

# Environmental Assessment and Review Framework

June 2021

Democratic Socialist Republic of Sri Lanka:  
Responsive COVID-19 Vaccines for Recovery  
Project under the Asia Pacific Vaccine Access  
Facility

## CURRENCY EQUIVALENTS

(as of 1 June 2021)

Currency unit	–	Sri Lanka Rupee/s (SLRe/SLRs)
SLRe1.00	=	\$0.00506
\$1.00	=	SLRs197.76

## ABBREVIATIONS

ADB	–	Asian Development Bank
APVAX	–	Asia Pacific Vaccine Access Facility
CEA	–	Central Environmental Authority
COVID-19	–	coronavirus disease
DE&OH	–	Directorate of Environmental and Occupational Health
DPD	–	Deputy Project Director
EARF	–	Environmental Assessment and Review Framework
EMP	–	Environmental Management Plan
EPL	–	Environmental Protection License
GRC	–	Grievance Redress Committee
GRM	–	Grievance Redress Mechanism
HCF	–	Health Care Facility
HSEP	–	Health System Enhancement Project
MSD	–	Medical Supplies Division
MOF	–	Ministry of Finance
MOH	–	Ministry of Health
MWM	–	Medical Waste Management
MWMP	–	Medical Waste Management Plan
NCCWM	–	National Committee on Clinical Waste Management
NEA	–	National Environmental Act
NDVP	–	National Deployment and Vaccination Plan for COVID-19 Vaccines
PDHS	–	Provincial Director of Health Services
PIU	–	Project Implementation Unit
PMU	–	Project Management Unit
PPE	–	Personal Protective Equipment
WHO	–	World Health Organization

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## I. INTRODUCTION

### A. Overview

1. Global research on coronavirus disease (COVID-19) spearheaded by the World Health Organization (WHO) has resulted in developing several vaccines to combat this global pandemic. The vaccines approved by WHO are now in the process of global rollout. The Government of Sri Lanka is fully committed to provide vaccination against COVID-19 through a national vaccination program. These vaccines are to be provided free of charge. In December 2020 (by a letter dated 23 December 2020), the Government of Sri Lanka requested Asian Development Bank (ADB) assistance for this vaccination program through the Asia Pacific Vaccine Access Facility (APVAX).
2. The Responsive COVID-19 Vaccines for Recovery Project which was developed in response to this request will be financed by ADB for \$150 million comprising \$84 million from the Rapid Response Component (RRC) under APVAX and \$66 million from the Project Investment Component (PIC) under the regular country allocation. This project will support the national COVID-19 vaccination program. The project is expected to be effective in July 2021.
3. The project will support the government to ensure COVID-19 vaccine access to the population to curtail the pandemic, minimize the socioeconomic and health effects due to it, and initiate the robust economic recovery process.
4. The project aims to cover the entire country across all 26 health districts<sup>1</sup> in all nine provinces of Central, North Central, Sabaragamuwa, Uva, Western, North Western, Northern, Eastern and Southern while ensuring that the geographically, socially, and economically deprived populations are protected from COVID-19 and its effects. The project will provide vaccination for 18.2% of the population in Sri Lanka. The project is aligned and developed in close collaboration with the World Bank which is allocating \$80.5 million to support the purchase of vaccines and rollout for 13.6% of the population in Sri Lanka.

## II. DESCRIPTION OF THE PROJECT

### A. Project impact and outcome

5. The expected project impact will enhance the resilience and responsiveness of the health system to curtail the COVID-19 virus spread, reduce morbidity and mortality, and the negative health, social and economic effects of the COVID-19 pandemic in Sri Lanka. The outcome is priority populations of Sri Lanka safely vaccinated against COVID-19 as per the National Deployment and Vaccination Plan for COVID-19 Vaccines (NDVP) without compromising routine vaccine services and other health services.

### B. Project outputs

6. The four project outputs are (i) COVID-19 vaccines delivered; (ii) vaccination information dissemination and monitoring systems strengthened, (iii) capacity of vaccine transport systems expanded, and (iv) vaccine-related medical waste management strengthened.

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<sup>1</sup> Sri Lanka has 25 administrative districts. Under the health administrative system, Ampara district is divided as Ampara and Kalmuni resulting in 26 health districts.

7. **Output 1: COVID-19 vaccines delivered.** Output 1 will finance vaccines to cover 18.2% of the population (4,000,000 population).<sup>2</sup> It will support the government in reaching 80% COVID-19 vaccine coverage by 2023, based on the NDVP. Sri Lanka currently has access (free of charge) to adequate vaccine doses to cover 20% of the population via the COVID-19 Vaccines Global Access Facility (COVAX) Advance Market Commitment (AMC) arrangement and 2.4% of the population from in-kind vaccine donations. World Bank resources will provide vaccines for another 13.6% of the population.

8. Output 1 will support the Medical Supplies Division (MSD) to purchase the required consumables, supplies, and essential equipment to rollout the vaccination program as described in the National Vaccination deployment plan. This includes the purchase of auto disposal syringes, safety boxes, emergency trays, portable oxygen cylinders, essential emergency management drugs, and consumables.

9. Output 1 also provides support to MSD to improve the logistics, regulatory and procurement capacity by supporting the development of a new medical supplies management information system, and upgrading the existing system for managing all drugs, vaccines, and consumables of the public health sector in the country. In addition, this output will support MSD to collaborate with the Ministry of Finance to initiate e-procurement practices in the health sector. This includes the purchase, development, and upgrade of software programs, purchase of computers, establishing internet connectivity, training and networking of hospitals and related institutions.

10. **Output 2: Vaccination information dissemination and monitoring systems strengthened.** Output 2 will support the Epidemiology Unit in Ministry of Health (MOH) improve and enhance the electronic National Immunization Program (e-NIP) and its electronic Adverse Effects Following Immunization Program to include the COVID-19 vaccination program. These systems give real time data related to vaccination coverage by age and sex and the geographic area of the routine immunization program and the newly introduced COVID-19 vaccination program for adults. This output will also support the Health Information Unit of the MOH to introduce a novel COVID-19 Immunization Tracker developed by WHO and the MOH, which will provide real-time individual client data that will help to monitor the vaccine deployment program for COVID-19 in Sri Lanka. Surveillance data will be shared with global and regional partners to support a collective response to the pandemic.<sup>3</sup> This output therefore intends to purchase laptop computers and tablets to all Medical Officer of Health units (354 units currently, each MOH unit will receive two laptop computers, eight tablets and five routers each) for managing the real-time data entry of the vaccination program.

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<sup>2</sup> The project authorizes use of funds to purchase COVID-19 vaccines produced by ADB eligible vaccine manufacturers only. The ADB eligibility is based on meeting one of 3 criteria: (i) if the Vaccine has been selected for procurement via COVAX on behalf of its participating countries (Vaccines procured under the COVAX Facility will be required to be pre-qualified by WHO or at a minimum have marketing authorization from a Stringent Regulatory Authority (SRA) listed by WHO (<https://www.who.int/medicines/regulation/sras/en/>). Exceptionally, provided acceptable to the receiving country, Emergency Use Listing by WHO may be acceptable; (ii) Vaccine manufacturer is prequalified by the WHO; or (iii) Vaccine is authorized by a stringent regulatory authority (SRA) for manufacturer in an SRA country or the SRA has authorized its manufacture in a non-SRA country.

<sup>3</sup> The Epidemiology Unit reports daily on their website ([www.epid.gov.lk](http://www.epid.gov.lk)) the relevant data. The Epidemiology Unit from March 2021 has expanded the sentinel surveillance sites for tracking COVID-19 cases by testing all COVID-19 suspected inward patients and patients who seek care at outpatient departments at all secondary and tertiary care hospitals. The Government is expected to share data updates with WHO, SAARC, and other regional and global entities in the long term.

11. Output 2 will also include support to Health Promotion Bureau (HPB) of the MOH to ensure gender equality and social inclusion when COVID-19 vaccination is rolled out. The output will provide training for community groups to ensure that vulnerable population groups have equal rights to vaccination. This output will also support with developing and printing of communication material when targeting vulnerable population groups and will also support capacity development of the HPB in inclusive risk communication and in addressing vaccine hesitancy of vulnerable population groups.

12. This output will also support the management and technical support required to implement the project. This includes the hiring of experts for project management services like Finance, Procurement, Monitoring and Evaluation (M&E), information technology (IT) and Engineer to the ongoing ADB-financed Health System Enhancement Project (HSEP) project management unit (PMU). In addition, the Epidemiology Unit, which will be responsible for majority of project activities and project results, will be provided with a team of support staff and the other units (Medical Supplies Unit, Health Promotion Bureau, the Environment Unit, and the Health Information Unit will each be provided with a Project Officer to each implementing team. All technical units of the MOH will also appoint a focal point to oversee the respective components of the project.

13. **Output 3: Capacity of vaccine transport systems expanded.** Output 3 will support to enhance the capacity of the vaccine transport system from central to regional levels and the vaccine distribution system from regional drug stores to the vaccination centers. When vaccines arrive in the country, they are stored in the central cold rooms managed by the Epidemiology Unit of the MOH. Thereafter, the Epidemiology Unit practices a pushout system and delivers the vaccines in adequate quantities to each of the 26 regional drug stores in Sri Lanka. The regional drug stores deliver vaccines to the divisional stores for the routine system but for COVID vaccination program, as it is managed as a campaign, delivers the vaccines to the vaccination centers directly. This requires adequate cold chain ensured transport facilities for safe and timely delivery of vaccines. Therefore, this output will support to purchase 36 small crew cab refrigerator trucks to each of the 26 regional drug stores and 10 large trucks to the Epidemiology Unit and to the MSD. In addition, with the rollout of the vaccination programs, adequate human resources will be required to be mobilized to regional stores, divisional offices and to vaccination centers and to the regional offices for supervision and management of the program. This output will also provide support to hire vehicles to each district team to facilitate the movement of staff.

14. **Output 4: Vaccine related medical waste management strengthened.** Output 4 will support the implementation of the Medical Waste Management Plan (MWMP) of the MOH. With the expanded COVID-19 vaccination, as much as 32 million syringes and nearly 3.2 million vials will need to be discarded. The large number of polymerase chain reaction tests carried out (nearly 2 million tests) add to the volume of waste generated due to COVID-19. In addition, with the establishment and conversion of routine secondary level care hospitals as COVID treatment hospitals, there are large number of hospitals that require well designed sewerage management for appropriate infection prevention and control. This output will support to establish sewerage system in 26 of the 87 (30%) of the secondary care hospitals that require such systems.

15. Output 4 will also support to improve the medical waste management arrangement in 6 of the 9 provinces in the country.<sup>4</sup> Based on the MWMP of the MOH, in the six provinces of Northern,

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<sup>4</sup> Medical waste management activities in the three provinces of Western, Southern and Central (nine districts of Colombo, Gampaha, Kalutara, Kandy, Nuwera Eliya, Matale, Galle, Matara and Hambantota) are currently managed

Eastern, North Central, North Western, Uva, and Sabaragamuwa, the project will establish satellite waste management centers in identified secondary and tertiary care hospitals in each of the districts. This output will support procure incinerators and manage waste segregation at 12 satellite hospitals representing the six provinces.<sup>5</sup>

### C. Project locations

16. Outputs 1 to 3 of the project will be implemented covering the entire country across all 26 health districts in all nine provinces of Central, North Central, Sabaragamuwa, Uva, Western, North Western, Northern, Eastern and Southern while ensuring that the geographically, socially, and poor populations are protected from COVID-19 and its effects. Outputs 4 shall be implemented in only six provinces in the country but the specific locations for civil works under Output 4 has not been identified and will be decided following the subproject selection criteria in this Environmental Assessment and Review Framework (EARF) as endorsed by the government.

**Table 1: List of Health Districts in Sri Lanka**

Province	Health district
Western	Colombo, Gampaha, Kalutara
Southern	Galle, Matara, Hambantota
Central	Kandy, Matale, Nuwara Eliya
Sabaragamuwa	Kegalle, Ratnapura
Uva	Badulla, Monaragala
North central	Anuradhapura, Polonnaruwa
North western	Kurunegala, Puttlam
Northern	Jaffna, Kilinochchi, Mannar, Vavuniya, Mullaitivu
Eastern	Trincomalee, Batticloa, Ampara, Kalmuni

Source: Ministry of Health.

### D. Scope of civil works

17. Civil works under output 4 shall only be carried out within existing government health facilities (hospitals), especially the ones designated COVID-19 treatment hospitals. The civil works shall include renovation and improvement of sewage management systems in 26 secondary care hospitals that require such systems. Dual chamber incinerators shall be established at 12 satellite hospitals representing the 6 provinces. The existing waste segregation facilities in these hospitals shall also be improved.

### E. Purpose of this Environmental Assessment and Review Framework

18. Projects and programs financed by ADB need to comply with ADB's safeguard policies as detailed in the safeguards policy statement of 2009 (SPS). Therefore, subprojects and components eligible for funding under this project will be required to satisfy the ADB's safeguard policies, in addition to conformity with environmental legislation of the government.

19. The full list of secondary and tertiary level hospitals that will be supported under the project are to be finalized and specific activities that will comprise investments at each facility remain

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by a private firm on a contract with the MOH. All medical waste from these provinces is taken by the firm and disposed at a state-of-the-art facility managed by them.

<sup>5</sup> All secondary and tertiary health care facilities have the solid waste segregation facilities in place. Support to waste segregation to be provided under Output 4 will be limited to provision of additional bins, concrete pits, painting of the bins, repairing the doors and locks.

unknown for the sites at the time of ADB Board approval. Hence, it is not possible to conduct site specific environmental assessments for the facilities for which details are yet to be developed. What is possible at this stage would be to carry out an identification of generic issues that are typically associated with the type of developments proposed and agree on safeguard procedures and instruments to be applied as and when subprojects become technically ready for implementation.

20. Therefore, the main purpose of this document is to provide a template to plan and manage environmental safeguards under the project in accordance with national requirements, ADB requirements, including international good practices. It will (i) describe the proposed subproject investments planned to be funded under the project; (ii) describe the legal framework relevant to the project; (iii) describe the potential environmental impacts of subprojects; (iv) specify safeguards requirements that will need to be followed in subproject screening, categorization, assessment and planning; (v) specify arrangements for meaningful consultation with affected people and interested stakeholders and information disclosure requirements; (vi) assess the adequacy of the client's capacity to implement national laws and ADB requirements and identify needs for capacity building; (vii) specify safeguards implementation procedures, institutional arrangements and budgetary requirements; (viii) specify monitoring and reporting requirements; and (ix) describe respective responsibilities of the client and ADB in relation to preparation, implementation and progress review of safeguards documents of subprojects.

