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### ABBREVIATIONS

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<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>DFAT</td>
<td>Department of Foreign Affairs and Trade of Australia</td>
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<td>DFID</td>
<td>UK Department for International Development</td>
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<tr>
<td>DONRE</td>
<td>Department of Natural Resources and Environment</td>
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<tr>
<td>DPC</td>
<td>District People’s Committee</td>
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<tr>
<td>EA</td>
<td>Environmental Assessment</td>
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<td>ECOP</td>
<td>Environmental Codes of Practice</td>
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<td>EHS</td>
<td>Environment, Health and Safety</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>EMP</td>
<td>Environmental Management Plan</td>
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<td>EPP</td>
<td>Environmental Protection Plan</td>
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<td>ESMF</td>
<td>Environmental and Social Management Framework</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>GHG</td>
<td>Greenhouse Gas Emission</td>
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<td>GoV</td>
<td>Government of Vietnam</td>
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<td>ISM</td>
<td>Implemental Support Mission</td>
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<td>MOST</td>
<td>Ministry of Science and Technology</td>
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<td>NATEC</td>
<td>National Agency for Technology Entrepreneurship and Commercialization</td>
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<td>NGOs</td>
<td>Non-governmental Organizations</td>
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<td>ODA</td>
<td>Official Development Assistance</td>
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<td>PMU</td>
<td>Project Management Unit</td>
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<td>PoCC</td>
<td>Proof of Concept Contest</td>
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<td>PPC</td>
<td>Provincial People’s Committee</td>
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<td>PPP</td>
<td>Public-Private Partnership</td>
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<td>S&amp;T</td>
<td>Science and Technology</td>
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<td>SME</td>
<td>Small and Medium Enterprise</td>
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<tr>
<td>ToR</td>
<td>Terms of Reference</td>
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<td>VCIC</td>
<td>Vietnam Climate Innovation Center</td>
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<td>WB</td>
<td>World Bank</td>
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<td>WHO</td>
<td>World Health Organization</td>
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I. Introduction

This ESMF was prepared by Ministry of Science and Technology (MOST) to satisfy the World Bank safeguard policy requirements. This is an instrument that examines the issues and impacts associated when a project consists of a program and/or series of sub-projects, and the impacts cannot be determined until the program or 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. The ESMF will be incorporated into the Project Implementation Manual to ensure that environmental and social issues will be considered together with other requirements during project implementation.

II. Project Description

2.1 Project objectives

The development objective is to support entrepreneurs and small and medium enterprises (SMEs) involved in developing local solutions to climate change and increase business activities in the climate technology sector through the establishment of climate innovation center.

2.2 Project Components

2.2.1 Component 1: Establishment of VCIC and its operations and support for policy development

- **Sub-component 1.1: Development of VCIC and operations**
  - Activity 1.1: Develop and coordinate VCIC operation planning to implement component II and III and promote cooperation with private sector on climate change innovation (PPP model);
  - Activity 1.2: Provide finance to rent space and purchase equipment of VCIC, costs of printing and publishing documents;
  - Activity 1.3: Preparing conditions for establishment and operation of Climate incubation and innovation fund in the future
  - Activity 1.4: Promoting cooperation between VCIC and funds of Ministry of Science and Technology;

- **Sub-component 1.2: Establishment of Project Management Unit and operations**
  - Activity 1.5: Set up Project Management Unit team and manage the project in accordance with current regulations, after VCIC is put into operation, focusing on supervision monitoring and coordination between VCIC with organizations under Ministry of Science and Technology;

- **Sub-component 1.3: Support policy development in clean-tech innovation**
  - Activity 1.6: Encouraging dialogue between government and private sector to study, pilot and develop a policy framework to support private investment and develop climate associations;
  - Activity 1.7: Collect feedback and lessons learnt from the deployment and implementation of VCIC to propose policies in supporting development of
climate innovation.

2.2.2 Component 2: Services to cleantech entrepreneurs including POC grants

- **Sub-component 2.1:** Pre-incubation of climate innovation technologies and enterprises
  - Activity 2.1: Searching, selecting and supporting incubation for organizations and individuals with good ideas about climate innovation through proof of concept competitions\(^1\);
  - Activity 2.2: Connecting and guiding organizations and individuals with good ideas about climate change climate to participate in global PoCC to find opportunities to access investors around the world
  - Activity 2.3: Organizing workshops, forums to introduce, connect organizations and individuals with feasible, innovative ideas about climate technologies with investors, authority of government to solicit funding for incubation.

