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THE GOVERNMENT OF VIETNAM
MINISTRY OF HEALTH

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ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

INESTING AND INNOVATING FOR GRASSROOTS SERVICE DELIVERY REFOMR PROJECT

(First Draft)

February, 2018

ACRONYMS

CHS	Commune Health care Stations
DH	District Hospital
DHC	District Health Care Center
DOH	Department of Health
DONRE	Department of Natural Resources and Environment
DPC	District People's Committee
EA	Environmental Assessment
ECOP	Environmental Codes of Practice
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMDP	Ethnic Minority Development Plan
EMPF	Ethnic Minority Planning Framework
EPP	Environmental Protection Plan
ESHS	Environmental, Social, Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GCC	General Conditions of Contract
GoV	Government of Vietnam
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HCW	Health Care Waste
HCWM	Health Care Waste Management
HIV	Human Immunodeficiency Virus
MONRE	Ministry of Natural Resources and Environment
PCC	Particular Conditions of Contract
PMU	Project Management Unit
PPC	Provincial People's Committee
PPMU	Provincial Project Management Unit
SOP	Standard Operating Procedure
WB	The World Bank

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Preface

This Environment and Social Management Framework (ESMF) has been prepared by the Client for the Investing and Innovating for Grassroots Service Delivery Reform Project in accordance with the World Bank policy requirements. It is a safeguard instrument that examines the issues and impacts associated with the proposed project which consists of a series of sub-projects, and the impacts cannot be determined until sub-project details have been identified. The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts. This framework was developed as a stand-alone safeguard instrument to satisfy the WB's safeguard policies on Environmental Assessment (OP/BP 4.01) and Indigenous Peoples (OP/BP 4.10). It is also connected to other safeguard instruments such as the Ethnic Minorities Policy Framework (EMPF) as well as the safeguard action plans for the subprojects namely the Ethnic Minority Development Plans (EMDPs) and the Environmental and Social Management Plans (ESMPs), including the Environmental Codes of Practice (ECOP). The ESMF will be applied to all subprojects to be financed under the Project.

The Provincial Project Management Unit (PPMU) established at the provincial Department of Health (DoH) in each of the ten provinces is responsible for preparation and implementation of the mitigation measures as described in the subproject specific EMDP and/or ESMP/ECOP in consistency with this ESMF. The subproject specific EMDP and ESMP would be subject to the review and clearance by the Bank before implementation.

1. EXECUTVIE SUMMARY

Project Development Objective: The development objective is to strengthen quality and efficiency of the grassroots health network in provision of preventive services, primary health care, health promotion, preventive care, priority given to mother and child, old people, disadvantaged people in difficult areas, contributing to health, improving longevity, and improving the quality of life of people. This will be achieved by (i) enabling the commune-level facilities to take on the management of select non-communicable diseases, (ii) improving the utilization and quality of services already provided at commune level, and (iii) strengthening the capacity of the district to provide appropriate referral and support services.

Project Beneficiaries: The main beneficiaries of this project include (i) People of all ages in 7 poorer provinces and 3 "front-runner" provinces; (ii) Grassroots Health Staff; (iii) Commune Health Stations; (iv) District Hospital/District Health Center; and (v) MoH and DoH in the selected project provinces.

Project Components: The project consists of 03 components include: **Component 1**: Improving quality of care at the commune health stations and enabling them to take on a new role on disease management; **Component 2**: Strengthening the district health services (DH/DHC cluster) to support the new role of the CHS and provide continuity of care; and **Component 3**: Enabling grassroots reforms, promoting quality improvement, piloting and scaling-up of innovations, implementation support, and results monitoring.

Applicable the World Bank's safeguard policies*:* The Project has been classified as category "B" and triggered the two safeguard policies, including Environmental Assessment (OP/BP 4.01) and Indigenous Peoples (OP/BP 4.10). The project also complies with the Bank policy on Access to Information.

Applicable the GoV's environmental regulations: The project will have to comply with the current GoV's environmental regulations such as Law on Environmental Protection (No. 55/2014/QH13) and Decree No. 18/2015/ND-CP on Environmental Protection Planning, Strategic Environmental Assessment, Environmental Impact Assessment, and Environmental Protection Plan.

Potential project impacts: The overall impacts will be positive. The negative impacts are connected to activities supported under the project, especially those related to: (i) Ethnic minority people, (ii) construction activities which could temporarily increase levels of dust and other air pollutants, noise, vibration, water pollution, local traffic volume, health and safety risk, and other impacts on local residents and businesses, and (iii) generation of medical wastes from operation of commune health care stations and other health care facilities. However, these impacts are envisaged to be insignificant and impact magnitude ranges from low to moderate. The construction-related impacts are considered low, localized and temporary, and can be mitigated. Good construction management and practices with close supervision of contractors by field/site engineers and in consultation with local authorities and local residents will be measures to effectively mitigate such impacts. In addition, an Environmental Codes of Practice (ECOP) was developed to address adverse the construction-related impacts associated with upgrading and new construction of CHSs. In case, adverse construction-related impacts of a subproject are considered moderate and could not be addressed by ECOP, an ESMP would be required and developed. All mitigation measures for construction-related impacts will be included in the bidding and contractual documents for the environmental compliance purpose of contractors. There might be UXO risk during site clearance but this risk is considered low as construction activities will exclusively take place within the existing CHSs' premises and could be mitigated through an UXO examination and clearance (as needed) prior to handing over site to contractors. There are also risks during operation if the CHSs were not properly designed

and/or maintained, but considered low and could be avoided through proper design, close consultation among key stakeholders, and the capacity building activities. Environmental and health risks related to health care waste would be minimized and mitigated through the good international practices, i.e. WBG EHS guidelines on HCWM and the applicability of the guidelines on HCWM issued by MOH and MONRE, such as the MOH manual of guideline on health care waste management in hospital, joint circular 58/2015/TTLT-BYT-BTNMT on regulation on health care waste management, and other relevant regulations.

The Environmental and Social Management Framework (ESMF): Given that the subprojects will be implemented during implementation, this ESMF has been prepared to ensure that the subprojects and activities to be financed under the Project would not create adverse impacts on the local environment and local communities and the residual and/or unavoidable impacts will be adequately mitigated in line with the WB's safeguard policies. The ESMF describes criteria for safeguard screening and identification of impacts; basic principles for development of mitigation measures; requirements for WB safeguard clearance; and implementation, supervision, monitoring, and reporting. The ESMF also provides guidelines for preparation of an ESMP for an identified subproject, including actions to facilitate effective implementation of the ESMP, institutional arrangements, safeguard training and capacity building, and budget allocation and source of funds. Below provides a brief summary of the ESMF process.

- *Safeguard Screening and Identification of Potential Impacts:* Safeguard screening will apply to all proposed subprojects under component 1. The aim is to ensure that the proposed subprojects will not cause significant adverse impacts on the environment and human health. If a proposed subproject is determined to cause significant adverse impacts on the environment and human health, then it is not considered to be supported under the project. Safeguard screening will help identify potential impacts of the proposed subprojects and develop appropriate safeguard instruments.
- *Development of Safeguard Instruments:* PPMU is required to prepare safeguard instruments for proposed subprojects in accordance with the World Bank policy requirements and the GoV's environmental regulations. In this case, the Bank requires preparing quality ESMP/ECOP, and EMDP whilst the GoV requires preparing EIA or EPP subject to the scale of proposed subprojects.
- *Public Consultation and Information Disclosure for subproject:* Public consultations will be conducted during project implementation when subproject details have been identified, with locally-affected people and local authorities and NGOs and their views will be taken into account subproject design. Consultations will also be conducted throughout subproject implementation with such groups to address EA-related issues that affect them in a timely manner. Draft and final safeguard instrument such as ESMP and EMDP will be locally disclosed prior to subproject appraisal.
- *Safeguard Review and Clearance:* ESMP/ECOP and EMDP will be reviewed and cleared by the Bank. The EIA or EPP will be reviewed and approved by the responsible agencies of the GoV.

Public Consultation and Information Disclosure for ESMF: Public consultations during ESMF preparation have been conducted with key stakeholders and their views have been incorporated into the project design. The project information and draft ESMF in Vienamese language have been provided to key stakeholders to be consulted prior to consultation meetings. Draft and final ESMF have been disclosed in-country and at the Bank external website prior to project appraisal.

Institutional Arrangements: This will be in line with the overall institutional arrangements of the Project. Contractors will be responsible for implementation of agreed environmental covenants in the contracts. Supervision and monitoring of the compliance with the ESMF will

be implemented by MOH PMU in coordination with PPMUs. Report on the status of safeguards performance of the project will be periodically submitted to the Bank and relevant government agencies for information. The cost for safeguards performance will be included in the Project cost. Safeguards training shall be provided by MOH PMU to PPMUs, CSC and contractors at the early stage of the project implementation.

2. INTRODUCTION

2.1 Project Overview

1. **Recent government strategies and masterplans, as well as on-going policy development, reflect an increasing awareness of these challenges and an emphasis on strengthening the grassroots health system**. The Ministry of Health and development partners' recent Joint Annual Health Reviews (JAHR) have focused on the challenges related to the non-communicable disease burden (2014), strengthening primary health care (2015) and healthy ageing (2016). The five-year health sector plan for the period 2016-2020 includes a significant focus on strengthening of the grassroots health system (MOH Plan 139/KH-BYT of 2016). The Government's Masterplan for easing hospital overcrowding includes actions at the primary care level, including developing a family practice model, bolstering preventive medicine, and strengthening commune health stations (Prime Ministerial Decision 92/QĐ-TTg of 2013). Both the National Strategy to prevent and control cancer, cardiovascular disease, diabetes, chronic obstetric pulmonary disease, asthma and other non-communicable diseases for the period 2015-2025 (Prime Ministerial Decision No. 376/QD-TTg of 2015) and the National Strategy for Population and Reproductive Health for the period 2010-2010 (Prime Ministerial Decision 2013/QD-TTg of 2011) emphasize the importance of strengthening the grassroots-level to prevent and manage non-communicable diseases and improving maternal and child health outcomes. Most importantly, in December 2016, the Government approved the Masterplan for building and developing the grassroots health care network in the new situation (Prime Ministerial Decision 2348/QĐ-TTg of 2016) which includes plans for both concrete investment and reforms to address the above-mentioned problems. A new basic essential service package for health insurance reimbursement at the commune level, intended to expand the scope of services to include non-communicable disease interventions, is currently under development. Principles of family medicine are being promoted for commune health stations and private primary care facilities. As reforms in the organization and financing of service delivery proceed, and the system attempts to address new challenges related to NCDs, care will also need to be undertaken that coverage of basic health services (such as immunization and maternal care) is sustained – and further improved.

2. **The project will contribute to the attainment of the objectives set out in the (new) Vietnam Country Partnership Framework (CPF) FY18-22, in particular Objective 6 which is to "improve access to quality public and private health services and reduce malnutrition"**. This objective explicitly includes the intention toimprove the quality of health care service delivery, especially at the primary care level, including "strengthening the grassroots (district and commune) health system in terms of availability/access, quality, integration, and transparency and voice". This objective also includes the need to improve the efficiency and sustainability of health financing and service delivery arrangements, including (among others) reducing the over-reliance on hospital-centered delivery, supporting health insurance reform, enhancing financial protection from out-of-pocket health spending, and creating an enabling environment for private sector participation. In this regard, the project will also be relevant to bringing about one of the five strategic shifts envisaged under the CPF, namely achieving "the financial sustainability of public services and transfers". To a lesser extent, the project will also contribute to the achievement of two other key strategic shifts envisaged in the CPF, namely the strategic shift towards more private sector development and participations across sectors and, also, ethnic minority poverty reduction.

2.2 Purpose of the ESMF

3. To comply with the WB's Operational Policy on Environmental Assessment (OP/BP 4.01), as the proposed project is adopting a programmatic approach consisting of investment activities that could not be identified by appraisal, preparation and disclosure of an Environment and Social Management Framework (ESMF) is required before appraisal. This is to ensure that

the proposed project has a concrete plan and process in place to avoid, minimize, and/or mitigate adverse environmental and social impacts of project investments and interventions when they are identified, planned, and implemented. The Project is classified by OP/BP 4.01 as Category B and two of the ten WB safeguard polices are triggered (see Section III). The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts. The ESMF was developed in line with OP 4.01, based on desk reviews of the relevant GoV's laws and regulations as well as various reports and documents related to environmental and social conditions in the proposed provinces and/or project sites, field visits to some of the proposed subprojects sites including meetings with key stakeholders.

4. The specific objectives of this ESMF are:

- to assess the potential environmental and social impacts of the proposed project, whether positive or negative and propose measures which will effectively mitigate these negative impacts and enhance positive impacts;
- to establish clear procedures for the environmental and social planning, review, approval and implementation of subprojects to be financed under the project;
- to specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to subprojects;
- to consider different alternatives, options, and relevant mitigation measures during project preparation and implementation;
- to determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF;
- to establish mechanisms for public consultation and disclosure of project/subproject's documents as well as redress of possible grievances; and
- to establish the project funding required to implement the ESMF requirements and to provide practical resources for implementing the ESMF.

2.3 Scope of the ESMF

5. Following the WB guidelines on preparation of an ESMF for the Bank-financed projects in Vietnam, the ESMF includes the following sections: Introduction (Section 1); the project description (Section 2); the policy, legal, and administrative framework (Section 3); Project potential environmental and social impacts (Section 4); Measures to manage environmental and social impacts (Section 5); Procedures for review, clearance and implementation of subproject safeguard instruments (Section 6); Implementation arrangements (Section 7); capacity building, training, and technical assistance (Section 8); ESMF implementation budget (Section 9); Grievance redress mechanism (Section 10); and ESMF consultation and disclosure (Section 11). Annexes provide more details on safeguard screening guideline (Annex 8); guideline for subproject ESMP preparation (Annex 9); ECOP (Annex 10); grievance registration form (Annex 11), and the template of CSC's monitoring reports (Annex 12).

6. In addition to the ESMF, there is another related safeguard instrument which will be applied during implementation of the proposed project. The instrument is the Ethnic Minority Policy Framework (EMPF) which provides guidelines for undertaking free, prior and informed consultation with ethnic minorities in the project area and the preparation of Ethnic Minority Development Plan (EMDP) in compliance with Bank Policy on Indigenous Peoples (OP/BP 4.10) and it will be applied when the project activities and/or subprojects are implemented in area inhabited by ethnic minorities that meet the definitions of OP/BP 4.10. The EMDP was

prepared in compliance with OP/BP 4.10. The safeguard screening and preparation of ESMPs and EMDPs for the future subprojects will be carried out during implementation. These instruments are presented separately.

3. PROJECT DESCRIPTION

3.1 Project Objective and Components

7. The development objective is to improve the quality and efficiency of the grassroots health system in the targeted provinces, with a focus on the management of selected non-communicable disease (NCD) and maternal and child health (MCH) tracer conditions.

8. This will be achieved by (i) enabling the commune-level facilities to take on the management of select non-communicable diseases, (ii) improving the utilization and quality of services already provided at commune level, and (iii) strengthening the capacity of the district to provide appropriate referral and support services.

9. The Project activities will be implemented through the following 03 components:

Component 1: Improving quality of care at the commune health stations and enabling them to take on a new role on disease management

10. Component 1 will strengthen the availability, quality, and continuity of care provided by the grassroots health system by (i) supporting commune health stations (CHS) to meet the national benchmarks for service-readiness and (ii) equipping and enabling the CHS to manage a new set of conditions (mainly non-communicable diseases), most of which are currently managed only at higher levels.

11. *Ensuring the basic readiness of CHS to deliver health services*: The project will finance the investments needed for the CHS in the project provinces to reach the national benchmarks for commune health. Investments will include mainly upgrading of existing CHS, but may also include construction of new CHS (either because there is no CHS[1] or because it is better to demolish and rebuild the current CHS than to upgrade)[2]. Investments will also be made in regional polyclinics[3]. The national benchmarks for commune health care for the 2014-2020 period have been defined by the Ministry of Health and are described in Circular 4667/QĐ-BYT.

12. *Enabling the CHS to take on a new role in managing select health conditions that are not currently available at commune level:* This sub-component will finance the additional inputs needed for the CHS to properly manage select non-complicated conditions. These inputs could include infrastructure, equipment, drugs and materials, as well as the training of health workers ("technical transfer") in the relevant competencies and information/education campaigns to inform the public of the CHS' new role and build public confidence. Decision support technologies will be used to guide health care workers through the clinical decision-making process (from examination to diagnosis to treatment), as well as improve select information management functions (e.g. cause of death reporting). It is envisaged that a CHS will first achieve competency (marked by a process of certification) in the delivery of one of these services before moving to gain certification in others. Not all participating provinces (or districts) will necessarily take on management of all of the select conditions.

Component 2: Strengthening the district health services (DH/DHC cluster) to support the new role of the CHS and provide continuity of care

13. Component 2 will strengthen the double-function district health centers (DH/DHCs) to (i) serve as centralized diagnostic laboratories for the CHS, (ii) provide emergency transfer of

[1] Per the latest Agricultural Census, there are only 19 communes in the country without CHS.

[2] There will need to be coordination between this project and a proposed ADB project which also aims to strengthen the grassroots health system, including through upgrading CHS. It will do so through the equivalent of a development policy operation which disburses all of its US$80 million in one tranche in the first year of project implementation (possibly 2018) against policy-related indicators achieved.

[3] Polyclinics tend to serve multiple communes and are typically found in urban areas where they replace commune health stations.

patients, and (iii) improve their capacity to serve as referral facilities for specific clinical services needed to ensure continuity of care from the commune to the district level. Not all project provinces will necessarily undertake all of these investments.

14. *Strengthening the provision of diagnostic laboratory services:* One activity will be the establishment of a centralized laboratory service at DH/DHC level. This will involve enhancing the laboratory capacity at the DH/DHC level (to handle a greater volume and, possibly, broader type of diagnostic services) and a transportation system to send specimens (not people) to and from the DHC (from its CHSs) on a timely basis.

15. *Ensuring timely emergency transfer of patients:* Another activity will be enhanced capacity in the emergency transfer of patients from CHS to DH/DHC level, and from DH/DHC to provincial level, intended to instill in patients the confidence that if they use the grassroots health system, they will be transferred quickly and safely to higher levels of care if deemed medically necessary. This activity will likely involve the purchase of ambulances, but lease and public private partnership (PPP) alternatives will also be explored during project preparation.

16. *Improving clinical capacity in select referral services*: The project will also support district hospitals to build their clinical capacity in the delivery of select services that are linked to the tracer conditions being strengthened at the CHS level in order to complete the continuity of care. The component will need to support not only investment in infrastructure and equipment, but also the technical knowledge ("technical transfer") needed to provide those services. It will also introduce decision support technologies to guide health care workers through the clinical decision-making process. Provincial health staff are expected to play an important role in the training of grassroots health staff, but may also themselves be the beneficiaries of training intended to enable them to better support the grassroots level[4].

Component 3: **Enabling grassroots reforms, promoting quality improvement, piloting and scaling-up of innovations, implementation support, and results monitoring**

17. *Enabling grassroots reforms through policy and capacity building:* To implement the reforms envisaged in this project, as well as to strengthen the grassroots health service delivery system (as envisaged in the Grassroots Master Plan) more generally, the MOH will need to develop enabling policies and build the capacity of provincial, district and local health staff. Policy actions specific to this project include, for example, the development of a certification process for each of the new conditions/diseases to be managed by the CHS. Broader reforms include the development and implementation of various policies, strategies and guidelines related to provider payment mechanisms, re-organization of service delivery, quality of care, governance and accountability, public-private partnership, etc. for the grass-roots system[5].

18. *Encouraging continuous quality improvement through quality scorecards:* Balanced Scorecards (BSC) will be developed by the MOH and introduced at the CHS and DH/DHC level in order to focus attention on the overall quality of facility service delivery and management, as well as the quality with which specific services are delivered. Ideally, the results of the Balanced Scorecards will be made available not only to district and provincial

[4] There will need to be coordination between this project's "technical transfer"/training activities and the training activities under other projects, e.g. the World Bank-supported Health Professionals Education and Training (HPET) project (IDA-financed) and the on-going ADB-supported human resources project. Ideally, given the constraints on using IBRD for "soft activities", the HPET component focused on training at the primary health care level will target some of its activities to this project's provinces to ensure complementary investments in health worker competencies.

[5] Care will be taken during project preparation to ensure that there is no overlap with the policy actions supported provided by the pipeline development policy loan of the Asian Development Bank.

health authorities, but also to the public (at the facility) in order to promote accountability and patient trust by communicating the quality improvements. At the CHS level, the BSC could include, for example, compliance with technical guidelines for delivery of tracer services (including, for example, clinical practice guidelines, referrals, sending specimens to centralized labs as needed); internal quality management processes; outreach and follow-up with patients and the district hospital; completion of family health records; planning and financial management; health information system. At DH/DHC level, the BSC could capture items such as the completion of training of the CHS staff; quarterly supervision at the CHS and (internal) verification of CHS balance scorecard; ensuring the operationalization of the centralized laboratory; ensuring better two-way patient referral with the CHS; clinical practices with respect to the select referral conditions; and better information exchange. The design of the BSCs will be further elaborated during project preparation[6].

19. *Piloting innovations:* This project envisages some health system innovations – including a new role for the CHS in NCD management, the use of centralized diagnostic laboratories, introduction of quality scorecards – and takes them to significant scale. The project is able to scale these innovations because they build on pilots that have been implemented and evaluated elsewhere in Vietnam. Component 3 will create space within the project to pilot, on a much smaller scale, additional innovative interventions envisioned in the Grassroots Masterplan – and evaluate them. At this concept stage, PPPs in grassroots health service delivery is one possible pilot area. Others are yet to be identified.