21. This EARF is prepared based on the ADB's SPS and relevant government laws and regulations, of which the National Environmental Act (NEA) and its amendments are key, other international conventions and agreements to which the government is a party of, and other international good practices. All subprojects financed under the project is expected to be prepared following procedures laid out in the EARF to ensure that the project will not contribute towards environmental deterioration in the project area but rather improve environmental quality. This EARF is linked to ADB's Report and Recommendation of the President and the loan covenant making it binding for ADB and MOH to effectively implement its provisions.

### **III. ASSESSMENT OF THE LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY**

#### **A. Existing medical waste management framework in the country**

##### **1. Draft National Policy on Medical Waste Management**

22. In 2001, the Government of Sri Lanka drafted a comprehensive national policy on health care waste management. It has three main sections covering:

- (i) General considerations on medical waste management (MWM) and the institutional mechanism for policy implementation that should be set up at national level.
- (ii) Provisions for the safe management of Medical Waste in medical Institutions, including regulations and MWM plans.
- (iii) Provisions for the implementation of and the monitoring of MWM plans at national and provincial levels including legislation, provision of human and financial resources, training and awareness and participation of private sector.<sup>6</sup>

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<sup>6</sup> Government of Sri Lanka, Ministry of Health. 2001. *Draft National Policy on Health Care Waste Management*. Colombo.

23. Some salient features of the draft policy are highlighted below.
- (i) Healthcare waste generated by the medical institutions of the public and private sector must be safely handled and disposed of. MWM as an integral part of hospital hygiene and infection control, hence each Health Care Facility (HCF) is legally responsible for the proper management of waste that it generates until its final disposal.
  - (ii) Major hospitals must prepare specific MWM plans outlining needs, objectives, and strategies, procedures for approved management and disposal of medical waste and timeframe for implementation. The Provincial Directors of Health Services (PDHS) must set up annual Provincial and District MWM plans presenting the strategy for MWM that should be developed at the regional level. The provincial and/or regional plan shall be a compilation of individual MWM plans of each health care facility (HCF) the province is responsible for. All plans need to be validated and supported by the Central or Provincial Health Services before implementation.
  - (iii) Specific budget lines need to be developed relating to hospital hygiene and medical waste management in the national accountancy of the health system to ensure sufficient human and financial resources are allocated to implement the MWM plans in medical institutions.
  - (iv) Policy implementation needs to be monitored based on specific objectives defined in the national action plan (the plan developed to implement the policy country wide).
  - (v) Other key aspects highlighted relate to approved MWM practices, equipment for treatment and disposal, training and awareness, involvement of civil society and private sector participation.
24. The institutional mechanism for implementing the national policy is envisaged under three levels of management:
- (i) At the central level, coordination and development of strategies and mechanisms to implement policy commitments, in accordance with national requirements, has been vested with the National Committee on Clinical Waste Management (NCCWM). In addition, development of training and capacity building packages, training implementation supervision, setting up of medical waste monitoring protocols, overall M&E has been assigned to the NCCWM. The central health services are responsible for technically backstopping HCFs under its management purview.
  - (ii) At the provincial level, implementation of the policy has been vested with the provincial Councils. The PDHS is responsible for setting up provincial MWM plans, synthesized from individual hospital MWM plans coming under its area of jurisdiction, development of financial resources and for the implementation of medical waste monitoring and/or auditing procedures.
  - (iii) At the local level, setting up of MWM plans that outline needs, objectives, strategies, procedures, and timeframes for medical institutions has been vested with the hospital management.

25. Although this national policy on MWM remains as a draft, it has been well adopted and implemented by healthcare facilities in the country.

## **2. National guidelines on Medical Waste Management**

26. The national guidelines for healthcare waste management drafted in 2001 aimed at (i) providing a better understanding of the fundamentals of MWM planning, and (ii) directing HCFs in setting necessary procedures and standards to comply with policy and legislative requirements. These have been drafted in a form that provides all fundamental elements that should be integrated into future legislation specific to medical waste. Although guidelines were reviewed by the NCCWM as well as the MOH it did not receive formal endorsement by the government.

27. The draft national guidelines contain both practical and conceptual information on MWM covering four main sections:

- (i) Definition and categorization of medical waste including potential harmful effects that can result from its improper management.
- (ii) Procedures for segregation, packaging, labelling, collection, storage, transportation, and disposal (including selection of appropriate treatment and disposal technologies for medical waste) that should be applied and followed by all HCFs in the country.
- (iii) Instructions for the implementation of health care waste management plans including detail description of duties and responsibilities of health care provider at various levels.
- (iv) Instruction for personnel of Central and Provincial Health Services who oversee MWM to ensure smooth implementation of the guidelines and to set up regular monitoring mechanisms.

28. In 2007, concise guidelines for MWM were prepared under the Hospital Efficiency and Quality component of the Sri Lanka Health Sector Development Project<sup>7</sup> based on the detailed draft guidelines prepared in 2001. The concise guidelines which mainly contain sections in waste categorization and health care waste management procedures have been formally adopted and incorporated into the Handbook of Infection Control.

### **a. Code of Hygiene**

29. Management of medical waste is an integral part of hospital hygiene and infection control that must be reinforced with internal rules. In 2008, the government developed a comprehensive Code of Hygiene that completed the existing Infection Control Handbook. The national code of hygiene contains recommended MWM procedures and is seen as part of an overall set of actions to control the hygiene conditions within the hospital. It sets out duties and responsibilities of medical and non-medical staff regarding hygiene procedures to be applied, recommended practices to maintain high level of hygiene and ongoing management and managerial activities to be carried out in the hospital. The code of practice must be implemented along with the MWM guidelines.

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<sup>7</sup> Financed by the World Bank.

30. **National Color Code.** In 2006, the MOH developed a national color code for implementing a uniform system for separating medical waste streams based on the type of waste, treatment, and disposal methods. The code recommends technical specifications for bags and bins to be used for different waste types. The national color code identifies 7 specific categories.

**Table 2: National Color Code for Segregation of Medical Waste**

Color	Category	Contents
Yellow	Infectious	Cultures or stocks from microbiology, tissues from surgeries/autopsies, material, or equipment in contact with blood or body fluids soiled linen, dialysis equipment such as tubing and filters.
Yellow with red strips	Sharp waste	Sharps, needles, and intravenous sets contaminated with body fluids
Black	General waste	General or municipal waste that is uncontaminated
Green	Biodegradable waste	Garden, kitchen, and food waste
Red	Glass waste	Uncontaminated drink bottles, water bottles
Blue	Paper waste	Paper, cardboard, and office stationery
Orange	Plastic waste	Uncontaminated plastic medicine bottles, saline bottles without IV sets, plastic bags

Source: Environmental management framework for health care waste & infrastructure development (Draft), 2012 MOH

31. The national policy on MWM to this date remains a draft as all attempts for its formal adoption in the past have not been successful. As a result, there have been no legal enactments made to operationalize the policy. As such, to this date, the national policy, and guidelines on medical waste management serves as a broad guideline only with no mandatory binding legal requirement. The only legal requirement for medical waste in Sri Lanka stems from the NEA, as explained below.

## **B. Environmental Legislation of Sri Lanka**

32. The requirement for environmental assessment and environmental pollution control in Sri Lanka is established by the NEA No. 47 of 1980 and subsequent amendments (No. 56 1988 and No. 53 of 2000). The three main regulatory tools implemented under the NEA are environmental impact assessment process (as Environmental Impact Assessment (EIA)/ Initial Environmental Examination (IEE)), National Environmental (Protection and Quality) Regulations No. 1 of 1990 for Environment Protection License (EPL) supported by standards for discharge and waste disposal guidelines and schedule waste management license (under National Environmental (Protection and Quality) Regulation No. 1 of 2008).

33. The procedures for EIA/IEE are defined in the EIA regulations gazette No 772/22 (1993). The regulations prescribe the activities for which EIA/IEE is mandatorily required in three separate schedules. The need for an environmental assessment and the level of analysis required (EIA or IEE) for each development activity is screened by the Central Environmental Authority (CEA) based on the submission of a basic information questionnaire by the developer. There are two possible screening outcomes.

- (i) Exclusion from EIA/IEE – the activity does not fall under the prescribed category or located in a sensitive area as defined in the regulations.
- (ii) EIA/IEE required – the activity falls under the prescribed category, has potentially serious environmental impacts and/or is in a sensitive area. With a positive screening decision, the CEA appoints a scoping committee to decide on the level of analysis and prepare the TOR or if the project falls within the jurisdiction of government authority which is an appointed project approving authority to

administer the EIA process, the CEA will hand over the process to the said authority.

34. The second regulatory tool under the NEA is the environment protection license. The EPL procedure has been introduced to prevent or minimize the release of discharges and emissions into the environment from industrial activities in compliance with national discharge and emission standards, to provide guidance on pollution control for polluting processes and to encourage the use of pollution abatement technology. The EPL regulations define the prescribed activities for which a license is required and procedures for obtaining one. Since 2008, the NEA requires all medical institutions to obtain a valid EPL.

- (i) Part II of the National Environmental (Protection & Quality) Regulation No. 01 of 2008 includes “Health care service centers generating infectious wastes, including medical laboratories and research centers” as a prescribed activity that requires a license.
- (ii) Schedule VIII lists medical waste as a scheduled waste from specific sources that no person shall generate, collect, transport, store, recover, recycle, or dispose except under the license issued by the Authority and in accordance with standards and other criteria as may be specified by the Authority.

35. Accordingly, every HCF is legally responsible for the proper management of medical waste from the point of generation until its final disposal to ensure minimum environmental and public health impacts. However, the NEA does not contain any definition of medical waste, or characterization of the type and degree of hazards associated with different medical wastes. Nor does it carry any guidance on treatment and disposal technologies that might be considered acceptable in Sri Lanka.

36. The third regulatory tool under the NEA deals with the disposal of scheduled waste as defined through the gazette notification No 1534/18 of 2008. It deals with waste from specific and nonspecific sources. The notification has three parts and eight schedules of which (i) part I deals with the issue of environmental protection license for emission/disposal of waste, (ii) part II deals with the issue of license for the management of scheduled waste (Hazardous Waste), and (iii) part III on general matters including definitions and the effectiveness and validity of the license issued under National Environment (Protection and Quality) Regulation No. 1 of 1990 published in extraordinary gazette No 595/16 of February 1990. The eight schedules include the tolerance limits, applications, formats for reporting, categorization of nonspecific and specific waste etc.

37. There are several other key national legislations for environmental management and protection. The Flora and Fauna Protection Ordinance and the Forest Ordinance does not permit any construction activities in protected areas managed by the Department of Wildlife Conservation and Forest Department, respectively. If any development is bound to have an impact on protected areas clearance from the two departments, as the case is, must be obtained.

38. The Antiquities Ordinance No. 9 of 1940 prohibits any activity within declared archaeological reserves. If a certain development activity has the potential to cause structural or non-structural damage to an archaeological resource clearance from with the Department of Archaeology must be obtained and if required, the Director of the Department could request for an Archaeological Impact Assessment before clearance is granted.

39. The Agrarian Development Act No. 46 of 2000 prohibits any filling of paddy land for development without the written permission of the Commissioner General of Agrarian Services.

40. Under the Disaster Management Act, construction in identified land slide hazard areas will require approval from the National Building Research Organization.

41. The Urban Development Authority Act No. 41 of 1978 and the Sri Lanka Land Reclamation & Development Corporation Act No. 15 of 1968 require clearance to be sought when carrying out development work in areas that are declared under these acts.

42. The Factories Ordinance under the Labour Code of Sri Lanka provides an environment of occupational safety and health at all workplaces and secures workers welfare requirements.

43. The National Institute of Occupational Safety and Health established under the National Institute of Occupational Safety and Health Act, No. 38 of 2009 provides has developed occupational safety and health standards and aims in protecting both employers and employees.

44. In addition to the above, approval from local authority is required for all new constructions.

**Table 3: National level clearances that are applicable to the project**

Activity	Relevant legislation	Statutory requirement	Authorizing body
Disposal of Health Care Waste	NEA	EPL/ SWL	CEA
Discharge of wastewater effluents	NEA (Protection and Quality) Regulation No. 1 of 1990 published in Gazette Extraordinary No. 595/16 of February 1990	EPL	CEA
Air emissions	National Environmental (Ambient Air Quality) Regulations, 1994, published in Gazette Extraordinary, No. 850/4 of December 1994 and amendment gazette No. 1562/22 of 2008	EPL	CEA
Disposal of solid waste	National Environmental (Municipal Solid Waste) Regulations, No. 1 of 2009	Approval for disposal sites	CEA
Emission of noise and vibration	National Environmental (Noise Control) Regulations No.1 of 1996 and its amendments	Compliance	CEA
Construction on steep slopes in the areas prone to land slides	Disaster management act No. 13 of 2005	Compliance	NBRO

CEA = Central Environmental Authority, EPL = Environmental Protection License, NBRO = National Building Research Organization; NEA = National Environmental Act, SWL=Schedule Waste License.

### C. Safeguard Requirements of ADB

45. All projects funded by ADB must comply with the SPS. The SPS includes operational policies that seek to avoid, minimize, or mitigate adverse environmental and social impacts, including protecting the rights of those likely to be affected or marginalized by the development process. It sets out the policy objectives, scope and triggers, and principles for three key safeguard areas: (i) environmental, (ii) involuntary resettlement, and (iii) indigenous peoples. All three safeguard policies involve a structured process of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle. The safeguard policies require that impacts be identified and assessed early in the project cycle, plans to avoid, minimize, mitigate, or compensate for the potential adverse impacts are developed and implemented and affected people are informed and consulted during project preparation and implementation. A basic principle of the three existing safeguard policies is that implementation

of the provisions of the policies is the responsibility of the borrower/client. Borrowers/clients are required to undertake social and environmental assessments, carry out consultations with affected people and communities, prepare and implement safeguard plans, monitor the implementation of these plans, and prepare and submit monitoring reports.

46. All projects funded by the ADB are first screened and categorized into one of the following categories in the early stages of project preparation. Screening and categorization are undertaken to (i) reflect the significance of potential impacts or risks that a project might present; (ii) identify the level of assessment and institutional resources required for the safeguard measures; and (iii) determine disclosure requirements.

- (i) **Category A.** A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required.
- (ii) **Category B.** A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.
- (iii) **Category C.** A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed.
- (iv) **Category FI.** A proposed project is classified as category FI if it involves investment of ADB funds to or through a FI.