- **Sub-component 2.2:** Incubation of climate innovation technologies and enterprises
  - Activity 2.4: Organizing training courses and providing professional services for start-up businesses at early stage to develop and realize ideas, as well as create products with high potential commercialized on market
  - Activity 2.5: Supporting entrepreneurs to connect with experts, research facilities to research and develop products;
  - Activity 2.6: Connecting startup businesses with angel investors, business consultant at national, regional and global level
  - Activity 2.7: Training for business start-ups in accordance with the financial investment of VCIC business planning, financial management, business strategy, …
  - Activity 2.8: Organizing and promoting investment between VCIC companies and financial experts, the State Development Bank and Vietnamese overseas to enhance capacity.

- **Sub-component 2.3:** Commercialization support
  - Activity 2.9: Perform market surveys, analysis reports and other contents related to opportunities in climate innovation technology;
  - Activity 2.10: Connect enterprises with the market based on the understanding on location, channels, and competitors; find the best way to help enterprises connect to the global market;
  - Activity 2.11: Support enterprises to develop their brand names and participate into the technological exchange;
  - Activity 2.12: Support the product promotion of the VCIC enterprises through VCIC's website and other social PR activities.

- **Sub-component 2.4:** Proof of Concept Grants to the enterprises

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\(^{1}\) Organizations and individuals may be selected through PoCC and other ways.
Activity 2.13: Provide Grant for passed proposals
Activity 2.14: One on one coaching, Training and consultancy services.

2.2.3 Component 3: E-portal and services to develop business in climate innovation technology

Activity 3.1: Create a database on technology, enterprises and expert working in the field of climate change in Vietnam;
Activity 3.2: Develop an e-portal;
Activity 3.3: Disseminate, explore and efficiently use the database on technology to support the activities on climate innovation.

2.3 The project implementation status, and additional activities and component

2.3.1 Component 1

This component focuses on setting up and building capacity for VCIC to ensure it is able to provide effective climate technology innovation, incubation, and commercialization services to entrepreneurs and businesses. Main activities include:

1. Providing support for the establishment and operation of VCIC; (completed)
2. Providing support for the operation of the Project Management Unit; (completed)
3. Providing support for policy development in climate technology innovation activities. (ongoing)

Ongoing activities

The Center has met the overall targets set under this component, including the establishment of the Center, its full operations and hiring staff complement. The WB team is continuing to provide capacity building support to the VCIC team in delivery of pre-incubation and incubations services to companies, through international experts aimed at developing standard processes and curriculum for pre-incubation and incubation processes, which complement the existing ones on the PoC process.

Proposed Activities

VCIC staff have expressed the need for customized training that would enable them to build expertise in the new areas proposed under the new funding and would allow them to best deliver. The Center will be providing the World Bank with a learning plan on the training needs based on staff competencies and how these will be procured. Examples of this include: training on providing technology transfer services to companies in the solar and water sectors, participating in relevant international training, etc. This training will be complemented by the ongoing capacity building provided by the World Bank through international experts.

2.3.2 Component 2

This component focuses on delivering climate technology innovation, incubation, and commercialization services to entrepreneurs and businesses. Main activities include:

Completed and ongoing activities:

1. Providing support for the pre-incubation of climate technology businesses; (pre-incubation training completed, other trainings planned)
2. Providing support for the incubation of climate technology businesses; (ongoing)
3. Providing support for the commercialization of climate technology and market development support activities; *(ongoing)*

4. Providing sub-grants to enterprises. *(17 companies awarded grants under PoC1, 17 companies awarded grants under PoC2).*

**Proposed Activities:** Additional activities on gender equal access to business and incubation service

In line with DFAT’s priority to support Vietnamese female entrepreneurs, VCIC plans to undertake a set of gender-specific activities aimed at supporting female entrepreneurs operating in the climate technology space. Specifically, VCIC would:

- Adopt *infoDev*s tested Women Innovation Acceleration Network (WINC) program\(^2\), which has been successfully implemented in the Caribbean region, and deliver it in the Vietnamese context. VCIC would adopt this tested methodology, customize it to the Vietnamese context, and deliver it to local female entrepreneurs. The program builds on a Train-the-Trainer methodology, through which local female entrepreneurs are selected, trained, receive a certification, and in turn proceed at training other entrepreneurs. The program is delivered through a combination of online webinars, which will be offered through VCIC’s e-portal, and in-person meetings. These activities are complementary to existing gender programs, such as Lean In Vietnam, Australia’s Investing in Women program and IFC gender programming. In assisting with its implementation, VCIC has already identified We Create Vietnam and Vietnam’s Women-Led Coalition that are already providing grant funding to female entrepreneurs.

- Conduct a 3\(^{rd}\) PoC competition focused on supporting female-led businesses. VCIC has built considerable expertise in running PoC Competitions and in supporting local entrepreneurs through a combination of funding and technical services. For this reason, VCIC can replicate the successful competitions in hopes of attracting and awarding more women entrepreneurs.