20. *Implementation support, results verification, and evaluation:* This component will also ensure that the MOH and provincial DOH are able to provide sufficient implementation support to the local health authorities and facilities implementing the project. In addition, it will also support the independent verification of the attainment of the results envisaged under the project, and especially the DLIs, by a verification agent with appropriate qualifications as agreed between the Government and World Bank. Further, this component will cover the costs of the design, implementation and analysis of health facility (CHS and DHC) surveys intended to monitor progress in the quality of care at the grassroots level over the life of the project. It is anticipated that there will be a baseline survey undertaken early in the first year of the project, with follow-up surveys at mid-term and during the last year of the project.

3.2 Project target areas

21. The project will be implemented in around 10 provinces, prioritize poorer provinces, and also include a few higher-capacity provinces that can implement more ambitious reforms**.** It has been agreed with the MOH that the provinces will include 7 poorer provinces and 3 "front-runner" provinces (i.e. wealthier, higher-capacity provinces that are willing and able to implement more ambitious reforms). The MOH and World Bank conducted provincial consultations in four provinces (namely Bac Giang, Hai Phong, Ha Tinh, Hue) from March to May 2017[7], and the MOH conducted an additional consultation in Ha Giang in June 2017, but the exact provinces to be supported by the project will still need to be agreed. Criteria for selection include: (i) willingness to participate, including accepting the on-lending requirements, (ii) relatively high poverty rate[8] and/or reputation as forward-looking, innovative

[6] The design and implementation of the BSCs will draw on the findings of the evaluation of a pilot in Nghe An province under the Central North Region Health Support Project of the World Bank that used results-based financing mechanisms and quality scorecards.

[7] The objective of the consultationwas to seek feedback from the provinces on the project design and assess the willingness of provinces like these to accept the on-lending conditions. In each province, meetings were held with the Provincial People's Committee (PPC), the provincial Department of Health (DOH), at least one DH-DHC cluster, and at least two CHS.

[8] Provided that they can meet the on-lending requirements, it is anticipated that at least two-thirds of participating provinces will be in the worst third of provinces in terms of poverty incidence.

province, (iii) having a relatively low percentage of communes meeting the commune benchmarks for health[9], and (iv) that the provinces together give a reasonable geographic distribution across the country. Also, while health services delivered with the support of the project will benefit people of all ages, the nature of the interventions mean that they will likely disproportionately benefit young children, women, and the elderly. The fact that the project targets poorer provinces means that there will likely be a relatively high concentration of ethnic minority populations in the project provinces.

4. POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

4.1 Applicable National Laws and Regulations

22. The following national laws and regulations will be applicable to the project implementation:

- Environmental Protection Law No. 55/2014/QH13 of the National Assembly of Vietnam dated June 23, 2014. This law stipulates environmental protection activities; policies, measures and resources for environmental protection; right and obligations of organizations, households and individuals in environmental protection
- The Law on Construction No. 50/2014/QH13 approved on 18th June 2014 by 7th National Assembly of the Socialist Republic of Vietnam. Article 12 of Chapter 1 prescribes prohibited actions such as use of materials to cause harm to the public health and environment
- The Law on Roadway Traffic No. 23/2008/QH12 dated on 13/11/2008. Articles 8 of Chapter 1 prescribes prohibited actions such as driving vehicles without licenses; driving vehicles with speed exceeding allowed speed; sounding horn between 10 p.m. and 5 a.m.; driving vehicles while the body is positive with drug. Article 55 of Chapter 4 stipulates ensuring technical safety quality and environmental protection for vehicles moving on roadways
- The Law on Complaint No. 02/2011/QH13 dated 11 November 201.This law stipulates complaint and handling complaint; management and monitoring of complaint handling
- The Law on Culture Heritage No. 28/2001/QH10. This law aims to (i) reinforce the state management effectiveness and (ii) raise responsibility of people for participation, protection and promotion of the value of cultural heritages
- The Law on Safety, Labor Sanitation No. 84/2015/QH13 dated June 25, 2015. This law stipulates ensuring safety and labour sanitation; policy and regulation for labour accident and occupational diseases; responsibility and right of organizations and individuals in safety and labour sanitation and state management of safety and labour sanitation
- Labor Law No.10/2012/QH13. This law stipulates labour standard; right and obligation of employee, employer, representative organization of employee, representative organization of employer in labour relations and other relations directly related to labour relations; state management of labour
- Law on Fire Prevention and Fighting No.27/2001/QH10 dated June 29, 2001. This law stipulates fire prevention and fighting; establishing human resources, equipment and machineries and policy on fire prevention and fighting
- Decree No. 38/2015/ND-CP of 24 April 2015 of the Government on management of waste and discarded materials. Chapter 2 stipulates Management of Hazardous Wastes. Hazardous waste must be classified according to hazardous waste codes in order to store in proper containers. Hazardous wastewater must be treated to satisfy national

[9] A related possible criterion is the percentage of provinces with a high share of communes meeting the Decision 2348 criteria for priority investment at the commune level by 2020.

standards. Hazardous waste must be classified at the timing of storage or transportation to treatment area

- Decree No. 39/2015/NĐ-CP of the Government dated 27 April 2015 on assistance policy applied to ethnic minority and poor women who comply the population policy will take effect as from 15 June 2015
- Decree No. 18/2015/ND-CP dated February 14, 2015 of the Government on environmental protection planning, strategic environmental assessment, environmental impact assessment, and environmental protection commitment
- Decree No.19/2015/ND-CP of 14 February 2015 of the Government detailing the implementation of a number of articles of the Law on Environmental Protection
- Decree No. 155/2016/ND-CP dated 18 November 2016 of the Government prescribing administrative sanctions for environmental protection. This decree stipulates administration violation in environmental protection including (i) violation of environmental protection plan, environmental impact assessment and environmental protection projects; (ii) actions to cause environmental pollution; (iii) violation of management of wastes, etc
- Decree No. 25/2013/ND-CP of 29 March 2013 of the Government on environmental protection charges for wastewater. This decree stipulates that organizations or individuals who discharge wastewater into the environment pay environmental protection fee
- Decree No. 113/2010/NĐ-CP dated 3 December 2010 of the Government on valuation of damages caused to the environment. This decree stipulates assessment of environmental damage, calculation of damage, and determination of obligation of compensation for damage due to environmental pollution and degradation
- Decree No. 174/2007/ND-CP of 29 November 2007 on environmental protection charges for solid waste. This desree stipulates the environmental protection fee for solid wastes, such as general solid waste (maximum 40,000 VND per ton) and hazardous wastes (maximum 6,000,000 VND per ton)
- Decree No. 59/2007/NĐ-CP dated 09/4/2007 of the Government on the management of solid waste. This decree stipulates right and obligation of organizations and individuals in relation to solid wastes
- Circular No. 27/2015/TT-BTNMT dated 19 May 2015 of the Ministry of Natural Resources and Environment on strategic environmental assessment (SEA), environmental impact assessment (EIA), and environmental protection plan (EPP)
- Circular No. 36/2015/TT-BTNMT dated 30/6/2015 of Ministry of Natural Resources and Environment on hazardous waste management. This circular stipulates details of execution of Decree 38/2015/ND-CP mentioned above
- Circular No. 22/2010/TT-BXD dated 03/12/2010 of Ministry of construction providing labor safety in construction
- Circular No. 19/2011/TT - BYT of 06 June 2011 of the Minsitry of Health on guidance on labor hygiene, laborers' health and occupational diseases
- Circular No 13/2007/TT-BXD of December 31st 2007. Providing guidance on a number of articles of decree no. 59/2007/nd-cp dated 09/4/2007 by the government on solid waste management
- Joint Circular No. 58/2015/TTLT-BYT-BTNMT dated 31 December 2015 on Health care Waste Management
- Decision no. 4667/QD-BYT dated 7 November 2014 and Decision no. 2271/2002/QD-BYT dated 17 June 2002 on design standard for CHSs

23. There are also a number of regulations and technical guidelines related to environmental quality and other requirements that need to be observed during the assessment of potential impacts as well as during implementation of the project and the key ones are highlighted as follows:

- QCVN 01:2009/BYT: National technical regulation on drinking water quality
- QCVN 02:2009/BYT: National technical regulation on domestic water quality
- QCVN 08-MT:2015/BTNMT– National technical regulation on surface water quality
- QCVN 09-MT 2015/BTNMT– National technical regulation on ground water quality
- QCVN 14:2008/BTNMT: National technical regulation on domestic wastewater
- QCVN 03-MT:2015/BTNTM - National technical regulation on the allowable limits of heavy metals in the soils
- QCVN 05:2013/BTNMT: National technical regulation on ambient air quality
- QCVN 06:2009/BTNMT: National technical regulation on hazardous substances in ambient air
- TCVN 6438:2005 - Road vehicles –Maximum allowable limits of gas emission
- QCVN 26:2010/BTNMT: National technical regulation on noise
- QCVN 27:2010/BTNMT: National technical regulation on vibration
- QCVN 28:2010/BTNMT: National technical regulation on health care wastewater
- QCVN 07:2009/BTNM: National Technical Regulation on Hazardous waste thresholds
- Decision 3733/2002/-BYT October 10, 2002: Promulgating 21 labor hygiene standards, 05 principles and 07 labor hygiene measurements
- QCVN 18:2014/BXD – National Technical regulation on safety in construction
- Other relevant sector technical regulation and standards

4.2 Applicable the World Bank Safeguard Policies

24. The project has been classified as Category B under OP 4.01. Civil works will be mainly on upgrading, and few with new construction of CHSs, which are expected to be of small scale and construction activities will exclusively take place within the existing CHSs' premises, generating only minor and localized environmental and social impacts that can be easily identified, mitigated, and managed. No large-scale, significant, and/or irreversible impacts are expected. Overall, the expected environmental impacts are mostly associated with the construction phase of the rehabilitation works and include debris management, worker sanitation, noise, dust emission, use of hazardous materials, etc. Further screening of subprojects should be undertaken during implementation to ensure their eligibility, and Category A subprojects will be excluded. The impacts and mitigation measures will be addressed during the preparation of the project Environmental and Social Management Framework (ESMF) and Environmental and Social Management Plans (ESMPs) or Environmental Codes of Practice (ECOP) for these subprojects, including those associated with labor influx. Therefore, the project has been categorized as Category B for environment. The following World Bank safeguard policies have been triggered: (a) Environmental Assessment (OP 4.01) and and (b) Indigenous Peoples (OP/BP 4.10).

Environmental Assessment (OP/BP 4.01)[10]

25. Environmental Assessment (EA) is an umbrella policy for the Bank's safeguard policies. The overarching objective is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environmental impacts. The EA process is intended to identify, avoid and mitigate potential impacts of Bank operations. It is important to note that EA takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and physical cultural resources); and trans-boundary and global environmental aspects. EA considers natural and social aspects in an integrated way.

26. This policy is triggered due to the potential adverse impacts associated with activities under Component 1, requiring the identification, mitigation and monitoring of potential adverse environmental and social impacts associated with upgrading and construction of CHSs. The project has been classified as Category B under OP 4.01 since the anticipated scale of potential adverse environmental or social impacts under the project are site specific, few if any of them are irreversible and in most cases, mitigation measures are readily available. Category A subprojects will be excluded from project financing due to the scope of the expected construction works.

The Indigenous Peoples policy (OP/BP 4.10)[11]

27. The Indigenous Peoples policy is designed to ensure that the development process fully respects the dignity, human rights, economies and cultures of Indigenous Peoples. The policy requires projects to identify impacts on indigenous peoples and develop a plan to address the impacts, both positive and adverse. Projects should be designed with benefits that reflect the cultural preferences of indigenous peoples. The borrower should carry out free, prior, and informed consultation and obtain broad community support for the project.

28. An initial screening conducted by the Bank specialist has confirmed that there are ethnic minority communities as per the Bank OP 4.10 definition, to be affected by and benefited from the project hence the World Bank policy on Indigenous Peoples OP/BP 4.10 will be triggered. An Ethnic Minority Planning Framework (EMPF) will be prepared guiding procedures to ensure free, prior, and informed consultation with affected ethnic minority communities to ascertain their broad community support, measures to ensure they benefit from project supports and minimize/mitigate any adverse impacts on them. The EMPF outlines and guides the preparation and implementation of subproject Ethnic Minority Development Plans (EMDPs) based on social assessment to be carried out to identify ethnic minorities and potential project impacts on them in the project area.The social assessment (SA) and preparation of the EMPF will be carried out early in project implementation stage to allow adequately inform the preparation of site-specific EMDPs.

The World Bank policy on Access to Information[12]

29. The World Bank Access to Information Policy is intended to ensure that persons and groups affected by the project are kept informed of the project objectives and impacts, and are consulted throughout the project to ensure that their interests are represented. Safeguards documents are disclosed locally in the project areas and the World Bank external website, which

[10]The full treatment of OP/BP 4.01 can be found at http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543912~menuPK:1286357~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html

[11] Full treatment of OP/BP 4.10 can be consulted at http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543990~menuPK:1286666~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html

[12] The World Bank Policy o Access to Information is available at http://www.worldbank.org/en/access-to-information

includes a resource center in Washington DC and an electronic database, offering access to information on World Bank projects and program to the public.

30. The Bank policy requires that during EA process the Government conducts meaningful consultations with stakeholders such as project-affected groups and local NGOs about the project's environmental and social aspects, and takes their views into account in the design of the project. All draft and final safeguard instruments are disclosed locally in an accessible place and in a form and language understandable to key stakeholders, and in English at the Bank external website before the project appraisal begins.

World Bank Group Environmental, Health, and Safety Guidelines[13]

31. The World Bank-financed projects should also take into account the World Bank Group Environmental, Health, and Safety Guidelines (known as the "EHS Guidelines"). The EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice. It contains the performance levels and measures that are normally acceptable to the World Bank Group and are generally considered to be achievable in new facilities at reasonable costs by existing technology. The environmental assessment process may recommend alternative (higher or lower) levels or measures, which, if acceptable to the World Bank. The more stringent of the requirements as set out in EHS Guidelines or in the national regulations would apply to the project. The website: www.ifc.org/ehsguidelines will provide detailed information.

4.3 Gap Analysis and Gap Filling Measures

32. The application of environmental assessment policies in Vietnam, as well as various efforts directed to policy harmonization between the GoV and donors, has gradually narrowed the gap between the two systems. However, significant differences remain between the GoV's environmental policies and those of the World Bank. These differences and proposed gap filling measures are described in Table 1 below. The purpose of inclusion of this table into the ESMF is to ensure that PPMUs fully understand the differences of EA process and mandatory compliance with the World Bank safeguard policy requirements and the GoV's environmental regulations given that PPMUs are not aware of and will have to comply with both.

[13]The EHS Guidelines are available at www.ifc.org/ehsguidelines.

Table 1. Summary of the World Bank and National EA Processes and proposed gap mitigation for the project

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
Screening	- Categories (A, B, C, FI) - Non-prescriptive on a case by case basis for categorization, safeguards policies application, and EA instrument identification. - The World Bank will classify a proposed project into one of four categories including A, B, C, or FI depending upon the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. ▪ Category A: Full EIA is required. In some cases, ESMF is also required ▪ Category B: ESIA, ESMF, or ESMP is required. In most cases, ESMF and/or ESMP is required ▪ Category C: no EA action is required. ▪ Category FI: ESMF is the most commonly used instrument. In some instances, details and impacts of sub-projects have been identified by appraisal, the FI prepares specific instruments based on the frameworks, such as ESIA or ESMP.	- Categories: I, II, III and IV of Decree 18/2015. - Prescriptive, fixed regulated in Annex I, II and III - List of projects subject to requirements of SEA and EIA report submittal and approval. - All projects are not listed. - Normally the project owners self-screen the project based on the categorization indicated in Decree 18/2015 and consult the Provincial Department of Natural Resources and Environment (DONRE) or Vietnam Environment Administration (VEA) for the appropriate classification and EA report requirement of the project, such as: ▪ Project falls into Annexes I, II, III: SEA or EIA is required ▪ Project falls into Annex IV: no EIA and Environmental Protection Plan (EPP) is required ▪ Project does not fall into Annexes I, II, III and IV: EPP is required	- Use the World Bank's discretionary (on a project-by-project basis) approaches in screening of projects the significance of its impacts, and subsequently to ascertain the project's EA category. - Examine the magnitude and significance of the project impacts based on the project type and scale, project location, sensitivity of environmental and social issues, and nature and magnitude of potential impacts.

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
EA instruments	- Depending on the project's impact, a range of instruments are used to meet the World Bank's requirement, these include: ESMF, specific EA; ESMPs, sectoral & regional EA; SEA; hazard or risk assessment; environmental audits. The World Bank provides general guidance for implementation of each instrument.	- The type of EA instruments such as SEA, EIA or EPP is decided based on Annex I, II, III and IV of Decree 18/2015.	Follow the World Bank requirements on the type of EA instrument needed
Scope	- The World Bank helps the Borrower draft the TOR for EA report and identifies the scope of EA, procedures, schedule and outline of the EA report. - For Category A projects, ESIA TOR is required, and scoping and consultation are conducted for preparation of the TORs for the EA report.	- TORs for EA are not required. - Normally after consultation with the local DONRE or VEA for the EA category, the project owner will proceed with EA report preparation.	TORs for REA, SEA, ESMF, ESIA, and ESMP are a good practice to follow. - Follow the World Bank's TORs, scoping, and consultation requirements.
Public consultation	- During EA process, the Borrower consults project-affected groups and local NGOs about the project's environmental aspects and takes their views into account. - For Category A projects, the Borrower consults these groups at least twice: (a) shortly after environmental screening and before the TORs for the EA are finalized; and (b) once a draft EA report is prepared. In addition, the Borrower consults with such groups throughout project implementation as	The project owner shall consult with the People's Committee of communes, wards and towns (hereinafter referred to as communes) where the project is carried out, with organizations or community under the direct impact of the project; research and receive objective opinions and reasonable requests of relevant entities in order to minimize the negative effects of the project on the natural environment, biodiversity and community health.	- EA consultation as per the government's EA regulation is not enough and the Borrower and its consultant need to follow the World Bank's requirements on consultation and disclosure of information during EA process. - Good consultation brings benefits to the project design

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
	necessary to address EA-related issues that affect them. - For Category B project, at least one public consultation needs to be conducted. - For meaningful consultations, the Borrower provides relevant project documents in a timely manner prior to consultation in a form and language that are understandable and accessible to the group being consulted. - Minutes of the public meetings are included in the reports.	- The People's Committee of the commune where the project is carried out and the organizations under direct impact of the project shall be consulted. The project owner shall send EIA reports to the People's Committee of the commune where the project is carried out and organizations under the direct impact of the project together with the written requests for opinions. Within 15 working days, from the date on which the EIA reports are received, the People's Committee of the commune and organizations under the direct impact of the project shall send their responses if they do not approve the project. - The consultation with the community under the direct impact of the project shall be carried out in the form of community meeting co-chaired by project owner and the People's Committee of the commune where the project is carried out together with the participation of representatives of Vietnamese Fatherland Front of communes, socio-political organizations, socio-professional organizations, neighborhoods, villages convened by the People's Committee of the commune. All opinions of delegates attending the meeting must be sufficiently and honestly stated in the meeting minutes.	and contributes to project environmental outcomes

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
Disclosure	Before the World Bank proceeds to project appraisal the EA report must be made available at public place accessible for project-affected groups and local NGOs. Once the World Bank officially receives the report, it will make the EA report in English available to the public through the Bank external website.	- After an EIA report is approved, the project owner shall formulate, approve and publicly display its EMP at the office of the commune-level People's Committee of the locality in which consultation of the community is made for people's information, examination and oversight. (Article 16, Decree 18/2015).	Follow the World Bank's Policy on Access to Information and Policy on disclosure of project information, including EA instruments.
Independent Expert	- For category A project, the Borrower retains independent EA experts not affiliated with the project to carry out EA. - For category A projects of high risk or multi-dimensional environmental concerns, the Borrower should also engage an advisory panel of independent, internationally recognized environmental specialists to advise on aspects of the project relevant to EA. - Experts/consulting firm will be selected through bid process under strict observation of the World Bank.	- Not regulated in Vietnam policies. - Project owner shall make, or hire an institution meeting the conditions provided in Clause 1, Article 13 (Decree 18/2015) to prepare an EIA report. Project owner or consulting service provider must fully meet the following conditions: (i) Having staff members in charge of EIA must obtain at least Bachelor's degrees and Certificate in EIA consultancy; (ii) Having specialist staff members related to the project obtaining at least Bachelor's degrees; (iii) Having physical-technical foundations and special-use devices for measuring, taking, processing, and analyzing environmental samples, which meet technical requirements. In case of unavailability of qualified special-use devices, having a contract to hire a capable institution.	Follow the World Bank requirements to avoid conflict of interest
EA review process	The Bank reviews the findings and recommendations of the EA to determine	- The Ministry of Natural Resources and Environment shall assess and approve the EIA	- In addition to the Government requirements, follow the World

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
	whether they provide an adequate basis for processing the project for Bank financing. When the borrower has completed or partially completed EA work prior to the Bank's involvement in a project, the Bank reviews the EA to ensure its consistency with this policy. The Bank may, if appropriate, require additional EA work, including public consultation and disclosure.	reports on projects prescribed in Appendix III of this Decree, except for projects subject to national defense and security secrets. - Ministries, ministerial agencies shall assess and approve the EIA reports on projects under their competence in approval for investment, except for projects in Appendix III of this Decree; - The People's Committee of the province shall assess and approve EIA reports on projects in the province, except for projects prescribed above. - The appraisal will take place no later than working 45 days at MONRE level and 30 working days at DONRE level and 5 working days at district level for after receipt of a full eligible EIA or EPP.	Bank's review and clearance procedures.
Number and language of EIA required for appraisal	- Number of copies are not specified. - Language requirement: English and Vietnamese. EA reports in Vietnamese are required for in-country disclosure and English is required for disclosure at the Bank external website	- The project owner has to submit at least seven copies of EIA report (depend on the number of appraisal council members) and one copy of the Feasibility Study or the Economic-Technical argument for the proposed project.	Follow the World Bank's guidance and the Government requirements
Content of EIA report	- For Category A projects, the content of an EA report follows Annex B of OP 4.01. - The scope of EA for a Category B project may vary from project to project, but it is	The content of an EA report should be in line with Circular No. 27/2015/TT-BTNMT.	The content of an EA report should satisfy both the Bank policy requirements and the GoV's regulations.