47. The project is categorized as an environmental category B. As such, the project will establish an environmental review process commensurate with the level of anticipated impacts and policy requirements of a category B to ensure that it is environmentally sound and are designed to operate in compliance with applicable regulatory requirements.

48. **Hazardous waste handling.** The SPS stipulates that the borrower will avoid the manufacture, trade, and use of hazardous substances and materials subject to international bans or phaseouts because of their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer and will consider the use of less hazardous substitutes for such chemicals and materials. Sharps, needles, used syringes, used vaccine vials are the main hazardous waste generated through the vaccination program. Further the contaminated liquid waste including sewage discharged from COVID-19 designated hospitals are considered as hazardous waste the needs to be properly treated.

#### **D. Guideline for Management of COVID-19 Infectious Waste**

49. The Directorate of Environmental and Occupational Health (DE&OH) of MOH in March 2020 had issued a guideline to manage COVID-19 related infectious waste (Annex 1). As per this

guideline, the infectious waste generated from any public HCF treating COVID-19 cases shall be treated only through incineration and/or metaMizer.<sup>8</sup>

#### **E. Institutional Capacity Review of the Executing Agency**

50. The MOH through its PMU will deliver the project. Management of environmental safeguards of the project is mainly linked to output 4 where civil works are involved. The Epidemiology Unit and the DE&OH of MOH shall assist the PMU in monitoring compliance with safeguards requirements.

51. The DE&OH is headed by a Deputy Director General and has a separate budget line under the MOH. DE&OH has a staff strength of 39 with capacity for occupational health and safety, food and drug safety, health care waste management, etc. Regarding MWM, the DE&OH has facilitated 28 EPLs and/or Schedule Waste License (SWLs) for major hospitals in all nine provinces so far through the provision of training, evaluation and follow up support. The MOH will be directly involved in the project as the chair of the ministerial project steering committee. The MOH also has prior experience implementing projects funded by other multi-lateral banks such as the World Bank with similar safeguards requirements as well as by several bi-lateral donors.

### **IV. ANTICIPATED ENVIRONMENTAL IMPACTS**

52. The scope of civil works under output 4 of this project shall support to renovate and improve sewerage systems in 26 of the 87 (30%) of the secondary and tertiary care hospitals that require such systems, to establish incinerators and improve waste segregation facilities at 12 satellite hospitals representing the 6 provinces. This component thus shall be beneficial in overall management of health care waste generated especially in these COVID-19 designated hospitals. Further the construction period shall generate employment opportunities for the local community.

53. Potential environmental impacts of proposed waste treatment and disposal facilities and their civil works components are presented in this chapter. Mitigation measures to minimize/mitigate negative impacts, if any, is recommended during construction and operational phases. As all proposed activities are to be carried out within lands of existing government health care facilities with no encroachments, there shall be no land acquisition and impacts of involuntary resettlement (no physical and/ or economic displacement is involved).

#### **A. Construction Phase**

54. As stated above, the proposed improvements and renovation works are to be carried out within existing health care facilities. Existing liquid and solid waste management systems in these facilities have been well laid out so that they can be easily accessed. But poor and inadequate maintenance over a long period had resulted in frequent leakages and breakdowns. The potential adverse impacts envisaged during the construction phase are localized, temporary in nature and can be mitigated with good construction and site management practices. Below are the potential environmental impacts:

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<sup>8</sup> This is a unit developed by medivac company, Australia which simultaneously uses steam-based sterilization and shredding to treat clinical waste. A volume reduction of 90% and weight reduction of 30% of waste could be achieved through the process and the processed material which is granular in nature can be recycled or buried in landfills safely.

- (i) Surface runoff mixed with construction wastewater (cement mixed water) can run in open drains and contaminate soil and surface waters.
- (ii) Blocking of drainage due to stockpiling of material and debris can possibly cause localized flooding and stagnation of water which can consequently provide breeding grounds for mosquitoes.
- (iii) Site preparation, trenching for foundations and material stock piling can potentially lead to erosion of soil during wet weather. Facilities in Central and Sabaragamuwa Provinces are more prone to such impact.
- (iv) Large labor forces are not envisaged for the proposed reconstruction activities. However, establishment of labor camps can potentially cause environmental pollution and various social issues if there is lack of provision of adequate facilities.
- (v) Site preparatory activities for drain, pipe laying, and establishment of incinerators can result in clearing of ground cover. These activities shall result in emitting dust and affecting air quality, noise and vibration nuisance to patients and staff of the health facilities in which these works are carried out.
- (vi) Improvement and renovation work of these systems may not require any full or partial demolition of existing buildings. In limited cases where such activity is required, it would generate demolition debris consisting of concrete, bricks, discarded pipes, wiring, cement bags and mixed spoilage which if improperly disposed of can cause a range of adverse environmental impacts. Some buildings may include Asbestos Cement sheet as roofing material. Such Asbestos Cement sheets needs careful disposal to protect public health. Annex 2 provides detailed guidelines on handling and disposal of discarded Asbestos Cement sheets.

**Table 4: Anticipated Impacts and Mitigation Measures During Construction Stage**

Impact	Potential environmental issues/impact	(a) Likelihood of occurrence (b) Level of impact	Recommended mitigation measures
Impacts due to site preparation activities, clearing of vegetation and ground preparation	Loss of vegetation, emission of dust, and noise are direct impacts that can be expected due to site clearing. Such impacts may cause a nuisance to hospital staff, patients, and the neighborhood	(a) Dust and noise are not likely to be a significant impact since the facilities are confined to locations mostly away from locations frequently visited by patients  (b) Low to moderate	<ul style="list-style-type: none"> <li>• Removal of vegetation on-site should be restricted to the bare minimum.</li> <li>• Erosion control during land preparation activities and cutting/filling within the site premises is needed.</li> <li>• Rainy periods should be avoided to the extent possible for land clearing.</li> <li>• Surface runoff should be diverted away from the site and/or construction site, and drainage should be diverted through silt traps (if needed). Any loose soil within site should be compacted as soon as possible.</li> <li>• All spoil, topsoil, demolition waste, and cut vegetation should be covered by secure tarpaulins whenever stored on-site and transported off-site to prevent material from being blown away by trucks</li> <li>• Prohibit burning of vegetative matter and domestic waste; Ensure that wastes are not haphazardly thrown in and around the site; provide proper collection areas/bins/craters, etc.</li> <li>• Conduct site clearance and restoration to original condition after the completion of construction work before issuing of completion certificate.</li> <li>• Regular watering of the construction site for dust suppression.</li> <li>• Restricting use of noisy machines or use of noise-reducing means for construction machines, keeping in mind that the construction site is within a sensitive receptor.</li> <li>• Stopping construction activity by 6 pm daily to avoid noise and vibration that may cause discomfort for in-patients and neighborhood.</li> </ul>
Impacts due to the demolition of existing buildings and other structures (if any)	Demolition and dismantling of existing buildings which are not used (if any, either full or partial) will result in noise and dust during demolitions. Demolition (if any), excavations, and trenching will produce additional amounts of waste and spoil. Accumulation of debris, and	(a) Highly unlikely as the drainage network of existing systems are kept with easy access.  (b) Low to moderate	<ul style="list-style-type: none"> <li>• Prepare and implement a construction waste management plan (include an asbestos management plan in it); include waste minimization measures in the plan.</li> <li>• Consult the hospital authorities after careful removal of such reusable/recyclable material and handover to the material stocks to them. It is the responsibility of the</li> </ul>

Impact	Potential environmental issues/impact	(a) Likelihood of occurrence (b) Level of impact	Recommended mitigation measures
	<p>construction waste materials and stockpiling can cause environmental pollution.</p> <p>Moreover, the generation of waste containing AC sheet, which, if improperly disposed of, can cause a risk to public health from air-borne asbestos fiber.</p>		<p>contractor to keep records of such material that are handed over to the hospital authorities.</p> <ul style="list-style-type: none"> <li>• Reuse as much demolition waste and material as much as possible</li> <li>• Asbestos sheets should be reused rather than disposing of. Extra care should be exercised in removing and, if need when disposal of asbestos products.</li> <li>• Find alternative beneficial uses for any unused building material, e.g., fills in other construction works; fixtures and fittings to be reused.</li> <li>• There should be no open burning of any demolished material, on-site or off-site.</li> <li>• Workers should be provided with appropriate safety wear, Worker Personal Protective Equipment (PPE) during demolition, and disposal</li> </ul>
Extraction and sourcing of materials	<p>Most of the work involved in the establishment of wastewater and HCW management systems include electro-mechanical works. The need for construction material is only for civil works involved in the construction of wastewater collection systems, foundations, tanks, storage yards, etc.</p>	<p>(a) Large quantities of construction material are unlikely to be required, but only in cases where ground filling and levelling will be required.</p> <p>(b) Low</p>	<ul style="list-style-type: none"> <li>• If procurement of earth/sand/quarry material is needed, it should be from sources that are operating with the required licenses.</li> <li>• If the contractor uses water supply available at the hospital, necessary approvals shall be obtained from the hospital authority or the water supply provider, as required.</li> </ul>
Impacts on air quality	<p>Emissions during site preparation, vehicles, equipment, and machinery used for excavation and construction may resulting in dust and air-borne pollutants.</p>	<p>(a) Unlikely to occur widely</p> <p>(b) Low</p>	<ul style="list-style-type: none"> <li>• Effective dust barriers must be erected to prevent dust from being blown towards other parts of the hospital (this barrier can function as noise/dust containment as well as for fencing the site premises that is used for safety reasons). The louvres/ pergolas of nearby buildings must be temporarily covered with polythene sheets until the construction work is over.</li> <li>• The site should be cleaned daily, especially surfaces that are affected by soil and dust. Regular watering (at least twice a day during the mid-morning and mid-evening) should be carried out in the construction site for dust suppression.</li> <li>• Excavated soil that is temporarily stored on-site should be</li> </ul>

Impact	Potential environmental issues/impact	(a) Likelihood of occurrence (b) Level of impact	Recommended mitigation measures
			<p>covered in a tarpaulin or other suitable material to prevent dust particles from getting air borne.</p> <ul style="list-style-type: none"> <li>• Where possible, construction stockpiles and debris piles should be stored away from the functional areas of the hospital.</li> <li>• Any equipment and machinery which uses diesel shall be appropriately maintained to control emissions. The contractor must ensure that vehicles entering the site have obtained vehicle emission certificates.</li> </ul>
<p>Deterioration of surface water quality. Drainage and hydrological modifications and modified flow patterns can lead to local flooding, increased erosion and sedimentation, slope instability.</p>	<p>Untreated or partially treated wastewater, improper disposal of waste (both liquid and solid waste), silt materials, runoff from stockpiled materials, and chemical contamination from fuels and lubricants during construction works can contaminate nearby surface water quality. Drainage, surface runoff and hydrological modifications</p> <p>Impacts can occur due to drainage obstruction during (i) construction of temporary access roads/ parking lots, ii). reclamation of land, iii). diversion of drainage paths, iv). crossing of pipelines at culverts, v). earthworks, trenching, construction of pipelines, filling, vi). residue, spoil/dredged material, and other solid waste disposal, vii). transport of construction material and viii). improper landscaping.</p>	<p>(a) Less likely to occur widely (b) Low</p>	<ul style="list-style-type: none"> <li>• Maintain cross drainage within site during construction. Hence stockpiles and debris must be safely stored away from these drainage paths.</li> <li>• Where blockage of drainage is unavoidable, alternative paths must be created to facilitate stormwater flows from the site to the outside.</li> <li>• Lead away drains that collect water from the internal drainage system of the nearby buildings must be kept clean and free from any constrictions to ensure a smooth flow of stormwater.</li> <li>• A washing area for construction equipment should be delineated within hospital premises away from the construction area.</li> <li>• Wastewater from the construction site should not be directly discharged into roadside drains. It should be first directed to a pit to allow siltation and percolation before connecting to a lead away drain.</li> <li>• The workers may use existing toilets in the hospital premises with the consent of the hospital authorities. Such use of toilets should not affect other users of the hospital in any way. Also, it must make sure that such use of toilets will not affect the health of the workers, as the toilets may be used by patients, thereby exposing workers to undue health risks.</li> </ul>
<p>High levels of noise and vibration</p>	<p>An increase in noise levels and vibration is possible due to excavation, earth-moving and blasting (if any) and the transport of equipment, materials, and people.</p>	<p>(a) Unlikely to occur widely (b) Low</p>	<ul style="list-style-type: none"> <li>• Construction work within the site, vehicles and equipment used in construction work should meet CEA standards for noise and vibration in Sri Lanka.</li> <li>• High noise-generating activities should be scheduled after informing and with the consent of the hospital authorities.</li> </ul>

Impact	Potential environmental issues/impact	(a) Likelihood of occurrence (b) Level of impact	Recommended mitigation measures
	<p>Installation of electro-mechanical components may emit high levels of noise.</p> <p>The operation of heavy equipment and machines in the nighttime can cause a nuisance to the surrounding hospital environment/people.</p>		<ul style="list-style-type: none"> <li>• Noise barriers must be erected, if needed, to cut down high noise. However, the contractor can separate site premises with a delineated barrier with a dual function of dust/noise containment and safety.</li> <li>• The use of noisy machines should be restricted, and where possible noise-reducing means for construction machines should be used.</li> <li>• Construction activity should be between 8.00 am to 6.00 pm daily to avoid discomfort caused by noise and vibration that for in-patients and the neighborhood.</li> <li>• If certain nighttime construction activities are unavoidable, they should be done using noise-reducing means or low-noise technologies.</li> <li>• Noisy construction machines/ activities should be scheduled to coincide with non-clinic and non-OPD days/times as much as possible or on days that patient visitation to the facility is minimum.</li> <li>• Liaising with the hospital authorities of the work schedules is always advisable. Prior notices of noise generating activities will avoid confusions among hospital authorities and the contractor</li> <li>• Conformity to the Interim Standard on Vibration Pollution Control for Sri Lanka is needed.</li> <li>• If vibration causes structural damages to nearby structures, the contractor is liable to rectify such damages.</li> </ul>
<p>Slope stability Soil erosion and sedimentation</p>	<p>Exposed slopes, cutting and filling operations, altered landscape, blasting and removal of boulders, removal of trees, roots and trunks, drainage modifications, and modified flow patterns can cause issues related to slope stability.</p> <p>Slope instability will cause loss of ground, causing damage to public/private land and built property in the neighborhood.</p> <p>Soil erosion and sedimentation may</p>	<p>(a) Likely to be an impact, especially in areas with sloping land.</p> <p>(b) Low</p>	<ul style="list-style-type: none"> <li>• Medium- to long-term slope stability should be considered in selecting sites for treatment plants and project interventions if proposed in sloping terrain.</li> <li>• If land clearing is done at sites with vertical relief, exposed bare sloping ground may be subjected to slope instability, mainly during rainy seasons. In sites involving the removal of rocks/boulders, slope instability may arise, depending on the slope and material</li> </ul>