### 2.3.3 Component 3

This component focuses on providing support for the set up and utilization of the electronic infrastructure to provide, share and exchange knowledge, experiences, and practices around climate technology.

**Ongoing activities**

The e-portal has always been envisaged as the tool through which VCIC would be connecting entrepreneurs with external investors, markets and international experts. In the context of the Center’s sustainability, it has also been envisaged that some of its services (e.g. matchmaking) would be offered for a fee, hence generating revenue for the Center. An RFP to select the firm to develop the e-portal has been launched. VCIC is now in the process of selecting the firm to carry out this assignment.

**Proposed activities**

As the e-portal is intended as one of the tools to generate revenue for the Center, some of the proposed activities under the new funding are expected to be carried out leveraging the e-portal. This may include among others: i) matchmaking of entrepreneurs with international companies, ii) webinars for female entrepreneurs, iii) database of international companies and experts, and more.

\(^{2}\)\[http://www.infodev.org/press-releases/caribbean-women-entrepreneurs\]
2.3.4 Component 4: Market Connect and Technology Transfer activities (new component)

Based on the successful pilots conducted by infoDev’s Climate Technology Program in South Africa, Ethiopia and Kenya, VCIC plans to broaden its service offering to include Market Connect and Technology Transfer activities. These activities will be offered on a fee basis in order to generate revenue for the Center.

Among the Market Connect activities, VCIC will offer its clients a suite of services – from market analysis, to international markets survey and facilitation – aimed at supporting efforts to bring their products into a new market. Existing VCIC PoC clients have identified this as one of the main areas that they would like to receive support from the Center, given several of them are already at an expansion stage.

The activities proposed under Technology Transfer aim to address a pressing demand for bringing tested technologies in the areas of renewable energy and water management, into the Vietnamese market that can best address the climate change challenges faced by the country. In implementing these activities, VCIC will leverage the partnerships established with leading international organizations in these sectors such as Dunatec, Solveigh on energy solutions; and the Australian Water Association (AWA) on water management.

**Proposed activities**

- Organize regular exchange activities (ie. an annual VCIC tech forum) that will provide the opportunity for international companies, tech providers, and local Vietnamese companies to interact, display products/solutions and network;
- Facilitate matchmaking between local and international companies using VCIC’s e-portal;
- Identify, through market analysis, technologies that are absent from the Vietnamese market, in the areas of renewable energy and water, and where these could be procured;
- Support companies to acquire needed technologies and provide seed funding to entrepreneurs to support their efforts in technology adoption (i.e. TA vouchers to procure selected services).

2.4 Project management

**Name of Project:** VIETNAM CLIMATE INNOVATION CENTRE (VCIC) PROJECT

**Name of Donor:** The World Bank

**Project Management Agency:** Ministry of Science and Technology (MOST)

**Project Implementing Agency:** National Agency for Technology Entrepreneurship and Commercialization (NATEC)

**Address:** No. 39, Tran Hung Dao Street, Hoan Kiem District, Hanoi

**Telephone number:** +84-39454957. Fax: 04.39440146. Website: ttdn.most.gov.vn

**Expected implementation time:** 5 years (2015-2019) with 02 phases

2.5 Organizational chart of project management
2.5.1 Responsibility of MOST

MOST is the governing body responsible for the following activities:

- Decide on the organization of program/project management;
- Approve the Project Document after the Prime Minister approves the project list;
- Approve the master plan for program/project implementation; review and approve the annual fund allocation plan in the program/project;
- Execute bidding under the provisions of existing laws on procurement;
- Monitor and evaluate the progress, assure the program/project implementation to follow the planned schedule and quality, and achieve objectives;
- Be responsible for loss, waste, corruption and irregularities in the management and use of ODA resources under their jurisdiction; and
- Perform other duties and powers as prescribed by law, international treaties and the ODA project.

2.5.2 Responsibility of NATEC

NATEC is the project owner, having the following tasks and powers in project management:
• Organize the project management and implementation based on decisions from the management agency;
• Responsible for the effective management and use of project funds from preparation and implementation till operation;
• Prepare and submit to the management agency approving the project document, the overall plan of project implementation; Approve annual project plans as basis for the approval of annual budget allocation by the management agency;
• Develop quarterly action plans serving the administration, monitoring and evaluation of the project;
• Appraise and approve the technical design, total cost estimates and cost estimates of project structures (for investment projects in construction);
• Implement the procurement under the provisions of existing laws on procurement;
• Negotiate, sign and monitor the implementation of contracts and handle contract breaches;
• Monitor and evaluate the project in order to ensure the targeted implementation schedule, quality and achieve objectives;
• Take responsibility for loss, waste, corruption and irregularities under their authority in the project organization, management and implementation causing economic, social, environmental damages and affecting the project overall objectives and effectiveness;
• For project activities subject to on-lending, the project owner shall be responsible for repaying fully and timely the loans under the agreed conditions; and
• The duties and powers as prescribed by law, specific international agreements on ODA for the project.