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
	narrower than that of Category A EA. The EMP is an integral part of Category A EAs (irrespective of other instruments used). EAs for Category B projects may also result in an ESMP with the content outlined in Annex C of OP 4.01.		
EA supervision	- During project implementation, the World Bank supervises the project's environmental aspects on the basis of the environmental provisions and the Borrower's reporting arrangement agreed in the loan agreement and described in the other project documentation, to determine whether the Borrower's compliance with environmental covenant (primarily with EMP) is satisfactory. If compliance is not satisfactory, the World Bank will discuss with the Borrower action necessary to comply.	- The local DONRE is entrusted to supervise the environmental compliance of the project. - By the end of project construction stage, the Environmental Management Agencies will coordinate with Construction Management Agencies to supervise the compliance of environmental management activities stated in EA study.	- Project environmental management system needs to be established to monitor and supervise safeguards compliance during implementation. - Follow requirements in project Loan Agreement, EMP, and contract with contractor to monitor and supervise safeguards compliance.

5. PROJECT POTENTIAL ENVIRONMETAL AND SOCIAL IMPACTS

5.1 Potential Positive Impacts

33. The project will contribute to the attainment of the objectives set out in the (new) Vietnam Country Partnership Framework (CPF) FY18-22, in particular Objective 6 which is to "improve access to quality public and private health services and reduce malnutrition". This objective explicitly includes the intention to improve the quality of health care service delivery, especially at the primary care level, including "strengthening the grassroots (district and commune) health system in terms of availability/access, quality, integration, and transparency and voice". This objective also includes the need to improve the efficiency and sustainability of health financing and service delivery arrangements, including (among others) reducing the over-reliance on hospital-centered delivery, supporting health insurance reform, enhancing financial protection from out-of-pocket health spending, and creating an enabling environment for private sector participation. In this regard, the project will also be relevant to bringing about one of the five strategic shifts envisaged under the CPF, namely achieving "the financial sustainability of public services and transfers". To a lesser extent, the project will also contribute to the achievement of two other key strategic shifts envisaged in the CPF, namely the strategic shift towards more private sector development and participations across sectors and, also, ethnic minority poverty reduction.

5.2 Potential Negative Impacts

34. Potential negative environmental and social impacts are mainly connected to construction activities supported by the project under Component 1. The main impacts are described in the following paragraphs while specific impacts and mitigation measures for each physical infrastructure investment will be identified during project implementation. Upgrading and new construction of CHSs will take place within the existing CHSs' premises.

35. The potential adverse social and environmental impacts would be those associated with construction and operation of the proposed physical investments under Component 1. These include commonly known construction impacts and risks, such as (a) safety risks related to unexploded ordinances left from the war; (b) loss of vegetation cover and trees (c) increased level of dust, noise, and vibration; (d) pollution risks related to removal and disposal of substantial quantities of non-hazardous construction materials associated with the demolition of some existing structures (e.g. existing communal health stations) consisting of debris; (e) traffic disturbance and increased traffic accident risks; (f) interruption of health services; (g) disturbance to daily socioeconomic activities in the project areas; (h) health and safety issues related to the public and the workers at construction sites; (i) social impacts associated with business disruption by construction-related activities and mobilization of workers to the sites; and (j) impact on ethnic minority communities in the project areas.

(a) During pre-construction phase

36. Some demolition activities of the existing CHS structures would generate dust, noise, debris and accident risk. For new construction, UXO clearance may be required depending upon the location of the CHSs. However, it is known that new construction will take place within the existing CHSs' premises. Thus, the adverse impact level is small, and the environmental risk is considered low at this stage.

(b) During construction phase

37. Main impacts would include dust emission, generation of noise, vibration, waste, accident risks, and disturbance to local residents and other social impacts. Given small scale and

simplicity of civil works relating to upgrading and construction of CHSs, the adverse impacts are considered small. The following describes more detail of adverse impacts:

- *Noise and vibration:* During construction activities, noise and vibration may be caused by the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people.
- *Air quality*: Construction activities may generate emission of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind. A secondary source of emissions may include exhaust from diesel engines of earth moving equipment, as well as from open burning of solid waste on-site.
- *Waste:* Non-hazardous solid waste generated at construction sites includes excess fill materials from grading and excavation activities, scrap wood and metals, and small concrete spills. Hazardous waste associated with construction activities may pose the potential for release of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment.
- *Occupational health and safety:* Over-exertion, and ergonomic injuries and illnesses, such as repetitive motion, over-exertion, and manual handling, are among the most common causes of injuries. Falls from elevation associated with working with ladders, scaffolding, and partially built or demolished structures are among the most common cause of fatal or permanent disabling injury. Slips and falls on the same elevation associated with poor housekeeping, such as excessive waste debris, loose construction materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground, are also among the most frequent cause of lost time accidents. Construction activities may pose hazards related to the potential fall of materials or tools, as well as ejection of solid particles from abrasive or other types of power tools which can result in injury to the head, eyes, and extremities. Vehicle traffic and use of lifting equipment in the movement of machinery and materials on a construction site may pose temporary hazards, such as physical contact, spills, dust, emissions, and noise. Construction sites may pose a risk of exposure to dust, chemicals, hazardous or flammable materials, and wastes in a combination of liquid, solid, or gaseous forms.
- *Community health and safety*: The community may be affected by physical, chemical, or other hazards associated with sites under construction. Risks may arise from inadvertent or intentional trespassing, including potential contact with hazardous materials, contaminated soils and other environmental media, buildings that are vacant or under construction, or excavations and structures which may pose falling and entrapment hazards. Increased incidence of communicable and vector-borne diseases attributable to construction activities represents a potentially serious health threat to project personnel and residents of local communities. Construction activities may result in a significant increase in movement of heavy vehicles for the transport of construction materials and equipment increasing the risk of traffic-related accidents and injuries to workers and local communities.
- *Interruption to health services.* It is envisaged that civil works would possibly cause a temporary interruption of access to health care services at commune health stations.

(c) Potential impacts during operation phase

38. The main negative impacts at this stage is connected to operation of health care facilities. For example, operation of communal health stations or district hospitals/health care centers would generate wastes including domestic and health care wastes. If the waste is not properly

managed it would cause adverse impacts on the human health and environment e.g. soil, air and water. In addition, there is a risk of exposure to infection and disease, waste gas, and radiation.

39. *Solid health care waste*: the majority of health care waste is general waste which is similar to domestic waste. Only 20% of solid health care waste is hazardous. According to MOH's survey, generation of HzHCW from a CHS is about 0.08 kg/bed/day. A typical CHS generates about 0.5 kg of HzHCW per day and an inter-commune polyclinic generates from 1 kg to 2 kg of HzHCW per day.

40. Wastewater from HCFs often has a quality similar to urban wastewater. Contaminated wastewater may result from discharges from medical wards and operating theaters (e.g. body fluids and excreta, anatomical waste), laboratories (e.g. microbiological cultures, stocks of infectious agents), pharmaceutical and chemical stores; cleaning activities (e.g. waste storage rooms), and x-ray development facilities. Wastewater may also result from treatment disposal technologies and techniques, including autoclaving, microwave irradiation, chemical disinfection, and incineration (e.g. treatment of flue gas using wet scrubbers which may contain suspended solids, mercury, other heavy metals, chlorides, and sulfates).

41. Depending on the effectiveness of hazardous waste management practices (in particular waste segregation strategies described above), hazardous health care wastes may enter the wastewater stream, including microbiological pathogens (wastewater with a high content of enteric pathogens, including bacteria, viruses, and helminthes / parasitic worms), hazardous chemicals, pharmaceuticals, and radioactive isotopes.

42. The volume of health care wastewater from CHs is approximately $1m^3$ per day and has the same basic component as the domestic wastewater.

43. *Hazards of health care waste***.** Exposure to hazardous health care waste can result in disease and/or injury. All individuals exposed to hazardous health care waste are potentially at risk, including those within health care establishments and those outside these sources. The main groups at risk are the following:

- Health staff: doctors, nurses, technician
- Patients visit the health care facilities
- Patient relatives and visitors
- Workers in waste disposal facilities including scavengers

44. Pathogens in infectious waste and wastewater may enter the human body by a number of routes: through a puncture, abrasion, or cut in the skin; through the mucous membranes; by inhalation; by ingestion. The existence in health care establishments of bacteria resistant to antibiotics and chemical disinfectants may also contribute to the hazards created by poorly managed health-care waste. Sharps may not only cause cuts and punctures but also infect these wounds if they are contaminated with pathogens. Sharp injuries are most popular accidents in health facilities. Sharp injury is the main transmission way of several dangerous infectious diseases such as HIV, HBV, and HCV. About 80% of occupational infections of HIV, HBV, HCV are resulted from injuries by contaminated needles and sharps. The principal area of concern of health care wastewater is high content of enteric pathogens which are easily transmitted through water.

45. In addition to health and environmental impacts, the general public is very sensitive about the visual impact of anatomical waste that is recognizable human body parts, including fetuses. In no circumstances it is acceptable to dispose of anatomical waste inappropriately, such as on a landfill.

46. Unless health care waste is managed strictly, it causes the environmental pollution and health risk. Given small amount of HzHCW and wastewater from PHC facilities, the environmental and health risks and impacts are considered moderate.

47. *Fire risk*: The risk of fire in health care facilities is due to the storage, handling, and presence of chemicals, pressurized gases, boards, plastics, and other flammable substrates.

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

(d) Medical equipment supply

49. It is not expected that medical equipment supply financed by the project would generate environmental and health risks as medical equipment provided to CHSs would be very simple and basic medical equipment with the aim of ensuring effective implementation of functions and tasks of the primary examination and cure in family medicine principle. Some test equipment will be provided to DHCs. The most complicated equipment is portable ultrasound machine which would be provided to CHSs. Absolutely, there would be no any medical equipment financed generating the environmental and health hazards or risks.

6. MEASURES TO MANAGE ADVERSE ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS

6.1 Design stage

50. PPMU should ensure that technical design of CHSs takes into account comments from consultations and complies with Decision no. 4667/QD-BYT dated 7 November 2014 and Decision no. 2271/2002/QD-BYT dated 17 June 2002 on design standard for CHSs, such as the land area for construction, water supply, drainage, wastewater and solid waste treatment, fire-fighting, etc.

6.2 Preconstruction stage

51. In order to mitigate UXO risk, UXO clearance for new construction of commune health care stations should be completed before handing over the site to construction contractors. PPMU should contract with the specialized military unit to conduct probe and clearance of UXO. UXO clearance should be carried out in accordance with Circular 146/2007/TT-BQP on guiding the implementation of the prime minister's decision no.96/2006/QD-TTg dated May 4, 2006 on the management and execution of UXO clearance and Circular 121/2012/TT-BQP on issuing QCVN 01:2012/BQP on national technical regulation on UXO clearance.

52. Dust, noise and waste (debris) generated from demolition should be managed in line with ECOP.

6.3 Construction stage

53. Mitigation measures have been designed proportionate to the nature and magnitude of potential negative environmental and social risks and impacts. Namely, an ECOP as annex of this ESMF that consists of a set of measures to minimize and mitigate adverse environmental and social risks and impacts applies to address construction-related impacts associated with the subproject of the upgrading of the existing commune health care stations and new construction of CHSs given small scale and simplicity of civil works. On the GoV side, an EPP will be prepared by PPMU that also covers a set of mitigation measures consistent with ECOP for adverse impacts associated with civil works.

54. For upgrading and construction of each CHS, there might be site-specific impacts that require site-specific mitigation measures. The site-specific impacts and corresponding mitigation measures would be determined during technical preparation and detailed design of each CHS. All mitigation measures for construction-related impacts and site-specific impacts shall be incorporated into bidding and contract documents for safeguard compliance purpose.

55. In case the project applies the Standard Procurement Document (SPD), the Bidder shall submit the following additional documents in its Bid, including Code of Conduct (ESHS) and Management Strategies and Implementation Plans (MSIP) to manage the (ESHS) risks. The Contractor shall be required to submit to PPMU/CSC for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 16.1, that includes the agreed Management Strategies and Implementation Plans. The C-ESMP includes setting up a grievance redress mechanism (GRM), and initiate and maintain close relations and consultation with local authorities and communities.

56. The PPMUs will closely supervise and monitor contractor's safeguards performance and ensure that the construction contractors implement civil works in compliance with Environmental, Social, Health and Safety Requirements. Consultation with local people especially affected people is needed during construction.

57. Monitoring of environmental quality during construction is useful to ensure the effectiveness of the mitigation measures being implemented by construction contractors. The monitoring should be proportionate to the subproject's environmental and social risks and impacts. MOH PMU should define the need for environmental quality monitoring with specific locations, monitoring parameters, frequency, and an estimated cost proportionate to environmental and social risks and impacts.

58. Measures to mitigate impacts on primary health care services at commune health stations during construction would be set up based on careful consultations with leaders of CHSs, designers, and local authorities. The agreed measures shall ensure that primary health care services are not interrupted and local people access to the health care services at any time. These measures shall be reflected in the mitigation plan.

6.4 Operation stage

59. Waste from health care facilities (HCF) can be divided into two separate groups. The first consists of general waste, similar in composition to domestic waste, generated during administrative, housekeeping, and maintenance functions. The second group consists of specific categories of hazardous health care waste, as detailed in Table 2 below.

60. Health care facilities should establish, operate and maintain a health care waste management system (HWMS) adequate for the scale and type of activities and identified hazards. Facility operators should undertake regular assessment of waste generation quantities and categories to facilitate waste management planning, and investigate opportunities for waste minimization on a continuous basis. The following paragraphs present good international practices for health care waste management[14].

61. *Waste Minimization, Reuse, and Recycling*: Facilities should consider practices and procedures to minimize waste generation, without sacrificing patient hygiene and safety considerations, including:

- Source reduction measures:
  - Consider options for product / material substitution to avoid products containing hazardous materials that require the product to be disposed as hazardous or special waste (e.g. mercury or aerosol cans), and preferring products with less packaging or products that weigh less than comparable products that perform the same function
  - Use of physical rather than chemical cleaning practices (e.g. using microfiber mops and cloths), where such practices do not affect disinfection and meet relevant standards for hygiene and patient safety
- Waste toxicity reduction measures:
  - Consider options for product/material substitution for equipment containing mercury or other hazardous chemicals; products that may become hazardous waste when disposed; products made of polyvinyl chloride (PVC); halogenated compounds; products that off-gas volatile organic compounds (VOCs), or products that contain persistent, bio-accumulative and toxic (PBT) compounds; products that contain substances which are carcinogenic, mutagenic or reproductive toxins (CMR)
- Use of efficient stock management practices and monitoring (e.g. for chemical and pharmaceutical stocks), including:
  - Small / frequent orders for products that spoil quickly and strict monitoring of expiry dates
  - Complete use of old product before new stock is used
- Maximization of safe equipment reuse practices, including:

[14] WBG EHS Guidelines

- Reuse of equipment following sterilization and disinfection (e.g. sharps containers)

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

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

63. *On-site Handling, Collection, Transport and Storage*:

- Seal and replace waste bags and containers when they are approximately three quarters full. Full bags and containers should be replaced immediately;
- Identify and label waste bags and containers properly prior to removal;
- Transport waste to storage areas on designated trolleys / carts, which should be cleaned and disinfected regularly;
- Waste storage areas should be located within the facility and sized to the quantities of waste generated, with the following design considerations:
  - Hard, impermeable floor with drainage, and designed for cleaning / disinfection with available water supply
  - Secured by locks with restricted access
  - Designed for access and regular cleaning by authorized cleaning staff and vehicles
  - Protected from sun, and inaccessible to animals / rodents
  - Equipped with appropriate lighting and ventilation
  - Segregated from food supplies and preparation areas
  - Equipped with supplies of protective clothing, and spare bags / containers
- Unless refrigerated storage is possible, storage times between generation and treatment of waste should not exceed the following:
  - Temperate climate: 72 hours in winter, 48 hours in summer
  - Warm climate: 48 hours during cool season, 24 hours during hot season
- Store mercury separately in sealed and impermeable containers in a secure location;
- Store cytotoxic waste separately from other waste in a secure location;
- Store radioactive waste in containers to limit dispersion, and secure behind lead shields.

64. *Transport to External Facilities*:

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

65. *Treatment and Disposal Options*: Facilities receiving hazardous health care waste should have all applicable permits and capacity to handle specific types of health care waste. Wastes from each category should be treated according to the treatment methods and technologies described in Table 2. When selecting a waste disposal technology, operators should consider other potential health and environmental issues that may be generated by the treatment. The main types of treatment and disposal technologies and techniques available for health care waste are described below:

- **Incineration** is a high temperature dry oxidation process to reduce organic, combustible waste to significantly smaller quantities of inorganic, incombustible matter. Incineration may produce gaseous air emissions, ash residues, and wastewater. Depending on the amount of waste generated and the other factors, HCFs may operate on-site incinerators, or waste may be transported to an off-site incineration facilit. Incinerators should have permits to accept health care waste and be properly operated and maintained.
- **Chemical disinfection** involves the addition of chemicals to kill pathogens in health care waste. Waste should be mechanically shredded prior to treatment. Treatment involves the use and handling of hazardous chemicals, in addition to disposal of hazardous residues following treatment.
- **Wet thermal treatment** disinfects waste by exposing shredded waste to high temperatures / pressure steam inside an exposure tank. Wastewater discharges and odor may result. Autoclaving is a type of wet thermal disinfection process typically used to sterilize reusable medical equipment. Dry thermal disinfection involves the shredding, heating, and compacting waste in a rotating auger. Air emissions and wastewater may be generated, and residues require disposal.
- Microwave irradiation involves the destruction of microorganisms through the microwave heating action of water contained within the waste. Following irradiation, waste is compacted and disposed of as part of the municipal waste stream. Contaminated wastewater may also be generated.
- **Land disposal** involves the disposal of health care waste into landfill facilities. Properly designed and operated sanitary landfills will protect against air and groundwater contamination. Disposal of waste into open dumps is not considered good practice and should be avoided. Pretreatment of waste prior to land disposal may involve encapsulation (filling containers with waste and an immobilizing material and sealing the containers).
- **Inertization** involves mixing waste with substances (e.g. cement) to minimize leaching of toxic waste into ground or surface water.

Table 2: Treatment and disposal methods for categories of health care waste [15]

Type of waste	Summary of treatment and disposal options / notes
Infectious waste: Includes waste suspected to contain pathogens (e.g. bacteria, viruses, parasites, or fungi) in sufficient concentration or quantity to cause disease in susceptible hosts. Includes pathological and anatomical material (e.g. tissues, organs, body parts, human fetuses, animal carcasses, blood, and other body fluids), clothes, dressings, equipment / instruments, and other items that may have come into contact with infectious materials.	**Waste Segregation Strategy**: Yellow or red colored bag/container, marked "infectious" with international infectious symbol. Strong, leak proof plastic bag, or container capable of being autoclaved. **Treatment**: Chemical disinfection; Wet thermal treatment; Microwave irradiation; Safe burial on hospital premises; Sanitary landfill; Incineration (Rotary kiln; pyrolytic incinerator; single-chamber incinerator; drum or brick incinerator)e • Highly infectious waste, such as cultures from lab work, should be sterilized using wet thermal treatment, such as autoclaving. • Anatomical waste should be treated using Incineration (Rotary kiln; pyrolytic incinerator; single-chamber incinerator; drum or brick incineratore).
Sharps: Includes needles, scalpels, blades, knives, infusion sets, saws, broken glass, and nails etc.	**Waste Segregation Strategy**: Yellow or red color code, marked "Sharps". Rigid, impermeable, puncture-proof container (e.g. steel or hard plastic) with cover. Sharps containers should be placed in a sealed, yellow bag labeled "infectious waste". **Treatment:** Chemical disinfection; Wet thermal treatment; Microwave irradiation; Encapsulation; Safe burial on hospital premises; Incineration (Rotary kiln; pyrolytic incinerator; single-chamber incinerator; drum or brick incinerator)e • Following incineration, residues should be landfilled. • Sharps disinfected with chlorinated solutions should not be incinerated due to risk of generating POPs. • Needles and syringes should undergo mechanical mutilation (e.g. milling or crushing) prior to wet thermal treatment
Pharmaceutical waste: Includes expired, unused, spoiled, and contaminated pharmaceutical products, drugs, vaccines, and sera that are no longer needed, including containers and other potentially	**Waste Segregation Strategy**: Brown bag / container. Leak-proof plastic bag or container. Treatment: Sanitary landfill[a]; Encapsulation[a]; Discharge to sewer[a]; Return expired drugs to supplier; Incineration (Rotary kiln; pyrolytic incinerator[a]); Safe burial on hospital premises[a] as a last resort. • Small quantities: Landfill disposal acceptable, however cytotoxic and narcotic drugs