Impact	Potential environmental issues/impact	(a) Likelihood of occurrence (b) Level of impact	Recommended mitigation measures
	be caused during construction due to land clearing, earthworks involved in cutting/filling, trenching, excavating, reclaiming, and landfilling, diversion of existing drainage paths, transport and stockpiling of construction material, residue, spoil, dredged material, etc.		
Storage and disposal of dredged material, spoil, and muck Impacts due to construction waste and storage of material	Improper extraction, storage and disposal of dredged material, spoil and muck from excavations, cleaning of drainage canals causing environmental pollution. Blocking of drainage paths leading to water stagnation and localized flooding within the facility, eventually leading to the breeding of mosquitoes. Some activities will produce hazardous waste, and inappropriate disposal practices can contaminate land and waterways	(a) Blocking of drainage could potentially occur during monsoons in the absence of good site management.  (b) Moderate	<ul style="list-style-type: none"> <li>• Maintain cross drainage within site always during construction. Hence, stockpiles and debris must be safely stored away from these drainage paths.</li> <li>• Where blockage of drainage is unavoidable, alternative paths must be created to facilitate stormwater flows from the site to the outside.</li> </ul>
Damages to ecological resources	Clearing of green areas, felling of the trees may affect terrestrial ecological balance, loss, and degradation of habitats, etc. Activities such as removal of trees and rehabilitation of existing habitats where faunal and avifaunal habitats have been established will lead to disturbances to such habitats. Heavy silt runoff and water pollution can cause damages to aquatic environments.	(a) Likely to occur removal of large trees is likely to occur in some sites but will not be widespread  (b) Moderate	<ul style="list-style-type: none"> <li>• Work shall not interfere with ecologically sensitive areas or with wildlife.</li> <li>• Large trees with DBH more than 30 cm should be removed only if they impinge on the design.</li> <li>• Large trees providing shade should be preserved as much as possible and incorporated into the landscape design</li> <li>• A compensatory tree planting program should be developed to replant native species wherever available space within the hospital premises and maintained until grown well.</li> </ul>
Impacts on occupational health and safety	Occupational hazards can arise during construction (e.g., trenching, falling objects, high levels of noise and vibration, accidents, etc.) and operations of newly built	(a) Occupational health and safety issues such as exposure to high noise/vibration levels are less likely to occur as	<ul style="list-style-type: none"> <li>• A safe construction site should include: (i) fully functional and well-maintained equipment, (ii) availability of emergency equipment and safety warnings, and (iii) worker personal protective equipment (PPE) and a strong commitment to follow safety practices with proper</li> </ul>

Impact	Potential environmental issues/impact	(a) Likelihood of occurrence (b) Level of impact	Recommended mitigation measures
	<p>infrastructure, especially treatment plants. There is a potential risk of workers of contractor and hospital staff being contracted with COVID-19.</p>	<p>construction works are small in scale. However, the risk of workers/ staff contracting with COVID-19 has a likelihood to occur.</p> <p>(b) Moderate to high</p>	<p>supervision of labour with proper monitoring and feedback</p> <ul style="list-style-type: none"> <li>• Workers must be provided with first-aid and health facilities. First aid training should be provided to the supervisor.</li> <li>• The constructors should carry out suitable training programs on occupational health and safety for workers</li> <li>• Machinery and equipment that could easily electrocute should be kept safely within site and always under the supervision of an experienced worker. Arranging regular safety checks for vehicles and equipment is needed, including the labour huts.</li> <li>• Allocation of responsibility to the relevant personnel is needed. Prohibition of alcohol and other narcotic substances, which may impair the judgment of workers engaged in construction activities, should be enforced.</li> <li>• Excavated areas for construction should be barricaded using barricading tapes and signboards. When work is done at higher elevations, the work should be carried out and supervised by experienced workers.</li> <li>• Adopt proper health and safety practices stipulated by MOH at work sites in prevention of COVID-19 spread.</li> </ul>
<p>Impacts on community health and safety; traffic hazards; safety of hospital staff and patients</p>	<p>Disturbances caused to accessing property and facilities (especially vehicular access) to hospital facilities and services can cause inconvenience to patients, hospital staff and visitors during construction, trenching, and other construction activities. Community hazards can arise during construction (e.g., open trenches, air quality, noise, falling objects, etc.). Trenching within hospital premises on pavements or any other paved road and areas using pneumatic drills will cause noise and air pollution.</p>	<p>(a) Public health and safety issues are likely to occur in all sites given that construction will take place within hospital premises while health care services are continuing to be delivered, and that a large majority of hospital users are patients.</p> <p>(b) Moderate</p>	<ul style="list-style-type: none"> <li>• The construction site should be delineated from the rest of the hospital, preferably using barricading tape or any other suitable material that separates the construction area from the rest of the hospital physically.</li> <li>• A safe pedestrian pathway to the hospital buildings should be provided if regular access along with the nearby gate and the hospital access road is blocked.</li> <li>• Signboards and directions for such detouring and shifting of facilities should be placed in all the two local languages, at prominent locations and in large-sized lettering. Safety of the peripheral areas of the site and access paths should be always ensured, e.g., non-slippery surfaces, clear of any obstructions and dangers, maintaining clean, tidy, and well-managed sites and activities, etc.</li> <li>• Safety signs should be placed at appropriate locations, informing the public of any dangers posed by construction-related activities.</li> <li>• Emergency access should never be obstructed. Alternative access for the ambulance and vehicular access should be provided whenever needed.</li> </ul>

Impact	Potential environmental issues/impact	(a) Likelihood of occurrence (b) Level of impact	Recommended mitigation measures
			<ul style="list-style-type: none"> <li>• Strict entry controls to the site premises should be in place so that unauthorized entry is debarred.</li> <li>• Notices should be provided to hospital staff and users about the schedule of construction activities with hazards, and potential noise and dust episodes, etc.</li> <li>• Concrete mixer trucks or any other trucks/construction vehicles should not be parked outside the hospital premises, as access roads may be narrow or busy.</li> <li>• Advance public notices should be displayed so that the hospital users are informed of the tree cutting.</li> <li>• All slopes should be strengthened by appropriate engineering interventions. Access roads and access paths should be rehabilitated to their original conditions.</li> </ul>
Physical Cultural Resources (PCRs)	There are structures in some hospitals which are more than 100 years old. Excavations and trenching can uncover and/or damage archaeological and historical resources.	(a) Less likely to occur (b) Low	<ul style="list-style-type: none"> <li>• All the staff and labourers of the contractor should be informed about the possible items of historical or archaeological value, which include old stone foundations, tools, clayware, etc. If something of this nature is uncovered, the Department of Archaeology shall be contacted, and work shall be stopped immediately. The chance find procedure of archaeological and cultural artefacts should be established.</li> </ul>
Clean-up operations, restoration, and rehabilitation	Impacts on social or sensitive receptors when post-construction requirements are not undertaken, e.g., improper closure of the campsites and yards, disposal of solid and liquid waste, and restoration of land after the project construction.	(a) Likely to occur (b) Low	<ul style="list-style-type: none"> <li>• Provide proper rainwater drainage network to the areas peripheral to the site, which will also prevent local flooding of low-elevation areas of the hospital premises, avoid soil erosion in the sloping terrain.</li> <li>• Any lead away drains, gutters, and drains of other buildings, if damaged or altered during construction, should be restored.</li> <li>• Rehabilitation of areas used for labour huts, offices, material storage yards, temporary drains, toilets, etc.</li> <li>• Turfing any exposed ground area, especially sloping terrain, to avoid soil erosion and landscaping with suitable trees. This will prevent soil erosion of the peripheral areas of the sub-project.</li> </ul>

CEA = Central Environmental Authority, COVID-19 = coronavirus disease, DBH = District Base Hospital, HCW = Health Care Worker, MOH = Ministry of Health.

## B. Operational phase

55. Potential adverse impacts envisaged during the operational phase are related to the handling/ disposal of health care waste and breakdowns/ failures in the systems. All types of solid, liquid, and gaseous waste that is generated during diagnosis, treatment or in medical research that can cause detrimental effects on human health and the environment when discharged or disposed of is considered medical waste. Generally, only a small percentage of the wastes produced by health care facilities is hazardous, while a large percentage is a general or non-hazardous waste. Even though the proportion of hazardous health care waste is relatively small, the risk they carry in terms of transmitting disease and polluting the environment due to careless disposal is very high.

56. The proposed project shall expand/improve the MWM services of selected secondary care health care facilities. However, the following two risks should be considered during operational stage of the project.

- (a) Occupational risks: During handling of wastes, medical and ancillary staff (including sanitary laborers) can be injured if the waste has not been safely packed. Sharps are the most dangerous in this respect and can cause serious injury and transmit diseases such as HIV/AIDs, hepatitis B, skin diseases and COVID-19.
- (b) Risks to the community and environment: If these HCF discontinue the use of such improved and renovated systems or due to breakdowns in the system and begin open dumping of untreated or inappropriately treated medical waste within or outside hospital premises, it could cause direct or indirect infections of public. Nearby communities may also be exposed to harmful emissions if waste management technologies such as incinerators are not properly maintained and monitored.

### 1. Medical Waste Management: Recommendations for complying with regulations

57. Operation of improved and renovated MWM should comply with the following regulations:

#### a. ***Complying with national policy and national guidelines for MWM***

58. Provisions of the national policy on MWM (2001) and national guidelines for health care waste management (2001)<sup>9</sup> should be complied with, and specific medical waste management plans should be prepared for each hospital.

#### b. ***Complying with national color code for segregated waste***

59. HCFs in the cluster should follow the national color code for segregated waste (2006)<sup>10</sup>.

#### c. ***Complying with accepted norms for labelling of segregated waste categories to ensure safety***

60. All the hospitals should follow accepted norms used for demarcation of segregated waste categories as per the National Color Code for Segregated Waste (2006)<sup>2</sup> and WHO guidelines.

<sup>9</sup> Draft Health care Waste Management National Guidelines, October 2001, Ministry of Health, and Indigenous Medicine, & Draft National Policy for HCWM, October 2001, Ministry of Health, and Indigenous Medicine

<sup>10</sup> See General Circular No. 01-12/2006, Ministry of Health and Nutrition, dated 21 March 2006.

61. Make labelling of waste containers mandatory, which can be used to identify the source, record the type and quantities of waste produced in each area of the HCF, and allow problems with waste segregation to be traced back to a medical area. A simple approach is to attach a label to each filled container with the details of the medical area, date, and time of closure of the container, and the name of the person filling out the label. Using an international hazard symbol<sup>11</sup> on each waste container is also recommended.

**d. Obtaining the Environmental Protection License**

62. In 2008, the GOSL consolidated the NEA, by incorporating medical institutions in the list of institutions/activities that require an EPL. The regulations determine the activities set out in the schedule as depicted in Gazette Extraordinary No. 1533/16 dated 2008.01.25, as activities for which a license is required - being activities that involve or results in discharging, depositing, or emitting waste into the environment, causing pollution. Item #68 under Part A of The Schedule list, 'Health care service centres generating infectious wastes, including medical laboratories and research centers' as a prescribed activity that needs a license.

**e. Obtaining the Scheduled Waste License**

63. Part II of the National Environmental (Protection & Quality) Regulations, No. 01 of 2008 include "*Health care service centres generating infectious wastes, including medical laboratories and research centres*" as a prescribed activity that requires a scheduled waste license (Gazette Extraordinary No. 1534/18 dated 2008.02.01).

64. Schedule VIII lists health care waste as a scheduled waste from specific sources that no person shall generate, collect, transport, store, recover, recycle, or dispose of except under the license issued by the Authority and in accordance with standards and other criteria as may be specified by the Authority. These categories include the following:

*28. Bio-medical and health care waste from health care Institution, including Medical Laboratories and Research Centres.*

*S 281 Infectious health care waste including laboratory cultures; waste from isolation wards; tissues (swabs), materials or equipment that have been in contact with infected patients; Human tissues or fluids*

*S 282 Sharps including needles and scalpels*

*S 283 Biological and Anatomical waste, including tissues, organs, body parts, human fetuses and animal carcasses, blood, and body fluids.*

*S 284 Outdated and discarded drugs, including cytotoxic drugs and chemical reagents*

*S 285 Materials and containers contaminated with the above-specified waste*

65. The following SWL should be obtained for HCFs where applicable: (Note: A permit for multiple operations can be obtained)

- i. Categories: *Generation and Storage*: All the hospitals in the cluster should obtain multiple SWL for the generation and storage of medical waste.
- ii. Categories: *Collection and Transportation*: The hospital authority who is responsible for collection and transportation of MW to the hospital where the MW

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<sup>11</sup> See: (i) Annex II of the European Commission's Directive on dangerous substances - 67/548/EEC, or (ii) those from the United Nations Economic Commission for Europe's (UNECE's) Globally harmonized system of classification and labelling of chemicals are recommended).

- treatment facility is established must obtain a multiple SWL for collection and transportation of medical waste.
- iii. Category: *Storage*: The hospital where the Health Care Worker (HCW) treatment facility is established must obtain a multiple SWL for: (i) Generation, (ii) Storage (waste generated at the hospital and all the waste it undertakes to process at the treatment facility), and (iii) Disposal (waste generated at the hospital and all the waste it undertakes to process at the waste treatment facility).
  - iv. Categories: *Recovery and Recycling*: These two categories may not be applicable in the case of operations of the health care waste treatment facility.

**f. *Air emission control***

66. If the proposed waste treatment facility is an incinerator, the emissions of such incinerators should comply with the provisions stipulated in Schedule III, Part V and regulations 14, 15 and 16 of National Environmental (Stationary Sources Emission Control) Regulations, No. 01 of 2019 (Gazette Extraordinary 2126/36 dated 2019.06.05).

67. It is very important to operate and maintain the Incinerator according to the guidelines provided by the manufacturer to ensure that the air emissions are maintained below the quality limited stipulated in the regulations.

- Operate and maintain the incinerator properly – keep visual records of the nature of emissions, and take corrective action as soon as color of smoke and opacity is abnormal
- Use recommended optimum levels of fuel for incineration and recommended waste loads
- Make sure that the composition of waste is according to the manufacturer's specifications.

