**

The dangerous goods regulations require all personnel involved in transport to undergo appropriate training. For the transPoint of Category A infectious substances, personnel must undergo training in accordance with the modal requirements. This can involve attendance at approved courses and passing examinations. For the transPoint of Category B infectious substances there is a requirement that clear instructions on the use of the packaging are supplied to the user; this is regarded as sufficient “training” for the shipping of these substances. However, if such specimens are consigned with other dangerous goods (e.g. flammable liquids, radioactive materials, liquefied gases, etc.), then personnel must be trained in the proper procedures for their transport. Training and awareness are important for all personnel involved in the transPoint of Category B infectious substances. Training of personnel, for example via consultation of guidance documents like this one, while not formally required by the modal regulations, is recommended and encouraged. Only through appropriate guidance and training can shippers ensure that the classification of the substance to be shipped is correct, and that proper packaging is selected and prepared. Carriers and other employers of transport workers should train their personnel in the appropriate procedures for recognizing and handling packages containing infectious substances and in how to address spills and protect themselves from exposure.

*Records of training received shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.*

### **Transport planning**

It is the responsibility of the shipper to ensure the correct classification, packaging, labelling, and documentation of all infectious substances destined for transport. The efficient transport and transfer of infectious substances requires good coordination between the sender, the carrier and the receiver to ensure that the material is transported safely and arrives on time and in good condition. Such coordination depends upon well-established communications and a good working relationship between the three parties.

The carriage of any goods whether dangerous or not, is a commercial matter for a carrier. The dangerous goods rules described in these guidelines reflect governmental legal requirements. Indeed, different countries may have adopted State variations to the United Nations Model Regulations. In addition, a carrier that does not wish to carry particular goods is under no legal obligation to do so. Many carriers (airlines, haulers and shipping lines) are “private carriers” and have the right to refuse to carry goods or add additional requirements. In recent years it has become clear that some carriers are indeed refusing to carry certain goods or are adding extra conditions. Provided such conditions do not conflict with the legal requirements, this type of action is not illegal.

ICAO and IATA list the main carrier restrictions in force among airlines. Some airlines will not carry dangerous goods at all, while others will carry only a very limited range of goods. As carrier restrictions for the different modes of transport are not published centrally, harmonization between stakeholders is essential. The shipper (sender, consignor), carrier and the receiver (consignee) have specific responsibilities in ensuring successful transportation.

### **The shipper (sender, consignor)**

- Makes advance arrangements with the receiver including investigating the need for import/export permits
- Makes advance arrangements with the carrier to ensure:
  - o that the shipment will be accepted for appropriate transport
  - o that the shipment (direct transport if possible) is undertaken by the most direct routing
- Prepares necessary documentation, including permits, dispatch and shipping documents
- Notifies the receiver of transportation arrangements once these have been made, well in advance of the expected arrival time.



**The carrier**

- Provides advice to the sender regarding the necessary shipping documents and instructions for their completion
- Provides advice to the sender about correct packaging
- Assists the sender in arranging the most direct routing and then confirms the routing
- Maintains and archives the documentation for shipment and transport.

**The receiver (consignee)**

- Obtains the necessary authorization(s) from national authorities for the importation of the material
  - Provides the sender with the required import permit(s), letter(s) of authorization, or other document(s) required by the national authorities
  - Arranges for the most timely and efficient collection on arrival
  - Should acknowledge receipt to the sender.

Shipments should not be dispatched until:

- Advance arrangements have been made between the sender, carrier and receiver
- The shipper has confirmed with the national authorities that the material may be legally exported
- The receiver has confirmed with the national authorities that the material may be legally imported
- The receiver has confirmed that there will be no delay incurred in the delivery of the package to its destination.

**Requirements for air mail**

Infectious substances in Category A will not be accepted for shipment through postal services. Infectious substances in Category B may be shipped by registered air mail, and the Universal Postal Union recommends the following procedure. The basic triple packaging system is used with the same requirements as for other means of transport. The address label shall display the word “*Lettre*” or “Letter” and the green Customs Declaration Label for Postal Mail is required for international mailing. “BIOLOGICAL SUBSTANCE, CATEGORY B” shall be identified with the white diamond label with black letters “UN 3373” (see Figure 10). Local/international restrictions may be in force. Prior contact should therefore be made with the national public operator to ascertain whether the packaged material will be accepted by the postal service in question.