[15] WBG EHS Guidelines

contaminated materials (e.g. drug bottles vials, tubing etc.).	should not be landfilled. Discharge to sewer only for mild, liquid pharmaceuticals, not antibiotics or cytotoxic drugs, and into a large water flow. Incineration acceptable in pyrolytic or rotary kiln incinerators, provided pharmaceuticals do not exceed 1 percent of total waste to avoid hazardous air emissions. Intravenous fluids (e.g. salts, amino acids) should be landfilled or discharged to sewer. Ampoules should be crushed and disposed of with sharps. • Large quantities: Incineration at temperatures exceeding 12000C. Encapsulation in metal drums. Landfilling not recommended unless encapsulated in metal drums and groundwater contamination risk is minimal.
Genotoxic/cytotoxic waste: Genotoxic waste may have mutagenic, teratogenic, or carcinogenic properties, and typically arises from the feces, urine, and vomit of patients receiving cytostatic drugs, and from treatment with chemicals and radioactive materials. Cytotoxic drugs are commonly used in oncology and radiology departments as part of cancer treatments.	**Waste Segregation Strategy:** See above for "infectious waste". Cytotoxic waste should be labeled "Cytotoxic waste". **Treatment:** Return expired drugs to supplier; Chemical degradation; Encapsulation[a]; Inertization; Incineration (Rotary kiln, pyrolytic incinerator); • Cytotoxic waste should not be landfilled or discharged to sewer systems. • Incineration is preferred disposal option. Waste should be returned to supplier where incineration is not an option. Incineration should be undertaken at specific temperatures and time specifications for particular drugs. Most municipal or single chamber incinerators are not adequate for cytotoxic waste disposal. Open burning of waste is not acceptable. • Chemical degradation may be used for certain cytotoxic drugs • Encapsulation and inertization should be a last resort waste disposal option.
Chemical waste: Waste may be hazardous depending on the toxic, corrosive, flammable, reactive, and genotoxic properties. Chemical waste may be in solid, liquid, or gaseous form and is generated through use of chemicals during diagnostic / experimental work, cleaning, housekeeping, and disinfection. Chemicals typically include formaldehyde,	**Waste Segregation Strategy**: Brown bag / container. Leak-proof plastic bag or container resistant to chemical corrosion effects. **Treatment:** Return unused chemicals to supplier; Encapsulation[a]; Safe burial on hospital premises[a]; Incineration (Pyrolytic incinerator[a]; • Facilities should have permits for disposal of general chemical waste (e.g. sugars, amino acids, salts) to sewer systems. • Small hazardous quantities: Pyrolytic incineration, encapsulation, or landfilling. • Large hazardous quantities: Transported to appropriate facilities for disposal, or returned to the original supplier using shipping arrangements that abide by the Basel Convention.

photographic chemicals, halogenated and nonhalogenated solventsd, organic chemicals for cleaning / disinfecting, and various inorganic chemicals (e.g. acids and alkalis).	Large quantities of chemical waste should not be encapsulated or landfilled.
Radioactive waste: Includes solid, liquid, and gaseous materials that have been contaminated with radionuclides. Radioactive waste originates from activities such as organ imaging, tumor localization, radiotherapy, and research / clinical laboratory procedures, among others, and may include glassware, syringes, solutions, and excreta from treated patients.	**Waste Segregation Strategy:** Lead box, labeled with the radioactive symbol. **Treatment**: Radioactive waste should be managed according to national requirements and current guidelines from the International Atomic Energy Agency. IAEA (2003). Management of Waste from the Use of Radioactive Materials in Medicine, Industry and Research. IAEA Draft Safety Guide DS 160, 7 February 2003.
Waste with high content of heavy metals: Batteries, broken thermometers, blood pressure gauges, (e.g. mercury and cadmium content).	**Waste Segregation Strategy:** Waste containing heavy metals should be separated from general health care waste. **Treatment:** Safe storage site designed for final disposal of hazardous waste. • Waste should not be burned, incinerated, or landfilled. Transport to specialized facilities for metal recovery.
Pressurized containers: Includes containers / cartridges / cylinders for nitrous oxide, ethylene oxide, oxygen, nitrogen, carbon dioxide, compressed air and other gases.	**Waste Segregation Strategy:** Pressurized containers should be separated from general health care waste. **Treatment:** Recycling and reuse; Crushing followed by landfill • Incineration is not an option due to explosion risks • Halogenated agents in liquid form should be disposed of as chemical waste, as above.
General health care waste (including food waste and paper, plastics, cardboard):	**Waste Segregation Strategy**: Black bag / container. Halogenated plastics such as PVC should be separated from general health care facility waste to avoid disposal through incineration and associated hazardous air emissions from exhaust gases (e.g. hydrochloric acids and dioxins). **Treatment:** Disposal as part of domestic waste. Food waste should be segregated and

	composted. Component wastes (e.g. paper, cardboard, recyclable plastics [PET, PE, PP], glass) should be segregated and sent for recycling.

Source: Safe Management of Wastes from Health-Care Activities. International Labor Organization (ILO), Eds. Pruss, A. Giroult, and P. Rushbrook (1999)

Notes:

a. Small quantities only
b. Low-level infectious waste only
c. Low-level liquid waste only
d. Halogenated and nonhalogenated solvents (e.g. chloroform, TCE, acetone, methanol) are usually a laboratory-related waste stream for fixation and preservation of specimens in histology / pathology and for extractions in labs.
e. Note on incinerators. Pyrolytic and rotary kiln incinerators should be used. Use of single-chamber and drum / brick incinerators are not normally considered good practice, except in emergency situations as a last option.

66. *Wastewater*: Waste segregation measures should be employed to minimize entry of solid waste into the wastewater stream, including:

- Procedures and mechanisms for separate collection of urine, feces, blood, and vomit from patients treated with genotoxic drugs to avoid their entry into the wastewater stream (as described above under waste segregation for hazardous and other wastes);
- Collection of large quantities of pharmaceuticals for separate treatment or return to manufacturer (see Table 2). Small quantities of mild, liquid pharmaceuticals, excluding antibiotics or cytotoxic drugs, may be discharged to sewer systems with a large water flow.

67. *Municipal Wastewater Treatment*: If wastewater is discharged to sanitary sewage treatment systems, the HCF should ensure that wastewater characteristics are in compliance with all applicable permits, and that the municipal facility is capable of handling the type of effluent discharged.

68. *Fire safety*: The risk of fire in health care facilities is significant due to the storage, handling, and presence of chemicals, pressurized gases, boards, plastics, and other flammable substrates. Fire safety recommendations applicable to occupational areas are presented under 'Occupational Health and Safety' in the General EHS Guidelines. Recommendations applicable to buildings accessible to the public, including health care facilities, are presented under 'Life and Fire Safety' in the General EHS Guidelines. Additional recommendations for fire safety include:

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

69. *Exposure to Infections/Diseases:* The following measures are recommended to reduce the risk of transferring infectious diseases to health care providers:

- Formulate an exposure control plan for blood-borne pathogens
- Provide staff members and visitors with information on infection control policies and procedures
- Establish Universal / Standard Precautions22 to treat all blood and other potentially infectious materials with appropriate precautions, including:
    - Immunization for staff members as necessary (e.g. vaccination for hepatitis B virus)
    - Use of gloves, masks, and gowns
    - Adequate facilities for hand washing. Hand washing is the single most important procedure for preventing infections (e.g. nosocomial and community). Hand washing should involve use of soap / detergent, rubbing to cause friction, and placing hands under running water. Washings of hands should be undertaken before and after direct patient contacts and contact with patient blood, body fluids, secretions, excretions, or contact with equipment or articles contaminated by patients. Washing of hands should also be undertaken before and after work shifts; eating; smoking; use of personal protective equipment (PPE); and use of bathrooms. If hand washing is not possible, appropriate antiseptic hand cleanser

and clean cloths / antiseptic towelettes should be provided. Hands should then be washed with soap and running water as soon as practical
    - Procedures and facilities for handling dirty linen and contaminated clothing, and preparing and handling food
    - Appropriate cleaning and waste disposal practices for the health care workplace
- The following recommendations should be implemented when using and handling of needles / sharps:
    - Use safer needle devices and needleless devices to decrease needle stick or other sharps exposures
    - Do not bend, recap, or remove contaminated needles and other sharps unless such an act is required by a specific procedure or has no feasible alternative
    - Do not shear or break contaminated sharps
    - Have needle containers available near areas where needles may be found
    - Discard contaminated sharps immediately or as soon as feasible into appropriate containers
    - Used disposable razors should be considered contaminated waste and disposed of in appropriate sharps containers
- Establish policies to exclude animals from facility property

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

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

71. *Exposure to Hazardous Materials and Waste*: In addition to the guidance provided above, hazardous materials and wastes should be handled according to occupational health and safety guidance provided in the General EHS Guidelines**.**

72. In addition, the following table shows general measures to mitigate impacts from wastes generated and other health risks during operation and annexes 1 to 7 cover SOPs for handling medical wastes generated from health care facilities as per MOH guidelines.

Table 3. General HCW management measures at health care facilities during operation

Impacts/Risks	Mitigation measures	Applicable national technical regulations
Solid health care waste	The principles of solid health care waste management are in accordance with Decision 43/2007/QĐ-BYT on regulation on HCWM below. The SOPs for HCWM are described in Annexes **Segregation of solid HCW** - Need to distinguish the waste immediately at the place of waste generation - Health care solid waste shall be segregated into 5 categories: infectious waste (sharp, non-	Decision 43/2007/QĐ-BYT dated 30 November 2007 on HCWM regulation

	sharp, highly infectious and anatomical waste), hazardous chemical waste, pressurized containers and general waste **Collection of solid HCW** - Each commune health station has to specify the location of waste containers for each type of health care waste where they are generate. - The location of waste containers must have the instruction of waste classification and collection. - Each group of health care waste must contain in the bag or box fitted the code color and the technical standard which is suitable for the Regulations on health care waste management. **Treatment and Disposal of solid HCW** Applying one or several treatment options as below: - Transporting to the nearest disposal sites - Handling immediately by friendly environment methods such as needle shredder machine, concrete tank - The annex introduces the applicable methods for health care wastes treatment and disposal	
Wastewater	- Wastewater shall be collected separately from rainwater - Hygiene latrines shall be available and accessible to patients, health staff and visitors - Wastewater shall be treated by on-site primary treatment facilities and disinfected before discharge into environment - The wastewater treatment system must have a sludge collection tank - Sludge discharged from the wastewater treatment system must be disposed of as medical solid waste - To periodically inspect the quality of wastewater treatment. Having a book on operation management and results of quality control - Treated wastewater must meet national technical regulation on health care wastewater	Decision 43/2007/QĐ-BYT dated 30 November 2007 on HCWM regulation TCVN 7957:2008 – Drainage and Sewerage – External Networks and Facilities – Design standard QCVN 28:2010/BTNMT – National technical regulation on health care wastewater
Waste gases	- Laboratories, chemical and pharmaceutical warehouses must have ventilating systems and toxic gas cylinders up to the prescribed standards - Equipment using toxic gas must have a	Decision 43/2007/QĐ-BYT dated 30 November 2007 on HCWM regulation

	standardized gas treatment system before being discharged into the environment - Waste gases from medical waste incinerators must be treated to meet Vietnamese environmental standards	TCVN QCVN 06:2006/BTNMT – National technical regulation on hazardous substances in ambient air
Risks associated with exposure to hazards	- All of the heath providers will be provided labor protection items - Solving unexpected situations (injured caused by needles) - The annex introduces sample SOPs for treatment of accident due to sharp waste.	MOH's guidelines for HIV/AIDS diagnosis and treatment (issued in accordance with Decision 3003/QD-BYT dated 19 August 2009

6.5 Mitigation measures for ethnic minority groups issues

73. The Project involves ethnic minority and a stand-alone EMPF has been prepared in line with OP 4.10 (Indigenous Peoples). This framework has been reviewed and cleared by the Bank.

7. PROCEDURES FOR REVIEW, CLEARANCE, AND IMPLEMENTATION OF SUBPROJECT SAEGUARD INSTRUMENTS

7.1 Objective and Approach

74. Main objective of the ESMF process is to ensure that the subprojects and other project activities to be financed by the project will not create significant adverse impacts on the local environment and local communities and the residual and/or unavoidable impacts will be adequately mitigated in line with the WB's safeguard policies. The ESMF comprises four steps and the process is schematically shown in Figure 2. This section briefly describes key steps while more details are provided in annexes. Table 4 summarizes the application of annexes in the ESMF process.

- Step 1: Safeguard screening and impacts assesment;
- Step 2: Preparaton of safeguard instruments as required including development of mitigation measures and public consultation;
- Step 3: Safeguard clearance and information disclosure; and
- Step 4: Implementation, monitoring, and reporting.

75. The safeguard screening, impact assessment, and preparation of safeguard documents for all subprojects will be carried out during the Project implementation and the safeguard documents (e.g. EMDPs and ESMPs) will be submitted to the WB for review and clearance prior to appraisal. Small scale and simplicity of civil works to be carried out under Component 1 will incorporate the ECOP into the bidding and contract documents and consultant contracts and contractor's compliance performance will be closely monitored by field engineers.

Table 4. Applications of ESMF Annexes

Annex	Content	Applicable to
1-7	Good practices of health care waste management	All subprojects of upgrading and construction of CHSs
8	Safeguard Screening	All subprojects of upgrading and construction of CHSs
9	Subproject ESMP Preparation	Subproject that its potential adverse impacts are considered moderate
10	ECOP	Small scale and simplicity of civil works
11	Sample Grievance Registration Form	All subprojects of upgrading and construction of CHSs
12	Suggested Content of the Monitoring Report	The Project

7.2 Safeguard Screening and Impact Assessment

76. This step (Step 1) aims to confirm the eligibility of subproject and/or activities to be financed by the Project as well as identify the potential environmental and social impacts of the subprojects/activities including categorization of the subproject into A, B, or C, identification of the WB safeguard policies to be triggered, and identification of safeguard documents to be prepared as required by OP/BP 4.01 and OP/BP 4.10 (see details in *Annex 8)*. MOH PMU will be responsible for signing the screening for each subproject. Consultation with the WB safeguard specialist for a complex subproject is required.

7.3 Development of Safeguard Documents

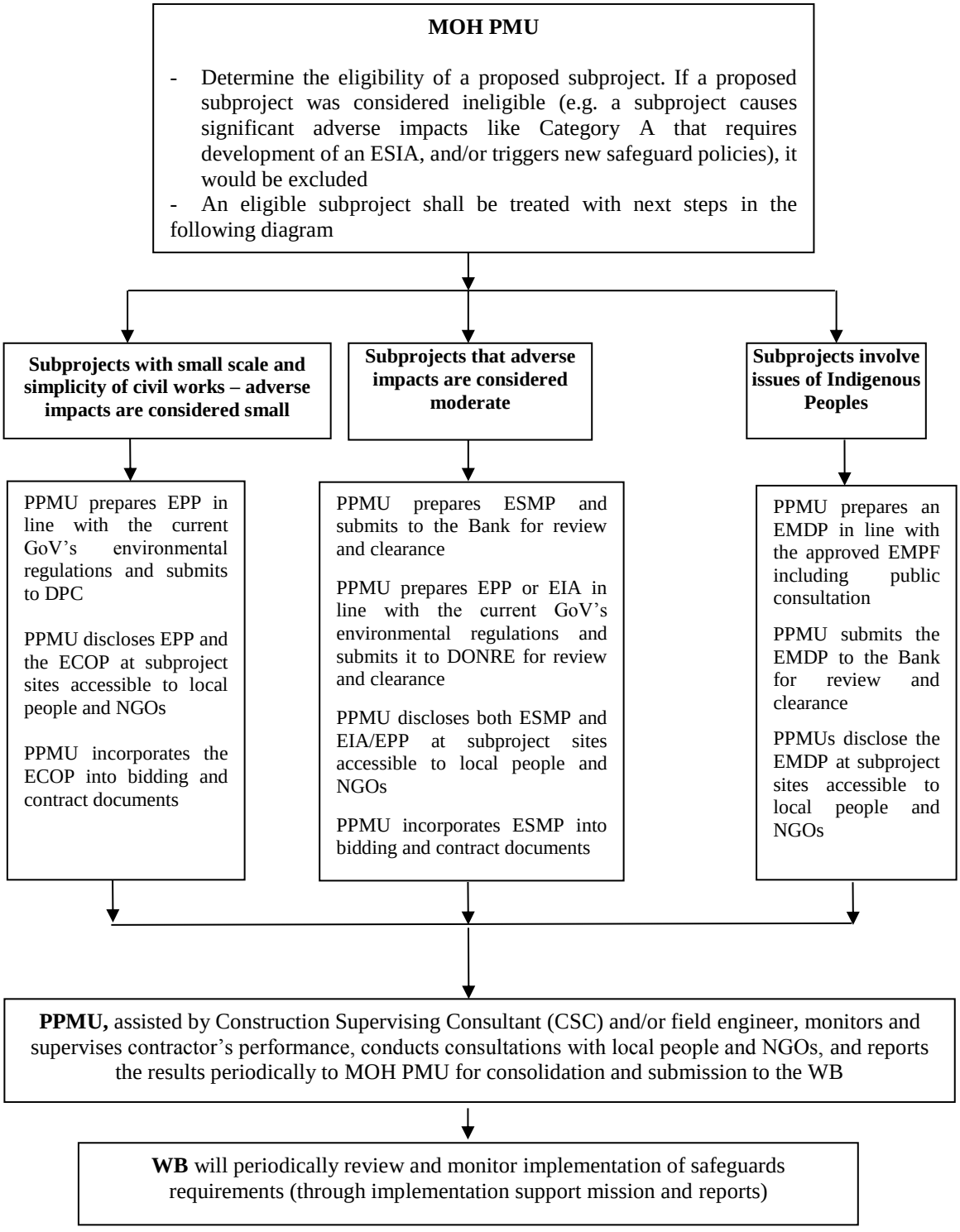
77. This step (Step 2) aims to prepare safeguard documents in line with the issues identified in Step 1. The guideline on the ESMP preparation is provided in Annex 9 while those for EMPDs are provided in EMPF. PPMUs will be responsible for preparation of safeguard

documents. Consultation with WB safeguard specialist for a complex subproject should be conducted as needed.

78. PPMUs will also prepare documents such as EPP or EIA as required by the current GoV's environmental regulation[16] and secure approval of responsible agencies.

[16] The GoV procedures, namely, Decree No. 18/2015/ND-CP dated February 14, 2015 of the Government on environmental protection planning, strategic environmental assessment, environmental impact assessment, and environmental protection commitment, and Circular No. 27/2015/TT-BTNMT dated 19 May 2015 of the Ministry of Natural Resources and Environment on strategic environmental assessment, environmental impact assessment, and environmental protection plan.

Figure 1: Schematic Flowchart of Project Safeguards Performance



7.4 Review, Approval, and Disclosure of Safeguard Documents

79. ***WB review and clearance:*** The WB will review and approve the subproject ESIA, ESMP and EMDP prepared during project implementation. PPMU ensures that all required safeguards documents such as ESIA, ESMP and EMDP of the subproject are prepared and submitted to the WB for review and clearance, and public disclosure before subproject appraisal. However, in the context of the project an ESIA is not expected given the project design, the nature and small scale of physical investments. During the project implementation, if a proposed physical investment that its potential adverse impacts are considered moderate[17] or significant[18], MOH PMU should consult the Bank to determine the appropriate extent and type of EA instrument. All safeguard documents will be disclosed in the project website and made available at PPMU office and the subproject sites accessible to local people and NGOs in Vietnamese language. A notification will be published about the disclosure and comments will be sought within one month of the disclosure date. The English version will be disclosed at the Bank external website.

80. ***Government review and approval:*** The WB also requires that EIA or EPP documents as required by the GoV will be reviewed and approved by the GoV responsible agencies. The EIA or EPP in Vietnamese as well as the approval decision will be provided to the Bank for information. The approved EIA or EPP reports will also be disclosed to the public. However, the EIA is not expected in the context of the project given the project design, the nature and small scale of physical infrastructure investments[19]. PPMU should consult the provincial DONRE about the appropriate extent of an EPP for upgrading and new construction of CHSs before technical preparation of subproject.

7.5 Implementation, Supervision, Monitoring, and Reporting

81. Safeguard implementation, supervision, monitoring, and reporting is an integral part of the Project implementation and responsibility of MOH PMU and PPMU. The WB safeguard specialists will also supervise and monitor the implementation of safeguard as part of the WB implementation support mission. Detailed responsibilities of relevant agencies are described in Table 5 below.

[17] A stand-alone ESMP is required for the subproject.

[18] A stand-alone ESIA is required for the subproject and ESMP is an integral part of the ESIA.

[19] As per the criteria in Annex 2 (list of projects requiring EIA) of Decree 18/2015/ND-CP on Environmental protection planning, Strategic environmental assessment, Environmental impact assessment, and Environmental protection plan, an EIA is required for construction of the health care facilities above 50 beds.

8. IMPLEMENTATION ARRANGEMENTS

8.1 Responsibility for ESMF Implementation

82. At project level, MOH as the implementing agency (IA) is overall responsible for the project safeguards performance. At subproject level, PPMU will be responsible for subproject safeguards performance in accordance with this ESMF. The table and figure below summarize the roles and responsibilities of the key parties and their relationships regarding safeguards performance.