**2. Medical waste management: Recommendations for complying with public health and safety provisions**

**a. *Proper collection of medical waste at each HCF***

68. The format specified schedule V, regulation 27 in the National Environmental (Protection & Quality) regulations, No. 01 of 2008 (Gazette Extraordinary No. 1534/18 dated 2008.02.01) should be used for maintaining records of the collection, storage, and treatment of medical waste. Each HCF should maintain a record of generation and collection (before handing over to the Transporter). This information is important in the renewal of the EPL and the SWL or each HCF. The method of treatment can indicate the details of handing over the waste to the transporter.

- Collection times within the HCF should be fixed and appropriate to the quantity of waste produced in each area of the health care facility. General waste should not be collected at the same time or in the same trolley as infectious or other hazardous wastes.
- Waste bags and sharps containers should be filled to no more than three-quarters full. Plastic bags should never be stapled but may be tied or sealed.
- Waste bags and containers should be labelled with the date, type of waste and point of generation to allow them to be tracked through to disposal. Where possible, weight should also be routinely recorded.

- HCW should be stored appropriately and handed over to the Transporter at regular intervals (pre-arranged). Record keeping is the responsibility of each HCF (see Regulation 27 above).

**b. *Proper transportation of medical waste the incinerator***

69. The waste collector and transporter should obtain proper SWLs, and the details needed for obtaining these licenses are given in the regulations. The format specified Schedule IV, Regulation 16(b) in the National Environmental (Protection & Quality) Regulations, No. 01 of 2008 (Gazette Extraordinary No. 1534/18 dated 2008.02.01) should be used for maintaining records by collectors and Transporters of medical waste.

**c. *Collection of medical waste from each HCF***

70. All the HCFs that are served by the central waste treatment facility should be strongly advised to send only infectious waste (highly infectious waste, pathological and anatomical waste), sharps, chemical and thermally destructible pharmaceutical waste.

71. Each HCF should declare what type of waste is contained in each package and approximate weight (this information is needed for their record-keeping as well). There should be a designated person who should take responsibility for the declaration of the contents.

72. The Collector should immediately refuse to collect any packages: (i) which he presumes contain any mix of waste which cannot be accepted (as listed above), (ii) any packages, bags, containers which are not properly sealed or tied or any packages which are damaged or as there is a risk of spilling while in transit, or any packages which have apparent signs of any leaking, (iii) the transfer sheet is not signed by the authorized person of the respective HCF, (iv) if the packages are not properly marked with a unique identification tag (location of origin, date of packing, weight, etc.), and (v) if any of the packages/bags are heavier than 10 kg. The ideal weight of a single package should be around 5 kg.

**d. *Transportation of medical waste from each HCF to waste treatment facility***

73. A list of all the HCFs shall be prepared from where medical waste is collected and transported to the central facility. Decide on the details (for each HCF) required to be included in the application to obtain the SWL: Clause 23–28 of Regulation 16(b) – to be filled by the Collector. The Collector is not allowed to collect scheduled waste at locations where he is not authorized to collect (locations which are not included in the SWL).

74. The PDHS should designate a vehicle (or a fleet of vehicles) for the exclusive use of waste transportation. Include the type/s of vehicles and registration numbers for obtaining the SWL. This SWL will serve the purpose of legally transporting the medical waste. Then establish a route that will be used for the transportation of the waste. This information must be included for each HCF in the application when obtaining the SWL (See Regulation 16(b) Clause 28) – to be filled by the Transporter. The driver and the helper (if any) should be provided with any appropriate clothing and PPE for handling HCW. They should be given very clear instruction on the procedure and what to be followed in any event of emergency/contingencies. This emergency plan should be included in the application submitted to obtain the SWL.

75. Drivers of vehicles carrying hazardous health care waste should have the appropriate training about risks and handling of hazardous waste. Training on the following issues should be included: (i) relevant legal regulations, (ii) waste classifications and risks, (iii) safe handling of hazardous waste, (iv) labelling and documentation, (v) emergency and spillage procedures, (vi) proper cleaning of the vehicle. In addition, drivers should be declared medically fit to drive vehicles. In case of accidents, contact numbers or details of the emergency services and other essential departments should be carried in the driver's cab. For safety reasons, vaccination against tetanus and hepatitis A and B is also recommended, and vaccination and training details of staff should be recorded.

76. The transport vehicle should be labelled according to the type of waste that is being transported. The label that is displayed will depend on the United Nations classification of the waste. (Note: According to the UN and WHO requirements, no specific vehicle labelling is required if less than 333 kg (i.e., the "gross dangerous goods charge") of infectious waste (UN 3291) is transported – although labelling is recommended. However, the National Environmental (Protection and Quality) Regulations, No. 1 of 2008 requires the following:

*"Every person involved with the management of scheduled waste shall, in addition to any other signs or symbols required under any other law, display a plainly visible notice in Sinhala, Tamil and English, on the (a) site of generation or storage; (b) vehicle used for transportation; (c) containers or tanks used for collection and storage; and (d) disposal sites."*

77. Therefore, it is recommended to adopt the recommended signage of the UN 3291 – recommended by the WHO with Sinhala and Tamil warning signs included.

#### ***Receipt of medical waste at the central facility for waste processing***

78. A designated officer should receive and keep records of medical waste received from each HCF, including the records of the transporter details of any waste returns should be recorded clearly, and the reason for returning clear instructions for proper waste collection, segregation and storage should be passed to waste generating HCFs regularly, and information should be maintained properly.

79. This officer should receive feedback from the operator on the presence of any waste items that are not allowed to be incinerated. Stern warnings should be issued to such HCFs, and such warning should be copied to the respective MOH and PDHS. If such incidences recur, do not receive waste from such HCFs.

80. The officer should be vigilant of any loose packages/bags or any leaky ones when receiving. The officer may refuse to accept such packages if circumstances warrant it. If not, the officer should direct the health care workers to safely transfer such packages safely to the incinerator site. This officer must supervise the record-keeping by the operator of the Incinerator, and such records should be kept as daily, weekly, and monthly summaries with the officer.

81. The officer should maintain the following records, which are needed for the renewal of the SWL, and show compliance to Regulations (The format specified in Schedule V, Regulation 27 in the National Environmental (Protection & Quality) Regulations, No. 01 of 2008 (Gazette Extraordinary No. 1534/18 dated 2008.02.01).

82. The hospital where the central waste processing facility is established should make sure that the control strategy for health care waste should have the following components:

- A consignment note should accompany the waste from the HCF, which is the place of production, to the site of final disposal at the central facility. On completion of the journey, the Transporter should complete the part of the consignment note especially reserved for him and return it to the waste producer.
- The hospital where the central facility is established should make sure that the waste is sent for processing and the Transporter has proper SWLs if not, accepting scheduled waste from them is not permitted.
- Handling and disposal facilities (Incinerator and disposal of burnt ash) at the waste processing site should hold an SWL issued by the Central Environmental Authority, allowing the facilities to handle and dispose of health care waste.

### **3. Medical waste management: Recommendations for complying with occupational health and safety**

83. The occupational safety of health care personnel and workers handling waste should never be overlooked. Clause 33 of the Regulation stipulate puts a strong emphasis on this.

#### **a. For the central waste processing facility**

84. The operator of the central waste processing facility should have the appropriate training about the risks and handling of hazardous waste. Training on the following issues should be included: (i) relevant legal regulations, (ii) waste classifications and risks, (iii) safe handling of hazardous waste, (iv) labelling and documentation, (v) emergency and spillage procedures, (vi) proper cleaning of the premises and the periphery.

85. In addition, the operator should be declared medically fit to operate the central waste processing facility. In case of accidents, contact numbers or details of the emergency services and other essential departments should be available at the incinerator site. For safety reasons, vaccination against tetanus and hepatitis A and B is also recommended, and vaccination and training details of staff should be recorded.

86. Provide: (i) appropriate clothing and PPE for the operator and his assistants who handle HCW, (ii) provide firefighting equipment (including sand buckets) at the incinerator site, (iii) provide proper water supply at the incinerator site and a washroom for the workers to clean themselves.

#### **b. Common for all the HCFs considered under this project**

87. Workers at risk from infection and injury include health care providers, hospital cleaners, maintenance workers, operators of waste-treatment equipment, and all personnel involved in waste handling and disposal within and outside health care facilities. Training in health and safety is intended to ensure that workers know of and understand the potential risks associated with health care waste and the rules and procedures they are required to respect for its safe management. They should be informed on the importance of consistent use of PPE and should be aware of where to obtain post-exposure follow-up in case of a needle-stick injury or other blood exposure.

88. Standardized and written health care waste-management procedures, when respected by personnel and monitored by the hospital management, can dramatically reduce the risk of

accidents. Hospital staff should be informed about the health care waste management system and procedures that are in place. Health care personnel should be trained for emergency response if injured by a waste item, and the necessary equipment should be always readily available. Written procedures for the different types of emergencies should be drawn up. For dangerous spills of hazardous chemicals or highly infectious materials, the clean-up operation should be carried out by designated personnel specially trained for the purpose.

89. To limit the risks, hospital management must set up management rules and operating procedures for health care waste and establish standardized emergency procedures. It is the responsibility of everybody involved in handling waste to know the emergency procedures and to act accordingly. One person should be designated as responsible for the handling of emergencies, including coordination of actions, reporting to managers and regulators, and liaising with emergency services. A deputy should be appointed to act in case of absence.

#### **4. Proper storage of medical waste and operations**

90. A proper waste storage shed should be built adjoining the waste processing facility, (i) its floor raised above any floodwaters, and the storage area should have an impermeable, hard-standing floor with good drainage; it should be easy to clean and disinfect, (ii) the access to be built up to this storage shed accessible to the transport vehicle, (iii) this storage shed has to have access control and should be kept locked, (iv) it should be provided with water supply for cleaning purposes, (v) there should be properly built drains to collect wash water into a catch pit, and the water collected there should be disinfected prior to disposal to the surrounding area (into a soakage gully), (vi) There should be protection from the sun; however, there should be good lighting and at least passive ventilation.

91. The waste storage shed, and the incinerator premises should be fenced, and access to it should be controlled. The storage area and the incinerator should afford easy access for staff in charge of handling waste and waste transport vehicles. The storage area should be inaccessible for stray animals and birds. Any rodents and insects should be eliminated using rodenticides and insecticides.

#### **5. Suggested methods to be adopted for better operations and ensuring sustainability of operations**

92. The operator of the waste processing facility should be given proper training on preventive maintenance, which refers to regular, routine maintenance to help keep incinerator up and running, preventing any unplanned downtime and expensive costs from unanticipated equipment failure. (i) A manual prepared for preventive maintenance should be provided (in Sinhala) to the operator. This must be prepared by the manufacturer of the Incinerator, (ii) a proper checklist for keeping records of preventive maintenance should be maintained and should be made available to the manufacturer when needed.

93. The operational manual should be made available for the operator – ideally prepared in Sinhala. A guide for troubleshooting should accompany the operation manual.

94. Any deviations from the normal mode of operations should be brought to the notice of the authorized engineer/technical officer of the hospital or the PDHS/RDHS – if needed, to be taken up with the manufacturer. This includes visual observation of the quality of smoke emissions, flaring and consumption of fuel, nature of the flame and observations of remain in the burnt ash.

95. Regular maintenance schedules should be carried out as scheduled. Any maintenance needs should be attended to without delays. Any signs of corrosion (especially on the stack) and other steel parts of the shed should be noted, and corrective action should be taken accordingly.

96. Storage space and the incinerator premises should be kept tidy and clean. Appropriate signages should be used to indicate public health hazards posed by the waste processing facility. Storage facilities should be labelled in accordance with the hazard level of the stored waste.

## **6. Management of wastewater from health care facilities**

97. Health care wastewater in the primary sector consists of (i) black water containing high concentrations of fecal matter, urine, and toxic chemical with high potential for pollution and (ii) greywater containing discharge from washing, cooking, bathing, laundering with low potential for pollution. Sewage generated in HCFs is potentially hazardous and infectious as they carry pharmaceutical chemicals and disease-causing bacteria, viruses, and parasites. None of the institutions in the primary sector considered under the project has piped sewerage, and the sewage is disposed of in septic tanks. There are many risks associated with current sewage disposal practices, especially if septic tanks are not watertight, old, and leaking or if the groundwater table in the area is naturally high, such as (i) contamination of local drinking water sources (ii) degradation of aquatic habitats and (iii) outbreaks of water-borne diseases. In addition, pharmaceuticals, detergents, antiseptics in wastewater may act as endocrine disruptors, and antibiotics can breed antibiotic-resistant pathogens once they are released into the environment without prior treatment.

98. Mitigation measures for hospital sewage and wastewater are to implement a treatment system. The volumes of wastewater produced in primary HCFs are not significant compared to higher grade hospitals, and the treatment options should be evaluated in a site-specific way during project implementation.

### **a. Mitigation of impacts by proper implementation of wastewater management systems**

99. Together with the wastewater that originates from such sanitary conveniences (blackwater), an adequate system of drainage shall be provided to carry wastewater from all other discharge points and appliances (greywater) within the hospital to a wastewater treatment system with an appropriate form of primary, secondary, and (if needed) tertiary treatment, designed and certified by a qualified engineer. Such treatment systems may consist of any pre-designed and prefabricated unit processes, packaged plants, etc. Preliminary treatment of wastewater, where needed, is essential, e.g., providing screens to remove gross solids, grease traps to remove oil and grease and primary treatment such as appropriate chemical treatment and dilution.

100. Disposal of effluent after treatment should be in compliance with provisions of the National Environmental (Protection & Quality) Act, No. 1 of 2008, and any other regulations as imposed by national and provincial regulations, any regulations imposed by local authorities, or any subsequent amendments to such regulations.

101. To make sure that wastewater generated within the HCF is safely collected, wastewater pipe networks, including traps and water seals, branch discharge pipes and connections, discharge stacks and ventilation pipes, and any other component of the pipe network, must be designed based on the maximum discharge of wastewater. In addition, the design of drains,

sewers, manholes, and any appurtenances from buildings to the point of connection to an existing sewer system or a wastewater treatment system should be part of the design. Designs should propose suitable technical measures to protect drains and pipelines from settlement, provide suitable access points for clearing blockages, rodent and vermin control, and any other foreseeable issues that need regular maintenance during operational activities of the building.