**Spill clean-up procedure**

The appropriate response in the event of exposure to any infectious substance is to wash or disinfect the affected area as soon as possible, regardless of the agent. Even if an infectious substance comes into contact with non-intact skin, washing of the affected area with soap and water or with an antiseptic solution can reduce the risk of infection. Medical advice should be obtained any time there is a suspected exposure to infectious substances resulting from a damaged package. The following procedure for clean-up can be used for spills of all infectious substances including blood. The person must be trained on such procedure before performing these steps:

1. Wear gloves and protecting clothing, including face and eye protection if indicated.
2. Cover the spill with a cloth or paper towels to contain it.
3. Pour an appropriate disinfectant over the cloth or paper towels and the immediately surrounding area (5% bleach solutions are generally appropriate, but for spills on aircraft, quaternary ammonium disinfectants should be used).
4. Apply the disinfectant concentrically beginning at the outer margin of the spill area, working towards the centre.
5. After about 30 min, clear away the materials. If there is broken glass or other sharps are involved, use a dustpan or a piece of stiff cardboard to collect the materials and deposit them into a puncture-resistant container for disposal.
6. Clean and disinfect the area of the spillage (if necessary, repeat steps 2–5).
7. Dispose of contaminated materials into a leak-proof, puncture-resistant waste disposal container.
8. After successful disinfection, report the incident to the competent authority and inform them that the site has been decontaminated (see Incident reporting below).

### **Incident reporting**

No reports of infections resulting from transport-related exposures have been documented other than the anthrax letters of 2001 in the USA. There have been reports of the transmission of acute respiratory infections and tuberculosis associated with air travel, but these were attributed to direct person-to-person contact and not to packaging problems or shipping incidents.

Statistical data collected by a group of central laboratories showed the efficacy of packaging compliant with P650 and P620 in assuring that infectious substances are transported without leakage and loss of materials. For the 4.92 million primary containers shipped in 2003 to any of the worldwide regional offices of these central laboratories, just 106 breakages, 0.002% of the total number, were recorded. Moreover, the leakages that did occur were all contained by the absorbent material, and no damage to secondary containers or outer packaging was reported. The various international modal regulations require the reporting of incidents to the relevant competent transport authorities in addition to the necessary health authorities. This applies to both categories of infectious substances, but particularly to those in Category A.

### **Transport planning**

It is the responsibility of the shipper to ensure the correct classification, packaging, labelling, and documentation of all infectious substances destined for transport. The efficient transport and transfer of infectious substances requires good coordination between the sender, the carrier and the receiver to ensure that the material is transported safely and arrives on time and in good condition. Such coordination depends upon well-established communications and a good working relationship between the three parties.

The carriage of any goods whether dangerous or not, is a commercial matter for a carrier. The dangerous goods rules described in these guidelines reflect governmental legal requirements. Indeed, different countries may have adopted State variations to the United Nations Model Regulations. In addition, a carrier that does not wish to carry particular goods is under no legal obligation to do so. Many carriers (airlines, haulers and shipping lines) are "private carriers" and have the right to refuse to carry goods or add additional requirements. In recent years it has become clear that some carriers are indeed refusing to carry certain goods or are adding extra conditions. Provided such conditions do not conflict with the legal requirements, this type of action is not illegal.

ICAO and IATA list the main carrier restrictions in force among airlines. Some airlines will not carry dangerous goods at all, while others will carry only a very limited range of goods. As carrier restrictions for the different modes of transport are not published centrally, harmonization between stakeholders is essential. The shipper (sender, consignor), carrier and the receiver (consignee) have specific responsibilities in ensuring successful transportation.

### **The shipper (sender, consignor)**

- Makes advance arrangements with the receiver including investigating the need for import/export permits
- Makes advance arrangements with the carrier to ensure:
  - o that the shipment will be accepted for appropriate transport
  - o that the shipment (direct transport if possible) is undertaken by the most direct routing
- Prepares necessary documentation, including permits, dispatch and shipping documents
- Notifies the receiver of transportation arrangements once these have been made, well in advance of the expected arrival time.

### **The carrier**

- Provides advice to the sender regarding the necessary shipping documents and instructions for their completion
- Provides advice to the sender about correct packaging
- Assists the sender in arranging the most direct routing and then confirms the routing
- Maintains and archives the documentation for shipment and transport.