Figure 2: Organizational diagram for safeguards performance

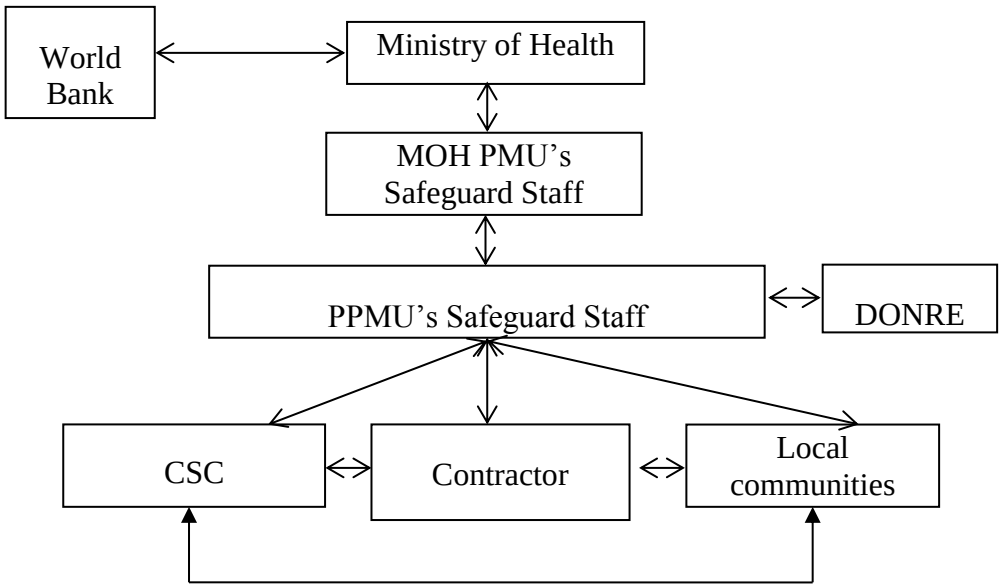


Table 5. Institutional responsibilities for the Project and Subproject Safeguard Implementation

Community/Agencies	Responsibilities
MOH PMU	- Be responsible for overall coordinating project's safeguard performance in line with this ESMF in coordination with PPMUs - Assign safeguard staff in charge of the project safeguard issues shortly after the project effectiveness date - Recruit and mobilize the safeguard consultants to support the project safeguards performance - Periodically report to the Bank on the status of the project's safeguard performance - Notify the Bank promptly of any incident or accident relating to the project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers. The notification will provide sufficient detail regarding such incident or accident, including any fatalities or serious injuries
MOH PMU's safeguard staff	- Be responsible for supervision and monitoring the project safeguards performance throughout the project implementation in coordination with its safeguards consultants and PPMUs. - Specifically, the safeguards staff will be responsible for: (i) helping PPMU incorporate ESMP into the detailed technical designs and civil works bidding and contractual documents; (ii) helping PPMU

Community/Agencies	Responsibilities
	incorporate responsibilities for ESMP and EMDP monitoring and supervision into the TORs, bidding and contractual documents for the Construction Supervision Consultant (CSC); iii) providing relevant inputs to the consultant selection process; (iv) reviewing safeguard monitoring reports submitted by the PPMUs; (v) conducting periodic site visits; (vi) helping the PPMU on solutions to handle safeguard issues of the subproject; and vii) assist MOH PMU in preparing periodic safeguard monitoring reports to submit to the World Bank
PPMU	- Be responsible for supervision and monitoring the safeguards performance of the subprojects to ensure compliance with the approved ESMP/ECOP/EMDP throughout subproject implementation - Specifically, to (i) closely coordinate with local authorities and communities during subproject preparation and implementation; (ii) ensure that the detailed design take into account all safeguard recommendations as indicated in the ESMP/ECOP and EMDP; (iii) comply with ESHS requirements in the SPDs; monitor and supervise contractor's compliance with ESHS requirements; (iv) ensure that an environmental and social management system is set up and functions properly; and (v) periodically report the status of the safeguards performance to MOH PMU - Hire CSC and assign Safeguards Staff to help with safeguard aspects of the subproject and coordinate with MOH PMU safeguard staff
Construction Supervision Consultant (CSC)	- Assign Environmental and Social Staff(s) and will be responsible for routine supervising and monitoring of all construction activities and for ensuring that Contractors comply with the ESHS requirements of the contracts - Engage sufficient number of qualified staff (e.g. Environmental Engineers) with adequate knowledge on environmental protection and construction subproject management to perform the required duties - Provide training in ESHS requirements to contractors if required - Assist the PPMU in reporting and maintaining close coordination with the local authorities and communities
Contractor	- Submit to PPMU/CSC for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 16.1, that includes the agreed Management Strategies and Implementation Plans - Appoint a competent individual as the contractor's on-site *Safety and Environment Officer (SEO)* who will be responsible for monitoring the compliance with ESHS and MSIP, which is set out in the Section VII – Works' Requirements of SPDs. - Take actions to minimize and mitigate all potential negative impacts in line with the objective described in the C-ESMP - Actively communicate with local communities and take actions to prevent disturbance during construction. - Ensure that all staff and workers understand the procedure and their tasks in C-ESMP - Refuse to implement illegal requirements

Community/Agencies	Responsibilities
	- Propose change in design so that it is suitable for construction reality to ensure the quality and effectiveness - Stop construction when construction activities cause dangerous for people - Manage influx of labor on site and ensure security and order - Report to the PPMU and CSC on any difficulties and their solutions - Report to local authorities and PPMU/CSC if environmental accidents occur and closely coordinate with relevant agencies and key stakeholders to resolve these accidents in a timely manner
Local authorities and communities, especially affected people	- Has right to participate and contribute their views to the subproject design to ensure that the design is suitable for the local context - Routinely monitor and supervise the subproject implementation to ensure that it follows the approved design and agreed safeguard recommendations - Has right to send complaints and request resolving the complaints through the established GRM to ensure that the subproject is implemented in accordance with the Bank safeguards policies and the GoV's regulations
Provincial DONRE	- Supervise and monitor compliance with the current GoV's environmental regulations - Report the status of the environmental compliance of the project activities to provincial people's committee

83. Each ESMP/ECOP is to be included in bidding documents and in any awarded contracts. The EMPF and EMDPs will be sent to local authorities and relevant organizations for implementation under the PPMU' guidance. The PPMU will be responsible for supervising EMDP/ESMP/ECOP implementation and reporting to MOH PMU as an element of normal project reporting requirements. The PPMU will establish a coordination and implementation group to address environmental and social issues, including environmental and social focal point. The focal point will be responsible for (a) coordination of environmental and social safeguards; (b) leading the preparation and implementation of safeguards instruments; (c) leading the environmental and social safeguard experts (consultants) and overseeing the training and capacity building activities; and (d) coordinating all safeguard activities with donors, implementing agencies, including local authorities, and/or other potential financial supporters. There will be a regular report on safeguard performance.

84. The implementation of safeguard instruments will be internally monitored by the PPMUs in close coordination with the respective peoples' committees, line departments at different administrative levels, and externally supervised by independent monitoring agencies. The PPMUs will ensure that activities related to environmental and social safeguards will be properly tracked, reported, and documented. Independent monitoring will start around the same time as implementation of activities and will continue until the end of the project/subproject. The performance of and compliance with safeguard instruments will also be subject to regular supervision by the World Bank task team.

85. The PPMUs will be responsible for the preparation and implementation of safeguard instruments and its monitoring. During project implementation, the PPMUs will be responsible for preparing and ensuring the effective implementation of safeguard measures (such as EMDPs, ESMPs/EPPs/ECOP) and regularly liaising with local authorities and communities.

86. A capacity needs assessment will be made at the outset of project implementation and if appropriate a capacity development plan for each province will be prepared and implemented. Enhanced training on safeguard policies and requirements will also be provided to the PPMU safeguards staff during project preparation and implementation. The PPMU, contractor and CSC will receive training in the project's safeguard aspects.

87. After the approval of the ESMP, the PPMU is responsible for ensuring that the ESMP is effectively implemented and that for all civil contracts, the agreed mitigation measures are included in the Bidding Document and Contract Document and that contractor is aware and committed to effectively implementing of the agreed mitigation measures and the cost is part of the contract cost. Before construction, the PPMU will hire the CSC and/or field engineer to be responsible for day-to-day supervision of contractor performance on safeguard and report the results in the subproject progress report. PPMU will work closely with DONRE during implementation of the subprojects.

8.2 Environmental Compliance Framework

88. Duties of the Contractor, the Safety, Social and Environmental Officer (SSEO) and the CSC set out here that are not already addressed within the SPDs should be incorporated into the Employers Requirements (section 7 of the SPDs).

(i) Environmental Duties of the Contractor[20]

89. The contractor firstly shall adhere to minimize the impact that may be result of the project construction activities and secondly, apply the mitigation measures under ESMP to prevent harm and nuisances on local communities and environment caused by the impacts in construction and operation phases.

90. The Contractor shall be required to submit for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 16.2[21], that includes the agreed Management Strategies and Implementation Plans.

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[20] If the Contractor was, or is, failing to perform any ESHS obligations or work under the Contract, the value of this work or obligation, as determined by the Project Manager, may be withheld until the work or obligation has been performed, and/or the cost of rectification or replacement, as determined by the Project Manager, may be withheld until rectification or replacement has been completed. Failure to perform includes, but is not limited to the following:

- failure to comply with any ESHS obligations or work described in the Works' Requirements which may include: working outside site boundaries, excessive dust, failure to keep public roads in a safe usable condition, damage to offsite vegetation, pollution of water courses from oils or sedimentation, contamination of land e.g. from oils, human waste, damage to archeology or cultural heritage features, air pollution as a result of unauthorized and/or inefficient combustion;
- failure to regularly review C-ESMP and/or update it in a timely manner to address emerging ESHS issues, or anticipated risks or impacts;
- failure to implement the C-ESMP;
- failing to have appropriate consents/permits prior to undertaking Works or related activities;
- failure to submit ESHS report/s (as described in Appendix C of SPDs), or failure to submit such reports in a timely manner;
- failure to implement remediation as instructed by the Engineer within the specified timeframe (e.g. remediation addressing non-compliance/s).

[21] The Contractor shall not commence any Works, including mobilization and/or pre-construction activities (e.g. limited clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits), unless the Project Manager is satisfied that appropriate measures are in place to address environmental, social, health and safety risks and impacts. At a minimum, the Contractor shall apply the Management Strategies and Implementation Plans and Code of Conduct, submitted as part of the Bid and agreed as part of the Contract. The Contractor shall submit, on a continuing basis, for the Project Manager's prior approval, such supplementary Management Strategies and Implementation Plans as are necessary to manage the ESHS risks and impacts of ongoing works. These Management Strategies and Implementation Plans collectively comprise the Contractor's Environmental and Social

91. Remedial actions that cannot be effectively carried out during construction should be carried out on completion of the works (and before issuance of the acceptance of completion of works). The duties of the Contractor include, but not limited to:

- Compliance with relevant legislative requirements governing the environment, public health and safety;
- Work within the scope of contractual requirements and other tender conditions;
- Organize representatives of the construction team to participate in the joint site inspections undertaken by the Environmental Staff of the CSC;
- Carry out any corrective actions instructed by the Environmental Staff of the PPMU and CSC;
- In case of non-compliances/discrepancies, carry out investigation and submit proposals on mitigation measures, and implement remedial measures to reduce environmental impact;
- Stop construction activities, which generate adverse impacts upon receiving instructions from the Environmental Staff of PPMU and CSC. Propose and carry out corrective actions and implement alternative construction method, if required, in order to minimize the environmental impacts; Non-compliance by the Contractor will be cause for suspension of works and other penalties until the non-compliance has been resolved to the satisfaction of the ES of PMU and CSC.

(ii) Contractor's Safety, Social and Environmental Officer (SSEO)

92. The contractor shall be required to appoint competent staff(s) as the Contractor's on-site safety, social and environment officer (SSEO). The SSEO must be appropriately trained in environmental management and must possess the skills necessary to transfer environmental management knowledge to all personnel involved in the contract. The SSEO will be responsible for monitoring the contractor's compliance with the ESMP requirements and the environmental specifications. The duties of the SSEO shall include but not be limited to the following:

- Carry out environmental site inspections to assess and audit the contractors' site practice, equipment and work methodologies with respect to pollution control and adequacy of environmental mitigation measures implemented;
- Monitor compliance with environmental protection measures, pollution prevention and control measures and contractual requirements;
- Monitor the implementation of environmental mitigation measures;
- Prepare audit reports for the site environmental conditions;
- Investigate complaints and recommend any required corrective measures;
- Advise the contractor on environment improvement, awareness and proactive pollution prevention measures;
- Recommend suitable mitigation measures to the contractor in the case of non-compliance. Carry out additional monitoring of noncompliance instructed by the Safeguard Staff of PPMU and CSC;

Management Plan (C-ESMP). The C-ESMP shall be approved prior to the commencement of construction activities (e.g. excavation, earth works, bridge and structure works, stream and road diversions, quarrying or extraction of materials, concrete batching and asphalt manufacture). The approved C-ESMP shall be reviewed, periodically (but not less than every six (6) months), and updated in a timely manner, as required, by the Contractor to ensure that it contains measures appropriate to the Works activities to be undertaken. The updated C-ESMP shall be subject to prior approval by the Project Manager.

- Inform the contractor and ES (of PPMU and CSC) of environmental issues, submit contractor's ESMP Implementation Plan to the Safeguard Staff of PPMU and CSC, and relevant authorities, if required;
- Keep detailed records of all site activities that may relate to the environment.

(iv) Environmental Supervision by Construction Supervision Consultant (CSC) during Construction

93. The contractor will be supervised by CSC against the contract requirements. CSC will ensure that the ESHS requirements are appropriately incorporated into the employers requirements and therefore the contract, such that they are confident that the contractor will meet the obligations. One of the obligations of the contractor (via CSC) is to report to the PPMUs: the information they are required to report should be adequate, when supplemented with the PPMU's own checks and supervision, to enable the PPMUs to report to the Bank on whether the measures contained in the ESMP are being delivered adequately.

(v) Compliance with Legal and Contractual Requirements

94. The constructions activities shall comply not only with contractual environmental protection and pollution control requirements but also with environmental protection and pollution control laws of the Socialist Republic of Viet Nam.

95. All the works method statements submitted by the Contractor to the CSC and PPMU for approval to see whether sufficient environmental protection and pollution control measures have been included.

96. The CSC and PPMU shall also review the progress and program of the works to check that relevant environmental laws have not been violated, and that any potential for violating the laws can be prevented.

97. The Contractor shall copy relevant documents to the SSEO and the safeguard staff of CSC and PPMU. The document shall at least include the updated work progress report, the updated work measure, and the application letters for different license/permits under the environmental protection laws, and all the valid license/permit. The SSEO and the safeguard staff shall also have access, upon request, to the Site Log-Book.

98. After reviewing the documents, the SSEO or the safeguard staff shall advise the PPMU and the contractor of any non-compliance with the contractual and legislative requirements on environmental protection and pollution control for them to take follow-up actions. If the SSEO or the safeguard staff concludes that the status on license/permit application and any environmental protection and pollution control preparation works may not comply with the work measure or may result in potential violation of environmental protection and pollution control requirements, they shall advise the Contractor and the PPMU accordingly.

8.3 Reporting Arrangements

99. In addition to the progress report, the Contractor shall also provide a report on the Environmental, Social, Health and Safety (ESHS) metrics set out in Appendix B of SPDs. In addition to Appendix B reports, the Contractor shall also provide immediate notification to the PPMU of incidents in the following categories. Full details of such incidents shall be provided to the PPMU within the timeframe agreed with the PPMU.

- confirmed or likely violation of any law or international agreement;
- any fatality or serious (lost time) injury;

- significant adverse effects or damage to private property (e.g. vehicle accident, damage from fly rock, working beyond the boundary)
- major pollution of drinking water aquifer or damage or destruction of rare or endangered habitat (including protected areas) or species; or
- any allegation of sexual harassment or sexual misbehavior, child abuse, defilement, or other violations involving children.

Table 6. Reporting Procedures

No.	Report Prepared by	Submitted to	Frequency of Reporting
1	Contractors	CSC	Immediately of certain aspects and monthly with respect to a wider range of aspects
2	Construction Supervision consultant (CSC)	PPMU	Immediately or monthly
4	Community Monitoring Board (CMB)	PPMU	When the community has any complaint about the subproject safeguards implementation
5	PPMU	DONRE	Once every six months in accordance with the current GoV's environmental regulations
6	PPMU	WB	Once every six months in accordance with the Section II of the Loan Agreement

8.4 Incorporation of ESMF into Project Operational Manual (POM)

100. The ESMF process and requirements will be incorporated into the Project Operation Manual (POM) and MOH PMU will provide training to ensure that the PPMU understands them as well as will supervise and monitor the ESMF implementation periodically.

9. CAPACITY BUILDING AND TRAINING

9.1 Institutional Capacity Assessment

101. At subproject level, PPMUs of …….provinces may have some experience with the WB-financed projects in terms of safeguard requirements however their capacity remain limited. Moreover, most national consultants and local authorities also do not have adequate knowledge on the WB safeguard requirements therefore safeguard training program will be necessary during the implementation of the Project.

9.2 Safeguards capacity building

102. The MOH PMU will be responsible for strengthening safeguards capacity for PPMUs and other stakeholders throughout project implementation. Safeguards training shall be organized as early as the project implementation. MOH PMU will prepare the content of training which cover all safeguard aspects of the project so that helps PPMUs and other stakeholders effectively perform safeguard requirements in accordance with the ESMF. The Bank safeguard specialist will participate in the training workshops as much as possible.

103. Priority for training should include, but not limited to, the following:

(i) The scope of application and objectives of the Bank safeguard policies applicable to the Project;

(ii) Safeguard Instrument preparation and implementation (e.g. ESMF, EMPF, ESMP, ECOP);

(iii) Specific training on EMDP planning and implementation including the application of GRM that could be effective in responding to local complaints;

(iv) ESHS requirements in SPDs, C-ESMP preparation and ESHS compliance; and

(v) Safeguard performance monitoring and reporting expertise

Table 7. Content of Safeguards Training

No	Key content	Target Groups for Training
1	The scope of application and objectives of the Bank safeguard policies applicable to the Project	PPMU safeguard staff
2	Safeguard Instrument preparation and implementation (e.g. ESMF, EMPF, ESMP, EPP, ECOP, EMDP)	PPMU safeguard staff
3	Specific training on EMDP planning and implementation including the application of GRM	PPMU safeguard staff
4	ESHS requirements in SPDs , C-ESMP preparation and ESHS compliance	PPMU safeguard staff , Contractors
5	Safeguard performance monitoring and reporting expertise	PPMU safeguard staff, CSC

10. ESMF IMPLEMENTATION BUDGET

104. The ESMF implementation budget comprises:

- Cost for preparation of safeguard documents (ESMPs, EPPs and EMDPs);
- Cost for safeguards capacity building
- Cost for implementation of agreed mitigation measures within ESMP/EPP/ECOP/EMDP
- Cost for supervision, monitoring and reporting of safeguards performance

105. The PPMUs will be responsible for the breakdown of the costs for every activities of safeguards performance during project implementation.

Table 8. Cost estimates for safeguards performance

Item	Cost estimates (in US$)
Preparation of subproject safeguard instruments, e.g. ESMP, EPP and EMDP	100,000
Safeguards capacity building	100,000
Implementation of agreed mitigation measures	Included in construction cost
Safeguard supervision/monitoring consultancy service	150,000

11. GRIEVANCE REDRESS MECHANISM

11.1 Subproject Grievance Redress Mechanism (GRM)

106. Within the Vietnamese legal framework citizen rights to complain are protected. As part of overall implementation of the subproject, a Grievance Redress Mechanism (GRM) will be established by PPMUs identifying procedures, responsible person and contact information. It will be readily accessible, handle grievances and resolve them at the lowest level as quickly as possible. The mechanism will provide the framework within which complaints about environmental and safety issues can be handled, grievances can be addressed and disputes can be settled quickly. The GRM will be in place before the subproject construction commences.

107. During construction, the GRM will be managed by the Contractor under supervision of the CSC. This requirement shall be set out in the employer requirements of the SPDs. The Contractor will inform the communities and communes affected by the subproject about the GRM in place to handle complaints and concerns about the subproject. This will be done via the Information Disclosure and Consultation Process under which the Contractor will communicate with the affected communities and interested authorities on a regular basis: hold meetings at least quarterly, publish a monthly information brochure, place announcements in local media, post notices of upcoming planned activities, and so on.

108. All complaints and corresponding actions undertaken by the Contractor will be recorded in the subproject safeguard monitoring report. Complaints and claims for damages could be lodged as follows:

- *Verbally:* direct to the CSC and/or the contractor safeguard staff or representative at the subproject Office
- *In writing:* by hand-delivering or posting a written complaint to the address specified
- *By telephone, fax, e-mail:* to the CSC, the contractor safeguard staff or contractor's representative.

109. On receipt of a complaint, the CSC, contractor safeguard staff or representative will register the complaint in the Complaints File and maintain a Log of events pertaining to it thereafter until its resolution. Immediately after receipt, three copies of the complaint will be made. The original will be kept in the File, one copy will be used by the contractor's safeguard staff, one copy will be forwarded to the CSC and the third copy to the PPMU within 24 hours of the complaint being made. Information to be recorded in the Complaints Log will include:

- The date and time of the complaint;
- The name, address and contact details of the complainant;
- A short description of the issue of complaint;
- Actions taken to address the complaint, including persons contacted and findings of each step in the complaint redress process;
- The dates and times when the complainant is contacted during the redress process;
- The final resolution of the complaint;
- The date, time and manner in which the complainant was informed thereof; and
- The complainant's signature when resolution has been obtained.

110. Small complaints will be dealt with within one week. Within two weeks (and weekly thereafter), a written reply will be delivered to the complainant (by hand, post, fax, e-mail) indicating the procedures taken and progress to date.

111. The main objective will be to resolve an issue as quickly as possible by the simplest means involving as few people as possible, at the lowest possible level. Only when an issue cannot be

resolved at the simplest level and/or within 15-days, will other authorities become involved. Such a situation may arise, for example, when damages are claimed and the amount to be paid cannot be resolved or the cause of the damages determined.

11.2 WB Grievance Redress Service (GRS)

112. ***WB' s GRS:*** Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanism or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to adddress project-related concerns. Project affected communities and individuals may submit their complaints to the WB's independent Inspection Panel which determines whether harms occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at anytime after concerns have been brought directly to the WB's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit www.worldbank.org/grs. For information on how to submit complaints to the World Bank Inspecition Panel, please visit www.inspectionpanel.org.

12. STAKEHOLDER ENGAGEMENT AND INFORMATION DISCLOSURE

12.1 Stakeholder engagement process

113. Stakeholder engagement is an inclusive process conducted throughout the project life cycle. Where properly designed and implemented, it supports the development of strong, constructive and responsive relationships that are important for successful management of the project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process and the assessment, management and monitoring of the project's environmental and social risks and impacts.

114. The objectives of stakeholder engagement are:

- To establish a systematic approach to stakeholder engagement that will help MOH identifies stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties.
- To assess the level of the stakeholder interest and support for the project and to enable stakeholders' view to be taken into account in project design and environmental and social performance.
- To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.
- To ensure that appropriate project information on environmental and social risk and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.
- To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow MOH to respond to and manage such grievances.

115. **At project level**, during preparation of the ESMF, consultations with key stakeholders have been done through face-to-face meetings. Key stakeholders include……. For meaningful consultations, MOH PMU has provided relevant material in a timely manner such as project paper and draft ESMF to the consulted groups to seek their views prior to consultation. Comments and recommendations received during the consultations were taken into account for finalization of the ESMF. Table 9 summarizes results of the public consultations on the ESMF.