102. Reuse, reclamation and/or recycling of treated or partially treated wastewater for non-human consumption use should only be considered as long as:

- i. it is not prejudicial to the health of any person, persons, or a community.
- ii. it will not contaminate any surface watercourse, groundwater, or water supply.

103. After ascertaining safety, in such cases of reuse, reclamation and recycling of treated/partially treated wastewater, separate plumbing and distribution network and storage systems should be suitably designed and constructed. These distribution and storage systems should be clearly identified from drinking water systems, and points where such non-potable water is used, especially the taps, appliances and/or fittings, should be visibly marked.

104. It is required that all types of sludge produced from the treatment plant be handled in an environmentally safe manner, and the designs should consider the best methods of disposal of sludge with special emphasis on quantity and quality.

**b. Contingency plan for any malfunctions of the wastewater treatment facility**

105. Contingency measures plans have to be prepared for: (i) sewage treatment works that could reasonably be expected to cause significant environmental impacts as a consequence of operational disruption (i.e. maintenance, etc. or breakdown); (ii) discharge of sub-standard wastewater into the environment from the treatment facility which could cause a significant public health impact, and which therefore requires a continuous system of influent/effluent monitoring to identify potential problems as and when they arise.

106. In the preparation of the contingency measures: the most likely causes of process disruption/breakdown have been identified; (i) an attempt must be made to estimate their probability of occurrence; (ii) the possible resultant environmental adverse impacts should be identified; (iii) the recommended courses of action to minimize the severity of the impacts have to be highlighted; (iv) the responsible agency who shall act in case of emergencies needs to be indicated.

107. Table 5 gives the potential issues that can arise during operation and maintenance and corrective actions. The major risks which can result in breakdowns and disruptions are described below.

**Table 5: Contingency Measures to be Adopted in the Operation and Maintenance of the Wastewater Treatment Facility**

The issue to be addressed	Action to be taken
Breakdown or malfunctioning of the wastewater treatment plant	Continuous monitoring of the effluent quality of treated wastewater shall be carried out, and their acceptance shall be notified to the plant operator from time to time. The monitoring parameters and the frequency shall conform to the requirement provided in the EPL. If the quality of the final treated wastewater is not acceptable, an immediate need to shut down the WWTP shall be anticipated. Until the final quality of the treated wastewater is acceptable, no effluent shall be discharged/pumped. A proper communication channel shall be worked out to initiate action during such incidences, if any, and all the occurrences and corrective action are taken shall be recorded for rectification purposes.
Failure of pumps	Stand-by pumps should be made available so that there shall be no issue arising to cause a complete stoppage of the treatment plant. Hence this type of failure seems to be manageable, although the frequency of occurrence is remote. However, preventive maintenance for all pumps is recommended to be carried out to ensure trouble-free operations.
Power failures	In the case of power failure, plant operations should not be interrupted. Stand-by generators with adequate capacities, equipped with automatic changeover switches, shall be provided, so that risk of failure be minimal.
Accidental bursts of pipeline	The pipe material shall be selected in such a way that it withstands imposed and dead loads and internal build-up of pressure (nominal range with an acceptable factor of safety) to withstand pipe bursts, and fixtures are designed so that the joints are leak-proof. Since collector sewers and laterals are small-diameter short pipelines, which are connected to manholes and gulleys, there shall be no pressure build-up within these gravity-flow pipelines. The effluent discharge main shall carry treated effluent from the treatment plant to the outfall, which should be a short pipe in length, in which high pressures are not anticipated. However, subsequent haphazard excavation work may damage the pipes, and, in such case, pumping should be controlled or totally stopped until repair work is done. Any leaks or overflows of untreated wastewater shall be cleaned immediately, and the area shall be disinfected immediately, using chemicals.
Effects of natural disasters on the collection of wastewater and operation of the treatment plant	The pipelines may span over areas vulnerable to flooding, but since they are buried with proper compaction, flooding shall not affect the integrity and stability of the pipeline. Piping should be fully sealed so that infiltration shall be not anticipated. Fire damage is not a risk for the pipes as the entire pipeline is buried underground.
Failure of the outlet structure	Accidental damages of the outlet structures may occur during regular maintenance, flood events, borrow animals or by debris, as the outlet structure may be buried or lie underwater. Periodic under-water observations are, therefore, recommended to be adhered to. Such observations should be examined by the maintenance staff for structural integrity, and if deformities are observed, immediate repair work shall be undertaken.
Accidental release of partially treated wastewater	It is usually expected that no partially treated wastewater is discharged through the outlet structure, but if it happens, people downstream should be informed so that they should be prevented from the use of water, including bathing. Until the conditions are brought back to normalcy, the affected population should be kept informed, and the impact zone shall be demarcated to avoid any activities causing health hazards.
Sabotage and willful damage to pipes and treatment units	There shall be a risk of sabotage, perhaps in the areas where the pipeline is laid on the surface or above the existing ground. For example, across the culverts, there may be aboveground pipes where air-release valves may be fixed. Such fixtures may be vulnerable to acts of sabotage, and such sensitive areas must, therefore, be checked on a periodic basis. A logbook must be maintained to notify such damages, and actions should be taken to avoid such situations as practical as possible.
Asphyxiation hazards during maintenance	In the case of repairs, workers may open the pipe fixtures for observations. In such a case, gases trapped, if found, may cause asphyxiation hazards causing even difficulties in breathing. Hence, personal protective gears suitable for such incidents shall be provided, without which any repair work should not be undertaken.
Accidents in the treatment plant and the pump house	Accidents may occur in the pump house if not maintained well. An operation manual encompassing the accidental preparedness plan shall be kept in the location where the treatment plant and pumping units are housed. All operators shall be given training and awareness sessions to make them prepared to handle such situations pragmatically.

EPL = Environmental Protection License, WWTP: Wastewater treatment plant

Source: Asian Development Bank.

## V. ENVIRONMENTAL ASSESSMENT FOR SUBPROJECTS AND COMPONENTS

### A. Environmental and social safeguards screening and categorization

108. All subprojects will be screened to assess the nature and extent of potential environmental impacts. The general subproject selection will be guided by two criteria for environment:

- (i) Subprojects with significant (category A) environmental impacts, or with impacts on involuntary resettlement and Indigenous Peoples (category A and B), will be excluded; and
- (ii) Subprojects with activities described in ADB's Prohibited Investment Activities List (Annex 3) will also be excluded.

109. Environmental guidelines for subproject selection in Table 6 provide further guidance to avoid or minimize adverse impacts during the selection of subprojects.

**Table 6: Environmental Guidelines for Subproject Selection**

<b>Component</b>	<b>Environmental Guidelines for Subproject Selection</b>
Overall (Applicable to all Subprojects)	Comply with relevant national, and local laws, rules and regulations regarding EIA, environmental protection, pollution prevention (water, air, noise, solid waste, etc.), core labor standards, physical cultural resources, and occupational and community health and safety.
	Comply with ADB SPS.
	Avoid land acquisition and involuntary resettlement and have no impacts on Indigenous Peoples.
Sewerage System	Follow best available techniques and best available practices as prescribed by the WHO and Stockholm Convention
	Conduct environmental audit of existing facilities per ADB SPS
	Subprojects will be limited to renovation of existing sewerage systems within existing government hospital facilities.
Incinerators	Avoid cutting trees, and if unavoidable, replant 3 trees for every tree lost.
	Follow best available techniques and best available practices as prescribed by the WHO and Stockholm Convention. (i.e. operation and management practices, waste input and control, combustion, flue gas treatment, solid residues, effluent treatment, etc.)
	Conduct environmental audit of existing facilities per ADB SPS.

ADB = Asian Development Bank, EIA = Environmental Impact Assessment, SPS = Safeguards Policy Statement, WHO = World Health Organization.

Source: Asian Development Bank

110. After meeting the subproject selection criteria and environmental guidelines for subproject selection, the PMU at MOH will classify subprojects at the earliest stage of preparation when sufficient information is available. Classification will (i) reflect the significance of potential impacts

or risks that a subproject might present; (ii) identify the level of assessment and institutional resources required for the safeguard measures; and (iii) determine disclosure requirements.

111. The subprojects will be categorized following ADB's classification system to reflect the significance of a subproject's potential environmental and involuntary resettlement impacts.

- a. **Environmental impacts.** A subproject's category is determined by the category of its most environmentally sensitive component, including direct, indirect, cumulative, and induced impacts in the subproject's area of influence. Each proposed subproject will be scrutinized as to its type, location, scale, and sensitivity and the magnitude of its potential environmental impacts. Subprojects are assigned to one of the following three categories: (i) Category A. A proposed subproject is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. (ii) Category B. A proposed subproject is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. (iii) Category C. A proposed subproject is classified as category C if it is likely to have minimal or no adverse environmental impacts.
- b. **Involuntary resettlement impacts.** Like environmental impacts, a subproject's involuntary resettlement category is determined by the category of its most sensitive component in terms of involuntary resettlement impacts. Subprojects are assigned one of the following three categories: (i) Category A. A proposed subproject is classified as category A if it is likely to have significant involuntary resettlement impacts. (ii) Category B. A proposed subproject is classified as category B if it includes involuntary resettlement impacts that are not deemed significant. (iii) Category C. A proposed subproject is classified as category C if it has no involuntary resettlement impacts. The involuntary resettlement impacts are considered significant if 200 or more persons will experience major impacts, which are defined as (i) being physically displaced from housing, or (ii) losing 10% or more of their productive assets (income generating).

112. Each subproject will be screened using the environmental and involuntary resettlement screening checklist provided in Annex 4. The environmental screening checklist is patterned after ADB's rapid environmental assessment checklist for buildings and consists of two parts: Part I focusing on construction related environmental impacts and Part II focusing on health care waste related impacts. Based on the screening, the PMU will propose the environmental categorization for each subproject. Category A subprojects will be excluded from ADB financing. Category B subprojects will require the preparation of an initial environmental examination (IEE) including an environmental management plan (EMP) while Category C subprojects will require a desk review of environmental implications. The PMU at MOH will submit the classification of each subproject to ADB Sri Lanka Resident Mission (SLRM) for review and approval.

## **B. Environmental assessment**

113. Given the limited scale of physical infrastructure improvement works proposed within the COVID-19 designated hospitals, which would basically involve rehabilitation and improvement works, almost all the subprojects will be either environmental category B or C. Once the

categorization is confirmed by SLRM, an IEE including an EMP will be prepared following the suggested outline (Annex 5).

114. The scope of the IEE should ideally cover more than one subproject, as it would be too cumbersome to conduct IEEs for each facility. Packaging of health facilities for umbrella IEEs could be done at a district level, or as deemed suitable by the PMU.

115. In preparing IEEs, secondary data will be collected for subproject sites. Pollution prevention, occupational health safety and community health and safety will be properly addressed in the EMP section of the IEE report. Appropriate mitigation measures will be planned and reflected in the IEE. The IEE will also reflect how meaningful consultation will be undertaken, disclosure requirements in accordance with ADB's Access to Information Policy, and provision for a project-level grievance redress mechanism.

116. An EMP for each subproject will be developed as part of the IEE. The EMPs will describe the mitigating measures to be carried out to mitigate negative impacts or enhance the environmental conditions during implementation of a subproject, and the environmental monitoring to be conducted to ensure that mitigation is provided and is effective in reducing impacts, or to determine the long-term impacts of a subproject. EMPs will outline specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements for implementation. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the subproject is designed, constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in this document.

117. All IEEs and EMPs will be prepared prior to the award of construction contracts. The bidding documents will include the EMP and the requirement to incorporate necessary resources to implement the EMP. The EMP will form part of the contract document, and if required, will need to be further updated during the construction phase of a subproject.

118. Any changes or updates on the IEE will be subject to ADB's review and disclosure.

119. For subprojects involving facilities and/or business activities that already exist or are under construction or proposed, an environmental compliance audit will be conducted. The environmental audit will include an onsite assessment to identify past or present environmental concerns. The audit will examine whether past actions were in accordance with ADB's safeguard principles and requirements for executing and implementing agencies and identify and plan appropriate measures to address outstanding compliance issues. In case there are non-compliance issues identified, a time-based corrective action plan in the IEEs will be budgeted and agreed between by ADB and PMU. The plan will define the necessary remedial actions, the budget for such actions, and the timeframe for resolution of non-compliance. The environmental audit report (including the corrective action plan, if any) will be made available to the public in accordance with the information disclosure requirements of SPS. If a subproject involves an upgrade or expansion of existing facilities that has potential impacts on the environment, the requirements for environmental assessments and planning specified in the EARF will apply in addition to compliance audit.

120. Given the nature of the project, it is unlikely that any of the subprojects would warrant to go through environmental impact assessment process as stipulated under the NEA. However, in the rare instance it does so, the PMU shall comply with the national requirements in addition to that of the ADB.

### **C. Review of environmental assessment reports**

121. The IEEs including the EMPs will be prepared by the PMU, endorsed by the executing agency, and forwarded to ADB for review and endorsement. In instances where national environmental clearance is needed, the IEEs will be sent to the relevant agency for their approval.

## **VI. CONSULTATION, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM**

### **A. Consultation and participation**

122. Stakeholder consultations allow opportunities to incorporate needs/views of the stakeholders in the final subproject design and mitigation measures, raise implementation issues and enhance the 'ownership of the project'. Meaningful stakeholder involvement and participation in decision-making contributes to project sustainability. Various project stakeholders have been consulted and will be continued at various stages of subproject preparation to ensure: (i) incorporation of views/concerns of affected persons, particularly the vulnerable, on environmental impacts and mitigation measures; and (ii) avoidance of potential conflicts for smooth project implementation.

123. The COVID-19 pandemic and the urgency of processing this loan has limited the number of physical consultations with stakeholders. Officials of MOH and line ministries were consulted mostly through virtual platforms and where possible, physical meetings have also been held.

124. The safeguards documents will record views of stakeholders and indicate how these have been considered in subproject development. Consultations will be held with a special focus on vulnerable groups.

125. At the minimum, staff of the selected COVID-19 designated hospitals, staff of regional and provincial health services who handle the vaccination program, patients seeking treatment, other government bodies, NGOs (if any) and local communities shall be consulted during project screening, assessment, and implementation. Stakeholders will be consulted regarding the scope of an impact assessment before work is commenced and they will be informed of the likely impacts of the subproject and proposed mitigation measures once the draft IEE and EMP documents are prepared. It is important for consultations to encourage women participation and engage as many relevant stakeholders as possible. It is also important to document outcomes of all consultations, record stakeholders met (gender-disaggregated), time and location. Considering the limitations due to the pandemic, it is recommended to conduct these consultations through virtual platforms or after adopting all precautionary measures including maintaining physical distancing, use of appropriate personal protective equipment and ensuring that the venue allows for social distancing.