### **The receiver (consignee)**

- Obtains the necessary authorization(s) from national authorities for the importation of the material

- Provides the sender with the required import permit(s), letter(s) of authorization, or other document(s) required by the national authorities
- Arranges for the most timely and efficient collection on arrival
- Should acknowledge receipt to the sender.

Shipments should not be dispatched until:

- Advance arrangements have been made between the sender, carrier and receiver
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4. Wear gloves and protecting clothing, including face and eye protection if indicated.
5. Cover the spill with a cloth or paper towels to contain it.
6. Pour an appropriate disinfectant over the cloth or paper towels and the immediately surrounding area (5% bleach solutions are generally appropriate, but for spills on aircraft, quaternary ammonium disinfectants should be used).
4. Apply the disinfectant concentrically beginning at the outer margin of the spill area, working towards the centre.
5. After about 30 min, clear away the materials. If there is broken glass or other sharps are involved, use a dustpan or a piece of stiff cardboard to collect the materials and deposit them into a puncture-resistant container for disposal.
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### **Transport planning**

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- Makes advance arrangements with the carrier to ensure:
  - o that the shipment will be accepted for appropriate transport
  - o that the shipment (direct transport if possible) is undertaken by the most direct routing
- Prepares necessary documentation, including permits, dispatch and shipping documents
- Notifies the receiver of transportation arrangements once these have been made, well in advance of the expected arrival time.

#### **The carrier**

- Provides advice to the sender regarding the necessary shipping documents and instructions for their completion
- Provides advice to the sender about correct packaging
- Assists the sender in arranging the most direct routing and then confirms the routing
- Maintains and archives the documentation for shipment and transport.

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### **Packing Instruction P620**

**This instruction applies to UN 2814 and UN 2900.**

Infectious substances in Category A and designated as UN 2814 or UN 2900 may only be transported in packaging that meets the United Nations class 6.2 specifications and complies with Packing Instruction P620, which is reproduced below. The various provisions mentioned are set out in the United Nations Model Regulations.

The following packagings are authorized provided the special packing provisions described below are met: Packagings meeting the requirements and approved accordingly consisting of:

A. Inner packagings comprising:

- (i) leakproof primary receptacle(s);
- (ii) a leakproof secondary packaging;
- (iii) other than for solid infectious substances, an absorbent material in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging; if multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated so as to prevent contact between them;

B. (b) A rigid outer packaging.

1. Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G); Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2).
2. The smallest external dimension shall be not less than 100 mm (4 in). **Additional requirements:**
  1. Inner packagings containing infectious substances shall not be consolidated with inner packagings containing unrelated types of goods. Complete packages may be overpacked in accordance with the provisions of 1.2.1 and 5.1.2; such an overpack may contain dry ice.
  2. Other than for exceptional consignments, e.g. whole organs which require special packaging, the following additional requirements shall apply:
    - Substances consigned at ambient temperatures or at a higher temperature. Primary receptacles shall be of glass, metal or plastics. Positive means of ensuring a leakproof seal shall be provided, e.g. a heat seal, a skirted stopper or a metal crimp seal. If screw caps are used, they shall be secured by positive means, e.g., tape, paraffin sealing tape or manufactured locking closure;
    - Substances consigned refrigerated or frozen. Ice, dry ice or other refrigerant shall be placed around the secondary packaging(s) or alternatively in an overpack with one or more complete packages marked in accordance with 6.3.3. Interior supports shall be provided to secure secondary packaging(s) or packages in position after the ice or dry ice has dissipated. If ice is used, the outer packaging or overpack shall be leakproof. If dry ice is used, the outer packaging or overpack shall permit the release of carbon dioxide gas. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used;
    - Substances consigned in liquid nitrogen. Plastics primary receptacles capable of withstanding very low temperature shall be used. The secondary packaging shall also be capable of withstanding very low temperatures, and in most cases will need to be fitted over the primary receptacle individually. Provisions for the consignment of liquid nitrogen shall also be fulfilled. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen;
    - Lyophilized substances may also be transported in primary receptacles that are flame-sealed glass ampoules or rubber-stoppered glass vials fitted with metal seals.
  3. Whatever the intended temperature of the consignment, the primary receptacle or the secondary packaging shall be capable of withstanding without leakage an internal pressure producing a pressure differential of not less than 95 kPa and temperatures in the range -40 °C to +55 °C (-40 °F to +130 °F).
  4. Other dangerous goods shall not be packed in the same packaging as Division 6.2 infectious substances unless they are necessary for maintaining the viability, stabilizing or preventing

degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Classes 3 (flammable liquids), 8 (corrosive substances) or 9 (miscellaneous dangerous substances and articles, including environmentally hazardous substances) may be packed in each primary receptacle containing infectious substances. These small quantities of dangerous goods of Classes 3, 8 or 9 are not subject to any additional requirements of these Regulations when packed in accordance with this packing instruction.