2.5.3 Responsibility of Steering Committee

The Steering Committee plays an important role in directing and supervising the project. It will make necessary decisions and direct project implementation including policy direction, approval of overall work plan, annual work plan and project budget adjustment.

The Steering Committee plays an important role in directing and supervising the project. It will make necessary decisions and direct project implementation including policy direction, approval of overall work plan, annual work plan and project budget adjustment.

The committee members include leaders of MOST (Chairman), Ministry of Finance (MOF), representatives from WB, DFAT, DFID, and National Project Director (Vice Chairman). Representatives of business associations may be invited to participate on theme basis. SC holds annual meetings and unscheduled meetings when necessary. A MOST leader and a WB representative are two main members, who have the right to make decisions when necessary.

The Committee shall meet at least once a year to: (i) provide strategic direction for VCIC; (ii) approve annual work plans and financial plans for VCIC; and (iii) review periodically the overall progress of activities carried out by VCIC.

The committee shall direct the project owner and project management in coordination with the relevant programs, projects and funds supporting science and technology business those run by the ministries: Planning and Investment, Natural Resources and Environment, Industry and
Trade, Agriculture and Rural Development and local authorities to exchange information, avoid duplication and promote efficiency.

2.5.4 Responsibility of PMU

The PMU has the following specific tasks:

- Support the project owner on overall planning and detailed annual plans; project preparation and implementation;
- Support the project owner in procurement and contract management; in disbursement, financial management and project asset management;
- Monitor and evaluate the project implementation;
- Prepare for the project owner to accept and handover the project outputs after completion; complete auditing and transferring project assets; develop project completion report and project finalization report; and
- Perform other duties within the project framework assigned by the project owner.

2.5.5 Responsibility of VCIC

Specific tasks of VCIC are as follows:

- Support the rapid growth of climate projects and business capacity by providing a comprehensive set of business development services, consultancy and training programs;
- Organizing the contest of ideas to choose the most promising companies for awarding funds from VCIC project;
- Develop a number of available high-impact climate solutions by supporting localization, commercialization and technology transfer through innovation funding, partnerships between industries and fund providers.
- Identify and develop connections between domestic and international markets for new climate solutions through the provision of information by sectors, support policy shift and create linkages with regional and international markets.

VCIC is responsible for managing and reporting to management board on:

- Activities in Components II and III;
- Expenditures for activities related to incubation, technology commercialization, business promotion and market development;
- Income from invested businesses who develop through steps and gain positive results will be used to repay the fund;
- Income from service provision in VCIC; and
- Targeted contribution and support from other partners (if any).
Figure 2: Vietnam Location in World Map
III. Policy, Legal, and Administrative Framework

3.1 Applicable National Laws and Regulations

**Laws**

- Environment Protection Law No. 55/2014/QH13 passed by the National Assembly on June 23, 2014;
- The Law on Water Resources No. 17/2012/QH13 passed by the National Assembly on June 21, 2012;
- The Law on Traffic and Transportation No. 23/2008/QH12 passed by the National Assembly on November 13, 2008;
- The Law on Construction No. 50/2014/QH13 passed by the National Assembly on June 18, 2014;
- Law on Cultural Heritage (2001) passed by the National Assembly on June 29, 2001;
- Law on Cultural Heritage (2009) passed by the National Assembly on June 18, 2009 on adjustment and addition to some articles of Law on Cultural Heritage 2001;
- Law on Plant Protection and Quarantine No. 41/2013/QH13 passed by the National Assembly on November 25, 2013; and
- Law on energy-saving and efficient use No.50/2010/QH12 passed by the National Assembly on June 17, 2010
- Law on Science and Technology No. 29/2013/QH13 passed by the National Assembly on June 18, 2013
- Law on Technology Transfer No. 07/2017/QH14 passed by the National Assembly on June 19, 2017
- Law on Complaint No.02/2011/QH13 passed by the National Assembly on November 11, 2011
- Other relevant laws