### **B. Information disclosure**

126. Aside from information disclosure during consultations, the PMU will ensure that environmental safeguards documents prepared in support of project implementation such as IEEs, any updated IEE, corrective action plans (if any) and environmental monitoring reports are disclosed via its website. In addition, the PMU will take necessary steps to make these documents available in appropriate locations, in a manner that is timely and in a language that is understood by local community/affected people for those who do not have access to the internet. For illiterate

people, other suitable communication methods will be used. The PMU will also send a written endorsement to ADB prior to disclosing these documents on the ADB website. IEEs (and any updates thereto), corrective action plans (if any) and environmental monitoring reports will be disclosed on the ADB website in compliance with ADB's Access to Information Policy.

### C. Grievance Redressal Mechanism

127. The objective of the Grievance Redress Mechanism (GRM) is to provide a timely and transparent mechanism to raise and find resolution to social and environmental issues arising out of the project. While the following institutional mechanism is recommended for project specific grievances, it will not replace, override or bypass other GRM systems that exist at the government/community level but provide another route through which concerns of affected parties can be swiftly addressed.

128. The project shall adopt the existing Grievance Redress Mechanism (GRM) established under the ongoing HSEP, financed by ADB, which has a have 2 tier system.<sup>12</sup> The GRM will continue to receive, evaluate, and facilitate the resolution of affected person's (AP's) concerns, complaints, and grievances about the social and environmental performance at the level of the project.

129. The existing GRM of HSEP is shown in Figure 1. Only written grievance will be forwarded to the Grievance Redress Committee (GRC) who will call a hearing, if necessary, with the complainant. The process will facilitate resolution through mediation. The GRC will meet as required and direct the field level with clear instructions and responsibilities to attend to the agreed actions within one to two weeks of meeting. If the grievance is related to construction, the contractor will sit in the GRC as an observer.

130. Levels of GRM resolution under HSEP.

- (i) **Tier 1:** Project implementation unit at the provincial level of HSEP is the first level to resolve grievances. The deputy project director (DPD) is the focal point for grievance redressal and acts as the chairman of GRC. Its members include the respective district regional director of health, the social and environment responsible officers from the project implementation unit (PIU) (secretary to the committee), one nominated officer from the provincial council, and a representative of the community.
- (ii) **Tier 2:** The DPD at the PIU in consultation with the environmental specialist / social safeguards specialist or any other relevant official of the PMU activates the second level for grievances that are not resolved at tier 1. In addition, via an officer of local authority, chief secretary, Grama Niladhari, construction site office or directly by a community member or any other individual can also directly report a grievance to the tier two. The GRC at the PMU level (Second tier) is headed by the Project Director of HSEP (Chairman of the committee) and its members include: Deputy Director General (planning) of the MOH, a nominated representative of chief secretary of the respective province, DPD of the respective province, environment officer and social safeguards officer (Secretary to the committee) and a representative from the respective community.

<sup>12</sup> Government of Sri Lanka, Ministry of Health. 2021. *Initial Environment Examination: Proposed for Round 2, Phase 1 in the Anuradhapura District and Polonnaruwa District in Sri Lanka* (prepared for ADB).

131. The GRM will not impede the AP's decision to use the legal system at any time.

132. On receiving a grievance (via an office of local authority, chief secretary, *Grama Niladhari*, construction site office or directly by a community member or any other individual), the PIU or the PMU will:

- (i) enter the grievance in the Complaints register of the respective PIU or the PMU;
- (ii) open a grievance file for the specific case;
- (iii) maintain records of the GRC meetings; and
- (iv) close the grievance filling a closure sheet that will be signed by the complainant agreeing that the concern has been satisfactorily resolved.

133. Grievances will be attended to at the first tier within 7 days, and at the second tier within 14 days based on site investigations and consultations with relevant parties. All grievances will be properly recorded with personal details unless otherwise requested.

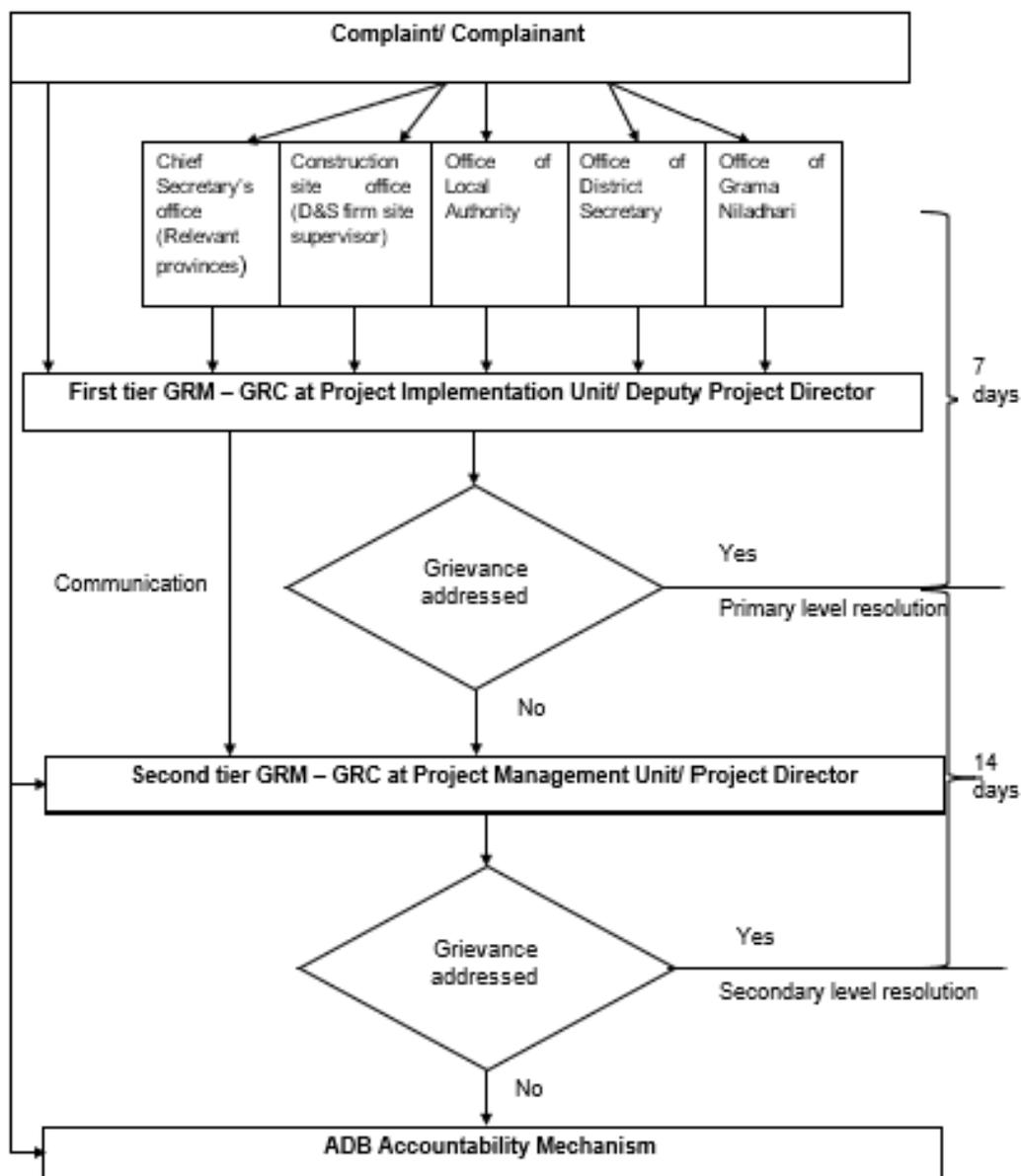
134. It is important to ensure that the project's mechanism for grievance redressal is widely disseminated to the public and other affected stakeholders through (i) public consultation meetings (ii) media advertisement (iii) locally erected notices and other means.

135. In the event that an affected person is not satisfied with the outcomes of the 2-tiered GRM, the affected person should make good faith efforts to resolve issues working with the South Asia Regional Department through ADB's Sri Lanka Resident Mission. As a last resort, the affected person can access ADB's Accountability Mechanism (ADB's Office of Special Project Facility or Office of Compliance Review).<sup>13</sup> ADB's Accountability Mechanism, including information on how to file a complaint, will also be explained to affected households.

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<sup>13</sup> Information on ADB's Accountability Mechanism is in [www.adb.org/site/accountability-mechanism/main](http://www.adb.org/site/accountability-mechanism/main).

**Figure 1: Grievance Redress Mechanism of HSEP**



136. The status of the GRM will be reported in environmental monitoring reports. The GRM section of the environmental monitoring report will include the following aspects pertaining to progress on grievances: (i) number of cases registered with the GRC, level of jurisdiction (first, second, and third levels), number of hearings held, decisions made, and the status of pending cases; and (ii) lists of cases in process and already decided upon may be prepared with details such as affected person, date of notice, date of application, date of hearing, decisions, remarks, actions taken to resolve issues, and status of grievance (i.e. open, closed, pending).

137. All administrative costs involved in resolving the complaints (meetings, consultations, communication, reporting and/or information dissemination) will be borne by the executing and implementing agencies.

## VII. INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

### A. Institutional Arrangements

138. The MOH will be the implementing agency. The PMU established at MOH to implement the HSEP shall coordinate with relevant divisions of MOH and COVID-19 designated hospitals in implementing the project. The national project steering and coordination committee established for HSEP chaired by the Secretary, MOH will provide policy direction to the project. The PMU, headed by the project director (PD), will be responsible for the overall coordination, management, administration, and project implementation and monitoring. At each province level, a PIU will be established and will be headed by a DPD.

139. The PMU will function as the project office for the MOH, carry out subproject appraisal and approval and ensure compliance with ADB loan covenants. The environmental consultant/specialist (ES) attached to the PMU shall:

- (i) Assist the PMU/PIUs in overall implementation of the project's EARF.
- (ii) Review and endorse the safeguards screening checklist and conduct follow-up assessments (IEE).
- (iii) Assist the PMU in checking the provisions of civil works contracts to ensure that EMPs and all other requirements to ensure resources are integrated in the bidding documents.
- (iv) Monitor compliance of the civil works contractors with EMP provisions.
- (v) Prepare and submit to the ADB semi-annual environmental monitoring reports for review and disclosure.
- (vi) In case unanticipated environmental impacts become apparent, advise the MOH and ADB the needed assessment to be undertaken and resources to implement mitigation measures.
- (vii) Assist the PD in all matters pertaining to environmental safeguards.

140. The environmental focal points at provincial PIU offices shall:

- (i) Assist the ES to conduct environmental screening for each site and in collecting necessary data for the preparation of IEEs and EMPs.
- (ii) Ensure compliance with EMPs during the construction period and maintain close co-ordination with the site engineer of the implementing agency and the contractor.
- (iii) Report to the ES on site level EMP compliance, issues, and challenges.
- (iv) Prepare and submit regular environmental monitoring and implementation progress reports to the PMU as specified by the ES.
- (v) Assist ES in ensuring public complaints relating to nuisance and inconvenience caused by sub-project implementation are addressed with corrective action and adequately documented.

141. The consultant specializing in HCW planning and management (which is part of the EMP requirement) attached to the PMU will support in completing due diligence on existing MWM systems in the selected COVID-19 designated hospitals and an overall assessment on managing MWM in government health facilities.

## **B. Institutional capacity development**

142. Output 2 of the project includes a component on institutional capacity development, where a COVID-19 vaccine management information system (COVID-19 Immunization tracker, Sri Lanka) to monitor the vaccine deployment program for COVID-19 in Sri Lanka will be established. This output therefore intends to purchase tablets and smart phones to dedicated preventive health sector staff across the country from public health midwives to public health inspectors, supervising staff and medical officers of health at divisions, region and at the province levels.

143. Training sessions will be provided by the supplier/s of incinerators to staff who will handle the incinerators. A service agreement shall also be enforced between the supplier/s and MOH for service and maintenance of these incinerators.

## **VIII. MONITORING AND REPORTING**

144. Each subproject will have a site-specific Environmental Monitoring Plan corresponding with the project's risks and impacts. Monitoring of environmental parameters such as air quality, noise, vibration, and water quality will be conducted based on the requirements specified in the individual EMPs. A sample monitoring checklist to be used and filled during site supervision is provided in Annex 6.

145. The responsibility of monitoring and assessing the progress of EMP implementation will lie primarily with the PMU. It will work closely with the hospital management in monitoring progress regarding implementation of EMP. Actions required to improve compliance status of mitigation measures together with agreed deadlines and follow-up measures shall be formally communicated with relevant parties in a timely manner during implementation and all such records should be documented, updated, and maintained at respective project offices. In case of non-compliance issues, necessary corrective actions should be agreed between ADB and the EA, budgeted, and implemented within a specific timeframe. The corrective action plan will be documented in the environmental monitoring report.

146. The ES will prepare monthly monitoring reports documenting the progress made in EMP implementation and implementation issues and submit to the PD for his review. Based on these, the PMU will prepare and submit to the ADB semi-annual environmental monitoring reports (proposed format in Annex 7) summarizing progress and issues relevant to implementation of the project. Progress monitoring should be supplemented with photo documentation of actual implementation onsite and should be included in the progress monitoring reports.

147. ADB will monitor projects on an ongoing basis until a project completion report is issued. The ADB will review project performance against MOH's commitment as outlined in this EARF and the legal documents. ADB will closely monitor project implementation through: (i) the conduct of periodic site visits to the project sites, (ii) review of the periodic monitoring reports submitted by the executing agency to ensure that adverse impacts and risks are mitigated as planned and as agreed with ADB; (iii) work with executing agency to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to re-establish compliance as appropriate; and (iv) prepare a project completion report that assesses whether the objective and desired outcomes of the safeguard plans have been achieved, considering the baseline conditions and the results of monitoring.

**ANNEX 1: Guideline for Management of COVID-19 Infectious Waste**

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**SUWASIRIPAYA**

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**Ministry of Health & Indigenous Medical Services**

To All PDHSs, RDHSs and  
All Heads of Institutions

**Guideline for Management of COVID-19 infectious waste**

Infectious waste generated from healthcare institutions treating COVID-19 cases shall be treated using only the following methods.

1. Incineration
2. Using a metaMizer

These two methods of treatment should be used in all healthcare institutions designated for treating COVID-19 cases.