116. **At subproject level**, MOH PMU will support PPMUs to identify key stakeholders to be consulted and appropriate methods for consultations with key stakeholders during subproject preparation. Consultations with key stakeholders should be conducted at the early stage of subproject preparation. PPMU ensures that subproject information and subproject's environmental and social risks and impacts and mitigation measures in understandable language will be provided to consulted groups prior to consultations. Also, PPMU provides information about timing and venue of consultation meetings to key stakeholders to be consulted in a timely manner to ensure that all invited stakeholders are present at the meeting. Comments and recommendations received during consultations should be taken into account during subproject design. Consultations with key stakeholders should be conducted as necessary during subproject implementation to address environmental and social risks and impacts that affect stakeholders.

Table 9. Summary of ESMF consultation results

Stakeholders	Date	Stakeholder's comments	Responses

Stakeholders	Date	Stakeholder's comments	Responses

12.2 Information Disclosure

117. Incompliance with the WB policy on access to information, all the draft safeguard documents prepared for the project including ESMF, EMPF, ESMPs, EPPs, ECOP and EMDPs in Vietnamese language were locally disclosed at the subproject sites on……. The English versions were disclosed at the Bank's external website on……. The final safeguards instruments are tentatively disclosed locally by …….. and at the Bank external website by…….

13. REFERECNES

1. Environmental and Social Management Framework Toolkit for World Bank-financed projects in Vietnam, 2015.
2. Ministry of Health, 2015. Guidelines on Health Care Waste Management in Hospital.
3. The Environmental and Social Management Framework for the Health Professionals Education and Training for Health System Reforms Project.
4. WBG EHS Guidelines. Environmental, Health and Safety Guidelines for Health Care Facilities.

Annex 1. Standard Operating Procedures for Health Care Waste Segregation

1. Purpose: ensure correct segregation of health care waste.

2. Scope of application: all rooms in Commune Health Center generating health care waste shall apply this procedures

3. Responsibility: all persons working in Commune Health Center (including staff, medical students, patients and their relatives) generating health care waste shall apply these procedures.

4. Equipments and supplies:

Waste bags shall meet the following requirements: color coding (yellow, green, white, black); Yellow and black waste bags must be made of PE or PP, do not use PVC bags; Health care waste bags' minimum thickness is 0,1mm, bag capacity is appropriate to waste volume, maximum capacity is 0,1 m^3 ; The outside of bags must have horizontal line at level ¾ and have sentence of "DO NOT CONTAIN WASTE OVER THIS LEVEL"; Waste bags must comply with regulations of color system in Clause 7 of this Decision and be used in the right way. The outside of hazardous or recycled health care waste bags and must include the suitable logo for each type of waste as follows: Yellow bags and containers for infectious waste must have logo of hazardous biological waste; White bags, containers for recycled waste must have logo of recycled waste.

Sharp containers shall meet the following requirements: Hard wall and bottom are hardly penetrable, leak-proof capacity, suitable size, the lid easy to open/close, the opening is big enough to contain sharp items without propulsive force, marked with the inscription "for sharp items only", a horizontal line running at the height of 3/4 of the bag with the inscription of "no storing beyond this line", yellow color, with handle or enclosed with fixation system, sharp items inside aren't dropped out during transportation.

5. Methods:

- **Definition of health care waste**

Waste generated from Commune Health Center is classified into the following categories: infectious waste, chemical waste, and general waste. Infectious waste includes 4 groups as follows:

- Sharp waste (group 1A): is waste that can cut, puncture including: needles, syringe, scalpels, knives, nails, bladders, broken glass and other sharp objects used in health activities.
- Infectious non-sharp waste (group 1B): is waste in contact with blood, humor and waste generated from sterile rooms.
- Highly infectious waste (group 1C): generates from laboratories such as: autopsies and tools in contact with autopsies.
- Anatomical waste (group 1D): includes parts of human body, tissues, placentae, foetus and animal carcasses

Chemical waste includes Pharmaceuticals that are expired, low-graded or no longer needed; and Harmful chemical substances in health care activities

General waste which does not contain hazardous agents include non-recycled waste and recycled waste

- **Segregation:**

- Health care waste must be segregated as soon as it is generated.
- Each type of waste must be contained in specialized bags and containers with suitable logos.
- Infectious waste is segregated into yellow color bags
- Sharp waste is segregated into sharp containers
- Chemical waste is segregated into black color bags
- General waste is segregated into green color bags
- Recycled waste is segregated into white color bags

Annex 2. Standard Operating Procedures for Health Care Waste Collection

1. ***Purpose:*** ensure correct collection of health care waste.

2. ***Scope of application:*** all rooms in Commune Health Center generating health care waste shall apply this procedures

3. ***Responsibility:*** persons in charge of environment in Commune Health Center

4. ***Equipments and supplies:***

Waste bags shall meet the following requirements: color coding (yellow, green, white, black); Yellow and black waste bags must be made of PE or PP, do not use PVC bags; Health care waste bags' minimum thickness is 0,1mm, bag capacity is appropriate to waste volume, maximum capacity is 0,1 m^3 ; The outside of bags must have horizontal line at level ¾ and have sentence of "DO NOT CONTAIN WASTE OVER THIS LEVEL"; Waste bags must comply with regulations of color system in Clause 7 of this Decision and be used in the right way. The outside of hazardous or recycled health care waste bags and must include the suitable logo for each type of waste as follows: Yellow bags and containers for infectious waste must have logo of hazardous biological waste; White bags, containers for recycled waste must have logo of recycled waste

Waste container shall be made of high- density, thick, rigid PE or of metal that have a lid able to open by foot. Containers with large capacity (over 50 litres) must have wheels; Yellow containers are used to collect yellow waste bags and boxes; Black containers are used to collect black waste bags. The containers for radioactive waste must be metal; Green containers are used to collect green waste bags; White containers are used to collect white waste bags; Capacity depends on an amount of generated waste, from 10 litres to 250 litres; The outside of containers must have a horizontal line at level or ¾ and a sentence of "DO NOT CONTAINS SHARPS OVER THIS LEVEL".

5. ***Methods:***

- Location of waste bags and containers:
    - all rooms in Commune Health Center has to identify heath care waste containers locations for each category of waste. Appropriate bags and containers must be located in all places where waste is generated.
    - The waste containers locations must have instructions for classification and collection.
    - Waste containers must be used following to set standards and cleaned daily.
    - Clean waste bags must be available in places where health care waste is generated in order to replace bags with the same type delivered to temporary storages of health facilities.

- Each category of waste must be collected to waste bags and containers according to prescribed color codes and must label places of waste generation

- Hazardous waste and general waste are not collected together. If they are collected together, the mixture of waste will be treated as hazardous waste.

- The volume of waste in each bag is about 3/4 full and then closed by tying the necks.

- Frequency of collection: Hospital orderly or staff is assigned a duty to collect hazardous health care waste and general waste from generating places to department's waste storage at

least once a day and when needed.

- Highly infectious waste must be primarily treated in a place where it is generated before colleting to central waste locations of health facilities

Annex 3. Standard Operating Procedures for Health Care Waste Storage

1. ***Purpose:*** ensure correct storage of health care waste.

2. ***Scope of application:*** The area/department of storage in Commune Health Center

3. ***Responsibility:*** persons in charge of health care waste storage area in Commune Health Center

4. ***Equipments and supplies:***

Storages place shall meet the following requirements: be far from food-preparing places, patients' wards, crowded sites and public paths at least 10 m; have roofs, doors and locks to prevent animals, rodents and unassigned persons from freely penetrating therein; the area is suitable to the waste volumes generated from the health care establishments; be built with water drainage systems, water -resistant floor and wall, good ventilation.

Storage equipments for sharp waste are containers made of high density plastic, having thick and rigid wall, capacity of 70 liters and yellow color. The container's outside is marked with bio-hazard symbol, inscription of "sharp waste only", a line at level of 3/4 and inscription of "not storing beyond this line".

5. ***Methods:***

- Different waste streams are stored separately
- Health care waste is stored in standard storage equipment
- Storage time of health care waste does not exceed 48 hours
- Anatomical waste must be buried or disposed daily
- Storage area and equipment must be cleaned and disinfected regularly

Annex 4. Guidance on selecting methods for Health Care Waste Treatment and Disposal

Treatment model:

According to Regulations on health care waste management and official letter No.7164/BYT-KCB dated 20/10/2008 of Minister of MOH, the health facilities are allowed to apply one of following models of treatment:

- In central managed cities where density of health care facilities is high, traffic system is favorable, health care facilities apply centralized model of hazardous health care solid waste treatment, one treatment facility treat all hazardous health care solid waste generated in city in order to save investment and operational cost.

- In other provinces and cities, health care facilities apply cluster model of hazardous health care solid treatment for hospitals, health care facilities locating within or surround cities and towns (distance to treatment facility is less than 30 km).

- Health care facilities locating in remote area and poor traffic area apply onsite waste treatment, use suitable treatment technology.

Treatment technologies

While incineration is adequate to many types of health care waste, non-incineration technologies are adequate to certain types of waste. Disinfection by steam, microwave or chemicals is applicable to most of infectious waste, but not suitable to treat anatomical waste, sharps and chemical waste. Concrete bury pit is only applied to anatomical waste and sharps. Innertization is only adequate to chemical and pharmaceutical waste *(see Table 4.1).* Based on socio-economic conditions and availability of technologies, the CHC should select the treatment technologies which are most suitable to its specific circumstances *(see Table 4.2).*

Table 4.1: Treatment and disposal methods suitable for different categories of health care waste

	Pyrolytic incinerator	Wet thermal disinfection	Microwave irradition	Chemical disinfection	Safe burying	Innertiza-tion	Others
Infectious waste							
Sharps	Yes	Yes	Yes	Yes	Yes	No	-
Non-sharps	Yes	Yes	Yes	Yes	Yes	No	-
Highly infectious	Yes	Yes	Yes	Yes	Yes	No	-
Anatomical	Yes	No	No	No	Yes	No	-
Chemical waste							
Pharmaceuticals	For small quantities	No	No	No	Yes	Yes	Return to supplier

Table 4.2: Main advantage and disadvantages HCW treatment technologies

Technology	Advantages	Disadvantages
Non-incineration technologies		
Needle cutter	- Prevent needle reuse - Easy to operate, low cost - Syringe can be recycled	- Needles need further treatment after cut and separated
Needle destroyer	- Needle is disinfected and destroyed by electricity - Easy to operate, low cost - Syringe can be recycled	- Require electricity - Stem of needle still exists after destroying.
Innertization	- Applicable to chemical waste and pharmaceutical waste - Simple to operate, low cost	- Not applicable to other waste
Cement bury pit	- Applicable to sharps and pathological waste - Simple to operate, low cost	- Requires land and space - Potential impact to underground water if poor design, construction
Safe burying	- Relatively safe if access to site is restricted and where natural infiltration is limited. - Low investment and operation cost	- Only apply to hospitals in mountainous and rural area
Disinfection by steam (autoclave) and/or microwave	- Highly efficient disinfection - Reduction in waste volume if shredder available - Low operational cost - Environmentally sound - Well-known technology in hospitals	- Inadequate for anatomical, pharmaceutical and chemical waste, and waste that is not readily steam permeable. - Requires trained operator - High investment cost, requires thermal resistant waste bags
Incineration technologies		
Two chamber or Pyrolytic incinerator	- Adequate for all infectious waste, most chemical waste, and pharmaceutical waste - Drastic reduction of weight and volume of waste	- Incomplete destruction of cytotoxics - Relatively high investment - High operational cost - Requires qualified operator - Emissions of air pollutants in case of improper operation and maintenance

Annex 5. Standard Operating Procedures for Health Care Waste Treatment and Disposal

1. ***Purpose:*** ensure safe treatment and disposal of health care waste.
2. ***Scope of application:*** The treatment and disposal location
3. ***Responsibility:*** persons in charge of health care waste treatment and disposal for Comnune Health Center
4. ***Selected equipments and methods:***

   (Mark "X" to selected equipments and methods)

	Treatment and disposal models		Treatment and disposal methods						
	In CHC	Outside CHC	Pyrolytic incinerator	Wet thermal disinfection	Microwave irradiation	Chemical disinfection	Safe burying	Innertiza-tion	Others
Infectious waste									
Sharps									
Non-sharps									
Highly infectious									
Anatomical									
Chemical waste									
Pharmaceuticals									

Annex 6. Standard Operating Procedures for Treatment of Accident due to Sharp Waste

1. Purpose: Ensure effective prophylaxis treatment of injury due to sharp waste.

2. Scope of application: all departments in the hospital shall be responsible for applying this procedure

3. Responsibility:

- Injured person shall be responsible for treating wound site, reporting to the supervisor and complete the report form, complying with testing and post-exposure prophylaxis treatment.

- Head of department: sent completed report form to Center for Preventive Medicine

- Center for Preventive Medicine: shall be responsible for counseling and providing anti-retrovirus therapy.

- Head of Infection control department: update the incident and take measures to prevent similar exposure.

4. Equipments and supplies:

- First aids tools for treatment of exposure site

- Equipment for HIV, HBV, HCV testing

- Anti-retrovirus treatment drugs

5. Methods:

- *Step 1*: *Treat the exposure site:* Flush the wound with tap water, Let the wound bleed for a short time 3 – 5 minutes, do not squeeze; clean the wound thoroughly with soap and water; disinfect wound by disinfectants (Dakin, Javel 1/10, alcohol 70^0) in at least 5 minutes.

- *Step 2*: *Report to the manager and complete the report form:*

Indicate the date, time and the context of exposure, describe the wound and assess the level of risk. Get the signatures of the witnesses and the supervisor.

- *Step 3: Assess the risk of exposure*

  Risk presents with: Bleeding percutaneous wounds caused by containing blood needles: the risk is higher in case of deep wounds caused by large-bore needle containing a lot of blood compared with that of shallow wounds from fine needles with less blood; Deep percutaneous wounds caused by scalpels or broken tubes containing patient's blood and body fluids; Existing lesions, ulcers or scratches on the skin or mucus membranes exposed to patient's blood and body fluids (even when the status of ulcers is unclear): the risk is higher with large ulcers or scratches.

  No risk: normal skin exposed to patient's blood or body fluids.

- *Step 4: Determine the HIV, HBV, HCV status of the source of exposure: If the source* patient is HIV (+), HbsAg (+), Anti HCV (+): get information on the use of and response to ARV treatment; If the HIV, HBV, HCV status of the source is unknown: provide counseling and perform HIV, HBV, HCV tests. In some cases it is impossible to identify the HIV status of the source (being exposed while on duty, the subject ran away), treat as HIV (+), HbsAg (+), Anti HCV (+) cases.

- *Step 5: Determine the HIV, HBV, HCV status of the exposed person:* Provide pre-test and post-test counseling as regulated. If the exposed person has positive test result right after the exposure incident: HIV, HBV or HCV infection occurred before, not due to the exposure incident; If HIV (-), HBV (-), HCV (-) then HIV, HBV or HCV test is required after 3 months and 6 months.

- *Step 6: Counsel the exposed person on.* Risk of infection with HIV, HBV, HCV; Information and services of the prophylaxis, its benefits and risks; Side effects of ARV and signs of primary HIV infection: fever, rash, nausea or vomiting, anemia, lymphadenopathy, etc; Prevention of HIV transmission to others: exposed person may transmit HIV to others even if the test is negative (the window period) and they, therefore should practice all prevention measures; Adherence to treatment and psychological support.

- *Step 7*: ARV prophylaxis for the exposed person: Provide ARV treatment as soon as possible, best within 2 – 6 hours after and before 72 hours after the exposure to all exposure cases with risk. At the same time, assess the HIV status of the source of exposure and the exposed person. If the source of exposure is HIV (+): continue the treatment. If the source of exposure is HIV (-): it is possible to discontinue the treatment. If the source is suspected having risk factor and is in the period window, the treatment should be continued. If the exposed person is HIV (+): do not provide prophylaxis, refer for follow-up and provide treatment as a normal HIV positive case. If the exposed person is HIV (-): continue the treatment; Exposure with no risk: no treatment is needed; If the HIV status of the source of exposure cannot be determined: treat as a case of exposure to the HIV (+) source.

Annex 7: Health Care Waste Management Checklist

1. Assessment of current situation

No.	Criteria	Status	Notes
1	**Health care waste is correctly and safely segregated at generating source**		
1.1	Sharp waste is segregated correctly and safely at generating source	☐Yes ☐No	
1.2	Infectious waste is segregated correctly and safely at generating source	☐Yes ☐No	
1.3	Chemical waste is segregated correctly and safely at generating source	☐Yes ☐No	
1.4	General waste is segregated correctly and safely at generating source	☐Yes ☐No	
1.5	Recyclable waste is segregated correctly and safely at generating source	☐Yes ☐No	
1.6	Visible pictures or posters instructing health care waste segregation in department	☐Yes ☐No	
2	**Health care waste is safely collected at commune health center**		
2.1	CHC designates a dirty room or area for waste collection	☐Yes ☐No	
2.2	At collection place, there are visible instruction on waste collection	☐Yes ☐No	
2.3	Infectious waste is safely collected in CHC	☐Yes ☐No	
2.4	Chemical waste is safely collected in CHC	☐Yes ☐No	
2.5	General waste is collected safely in CHC	☐Yes ☐No	
2.6	Recyclable waste is safely collected in CHC	☐Yes ☐No	
2.7	Waste containers cleaned and disinfected daily or regularly so that there is not dirt and bad odor	☐Yes ☐No	
3	**Health care waste is safely stored in CHC**		
3.1	Health care waste storage area is in place	☐Yes ☐No	
3.2	Health care waste storage area, if available, meet the regulatory requirements	☐Yes ☐No	
3.3	Infectious waste is stored safely	☐Yes ☐No	
3.4	Chemical waste is stored safely	☐Yes ☐No	
3.5	General waste is stored safely	☐Yes ☐No	
3.6	Waste storage area and equipment are cleaned and disinfected daily	☐Yes ☐No	
4	**Health care waste is safely treated and disposed on- site or off-site**		

4.1	In case of off-site treatment, hazardous health care waste is transported to legal treatment and disposal facilities by special means in a controlled manner and in line with hazardous health care waste management regulations.	☐Yes ☐No	Applicability ☐ Yes ☐No
4.2	In case of on-site treatment, infectious waste is sterilized and shredded, then continued to treat for disposal as general waste	☐Yes ☐No	Applicability ☐ Yes ☐No
4.3	In case of on-site treatment, some hazardous health care waste (anatomical waste, sharps, and some chemical waste) is encapsulated or isolated in concrete pits being designed and operated in line with regulations on hazardous waste management	☐Yes ☐No	Applicability ☐ Yes ☐No
4.4	In case of on-site treatment, chemical health care waste is innertized by cement, then transported to legal landfill for disposal	☐Yes ☐No	Applicability ☐ Yes ☐No
4.5	In case of on-site treatment, health care waste is safely treated by existing incinerator applied stringent pollution control measures so that secondary pollution due to incinerator's gas emission and bottom ash are avoided	☐Yes ☐No	Applicability ☐ Yes ☐No
5	**Wastewater from CHC is collected and treated properly**		
5.1	Health care wastewater is collected separately from storming water in collection network which meet regulatory requirements	☐Yes ☐No	
5.2	Latrines are sufficient to health staff and patients. Latrines meet technical regulations on design, operation and maintenance of hygienic latrine	☐Yes ☐No	
5.2	Wastewater is treated properly before discharge into environment	☐Yes ☐No	
6	**Health care waste management procedures are developed correctly and systematically.**	☐Yes ☐No	
7	**CHC's staff are provided with sufficient personal protective equipment and use them properly**	☐Yes ☐No	

2. Main findings and recommendations

Main findings	Recommendations

Annex 8: Safeguard Screening Guidelines

Table below presents the technical guideline on safeguard screening for physical investments under Component 1.

Technical Guideline on Safeguard Screening and Actions to be taken

Potential negative impacts	Required document	Required mitigation actions (If Yes)	Remarks
(1) Likely involve ethnic minorities and/or adversely affect ethnic groups	EMDP	Carry out social assessment process through free, prior, and informed consultations and prepare an EMDP in accordance with guidance in the EMPF. The project will support increasing awareness of affected population, in respective languages of ethnic minority groups, about the Grievance Redress mechanisms, and building capacity of those involved in the existing Grievance Redress mechanism on the required tasks, including dealing with or mediating complaints from individual and/or ethnic groups, recording and reporting, and monitoring proposed resolutions.	Prior consultation with WB, proper documentation, and Post review by WB may be necessary
(2) Likely involve UXO risk	UXO clearance plan	PPMU would contact and work with the competent military agencies to develop an UXO clearance plan in accordance with current regulations of the GoV.	UXO clearance should be completed before handing over the site to contractor
(3) Involve civil works which will generate construction-related impacts such as air pollution, noise, vibration, wastes, health risks, etc.	ESMP or ECOP	ESMP or ECOP sets out a set of mitigation measures to address construction-related impacts. PPMU will ensure that the all mitigation measures are included in bidding and contractual documents.	Provisions for CSC's ESHS supervision will be explicitly described in the TOR PPMU and its CSC will supervise contractor's compliance with ESHS requirements

Potential negative impacts	Required document	Required mitigation actions (If Yes)	Remarks
(4) Likely cause impacts on PCRs, natural habitats, forests or involve pesticide uses and land acquisition and resettlement	N/A	N/A	Such physical investments would be excluded given that the project has not triggered the policies on Physical Cultural Resources, Natural Habitats, Forests, Pest Management and Involuntary Resettlement

Annex 9: Guidelines for Subproject ESMP Preparation

This annex presents technical guideline for preparation of an ESMP for subproject including scope of ESMP report (Section A3.1), public consultation (Section A3.2), and preparation of EIA/EPP as required by the Government's EIA regulations (Section A3.4). Result from technical screening and issues identified in Annex 8 will be used as the basis of preparation of scope and extent of the mitigation measures.