**Decrees and Circulars**

- Decree No. 18/2015/ND-CP dated 14 February 2015 on environmental protection planning, strategic environmental assessment, environmental impacts assessment and environmental protection plan;
- Decree No. 116/2014/ND-CP dated 4 December 2014 on stipulating detail and guidance on executing some articles of Law on Plant Protection and Quarantine;
- Decree No. 73/2010/ND-CP on administrative penalization security and society issues;
- Decree No. 59/2007/ND-CP on management of solid waste;
- Decree of Government No. 201/2013/ND-CP on stipulating detail and guidance on executing some articles of Law on Water Resources;
- Decree No. 1338/2007/ND-CP on technical guidelines for construction within weak foundation area;
- Decree No.08/2014/ND-CP dated 27 January 2014 on stipulating detail and guidance on executing some articles of Law on Science and Technology;
• Decree No.76/2018/ND-CP dated 15 May 2018 on stipulating detail and guidance on executing some articles of Law on Technology Transfer;
• Decree No. 22/2010/TT-BXD on regulation of construction safety;
• Circular No. 27/2015/TT-BTNMT dated 29 May 2015 on strategic environmental assessment, environmental impacts assessment and environmental protection plan;
• Circular No.12/2006/TT-BTNMT on Regulations on Companies engaging in Hazardous Waste Generation, Transportation and Disposal;
• Circular No.12/2011/TT-BTNMT on Hazardous waste management;
• Circular No.02/2005/TT-BTNMT on guiding the implementation of the Government Decree 149/2004/ND-CP on the permits for water resource exploration, exploitation and use, or for discharge of wastewater into water source;
• Circular No. 21/2013/TT-BNNPTNT dated 17 April 2013 on the list of pesticides permitted, limited and banned;
• Decision 35/2010/QD-UBND on the permits for water resource exploration, exploitation and use, or for discharge of wastewater into water source within the area of Hanoi;
• Decision 2068/QD-TTg dated 25 November 2015 on approval of the Vietnam strategy for renewable energy development towards 2030, vision 2050
• Decision No.23/2006/QD-BTNMT on the List of Hazardous Waste;
• Decision No. 3733/2002/QD-BYT on application of 21 standards on health and safety;
• Instruction No. 02 /2008/CT-BXD on safety and sanitation issues in construction agencies; and
• Other relevant decrees and circulars

National Technical Regulations and Standards
• QCVN 03: 2008/BTNMT: National technical regulation on the allowable limits of heavy metals in the soils;
• TCVN 6774:2000 – water quality – freshwater quality guidelines for protection of aquatic life;
• QCVN 05:2013/BTNMT-National technical regulations on ambient air quality;
• QCVN 26:2010/BTNMT – National Technical Regulation on noise;
• QCVN 27:2010/BTNMT – National Technical Regulation on vibration;
• QCVN 07: 2009/BTNMT: National technical regulation on hazardous waste thresholds;
• QCVN 08-MT: 2015/BTNMT: National technical regulation on quality of surface water;
• QCVN09-MT:2015/BTNMT: National technical regulation on quality of groundwater;
• QCVN 14: 2008/BTNMT: National technical regulation on domestic wastewater;
• TCVN 5308-9: Technical regulation on safety in construction;
• TCVN 7222:2002: General requirements on waste water treatment plants;
• TCVN 4447:1987: Earth works-Codes for construction; and
• Other relevant current national standards and technical regulations

3.2 World Bank Safeguard Policies Triggered

• **OP 4.01: Environmental Assessment**

The objectives of this policy are to ensure that Bank-financed projects are environmentally sound and sustainable, and improve decision-making by promoting integration of environmental and social criteria into project decision-making process. Environmental assessment (EA) takes into account natural environment; human health, safety; social aspects; physical cultural resources; trans-boundary and global aspects; overall legal framework, obligations under relevant international treaties and institutional capacities. EA considers natural and social aspects in an integrated way. It also takes into account the variations in project and country conditions; the findings of country environmental studies; national environmental action plans; the country's overall policy framework, national legislation, and institutional capabilities related to the environment and social aspects; and obligations of the country, pertaining to project activities, under relevant international environmental treaties and agreements. The Bank does not finance project activities that would contravene such country obligations, as identified during the EA. EA is initiated as early as possible in project processing and is integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project. This policy is referred as an “umbrella” safeguards policy.

OP 4.01 is triggered as the project is anticipated to cause adverse environmental and social impacts associated with activities of proposed subprojects supported under the project during project implementation. Thus, the Bank requires environmental assessment (EA) of this project proposed for Bank financing to help ensure that the project is environmentally, sound and sustainable, and thus to improve decision making. An ESMF is required to address project’s potential environmental and social impacts as the project consists of a series of subprojects that subproject details are identified during project implementation.