5. Alternative packagings for the transPoint of animal material may be authorized by the competent authority in accordance with the provisions of 4.1.3.7.

### **Packing Instruction P650**

#### **This packing instruction applies to UN 3373**

The text of United Nations Packing Instruction P650, in use for the transPoint of infectious substances in category B assigned to UN 3373 by all surface modes of transport is reproduced below. The shaded text on the right hand side indicates the ICAO variations to these instructions that apply to the transport by air. The various provisions mentioned are set out in the United Nations Model Regulations.

1. The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between cargo transport units and between transport units and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings shall be constructed and closed to prevent any loss of contents that might be caused under normal conditions of transport by vibration or by changes in temperature, humidity or pressure.
2. The packaging shall consist of at least three components:
  - (a) a primary receptacle,
  - (b) a secondary packaging, and
  - (c) an outer packaging of which either the secondary or the outer packaging shall be rigid
3. Primary receptacles shall be packed in secondary packagings in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings shall be secured in outer packagings with suitable cushioning material. Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer packaging.
4. For transport, the mark illustrated below shall be displayed on the external surface of the outer packaging on a background of a contrasting colour and shall be clearly visible and legible. The mark shall be in the form of a square set at an angle of 45° (diamond-shaped) with each side having a length of at least 50 mm; the width of the line shall be at least 2 mm and the letters and numbers shall be at least 6 mm high. The proper shipping name "BIOLOGICAL SUBSTANCE, CATEGORY B" in letters at least 6 mm high shall be marked on the outer packaging adjacent to the diamond-shaped mark.
5. At least one surface of the outer packaging must have a minimum dimension of 100 mm × 100 mm.
6. The completed package shall be capable of successfully passing the drop test in 6.3.5.3 as specified in 3.5.2 of these Regulations at a height of 1.2 m. Following the appropriate drop sequence, there shall be no leakage from the primary receptacle(s) which shall remain protected by absorbent material, when required, in the secondary packaging.
7. For liquid substances
  - The primary receptacle(s) shall be leakproof;
  - The secondary packaging shall be leakproof; and must not contain more than 1 litre;
  - If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them;
  - Absorbent material shall be placed between the primary receptacle(s) and the secondary packaging. The absorbent material shall be in quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;
  - The primary receptacle or the secondary packaging shall be capable of withstanding, without leakage, an internal pressure of 95 kPa (0.95 bar). For air transportation in the range of -40 °C to +55 °C (-40 °F to +130 °F).
  - The outer package must not contain more than 4 litres. This quantity excludes ice, dry ice or liquid nitrogen when used to keep specimens cold

8. For solid substances
  - (a) The primary receptacle(s) shall be siftproof;
  - (b) The secondary packaging shall be siftproof;
  - (c) (c) If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them.
  - (d) (d) Except for packages containing body parts, organs or whole bodies, the outer package must not contain more than 4 kg. This quantity excludes ice, dry ice or liquid nitrogen when used to keep specimens cold
  - (e) (e) If there is any doubt as to whether or not residual liquid may be present in the primary receptacle during transport then a packaging suitable for liquids, including absorbent materials, shall be used.
9. Refrigerated or frozen specimens: Ice, dry ice and liquid nitrogen
  - (a) When dry ice or liquid nitrogen is used as a coolant, the requirements of 5.5.3 shall apply. When used, ice shall be placed outside the secondary packagings or in the outer packaging or an overpack. Interior supports shall be provided to secure the secondary packagings in the original position. If ice is used, the outside packaging or overpack shall be leakproof.
  - (b) (b) The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.
10. When packages are placed in an overpack, the package markings required by this packing instruction shall either be clearly visible or be reproduced on the outside of the overpack.
11. Infectious substances assigned to UN 3373 which are packed and marked in accordance with this packing instruction are not subject to any other requirement in these Regulations.
12. (12) Clear instructions on filling and closing such packages shall be provided by packaging manufacturers and subsequent distributors to the consignor or to the person who prepares the package (e.g. patient) to enable the package to be correctly prepared for transport.
13. (13) Other dangerous goods shall not be packed in the same packaging as Division 6.2 infectious substances unless they are necessary for maintaining the viability, stabilizing or preventing degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Classes 3 (flammable liquids), 8 (corrosives) or 9 (miscellaneous dangerous substances and articles, including environmentally hazardous substances) may be packed in each primary receptacle containing infectious substances. When these small quantities of dangerous goods are packed with infectious substances in accordance with this packing instruction no other requirements in these Instructions need be met.