A3.1 Preparation of an ESMP Report

This section provides technical guidelines for preparing an ESMP as a standalone document as part of Category B subproject to be submitted to the World Bank through the outline and content of the ESMP report. The ESMP is the key documents to be used during the implementation of the subproject and monitoring of safeguard compliance covering both environment and social aspects during construction and operation of the subprojects (non-resettlement and ethnic peoples that are required to comply with OP/BP 4.10 and OP/BP 4.12). It is important to ensure the following:

- ***Detailed design and preparation of bidding and contract documents:*** To minimize the impact during land clearance, construction, and operation, it is important for the Bidder to submit the following additional documents in its Bid, including Code of Conduct (ESHS), and Management Strategies and Implementation Plans (MSIP) to manage the (ESHS) risks.
- ***Before starting construction***, the subproject owners and/or supervisor certify that (a) all compensation for land acquisition and affected facilities, the relocation of households and / or recovery of land / land donation has been completed, (b) subproject environmental impact assessment and / or the specific mitigation measures approved by the government, and (c) the ESMP above was approved by the Government. The Contractor shall submit for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 16.2, that includes the agreed Management Strategies and Implementation Plans.
- ***During construction***, the subproject owners and/or supervision consultant closely monitor and supervise Contractor's compliance with Environment, Social, Health and Safety Requirements set out within Section 7 – Works' Requirements of SPD and include the contractor performance on the Environmental, Social, Health and Safety (ESHS) metrics set out in Appendix B of SPDs in the subproject progress report.
- ***After completing the construction,*** the subproject owners and/or supervision consultant confirms contractor's compliance with the ESHS requirements including ensuring that any damage incurred by the contractor has been properly addressed. If necessary, it should be ordered to pay compensation/rehabilitation of the construction sector as stipulated in the contract.

(a) Scope and Content of ESMP report

The ESMP outline and content should be as follows:

- ***Executive summary:*** The executive summary summarizes the key findings of the ESMP. It should be clear and concise, ranging from 3-5 pages, and briefly address the following topics: Introduction (based on Section I); World Bank's safeguard policies and national laws and regulations applied to the project (based on Section II), Project description (based on Section III), baseline datas (based on Section IV), Environmental

and social impacts and mitigation measures (based on Section V), monitoring (based on Section VI), ESMP implementation arrangement (based on Section VII), Capacity building, training and technical assistance (based on Section VII), ESMP Implementation budget (based on Section IX) and ESMP consultation and disclosure (based on Section X).

- ***Introduction (Section I):*** This should provide brief but concise information on: (a) the ESMP context: describe how the EMP fits into the overall planning process of the project, listing project/subproject environmental studies such as EIA/EPP, approval documentation; (b) the ESMP's connection with the ESMF and the project; (c) the objectives of the ESMP: describe what the ESMP is trying to achieve. The objective should be subproject specific, not broad policy statements. The project-specific ESMP shall form part of the subproject contract specifications.
- ***Policy, legal and administrative framework (Section II):*** GOV's regulations: provide brief description of GoV regulations related to EIA and technical regulations and standards applied to the subproject. *World Bank's safeguard policy:* list World Bank safeguard policies triggered.
- ***Subproject description (Section III):*** The subproject objective and description should be provided in sufficient detail to define the nature and scope of the subproject. These should include: (a) *Subproject location*: site location should be described with location of the activities provided including location maps showing location in the subproject area as well as details at the subproject level; (b) *Construction/operation activities*: the description may include a brief description of construction and operation processes; working or operating hours, including details of any activities required to be undertaken outside the hours; employment numbers and type; the plant and equipment to be used; the location and site facilities and worker camps; bill of quantities for civil works; and (c) *timing and scheduling*: anticipated commencement and completion dates should be indicated. If the subproject is to be completed in stages then separate dates for each stage should be provided.
- ***Baseline data (Section IV):*** This should provide key information on the environmental background of the subproject as well as its connection with the subproject area, including maps. Focus should be given to provide clear data on topography, major land use and water uses, soil types, flow of water, and water quality/pollution. Brief description on socioeconomic condition and EM (if relevant) should also be provided. Photos showing existing conditions of subproject sites should be included.
- ***Potential impacts and mitigation measures (Section V):*** This section summarizes the predicted positive and negative impacts associated with the proposed subproject/subproject, particularly those presenting impacts of medium to high significance. A summary should be provided of the predicted positive and negative impacts associated with the proposed subproject that require management actions (i.e. mitigation of negative impacts or enhancement of positive impacts). The necessary information for this section should be obtained from the EA process, including the EIA and EPP reports. The impacts should be described for pre-construction, construction, and operation phases. Using a matrix format could help understanding connection between the impacts and mitigation better (See Table 1 below for a sample mitigation measures matrix.). Cross-referencing to the EIA/EPPs reports or other documentation is recommended, so that additional detail can readily be referenced. While commonly-known social and environmental impacts and risks of construction activities can be addressed through Environmental Codes of Practice (ECOP), specific mitigation measures should also be proposed to addressed sub-project specific impacts predicted

based on site-specific conditions and typology of investments. Some measures can be proposed for incorporation into engineering design to address potential impacts/risks and/or bring about added values of the works provided (e.g. road/access path improvement combined with canal lining). Mitigation measures should include a communication program and grievance redress mechanism to address social impacts. It is necessary to ensure that this section responds to appropriate suggestions and adequately addresses the issues and concerns raised by communities as recorded in the consultation summary presented in Section A3.5. Depending on impacts of a subproject, Physical Cultural Resources (OP/BP 4.11) or Pest Management (OP 4.09) may be triggered and physical cultural resources and pest management plans may need to be developed and included in the ESMP.

Table 1. Template of mitigation measure matrix

Phase	*Issue*	*Mitigation Measure*	*Locations for mitigation measures*	*Applicable Standard (e.g. country, WB, EU)*	*Cost of Mitigation*	*Responsible party*	*Verification Required to determine effectiveness of measures*
Design/Pre-Construction							
Construction							
Operation							
Decommissioning							

- ***Monitoring (Section VI)*:** Monitoring of ESMP implementation would encompass environmental compliance monitoring and environmental monitoring during subproject implementation as described in details below:
  - Environmental compliance monitoring includes a system for tracking environmental compliance of contractors such as checking the performance of contractors or government institutions against commitments expressed in formal documents, such as contract specifications or loan agreements.
  - The objectives of environmental monitoring is: a) to measure the effectiveness of mitigating actions (e.g. if there is a mitigating action to control noise during construction, the monitoring plan should include noise measurements during construction); b) To meet Borrower's environmental requirement; and c) to respond to concerns which may arise during public consultation (e.g. noise, heat, odor, etc.), even if the monitoring is not associated with a real environmental issue (it would show good faith by the Borrower). The monitoring program should clearly indicate the linkages between impacts identified in the EA report, indicators to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions, and so forth. The cost of environmental monitoring should be estimated and included in sub-project's total investment costs. It is crucial to monitor and collect data that is useful and will actually be used. There is no value in spending money to collect data that is not properly analyzed, that is not reported

or even if reported, no actions can or will be taken. It is useful to know the kinds of analysis to which the data will be subjected before collecting the data to ensure that one can do the anticipated analyses.

Table below provides an example of how monitoring is structured.

Template of monitoring plan

Phase	**What** parameter is to be monitored? (Note if it is against a set standard)	**Where** is the parameter to be monitored?	**How** is parameter to be monitored/ type of monitoring equipment?	**When** is parameter to be monitored/ frequency of measurement or continuous?	**Responsible Party**
Pre-construction					
Construction					
Operation					
Decommissioning					

- ***ESMP Implementation arrangements (Section VII)****:* The following subsections are recommended:
  - *Responsibility for ESMP implementation*: This describes how the implementing agency plans to assign responsibilities to assure proper flow and use of environmental information for efficient and effective environmental management. For a World Bank-financed subproject, the stakeholders involved in ESMP implementation and monitoring usually include the subproject implementing agency, the PMU, construction contractors, construction supervision consultant (CSC), independent environmental monitoring consultant (IEMC), local environmental management authorities, NGOs, and communities. Each player should be assigned with practical responsibilities. Good coordination among these actors ensures effective implementation of the ESMP. Responsibilities of the CSC and IEMC for monitoring and supervision of ESMP compliance during construction and supervision should be indicated in some detail. Generic Terms of Reference for CSC and IEMC should be included in the ESMP as annexes.
  - *Incorporation of ESMP into detailed technical design and bidding and contractual document*: The bidding and contractual documents should include ESMP requirements documents to ensure that obligations are clearly communicated to contractors. The bidding documents might also include environmental criteria as part of the basis for selecting contractors. Contractors should also be obliged to follow appropriate environmental, health, and safety standards to reduce associated risks during construction and operation. Therefore, this section should also elaborate on how PMU and its staff will incorporate ESMP into the subproject detailed design and tendering documents.
  - *Environmental compliance framework*: During subproject implementation, the Borrower reports on compliance with environmental commitments, the status of mitigative measures, and the findings of monitoring programs as specified in the subproject documents. The World Bank bases supervision of the subproject's

environmental aspects of the ESMP as set out in the legal agreements for the subproject. This subsection elaborates on the environmental duties of the contractor and its safety and environment officer, compliance with legal and contractual requirements, and environmental supervision during construction supervision, and a penalty framework.

- *Reporting procedures*: Procedures to provide information on the progress and results of mitigation and monitoring measures should be clearly specified. As a minimum, the recipients of such information should include those with responsibility for ensuring timely implementation of mitigation measures, and for undertaking remedial actions in response to breaches of monitoring thresholds. In addition, the structure, content and timing of reporting to the World Bank should be designed to facilitate supervision. Responsibility of different actors for reporting and the type of reports should also be clearly indicated.

- ***Institutional Strengthening Plan (Section VIII):*** This section describes institutional needs to assure successful implementation of the mitigation and monitoring plans. This may include equipment purchases, training, consultant services, and special studies. Most subprojects would mainly require capacity strengthening in ESMP implementation through training for different stakeholders. All relevant stakeholders should undergo general environmental awareness training and training about their responsibilities under the ESMP. The training should ensure that they understand their obligation to exercise proper environmental management during subproject implementation. Environmental training should include: a site induction, familiarization with the requirements of the ESMP; environmental emergency response training; familiarization with site environmental control; targeted environmental training for specific personnel such as environmental staff of PMU, safety and environment officer of the contractor, construction supervision engineer. The need for additional or revised training should be identified and implemented from the outputs of monitoring and reviewing the ESMP. Records of all training should be maintained and include: who was trained; when the person was trained; the name of the trainer; and a general description of the training content.

- ***Estimated Budget for ESMP Implementation (Section IX):*** These should be specified for both the initial investment and recurring expenses for implementing all measures contained in the ESMP, integrated into the total project costs, and factored into loan negotiations. It is important to capture all costs, including administrative, training, environmental monitoring and supervision, costs for mitigation measures to be implemented by contractors, costs for additional environmental studies, and operational and maintenance costs. The aim is to satisfactorily mitigate adverse impacts at least cost. The costs of preparing an ESMP, which are borne by the Borrower, vary depending on factors such as the complexity of potential impacts, the extent to which international consultants are used, and the need to prepare separate ESMPs for subprojects.

(b) Consultation and Information Disclosure (Section X)

Consultation*:* The ESMP should clearly describe and justify the proposed mitigation measures to facilitate public consultation. Consultation with affected people and NGOs should be integral to all Category A and B projects in order to understand the acceptability of proposed mitigation measures to affected groups. In some situations, the development of environmental awareness amongst stakeholders is important to ensure effective consultation on the ESMP. Where projects involve land acquisition or resettlement, these issues should be fully addressed in resettlement action plan (RAP), and where appropriate in ethnic minority development plan (EMDP).

- The consultation process can also be used help to design achievable mitigation measures. This process is particularly important when it depends on the buy-in of the affected people. Where appropriate, this may be supported by including formal requirements within the TOR for public participation in developing the ESMP.
- Public consultation of ESMP should be an integral part of EIA/EPP consultation. If consultation has not been conducted or not adequately carried out during EIA/EPP preparation process, it must be undertaken to capture the feedbacks of the affected people and communities. This section provides summary on consultation activities to stakeholders, particularly affected households, on the final draft ESMP at project/subproject level. This summary should indicate the date and location where consultation meeting took place, the number of participants from affected households, the numbers of female and ethnic minority participants, and suggestions, and concerns raised and responses. Locations and dates of ESMP to be disclosed should be provided.

Disclosure of the ESMP: Information disclosure: According to the World Bank's policy on access to information, draft and final ESMP are disclosed locally in an accessible place and in a form and language understandable to key stakeholders and in English at the Bank external website before the appraisal mission.

A3.2 Guidance on Public Consultation

The Bank's safeguard policies require the subproject's owner to facilitate public consultation and information disclosure. Accordingly, consultation with project affected people (PAPs) and local NGOs is required for this project and its subprojects. During the preparation of ESMPs, public consultation must be carried out in line with the Bank's requirements in a form convenient to the local people (e.g. survey, meeting, leaflet, signboard etc.) and information on the main findings of environmental impacts and proposed mitigation measures must be provided in the local language understandable for the majority of the affected people. Records of feedback from public consultation should be attached to final draft ESMP while the main EMP should include a section summarizing public concerns and suggestions. The ESMP should clearly state that environmental concerns and suggestions for environmental improvement made by the public have been incorporated. It is required that ESMPs include a summary table to show the number of meetings, the place, the number of PAPs attended meetings.

The subproject's owner should confirm with the Bank that hard copies of draft ESMP (in Vietnamese) are disclosed at the subproject areas, at the PPMU office and Commune People Committee's office, and place accessible to the public and the time for such disclosure. The subproject owner also sends ESMP in English language to the Bank for disclosure at the Bank external website.

A3.4 Preparation of EIA/EPP per the GOV's EIA Regulations

In addition, the subproject is that funded within the framework of the project will be prepared with EAdocuments required by the Government of Vietnam. The details areas follows:

- Government's review and approval. If a subproject requires review and approval according to the GoV's EA regulation, the subproject owner will prepare and submit the EA report as required for review and secure the approval by relevant government authorities before subproject appraisal. The guidelines for appraisal and approval of an EIAs or EPPs are included in the respective government regulation (namely, Decree 18/2015/NĐ-CP dated 14 February 2015 regarding regulations on strategic environmental assessment, environmental impacts assessment and environmental protection plan, and Circular 27/2015/TT-BTNMT dated 29 May 2015 detailing some articles of Decree 18/2015/NĐ-CP). The approval decision will be provided to the

World Bank for information.

Annex 10: Environmental Codes of Practice (ECOP)

Note: This ECOP might be adjusted proportionate to environmental and social risks and impacts of an identified subproject in consultation with the Bank during project implementation.

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
Air pollution	- Minimizing dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house, or cyclone). - Minimizing dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content. - Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements. - Selectively removing potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition. - Managing emissions from mobile sources. - Avoiding open burning of solid.	- TCVN 6438-2005: Road vehicles - Maximum permitted emission limits of exhaust gas - Decision No. 35/2005/QD-BGTVT on inspection of quality, technical safety and environmental protection - QCVN 05: 2013/MONRE: *National technical regulation on ambient air quality* - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
Noise and vibration	- Planning activities in consultation with local communities so that activities with the greatest potential to generate noise are planned during periods of the day that will result in least disturbance. - Using noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities, and exhaust muffling devices for combustion engines. - Avoiding or minimizing project transportation through community areas.	- QCVN 26:2010/BTNMT: National technical regulation on noise - QCVN 27:2010/BTNMT: National technical regulation on vibration - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community
Soil erosion and Sedimentation	- Scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical. - Contouring and minimizing length and steepness of slopes. - Mulching to stabilize exposed areas. - Re-vegetating areas promptly. - Designing channels and ditches for post-construction flows. - Lining steep channel and slopes (e.g. use jute matting). - Reducing or preventing off-site sediment transport through use of settlement ponds, silt fences, and water treatment, and modifying or suspending activities during extreme rainfall and high winds to the extent practical.	- WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
Water pollution	- The Contractor must be responsible for compliance with the relevant Vietnamese legislation relevant to wastewater discharges into watercourses. - Portable or constructed toilets must be provided on site for construction workers. Wastewater from toilets as well as kitchens, showers, sinks, etc. shall be discharged into a conservancy tank for removal from the site or discharged into municipal sewerage systems; there should be no direct discharges to any waterbody. - Wastewater over standards set by relevant Vietnam technical standards/regulations must be collected in a conservancy tank and removed from site by licensed waste collectors. - Make appropriate arrangements for collecting, diverting or intercepting wastewater from worker camps to ensure minimal discharge or local clogging and flooding. - Segregating or diverting clean water runoff to prevent it mixing with water containing a high solids content, to minimize the volume of water to be treated prior to release. - Providing adequate drainage systems to minimize and control infiltration. - Before construction, all necessary wastewater disposal permits/licenses and/or wastewater disposal contract have been obtained. - At completion of construction works, wastewater collection tanks and septic tanks shall be safely disposed or effectively sealed off.	- QCVN 09-MT:2015/BTNMT: National technical regulation on groundwater quality - QCVN 14:2008/BTNMT: National technical regulation on domestic wastewater - QCVN 08-MT:2015/BTNMT – National technical regulation on surface water quality - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
Biodiversity	- The Contractor shall prepare a Clearance, Revegetation and Restoration Management Plan for prior approval by the Construction Engineer, following relevant regulations. The Clearance Plan shall be approved by Construction Supervision Consultant and followed strictly by contractor. Areas to be cleared should be minimized as much as possible. - Site clearance in a forested area is subject to permission from Department of Agriculture and Rural Development. - The Contractor shall remove topsoil from all areas where topsoil will be impacted on by rehabilitation activities, including temporary activities such as storage and stockpiling, etc; the stripped topsoil shall be stockpiled in areas agreed with the Construction Supervision Consultant for later use in re-vegetation and shall be adequately protected. - The application of chemicals for vegetation clearing is not permitted. - Prohibit cutting of any tree unless explicitly authorized in the vegetation clearing plan. - When needed, erect temporary protective fencing to efficiently protect the preserved trees before commencement of any works within the site. - No area of potential importance as an ecological resource should be disturbed unless there is prior authorization from CSC, who should consult with PPMU and the relevant local authorities. This could include areas of breeding or feeding of birds or animals, fish spawning areas, or any area that is protected as a green space. - The Contractor shall ensure that no hunting, trapping shooting, poisoning of fauna takes place.	- Law on Biodiversity No.20/2008/QH12	Contractor	PPMU, its CSC, local community

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
Stockpiles and Borrow pits	- Large-scale borrow pits or stockpiles will need site-specific measures that go beyond those in this ECOP. - All locations to be used must be previously identified in the approved construction specifications. - An open ditch shall be built around the stockpile site to intercept wastewater. - Stockpile topsoil when first opening a borrow pit and use it later to restore the area to near natural conditions. - If the need for new sites arises during construction, they must be pre-approved by the Construction Engineer. - If landowners are affected by use of their areas for stockpiles or borrow pits, they must be included in the subproject RAP. - If access roads are needed, they must have been considered in the environmental assessment.		Contractor	PPMU, its CSC, local community

Wastes	**I. General Wastes** **(a) Wastewater** - The Contractor shall be responsible for compliance with the relevant Vietnamese regulations on wastewater discharges into surroundings. - Consider hiring local workers to reduce wastewater generation on site. - Septic systems shall be provided for treatment and disposal of domestic sanitary sewage in areas with no sewerage collection networks. Septic systems should only be used for treatment of sanitary sewage. When septic systems are the selected form of wastewater disposal and treatment, they should be: • Properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface or groundwater. • Well maintained to allow effective operation. • Installed in areas with sufficient soil percolation for the design wastewater loading rate. • Installed in areas of stable soils that are nearly level, well drained, and permeable, with enough separation between the drain field and the groundwater table or other receiving waters. - Wastewater from washing vehicles and construction equipment shall be collected into a settling pond before discharged into local drainage system. - At completion of construction works, wastewater collection tanks and septic tanks shall be safely disposed of or effectively sealed off. **(b) Storm water** [22] - Storm water should be separated from process and sanitary wastewater streams in order to reduce the volume of wastewater to be treated prior to discharge.	- QCVN 14:2008/BTNMT: National technical regulation on domestic wastewater - QCVN 40: 2011/ BTNMT: National technical regulation on industrial wastewater - Decree No. 38/2015/NĐ-CP dated 24/04/2015 on waste and scrap management - Circular No. 36/2015/TT-BTNMT on management of hazardous wastes - Decision No. 59/2007/NĐ-CP on solid waste management - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

[22] Storm water includes any surface runoff and flows resulting from precipitation, drainage or other sources. Typically storm water runoff contains suspended sediments, metals, petroleum hydrocarbons, Polycyclic Aromatic Hydrocarbons (PAHs), coliform, etc. Rapid runoff, even of uncontaminated storm water, also degrades the quality of the receiving water by eroding stream beds and banks.