• **OP 4.09: Pest Management**

The objective of this policy is to mitigate and manage environmental and health risks associated with use of pesticides, promote and support safe, effective and environmentally sound pest management. Procurement of any pesticide in a Bank-financed project is contingent on an assessment of the nature and degree of associated risks, taking into account the proposed use and the intended users. In assisting borrowers to manage pests that affect either agriculture or public health, the Bank supports a strategy that promotes the use of biological or environmental control methods and reduces reliance on synthetic chemical pesticides. In the Bank-financed projects, the Borrower addresses pest management in the context of the project’s environmental assessment. In appraising a project that will involve pest management, the Bank assesses the capacity of the country’s regulatory framework and institutions to promote safe, effective and environmentally sound pest management. The Bank uses various means to assess pest management in the country and support integrated pest management (IPM) and the safe use of agricultural pesticides: economic and sector work, sectoral or project-specific environmental assessments, participatory IPM assessments, and investment projects and components aimed specifically at supporting the adoption and use of IPM. In Bank-financed agriculture

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3 For more details about WB guidelines and Policies, please visit Bank website or Annex 2 of this ESMF:
operations, pest populations are normally controlled through IPM approaches, such as biological control, cultural practices, and the development and use of crop varieties that are resistant or tolerant to the pest. The Bank may finance the purchase of pesticides when their use is justified under an IPM approach.

The project will not finance procurement of any pesticides. However, this policy is triggered as proposed subprojects are anticipated that may involve use of small amount of pesticides for agricultural research purposes. Thus, national guidelines on sustainable use of pesticides will apply to such proposed subprojects. Also, it is noted that the Bank does not finance formulated products that fall in WHO classes IA and IB, or formulations of products in Class II, if (a) the country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.

3.3 Gap analysis

There are a few differences between the GoV and WB on EA process.

**Table 1. The differences between the GOV’s regulations and WB’s safeguard policies**

<table>
<thead>
<tr>
<th></th>
<th>World Bank</th>
<th>GoV</th>
</tr>
</thead>
</table>
| **Screening**        | Screening process is carried out to determine the appropriate extent and type of EA. The Bank classifies the proposed project into one of four categories depending upon the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.  
|                      | - Category A: A full EIA is required  
|                      | - Category B: The scope of EA is narrower than that of Category A. An EMP and/or ECOP is required.  
|                      | - Category C: Beyond screening, no further EA action is required.           | Screening process is in conformity to Decree No.18/2015/ND-CP. The GoV classifies proposed projects into two categories depending upon the scale and location of project.  
|                      |                                                                          | - Projects listed in Annex II and III of Decree 18/2015 require full Environmental Impact Assessment (EIA)  
|                      |                                                                          | - Projects not listed in Annex II and III of Decree 18/2015 require Environmental Protection Plan (EPP) |
| **Responsibility for screening** | World Bank                                                               | Project Proponent                                                   |
|                      |                                                                          |                                                                     |
| **Content of EA report for Category A Project** | Analysis of Alternatives: Systematically compares feasible alternatives to the proposed project site, technology, design, and operation--including the "without project” situation--in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring | No analysis of alternatives is required in the EIA report. |
For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

| Public consultation | For all Category A and B projects proposed for financing, during the EA process, the borrower consults project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and takes their views into account. The borrower initiates such consultations as early as possible. For Category A projects, the borrower consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference 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 necessary to address EA-related issues that affect them. |
| Disclosure | Once the borrower officially transmits the Category A EA report to the Bank, the Bank distributes the summary (in English) to the executive directors (EDs) and makes the report available through the Bank’s external website. Once the borrower officially transmits any separate Category B EA report to the Bank, the Bank makes it available through the Bank’s external website. For a Category A project, the borrower makes the draft EA report available at a public place accessible to project-affected groups and local NGOs. | During EA process, the project owner conducts public consultation with communal people’s committees (CPC) and local communities directly affected by the project. Consultation with CPC is conducted by sending draft EIA to CPC and requesting their views. Consultation with local communities directly affected by the project is conducted through face-to-face meeting with participation of representatives of communal fatherland front, local NGOs and affected groups. The project owner prepares the environmental management plan (EMP) based on the environmental and monitoring program proposed in the EIA report and publicly disclose this EMP at the office of CPC where consultations took place during EA process. |
The project shall comply with both the GoV’s regulations and World Bank policy requirements.  

IV. Potential Project Impacts and Mitigation Measures  

4.1 Potential positive environmental and social impacts  

The project aims at establishing and effectively operating VCIC to provide financial services, training and business consulting to SMEs for climate technology and clean energy innovation projects. It will also help build capacity in the public sector to support businesses in their development of new climate innovation projects with solutions appropriate to the conditions of Vietnam.  

The rapid development of technologies supported by VCIC will also bring positive social, economic and environmental impacts, including:  

- Reduction of GHG emissions;  
- Improvement of access to renewable energy sources and more energy efficiency;  
- Improvement of access to water;  
- Increase in agricultural efficiency;  
- Support to the majority of people, including women, youth, the poor and the vulnerable groups to climate change; and  
- Supporting female entrepreneurs operating in the climate technology space  

Regarding institution and policy, the project contributes to improvement of policies supporting the development of private enterprises in climate innovation and provides necessary lessons for the development of PPP model in S&T.  