1. Handover the infectious waste generated in Healthcare institutions in Western, Central and Southern Provinces to Sisili Hanaro Encare (Pvt) Ltd for incineration.
2. Use either incinerators or metaMizers to treat the clinical waste in all other provinces.

Please advise the staff to adhere to the following in managing infectious waste from COVID-19 cases /wards.

Infectious waste generated from suspected and confirmed COVID-19 cases should be collected in yellow polythene bags of minimum 300 gauge and tied well. It should then be put in another yellow bag (double bagged) and tied and sealed with appropriate adhesive tape. Mark the waste bag with a red label as "COVID-19 waste" for easy identification and prioritized disposal.

Sharps should be placed in cardboard sharp boxes which should be puncture proof and leak proof. Sharp boxes should be designed with a small inlet so that items can be dropped in but no item can be removed. It should be closed when  $\frac{3}{4}$  full.

Make sure that the sharp box has a handle. Mark the sharp box with a red label as “COVID-19 waste” for easy identification and prioritized disposal.

COVID-19 waste containing yellow polythene bags and sharp boxes should be transported separately in a trolley or a cart which is easy to load, clean and disinfect and treated on priority basis on the same day.

The staff transporting this waste needs to wear proper personal protective equipment (PPE) such as gloves, masks, boots and overalls at all times.

The staff at the treatment facility needs to wear proper personal protective equipment such as industrial gloves, masks, boots and overalls.

Infectious waste handling staff need to be educated on how to protect them and should be provided with washing facilities with adequate soap and water.

Arrangements need to be made to treat COVID-19 infectious waste within 24 hours.

Waste management process needs to be supervised by a team nominated by the Head of the Institution

For any clarifications please contact the Director (E&OH)



Dr. Lakshman Gamlath

DDG (EOH &FS)

## Annex 2: Guidelines For removing Asbestos Cement Sheets from Buildings

**Background:** Asbestos Cement (AC) sheets are still widely used as roofing material in Sri Lanka, which accounts for most of asbestos use in the country. While many countries have banned the use of all forms of asbestos, Sri Lanka has not yet imposed a total ban although many policy level discussions are going on in assessing this risk and identifying how to address it. In AC, the chrysotile (or white asbestos) fiber is encapsulated in a cement matrix. While this fiber-cement bond is regarded to be relatively safe, if it is released into the air during (i) assembling, cutting, removing asbestos sheets during construction and (ii) aging and fungal attacks on AC sheets or (ii) the process of aging and fungal attack, and is inhaled over a long period of time, it can cause great risks to public health. The Rotterdam Convention of Hazardous chemicals lists asbestos containing material as hazardous that requires to follow a prior informed consent procedure in importation etc. The National Environmental Act of Sri Lanka identifies 'waste arising from repairing/renovation processes and demolition/construction debris containing asbestos' as a scheduled waste in Part II (specific sources) requiring licensed approval for disposal.

It is highly unlikely that existing structures in selected COVID-19 designated health care facilities shall require any full or partial demolition to improve/ renovate existing liquid waste management systems and solid waste management systems. However, if such need arises and there is AC sheets to be removed and disposed, this note should be considered as a further guide to the provisions contained in the EMP for the safe handling and disposal of used AC sheets.

*The following guidelines have been extracted from the Health and Safety Executive (<http://www.hse.gov.uk/>) which is an independent regulator for safe working environments in the UK.*

### Preparing the work area

- Ensure safe access to the roof. If necessary, use a mobile access platform.
- Restrict access to the working area to minimize the number of people present. This is extremely important as the construction sites are sensitive receptors constantly used by those who are sick.
- Delineate the area using tape and notices to warn others.
- Ensure adequate lighting.

### Equipment needed

- Thick polythene sheeting and duct tape
- Barricade tape and warning signs
- Bolt cutter
- Straps and ropes
- Water sprayer
- Buckets of water and rags
- Sealable bags for large AC pieces broken away from the roof
- Personal protective equipment such as masks, overalls, gloves and boots

### Guidelines during removal

- Avoid or minimize breaking the AC.
- If fasteners hold the sheets in place, dampen and remove them and place them in the asbestos waste bag.
- If the sheets are bolted in place, dampen and cut the bolts while avoiding contact with the AC.

- Remove the bolts or fixings carefully and place them in the asbestos waste bag.
- Unbolt, or use cutters to release gutters, drainpipes, ridge caps etc. Avoid contact with the AC.
- Lower large pieces to the ground. Do not drop them or use rubble chutes. Stack sheets carefully.
- Where there are several AC sheets and other large items, place them in a lockable skip.
- Double-wrap large pieces in 1000-gauge polythene sheeting. Seal with duct tape.
- Attach asbestos warning stickers.
- Place small pieces in the asbestos waste bag.

**Guidelines for cleaning and disposal**

- Clean the equipment and the area with damp rags.
- Check for debris in fasteners or bolt holes. Clean with damp rags.
- Put debris, used rags, polythene sheeting and other waste in the asbestos waste bag and tape it closed.
- Dispose of contaminated webbing and rope as 'asbestos waste'.
- Put the asbestos waste bag in a clear polythene bag and tape it closed.

**For disposal of the discarded AC sheets:**

- Store the sealed asbestos sheets in a safe corner of the hospital premises or transport to a central disposal yard where waste from all sites in the district can be stored.
- Transfer to a suitable sanitary landfill such as Aruwakkalu which operates with proper facilities to contain leachate and with proper licensing.

### ANNEX 3: ADB Prohibited Investment Activities List

The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor<sup>a</sup> or child labor;<sup>b</sup>
- (ii) production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals,<sup>c</sup> pesticides, and herbicides,<sup>d</sup> (b) ozone-depleting substances,<sup>e</sup> (c) polychlorinated biphenyls<sup>f</sup> and other hazardous chemicals,<sup>g</sup> (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,<sup>h</sup> and (e) transboundary trade in waste or waste products;<sup>i</sup>
- (iii) production of or trade in weapons and munitions, including paramilitary materials;
- (iv) production of or trade in alcoholic beverages, excluding beer and wine;<sup>j</sup>
- (v) production of or trade in tobacco;<sup>j</sup>
- (vi) gambling, casinos, and equivalent enterprises;<sup>j</sup>
- (vii) production of or trade in radioactive materials,<sup>k</sup> including nuclear reactors and components thereof;
- (viii) production of, trade in, or use of unbonded asbestos fibers;<sup>l</sup>
- (ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and
- (x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

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<sup>a</sup> Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

<sup>b</sup> Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention" ([www.ilo.org](http://www.ilo.org)).

<sup>c</sup> A list of pharmaceutical products subject to phaseouts or bans is available at <http://www.who.int>.

<sup>d</sup> A list of pesticides and herbicides subject to phaseouts or bans is available at <http://www.pic.int>.

<sup>e</sup> A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>.

<sup>f</sup> A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

<sup>g</sup> A list of hazardous chemicals is available at <http://www.pic.int>.

<sup>h</sup> A list is available at <http://www.cites.org>.

<sup>i</sup> As defined by the Basel Convention; see <http://www.basel.int>.

<sup>j</sup> This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor's primary operations.

<sup>k</sup> This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which ADB considers the radioactive source to be trivial and adequately shielded.

<sup>l</sup> This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

### ANNEX 4.1: Environmental screening checklist

**Instructions:**

The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (SDES) for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

#### A. Basic Information on the health care facility (HCF)

Name of the HCF	
Location	Province District Divisional secretary division
Type of HCF	
Number of beds and bed occupancy rate	
No. of out-patients per day	
No. of staff	
Proposed rehabilitation interventions	
Contact person in the HCF	

#### B. General construction related impacts

Screening questions	Yes	No	Remarks
<b>Project Siting. Is the project site within or adjacent to any of the following areas:</b>			
• Densely populated area			
• Cultural heritage site			
• Protected Area			
• Wetland and water bodies			
• Mangroves			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• D. Potential Environmental Impacts			
• Will the Project involve or cause...			
• Encroachment on historical/cultural areas?			
• Encroachment on precious ecology (e.g. sensitive or protected areas)?			
• Unsatisfactory raw water supply			
• Conflicts in abstraction of water with other beneficial water uses of the same sources			
• Over pumping of groundwater			
• Increase in production of general solid waste			
• Increase in production of hazardous waste			
• Increased sewage flow			
• Generation of sludge from waste treatment plants			

Screening questions	Yes	No	Remarks
• Use of or dismantling of structures that contain Asbestos			
• Noise and dust from construction activity?			
• Soil erosion and silt run off from construction activity?			
• Accident risks associated with increased vehicular traffic?			
• Increased noise and air pollution resulting from increased traffic volume?			
• Risks and vulnerabilities related to occupational health and safety due to physical hazards during project construction and operation?			
• Requirements for disposal of fill, excavation, and/or spoil materials?			
• Loss of large trees (more than 30 cm DBH); how many?			
• Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?			
• Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?			
• Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
• Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?			
• Risks to community health and safety caused by management and disposal of waste?			
• Procurement of x-ray machines or any other equipment containing radioactive material			
• Procurement of incinerators?			
• Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather-related events such as floods, droughts, storms, landslides?			

**C. Screening decision and recommendation**

<b>Sub-project safeguard category</b> (Please tick as appropriate)	B <input type="checkbox"/>	C <input type="checkbox"/>
	IEE needed	
	EMP only	

## ANNEX 4.2: Involuntary resettlement screening checklist

### A. Basic information on the health care facility (HCF)

Name of the HCF	
Location	Province District Divisional secretary division
Type of HCF	
Number of beds and bed occupancy rate	
No. of out-patients per day	
No. of staff	
Proposed rehabilitation interventions	
Contact person in the HCF	

### B. Involuntary resettlement impacts

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
<b>Involuntary Acquisition of Land</b>				
1. Will there be land acquisition?				
2. Is the site for land acquisition known?				
3. Is the ownership status and current usage of land to be acquired known?				
4. Will easement be utilized within an existing Right of Way (ROW)?				
5. Will there be loss of shelter and residential land due to land acquisition?				
6. Will there be loss of agricultural and other productive assets due to land acquisition?				
7. Will there be losses of crops, trees, and fixed assets due to land acquisition?				
8. Will there be loss of businesses or enterprises due to land acquisition?				
9. Will there be loss of income sources and means of livelihoods due to land acquisition?				
<b>Involuntary restrictions on land use or on access to legally designated parks and protected areas</b>				
10. Will people lose access to natural resources, communal facilities and services?				
11. If land use is changed, will it have an adverse impact on social and economic activities?				
12. Will access to land and resources owned communally or by the state be restricted?				
<b>Information on Displaced Persons:</b>				
Any estimate of the likely number of persons that will be displaced by the subproject? [ ] No [ ] Yes [ ] NA If yes, approximately how many? _____				
Are any of them poor, female-heads of households, or vulnerable to poverty risks? [ ] No [ ] Yes [ ] NA				
Are any displaced persons from indigenous or ethnic minority groups? [ ] No [ ] Yes [ ] NA				

## **ANNEX 5: Outline for an Initial Environmental Examination**

This outline is extracted from annex to appendix 1 of SPS.

### **A. Executive Summary**

This section describes concisely the critical facts, significant findings, and recommended actions.

### **B. Policy, Legal, and Administrative Framework**

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

### **C. Description of the Project**

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

### **D. Description of the Environment (Baseline Data)**

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

### **E. Anticipated Environmental Impacts and Mitigation Measures**

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

### **F. Analysis of Alternatives**

This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. It also states the basis for selecting the particular project design proposed and, justifies recommended emission levels and approaches to pollution prevention and abatement.

## **G. Information Disclosure, Consultation, and Participation**

This section:

- (i) describes the process undertaken during project design and preparation for engaging stakeholders, including information disclosure and consultation with affected people and other stakeholders;
- (ii) summarizes comments and concerns received from affected people and other stakeholders and how these comments have been addressed in project design and mitigation measures, with special attention paid to the needs and concerns of vulnerable groups, including women, the poor, and Indigenous Peoples; and
- (iii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during project implementation.

## **H. Grievance Redress Mechanism**

This section describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance.

## **I. Environmental Management Plan**

This section deals with the set of mitigation and management measures to be taken during project implementation to avoid, reduce, mitigate, or compensate for adverse environmental impacts (in that order of priority). It may include multiple management plans and actions. It includes the following key components (with the level of detail commensurate with the project's impacts and risks):

- (i) Mitigation:
  - (a) identifies and summarizes anticipated significant adverse environmental impacts and risks;
  - (b) describes each mitigation measure with technical details, including the type of impact to which it relates and the conditions under which it is required (for instance, continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate; and
  - (c) provides links to any other mitigation plans (for example, for involuntary resettlement, Indigenous Peoples, or emergency response) required for the project.
- (ii) Monitoring:
  - (a) describes monitoring measures with technical details, including parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits and definition of thresholds that will signal the need for corrective actions; and
  - (b) describes monitoring and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures and document the progress and results of mitigation.

- (iii) Implementation arrangements:
  - (a) specifies the implementation schedule showing phasing and coordination with overall project implementation;
  - (b) describes institutional or organizational arrangements, namely, who is responsible for carrying out the mitigation and monitoring measures, which may include one or more of the following additional topics to strengthen environmental management capability: technical assistance programs, training programs, procurement of equipment and supplies related to environmental management and monitoring, and organizational changes; and
  - (c) estimates capital and recurrent costs and describes sources of funds for implementing the environmental management plan.
  
- (iv) Performance indicators: describes the desired outcomes as measurable events to the extent possible, such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods.

## **J. Conclusion and Recommendation**

This section provides the conclusions drawn from the assessment and provides recommendations.

**ANNEX 6: Sample environmental field monitoring data sheet**

Date of visit:  
 Name of HCF:  
 Location:

EMP compliance							
	Mitigation measures from EMP	Progress level (Activity implementation status)		Level of execution (Environmental rank)		Remarks – During this field visit	
		%	Color	Rank	Color	Photo taken	Observations
1							
2							
3							
4							
5							

Color code	Level of execution
	Good
	Moderate
	Poor

## **ANNEX 7: Outline for a Semi-annual Environmental Monitoring Report**

1. Introduction
  - a. Overall project description and objectives
  - b. Details of site personnel and/or consultants for environmental monitoring
  - c. Description of subprojects and status of implementation
  - d. Approach and methodology for environmental monitoring of the project
2. Compliance status with national/state/local statutory environmental requirements
3. Compliance status with environmental loan covenants
4. Compliance status with the environmental management plan
5. Implementation of grievance redress mechanism and public complaints
6. Overall compliance with CEMP/EMP and EMOP
7. Monitoring of environmental impacts on project surroundings
8. Conclusions and recommendations