#### **Requirements for air mail**

Infectious substances in Category A will not be accepted for shipment through postal services.

Infectious substances in Category B may be shipped by registered air mail, and the Universal Postal Union recommends the following procedure.

The basic triple packaging system is used with the same requirements as for other means of transport. The address label shall display the word "*Lettre*" or "Letter" and the green Customs Declaration Label for Postal Mail is required for international mailing. "BIOLOGICAL SUBSTANCE, CATEGORY B" shall be identified with the white diamond label with black letters "UN 3373" (see Figure 10). Local/international restrictions may be in force. Prior contact should therefore be made with the national public operator to ascertain whether the packaged material will be accepted by the postal service in question.

#### **Spill clean-up procedure**

The appropriate response in the event of exposure to any infectious substance is to wash or disinfect the affected area as soon as possible, regardless of the agent. Even if an infectious substance comes into contact with non-intact skin, washing of the affected area with soap and water or with an antiseptic solution

can reduce the risk of infection. Medical advice should be obtained any time there is a suspected exposure to infectious substances resulting from a damaged package. The following procedure for clean-up can be used for spills of all infectious substances including blood. The person must be trained on such procedure before performing these steps:

1. Wear gloves and protecting clothing, including face and eye protection if indicated.
2. Cover the spill with a cloth or paper towels to contain it.
3. Pour an appropriate disinfectant over the cloth or paper towels and the immediately surrounding area (5% bleach solutions are generally appropriate, but for spills on aircraft, quaternary ammonium disinfectants should be used).
4. Apply the disinfectant concentrically beginning at the outer margin of the spill area, working towards the centre.
5. After about 30 min, clear away the materials. If there is broken glass or other sharps are involved, use a dustpan or a piece of stiff cardboard to collect the materials and deposit them into a puncture-resistant container for disposal.
6. Clean and disinfect the area of the spillage (if necessary, repeat steps 2–5).
7. Dispose of contaminated materials into a leak-proof, puncture-resistant waste disposal container.
8. After successful disinfection, report the incident to the competent authority and inform them that the site has been decontaminated (see Incident reporting below).

### **Incident reporting**

No reports of infections resulting from transport-related exposures have been documented other than the anthrax letters of 2001 in the USA. There have been reports of the transmission of acute respiratory infections and tuberculosis associated with air travel, but these were attributed to direct person-to-person contact and not to packaging problems or shipping incidents. Statistical data collected by a group of central laboratories showed the efficacy of packaging compliant with P650 and P620 in assuring that infectious substances are transported without leakage and loss of materials. For the 4.92 million primary containers shipped in 2003 to any of the worldwide regional offices of these central laboratories, just 106 breakages, 0.002% of the total number, were recorded. Moreover, the leakages that did occur were all contained by the absorbent material, and no damage to secondary containers or outer packagings was reported. The various international modal regulations require the reporting of incidents to the relevant competent transport authorities in addition to the necessary health authorities. This applies to both categories of infectious substances, but particularly to those in Category A.



## **Annex 5: Environmental and Social Guidelines for Contractors**

### **General**

In addition to these general conditions, the Contractor would comply with any specific ESMP for the works he is responsible for. The Contractor would inform himself about such an ESMP and prepare his work strategy and plan to fully take into account relevant provisions of that ESMP. If the Contractor fails to implement the approved ESMP after written instruction by the Supervising expert to fulfil his obligation within the requested time, the Owner reserves the Right to arrange through the Supervising expert for execution of the missing action by a third party on account of the Contractor. Notwithstanding the Contractor's obligation under the above clause, the Contractor would implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in an ESMP. In general, these measures would include but not be limited to:

- Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, vibrating equipment, temporary access roads, etc., to ensure safety, health and the protection of workers and communities living in the vicinity dust producing activities.
- Ensure that noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation, blasting) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.
- Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to works being carried out.
- Prevent bitumen, oils, lubricants and waste water used or produced during the execution of works from entering rivers, streams, irrigation channels and other natural water bodies/reservoirs, and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.
- Prevent and minimize the impacts of quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands; local communities and their settlements. In as much as possible restore/rehabilitate all sites to acceptable standards.
- Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, and collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.
- Implement soil erosion control measures in order to avoid surface run off and prevents siltation, etc.
- Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.
- Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long distance transportation.
- Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.
- The Contractor would indicate the period within which he/she would maintain status on site after completions of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed.

The Contractor would adhere to the proposed activity implementation schedule and the monitoring plan / Strategy to ensure effective feedback of monitoring information to project management so that Impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions. Besides the regular inspection of the sites by the Supervising expert for adherence to the Contract conditions and specifications, the owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental authorities may carry out similar inspection duties. In all cases, as directed by the Supervising expert, the Contractor would comply with directives from such inspectors to implement measures required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

### **Chance finds procedure for culturally significant artifacts'**

The Contractor is responsible for familiarizing themselves with the following "Chance Finds Procedures", in case culturally valuable materials are uncovered during excavation, including:

- Stop work immediately following the discovery of any materials with possible archaeological, historical, paleontological, or other cultural value, announce findings to project manager and notify relevant authorities;
- Protect artifacts' as well as possible using plastic covers, and implement measures to stabilize the area, if necessary, to properly protect artifacts'
- Prevent and penalize any unauthorized access to the artifact
- Restart construction works only upon the authorization of the relevant authorities.

Requirements for chance finds are also outlined in the Act. Article 41 which states that: "Any person who discovers any cultural heritage in the course of excavation connected with mining, explorations, building works, road construction or other similar activities would report to the Authority and protect and keep same intact until the Authority takes delivery thereof". The Authority would take all appropriate measures to examine, take delivery and register the Cultural heritage so discovered. Where the Authority fails to take appropriate measures within 6 months, the person that discovered the cultural heritage may be released from the responsibility by submitting a written notification with a full description of the situation to the Regional Government official.

**Cost of Compliance:** It is expected that compliance with these conditions is already part of standard good workmanship and state of art as generally required under this Contract. The item "Compliance with Environmental Management Conditions" in the Bill of Quantities covers these costs. No other payments will be made to the Contractor for compliance with any request to avoid and/or mitigate an avoidable Environmental and social impact.

## **Annex 6: List of ESMF Preparers**

### **List of Contributor Experts**

1. **Eyob Abera Mesfin**, (MPH, PhD) Advisor, Biosafety and Biosecurity, Quality System and public health expert, Ethiopian Public Health Institute, Addis Ababa, Ethiopia.
2. **Ahmed Mohamed**, (BSc, MPH), Assistance researcher II, Occupation health and safety and public health expert, Ethiopian Public Health Institute, Addis Ababa, Ethiopia.
3. **Yeabkal Daniel**, (BSc, MSc) Assistance researcher, Biosafety and Biosecurity expert
4. **Abel Weldetinsae**, (BSc, MSc) Associate researcher, Environmental pollution and sanitation expert, Ethiopian Public Health Institute, Addis Ababa, Ethiopia.
5. **Daniel Abera**, (BSc, MSc), Researcher, Waste Management and Gas Emission Expert, Ethiopian Public Health Institute, Addis Ababa, Ethiopia
6. **Kirubel Tesfaye**, (BSc, MSc), Researcher, Waste Management and Gas Emission Expert, Ethiopian Public Health Institute, Addis Ababa, Ethiopia
7. **Melaku Gizaw**, (BSc, MSc), Associate researcher, Environmental analytical chemist, Ethiopian Public Health Institute, Addis Ababa, Ethiopia.
8. **Mesaye Getachew**, (BSc, MSc), Associate researcher, Environmental chemist, Ethiopian Public Health Institute, Addis Ababa, Ethiopia.
9. **Moa Abate**, (BSc, MSc), Associate researcher, Occupation health and safety expert, Ethiopian Public Health Institute, Addis Ababa, Ethiopia.
10. **Tsigereda Assefa**, (BSc, MSc), Associate researcher, Environmental science and technology expert, Ethiopian Public Health Institute, Addis Ababa, Ethiopia.