	- Surface runoff from process areas or potential sources of contamination should be prevented. - Where this approach is not practical, runoff from process and storage areas should be segregated from potentially less contaminated runoff. - Runoff from areas without potential sources of contamination should be minimized (e.g. by minimizing the area of impermeable surfaces) and the peak discharge rate should be reduced (e.g. by using vegetated swales and retention ponds). - Where stormwater treatment is deemed necessary to protect the quality of receiving water bodies, priority should be given to managing and treating the first flush of stormwater runoff where the majority of potential contaminants tend to be present. - When water quality criteria allow, stormwater should be managed as a resource, either for groundwater recharge or for meeting water needs at the facility. - Oil water separators and grease traps should be installed and maintained as appropriate at refueling facilities, workshops, parking areas, fuel storage and containment areas. - Sludge from stormwater catchments or collection and treatment systems may contain elevated levels of pollutants and should be disposed in compliance with local regulatory requirements, in the absence of which disposal has to be consistent with protection of public health and safety, and conservation and long term sustainability of water and land resources. **(c) Solid waste** - Before construction, a solid waste control procedure (storage, provision of bins, site clean-up schedule, bin clean-out schedule, etc.) shall be prepared by Contractors and it must be carefully followed during construction activities. - Before construction, all necessary waste disposal permits or licenses			

	shall be obtained. - Measures shall be taken to reduce the potential for litter and negligent behavior with regard to the disposal of all refuse. At all places of work, the Contractor shall provide litter bins, containers and refuse collection facilities. - Solid waste shall be temporarily stored on site in a designated area approved by the Construction Supervision Consultant and relevant local authorities prior to collection and disposal through a licensed waste collector. - Waste storage containers shall be covered, tip-proof, weatherproof and scavenger proof. - No burning, on-site burying or dumping of solid waste shall occur. - Recyclable materials such as wooden plates for trench works, steel, scaffolding material, site holding, packaging material, etc shall be collected and separated on-site from other waste sources for reuse, for use as fill, or for sale. - If not removed off site, solid waste or construction debris shall be disposed of only at sites identified and approved by the Construction Supervision Consultant and included in the solid waste plan. Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas, such as in areas of natural habitat or in watercourses. **II. Hazardous Wastes** **(a) Storage of hazardous wastes** Hazardous waste should be stored so as to prevent or control accidental releases to air, soil, and water resources in area location where: - Waste is stored in a manner that prevents the commingling or contact between incompatible wastes, and allows for inspection between containers to monitor leaks or spills. Examples include sufficient space between incompatibles or physical separation such as walls or containment curbs.			

	- Store in closed containers away from direct sunlight, wind and rain. - Storage should be on an impermeable surface that readily able to be cleaned, and that is appropriately bunded to contain any spills or leaks. The storage area should be covered to prevent rainwater from accumulating in the bunded area. - Secondary containment systems should be constructed with materials appropriate for the wastes being contained and adequate to prevent loss to the environment. - Secondary containment is included wherever liquid wastes are stored in volumes greater than 220 liters. The available volume of secondary containment should be at least 110 percent of the largest storage container, or 25 percent of the total storage capacity (whichever is greater), in that specific location. - Provide adequate ventilation where volatile wastes are stored. **(b) Hazardous Wastes Transportation** - On-site and Off-site transportation of waste should be conducted so as to prevent or minimize spills, releases, and exposures to employees and the public. - All waste containers designated for off-site shipment should be secured and labeled with the contents and associated hazards, be properly loaded on the transport vehicles before leaving the site, and be accompanied by a shipping paper (i.e., manifest) that describes the load and its associated hazards, consistent with the guidance. **(c) Disposal of hazardous wastes** - Chemical wastes of any kind shall be disposed of at an approved appropriate landfill site and in accordance with local legislative requirements. The Contractor shall obtain needed disposal certificates. - The removal of hazardous wastes shall be performed and disposed of by specially trained and certified workers.			

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
	- Used oil, lubricants, cleaning materials, etc. from the maintenance of vehicles and machinery shall be collected in holding tanks and removed from site by a specialized oil recycling company for disposal at an approved hazardous waste site. - Unused or rejected tar or bituminous products shall be returned to the supplier's production plant.			

Hazardous materials	**Hazardous Materials Transfer** - Use of dedicated fittings, pipes, and hoses specific to materials in tanks (e.g., all acids use one type of connection, all caustics use another), and maintaining procedures to prevent addition of hazardous materials to incorrect tanks. - Use of transfer equipment that is compatible and suitable for the characteristics of the materials transferred and designed to ensure safe transfer. - Regular inspection, maintenance and repair of fittings, pipes and hoses. - Provision of secondary containment, drip trays or other overflow and drip containment measures, for hazardous materials containers at connection points or other possible overflow points. **Overfill Protection** - Prepare written procedures for transfer operations that includes a checklist of measures to follow during filling operations and the use of filling operators trained in these procedures. - Installation of gauges on tanks to measure volume inside. - Use of dripless hose connections for vehicle tank and fixed connections with storage tanks. - Provision of automatic fill shutoff valves on storage tanks to prevent overfilling. - Use of a catch basin around the fill pipe to collect spills. - Use of piping connections with automatic overfill protection (float valve). - Pumping less volume than available capacity into the tank or vessel by ordering less material than its available capacity. - Provision of overfill or over pressure vents that allow controlled release to a capture point.	- WBG EHS Guidelines - Decree No. 38/2015/NĐ-CP dated 24/04/2015 on waste and scrap management - Circular No. 36/2015/TT-BTNMT on hazardous waste management	Contractor	PPMU, its CSC, local community

	Reaction, Fire and Explosion Prevention - Storage of incompatible materials (acids, bases, flammables, oxidizers, reactive chemicals) in separate areas, and with containment facilities separating material storage areas. - Provision of material-specific storage for extremely hazardous or reactive materials. - Use of flame arresting devices on vents from flammable storage containers. - Provision of grounding and lightning protection for tank farms, transfer stations, and other equipment that handles flammable materials. - Selection of materials of construction compatible with products stored for all parts of storage and delivery systems, and avoiding reuse of tanks for different products without checking material compatibility. - Storage of hazardous materials in an area of the facility separated from the main production works. Where proximity is unavoidable, physical separation should be provided using structures designed to prevent fire, explosion, spill, and other emergency situations from affecting facility operations. - Storage should be on an impermeable surface that readily able to be cleaned, and that is appropriately bunded to contain any spills or leaks. The storage area should be covered to prevent rainwater from accumulating in the bunded area. - Prohibition of all sources of ignition from areas near flammable storage tanks. **Secondary Containment (Liquids)** - Transfer of hazardous materials from vehicle tanks to storage in areas with surfaces sufficiently impervious to avoid loss to the environment and sloped to a collection or a containment structure			

	not connected to municipal wastewater/stormwater collection system. - Where it is not practical to provide permanent, dedicated containment structures for transfer operations, one or more alternative forms of spill containment should be provided, such as portable drain covers (which can be deployed for the duration of the operations), automatic shut-off valves on storm water basins, or shut off valves in drainage or sewer facilities, combined with oil-water separators. - Storage of drummed hazardous materials with a total volume equal or greater than 1,000 liters in areas with impervious surfaces that are sloped or bermed to contain a minimum of 25 percent of the total storage volume. - Provision of secondary containment for components (tanks, pipes) of the hazardous material storage system, to the extent feasible. - Conducting periodic (e.g. daily or weekly) reconciliation of tank contents, and inspection of visible portions of tanks and piping for leaks. - Use of double-walled, composite, or specially coated storage and piping systems particularly in the use of underground storage tanks (USTs) and underground piping. If double walled systems are used, they should provide a means of detecting leaks between the two walls. **Training - Employees should be provided training on Hazmat management. The training program should include:** - A list of employees to be trained. - Specific training objectives. - Mechanisms to achieve the objectives (i.e., hands-on workshops, videos, etc.). - The means to determine whether the training program is effective.			

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
	- Training procedures for new hires and refresher courses for existing employees. **Community Involvement and Awareness** - Availability of general information to the potentially affected community on the nature and extent of project operations, and the prevention and control measures in place to ensure no effects to human health. - The potential for off-site effects to human health or the environment following an accident at planned or existing hazardous installations. - Specific and timely information on appropriate behavior and safety measures to be adopted in the event of an accident including practice drills in locations with higher risks. - Access to information necessary to understand the nature of the possible effect of an accident and an opportunity to contribute effectively, as appropriate, to decisions concerning hazardous installations and the development of community emergency preparedness plans. - DONRE and DOH shall be promptly informed of any accidental spill or incident. - Prepare and initiate a remedial action following any spill or incident. In this case, the contractor shall provide a report explaining the reasons for the spill or incident, remedial action taken, consequences/damage from the spill, and proposed corrective actions.			

Traffic safety	- Contractor shall strictly comply with Law on Roadway Traffic - Adoption of best transport safety practices across all aspects of subproject operations with the goal of preventing traffic accidents and minimizing injuries suffered by subproject personnel and the public. Measures should include: • Emphasizing safety aspects among drivers. • Improving driving skills and requiring licensing of drivers. • Adopting limits for trip duration and arranging driver rosters to avoid overtiredness. • Avoiding dangerous routes and times of day to reduce the risk of accidents. • Use of speed control devices (governors) on trucks, and remote monitoring of driver actions. - Regular maintenance of vehicles and use of manufacturer approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. - Minimizing pedestrian interaction with construction vehicles. - Collaboration with local communities and responsible authorities to improve signage, visibility and overall safety of roads, particularly along stretches located near schools or other locations where children may be present. Collaborating with local communities on education about traffic and pedestrian safety (e.g. school education campaigns). - Coordination with emergency responders to ensure that appropriate first aid is provided in the event of accidents. - Using locally sourced materials, whenever possible, to minimize transport distances. Locating associated facilities such as worker camps close to subproject sites and arranging worker bus transport to minimizing external traffic.	- Law on traffic and transport No. 23/2008/QH12; - Decree 46/2016/ND-CP on administrative penalty for traffic safety violation - Circular No. 22/2010/TT-BXD on regulation on labour safety in construction - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
	- Employing safe traffic control measures, including road signs and flag persons to warn of dangerous conditions.			
Workers' camp	- The Contractor and worker camps will be constructed on the land temporarily acquired by the subproject. - The camps will be constructed far enough from the places to be used for stockpile of construction materials, fuel storage, garbage storage, wastewater drainage canal, sensitive sites such as school, hospital, church, pagoda, temple, and other dangerous areas such as landslide, land subsidence, and erosion. - The camps must be ensured with good environmental conditions such as ventilation, full sunlight, clean water, garbage collection, hygienic toilets, mosquito net, fire extinguishers, first-aid kits, and other health protection measures to all workers.	- Law on Labor No.10/2012/QH13	Contractor	PPMU, its CSC, local community

Chance Find Procedures	Where the risk and identification process determines that there is a chance of impacts to cultural heritage, the Contractor will retain competent professionals to assist in the identification and protection of cultural heritage. If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall: + Stop the construction activities in the area of the chance find; + Delineate the discovered site or area; + Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Department of Culture and Information takes over; + Notify the Construction Supervision Consultant who in turn will notify responsible local or national authorities in charge of the Cultural Property of Viet Nam (within 24 hours or less); + Relevant local or national authorities would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values; + Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage; + If the cultural sites and/or relics are of high value and site preservation is recommended by the professionals and required	- Law on cultural heritage No. 28/2001/QH10; - Amended and supplemented Law on cultural heritage No. 32/2009/QH12; - Amended and supplemented Decree No. 98/2010/ND-CP	Contractor	PPMU, its CSC, local community

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
	by the cultural relics authority, the subproject owner will need to make necessary design changes to accommodate the request and preserve the site; + Decisions concerning the management of the finding shall be communicated in writing by relevant authorities; and + Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the heritage.			

Occupational health and safety	**Over-exertion** - Training of workers in lifting and materials handling techniques in construction and decommissioning, including the placement of weight limits above which mechanical assists or two-person lifts are necessary. - Planning work site layout to minimize the need for manual transfer of heavy loads. - Selecting tools and designing work stations that reduce force requirements and holding times, and which promote improved postures, including, where applicable, user adjustable work stations. - Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks. **Slips and Falls** - Implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths. - Cleaning up excessive waste debris and liquid spills regularly. - Locating electrical cords and ropes in common areas and marked corridors. - Use of slip retardant footwear. **Work in Heights** - Training and use of temporary fall prevention devices, such as rails or other barriers able to support a weight of 200 pounds, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface. - Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 2,268 kg	- Directive No. 02 /2008/CT-BXD on labour safety and sanitation in construction agencies; - Circular No. 22/2010/TT-BXD on regulation on labour safety in construction - QCVN 18:2014/BXD: Technical regulation on safety in construction - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

	(also described in this section in Working at Heights above), as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. The tie in point of the fall arresting system should also be able to support 2,268 kg. - Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces. **Struck By Objects** - Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels. - Conducting sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable. - Maintaining clear traffic ways to avoid driving of heavy equipment over loose scrap. - Use of temporary fall protection measures in scaffolds and out edges of elevated work surfaces, such as hand rails and toe boards to prevent materials from being dislodged. - Evacuating work areas during blasting operations, and using blast mats or other means of deflection to minimize fly rock or ejection of demolition debris if work is conducted in proximity to people or structures. - Wearing appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes. **Moving Machinery** - Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes, establishment of speed limits, and on-site trained flag-people wearing high-visibility vests or outer			

	clothing covering to direct traffic. - Ensuring the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle. - Ensuring moving equipment is outfitted with audible back-up alarms. - Using inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations. **Dust** - Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements. - PPE, such as dusk masks, should be used where dust levels are excessive. **Confined Spaces and Excavations** - Controlling site-specific factors which may contribute to excavation slope instability including, for example, the use of excavation dewatering, side-walls support, and slope gradient adjustments that eliminate or minimize the risk of collapse, entrapment, or drowning. - Providing safe means of access and egress from excavations, such as graded slopes, graded access route, or stairs and ladders. - Avoiding the operation of combustion equipment for prolonged periods inside excavations areas where other workers are required to enter unless the area is actively ventilated. **Other Site Hazards** - Use of specially trained personnel to identify and remove waste materials from tanks, vessels, processing equipment or			

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
	contaminated land as a first step in decommissioning activities to allow for safe excavation, construction, dismantling or demolition. - Use of specially trained personnel to identify and selectively remove potentially hazardous materials in building elements prior to dismantling or demolition including, for example, insulation or structural elements containing asbestos and Polychlorinated Biphenyls (PCBs), electrical components containing mercury. - Use of waste-specific PPE based on the results of an occupational health and safety assessment, including respirators, clothing/protective suits, gloves and eye protection.			

Community's health and safety	**A. General Site Hazards** - Subproject should implement risk management strategies to protect the community from physical, chemical, or other hazards associated with sites under construction. - Restricting access to the site, through a combination of institutional and administrative controls, with a focus on high risk structures or areas depending on site-specific situations, including fencing, signage, and communication of risks to the local community. - Removing hazardous conditions on construction sites that cannot be controlled affectively with site access restrictions, such as covering openings to small confined spaces, ensuring means of escape for larger openings such as trenches or excavations, or locked storage of hazardous materials. **B. Disease Prevention** *Communicable Diseases* - Providing surveillance and active screening and treatment of workers. - Preventing illness among workers in local communities by: • Undertaking health awareness and education initiatives, for example, by implementing an information strategy to reinforce person-to-person counseling addressing systemic factors that can influence individual behavior as well as promoting individual protection, and protecting others from infection, by encouraging condom use. • Training health workers in disease treatment. • Conducting immunization programs for workers in local communities to improve health and guard against infection. • Providing health services. • Providing treatment through standard case management in on-	- Law on Roadway Traffic No. 23/2008/QH12 - Directive No. 02 /2008/CT-BXD on labour safety and sanitation in construction agencies; - Circular No. 22/2010/TT-BXD on regulation on labour safety in construction - QCVN 18:2014/BXD: Technical regulation on safety in construction - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

	site or community health care facilities. Ensuring ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers. • Promoting collaboration with local authorities to enhance access of workers families and the community to public health services and promote immunization. *Vector-Born Diseases* - Prevention of larval and adult propagation through sanitary improvements and elimination of breeding habitats close to human settlements. - Elimination of unusable impounded water. - Increase in water velocity in natural and artificial channels. - Considering the application of residual insecticide to dormitory walls. - Implementation of integrated vector control programs. - Promoting use of repellents, clothing, netting, and other barriers to prevent insect bites. - Use of chemoprophylaxis drugs by non-immune workers and collaborating with public health officials to help eradicate disease reservoirs. - Monitoring and treatment of circulating and migrating populations to prevent disease reservoir spread. - Collaboration and exchange of in-kind services with other control programs in the subproject area to maximize beneficial effects. - Educating subproject personnel and area residents on risks, prevention, and available treatment. - Monitoring communities during high-risk seasons to detect and treat cases.			

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
	- Distributing appropriate education materials. - Following safety guidelines for the storage, transport, and distribution of pesticides to minimize the potential for misuse, spills, and accidental human exposure.			

Communication with local communities	- Maintain open communications with the local government and concerned communities; the contractor shall coordinate with local authorities (leaders of local wards or communes, leader of villages) for agreed schedules of construction activities at areas nearby sensitive places or at sensitive times (e.g., religious festival days). - Copies in Vietnamese of this ECOP and of other relevant environmental safeguard documents shall be made available to local communities and to workers at the site. - Reduced playground space, loss of playing fields and car parking: The loss of amenities during the construction process is often an unavoidable source of inconvenience to users in sensitive areas. However, early consultation with those affected, provides the opportunity to investigate and implement alternatives. - Disseminate subproject information to affected parties (for example local authority, enterprises and affected households, etc) through community meetings before construction commencement. - Provide a community relations contact from whom interested parties can receive information on site activities, subproject status and subproject implementation results. - Provide all information, especially technical findings, in a language that is understandable to the general public and in a form of useful to interested citizens and elected officials through the preparation of fact sheets and news release, when major findings become available during subproject implementation phase. - Monitor community concerns and information requirements as the subproject progresses. - Respond to telephone inquiries and written correspondence in a timely and accurate manner. - Inform local residents about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate.	- Decree No. 167/2013/ND-CP on administrative penalty for violations related to social security, order and safety issues - WBG EHS Guidelines	Contractor	PPMU, its CSC, local community

Environmental and social issues	Mitigation measures	Applicable Standards, Regulations and Guidelines	Responsibility	
			Implementation	Supervision
	- Limit construction activities at night. When necessary ensure that night work is carefully scheduled and the community is properly informed so they can take necessary measures. - At least 15 days in advance of any service interruption (including water and electricity supply, telephone service, bus service, etc.) the community must be advised through postings at the subproject site, at bus stops, and in affected homes/businesses. - Provide technical documents and drawings to local authority and community. - Notification boards shall be erected at all construction sites providing information about the subproject, as well as contact information about the site managers, environmental staff, health and safety staff, telephone numbers and other contact information so that any affected people can have the channel to voice their concerns and suggestions - If a local community may be at risk from a potential emergency arising at the construction site, the contractor should implement communication measures to alert the community, such as: + Audible alarms, such as fire bells or sirens. + Fan out telephone call lists. + Vehicle mounted speakers. + Communicating details of the nature of the emergency. + Communicating protection options (evacuation, quarantine). + Providing advise on selecting an appropriate protection option.			

Environmental quality monitoring

In case an environmental quality monitoring is required during construction, the followings are implemented.

IMPACT	PARAMETERS TO BE MONITORED	APPLICABLE NATIONAL STANDARD NO.	LOCATION	FREQUENCY
Dust emission	TSP	QCVN 05:2013/BTNMT – National technical regulation on ambient air quality	Vicinity of clearing works, materials stockpile, and/or community areas	In windy conditions or when traffic is heavy
Noise generation	Noise level (L_{eq})	QCVN 26:2010/BTNMT – National technical regulation on noise	In the vicinity of sensitive receivers such as habitation, church, school, hospital…	In response to complaints
Surface water quality degradation	pH, TSS, BOD, DO, oil &grease, Coliform and E.coli	QCVN 08-MT:2015/BTNMT – National technical regulation on surface water quality	Nearby receiving waters	After heavy rains and/or once every three or six months

Annex 11. Template of Grievance Registration Form

This annex applies to all subprojects to be financed by the project. The subproject owner (PPMU) will be responsible for implementation of the GRM process (see ESMF main text Section XI) and complete the GRM registration form and report the results as part of the safeguard monitoring report to be submitted to WB. It is expected that a Community Development Committee (CDC) is established to take the lead in responding to the GRM process. Training will be provided to responsible staff.

Grievance Number: _____ LOCATION: District: _____ Village: _____ CDC Name: _____ NAME OF COMPLAINANT: _____ ADDRESS:_____Telephone #: _____ DATE RECEIVED:
Classification of the grievance (Check boxes) ☐ Water Use ☐ Dispute with contractors ☐CDC formation ☐ Inter-community dispute ☐Land acquisition and Compensation ☐ Technical/operational coordination ☐ Financial ☐ Process delays ☐ Water Quality ☐ Noise ☐ Sanitation ☐ Water Use ☐ Other (specify)_____
Brief description of the grievance:
What is the perceived cause?
Suggested action (by complainant) to address grievance:

Annex 12. Suggested Content of an Environmental Monitoring Report for the Project[23]

Introduction

- Purpose of the report
- Report preparation
- Brief introduction to the project
- Brief project progress

Environmental Safeguards Performance

- WB safeguard policies applicable to the project

List all WB environmental safeguard policies applicable to the project.

- PPMU performance

Assess PPMU performance in accordance with institutional responsibilities, which are set out in the ESMF or ESMP.

- CSC performance

Assess CSC performance in accordance with the approved TOR and the provisions in the signed contract.

- Contractor performance

Assess the contractor's compliance with ESHS requirements set out in the signed contract and C-ESMP. Assessment should be based on reviewing reports submitted from PPMUs, consultations with local communities and authorities and regular field visits.

- Community participation

Assess the community participation during implementation, and their contribution to supervision and monitoring of environmental safeguards performance of PPMU and contractors.

- GRM operation

Assess the effectiveness of the operation of the designed GRM. Identify hindrance in operation of the designed GRM that need to be tackled based on consultation with locally-affected people, and local NGOs and authorities, and workers.

- Applied mitigation measures corresponding to each safeguard policy triggered

Assess the effectiveness of each mitigation measure applied to minimize and mitigate environmental and social risks and impacts associate with each environmental safeguards policy triggered and identify hindrance that needs to be handled.

- Ambient environmental quality

The ambient environmental quality during construction and decommissioning should be monitored and compared with national standards or WBG EHS guidelines to evaluate the effectiveness of applying mitigation measures and propose additional measures as necessary.

- Incidents or accidents

[23] Prepared by MOH PMU

Describe any incidents or accidents if any that happen during implemetation. Also, analyse consequences of incidents or accident and remedies to be taken.

- Corrective actions

Describe any actions to be corrected if any during implementation that aims to improve environmental safeguards performance of the project.

- Recommendations and timeframe

Describe recommendations to improve environmental safeguards performance and specify the timeframe to successfully implement these recommendations.