4.2 Potential negative environmental and social impacts  

Site specific and less sensitive localized environmental and social negative impacts may happen in relation to investment of small and medium private enterprises and technology ventures. These potential negative impacts may include air pollution due to dusts and fumes, soil and water pollution and waste from electrical, electronic, and metallic equipment, byproduct or, that would be produced as a result of construction and installation, manufacture and operation of SMEs. These wastes pose a potential threat to human health and the environment when improperly disposed. In addition, generation of particulate matter (dust) and emission of exhaust combustion of gas products into the atmosphere during construction and operation of facilities will affect ambient air quality. SME owners should be responsible for controlling air, land and water pollution.  

Due to the fact that the VCIC would support a wide range of SME business ventures, there are also possibilities of a few adverse social impacts due to particular activities such as unsafe health and environment for workers, unsafe working place conditions, which among others may cause adverse impacts on people and society. With regards to unsafe health and environmental working conditions, health problems may result from a lack of safe facility arrangements, as well as waste and noise pollution in the working area.
Potential dangers likely to originate from technological or industrial incidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation, should also be considered during screening of business ventures for funding.

4.3 Mitigation measures for potential environmental and social impacts

In order to cope with these potential adverse impacts, the environmental and social screening process proposed under the ESMF will be applied in such a way as to ensure that potential negative impacts are prevented and/or mitigated appropriately, and positive impacts are enhanced.

Namely, negative environmental and social impacts associated with civil works will be mitigated through application of good design and environmental codes of practice (ECOP) which is given in this ESMF. These mitigations apply to minor construction activities and shall be carried out by contractor during construction. The ECOP will be included in the bidding documents and relevant contract documents. In addition, prior to the construction PMU/VCIC shall ensure to hire competent consultants to review technical design submitted by SME owner for construction works. The technical design shall be approved by local competent agencies in line with the relevant legal documents.

Regarding generation of solid waste and wastewater which may include hazardous wastes from operation of facilities, PMU/VCIC and SME owners have to be responsible for signing contracts with local services companies to collect, transport and treat wastes in accordance with the GoV’s regulations.

Regarding proposed activities under technology transfer, a transferred technology needs to be checked to ensure it meets the requirements of Decree 76/2018/ND-CP. The transferred technology also needs to be analyzed and tested in the specific conditions of the country in order to evaluate the effectiveness and potential risks associated. Technical staff and workers of entrepreneurs and SMEs that apply the transferred technology need to be trained and certified on operating the technology, including Environmental, Health and Safety (EHS) requirements.

Impacts associated with use of pesticides would be mitigated through application of national guidelines on sustainable use of pesticides regulated by Law on Plan Protection and Quarantine 2013, Law on Chemicals 2007, Decree 26/2011/ND-CP, Decree 116/2014/ND-CP, and Circular 21/2013/TT-BNNPTNT. Furthermore, the project will also apply the guidelines on the sustainable use of pesticides of international organizations such as WHO and FAO (see Annex 5).

In addition, World Bank Group Environment, Health and Safety Guidelines (EHSGs) would be applied during EA process for proposed subprojects to mitigate potential negative environmental and social impacts.

In order to mitigate social impacts on livelihoods due to adoption of new technologies, PMU/VCIC is responsible for providing training courses to beneficiaries.

V. Environmental and Social Management Framework Process

5.1 Safeguard Screening for proposed subprojects

The purpose of safeguard screening is to ensure that proposed subprojects would not cause any significant adverse environmental and social impacts as well as do not trigger safeguard policies other than OP 4.01 and OP 4.09 during implementation. The safeguard screening for proposed subprojects would be conducted as early as possible and considered as a key step during project implementation. For each proposed subproject, PMU/VCIC’s environmental
consultant will refer to the project proposal and fill out an “ENVIRONMENTAL AND SOCIAL SAFEGUARDS CHECKLIST” as introduced in Annex 1.

5.1.1 Eligible subprojects

The results from screening process are used for determining the eligibility of proposed subprojects, which would be supported under the project, and subsequently the appropriate safeguard instruments that need to be prepared for proposed subprojects to manage anticipated adverse environmental and social impacts.

By design, the project only triggers the WB safeguard policies of OP 4.01 (Environment Assessment) and OP 4.09 (Pest Management), so any proposed subprojects during implementation trigger safeguard policies different to these two safeguard policies will not be supported under the project. In addition, the project is classified as category B so proposed subprojects which cause significant adverse environmental and social impacts like Category A will not also be financed by the project.

5.2 Safeguard Instruments

As per National Law on Environmental Protection 2014, SME owner will prepare an EIA or EPP for each subproject supported under the project during implementation in close consultation with key stakeholders especially locally-affected people. The content and format of an EIA and EPP are given in Circular No. 27/2015/TT-BTNMT.

Given that the project is classified as Category B, as per WB policy requirements SME owner will prepare the following safeguard instrument for proposed subprojects:

- **ECOP (see Annex 3)** - an instrument that consists of a set of mitigation measures to address minor negative environmental impacts associated with small scale construction activities;

- **Environmental Management Plan (ESMP):** An ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The plan also includes the actions needed to implement these measures. ESMP is an integral part of ESIA report for Category A projects; however, for many Category B projects, the EA may result in a management plan only. To prepare a management plan, SME owner (a) identifies the set of responses to potentially adverse impacts; (b) determines requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describes the means for meeting those requirements. Outline of an ESMP is presented in Annex 4.

For VCIC project, ESMP shall be separately prepared as no full EIA is expected due to small-scale proposed subprojects. In case, impacts associated with civil works cannot be addressed through ECOP, an ESMP is required.

For subproject which an EIA or EPP has already been approved by the GoV authorities, PMU’s environmental consultant will make a due diligence to assess the adequacy of these reports. If any insufficiency is found, SME owner will have to prepare one ESMP with supplementary measures, subject to World Bank prior review and approval. Depending on the investment type and scope, a subproject or an activity requiring EPP in line with the GoV’s regulations may need to prepare an ESMP including ECOP to satisfy the World Bank safeguards policy.

5.3 Review, Approval, and Disclosure of Safeguard Instruments

5.3.1 Review and approval of safeguard instruments

*GoV’s review and approval procedures*
If a project requires review and approval according to the GoV’s EA regulations, SME owner will prepare and submit the EA report as required for review and secure the approval by relevant government authorities before appraisal. The guidelines on appraisal and approval of an EIA or EPP are included in the respective government regulation (namely, Decree 18/2015/ND-CP dated 14 February 2015 regarding regulations on environmental protection planning, strategic environmental assessment, environmental impacts assessment and environmental protection plan, and Circular 27/2015/TT-BTNMT dated 29 May 2015 on strategic environmental assessment, environmental impact assessment, and environmental protection plan). The letter of approval will be provided to the World Bank for information.

**WB’s review and approval procedures**

The procedures for the World Bank’s safeguards review and clearance of subprojects prepared during implementation are described in the following table.

**Table 2. Review and Clearance Procedures**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Environmental Actions Required</th>
<th>Implemented by</th>
<th>Review/Approvals by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identification</td>
<td>1.1. Prepare basic information and submit to PMU/VCIC for screening</td>
<td>SME owner</td>
<td>PMU</td>
</tr>
<tr>
<td></td>
<td>1.2. Determine eligible proposed subprojects by environmental screening</td>
<td>PMU/VCIC</td>
<td>WB</td>
</tr>
<tr>
<td></td>
<td>1.3. Determine the appropriate extent and type of EA, i.e. EIA, EMP/ECOP or EPP. For Category C, beyond screening, no further EA action is required.</td>
<td>PMU/VCIC</td>
<td>WB</td>
</tr>
<tr>
<td>2. Preparation</td>
<td>2.1. Prepare EIA, EMP including ECOP, or EPP for eligible subproject in close consultation with key stakeholders</td>
<td>SME owner</td>
<td>PMU needs to ensure quality of the EA documents before submitting to the Bank for review and clearance. EMP reviewed and approved by WB EIA or EPP reviewed and approved by DONRE or District People Committee respectively</td>
</tr>
</tbody>
</table>
### 5.3.2 Public consultation and Information Disclosure

**Public Consultation**

During EA process, SME owner will conduct public consultation with key stakeholders especially locally-affected people and local NGOs to take their views into account. The public consultation is to ensure that potential affected people to understand subproject’s potential impacts and their concerns will be adequately addressed by mitigation measures during subproject design, implementation and operation.

At the consultation, representatives from affected groups will be informed about the subproject’s potential environmental impacts and mitigation proposed to mitigate these impacts. Representatives from affected people will be asked to comment on the impacts and mitigation measures or talk about their socio-environmental concerns related to subproject activities. The public consultation activities including date, location, and publication form, comments from consulted people and response from SME owner shall be documented and taken into account into finalization of EA reports.

**Disclosure**

For meaningful consultations, SME owner provides relevant material including subproject paper and draft subproject EA reports in Vietnamese language in a timely manner prior to consultation to the groups being consulted.

In addition, draft and final subproject EA reports including ESMP, ECOP, EIA, and EPP in Vietnamese language will be disclosed locally through MOST’s website and subproject sites accessible to locally-affected people and local NGOs in Vietnamese language, and on the Bank’s external website in English prior to subproject appraisal.

EA process to be applied to subproject proposed during project implementation is illustrated in Figure 3.
**Figure 3. Schematic Flowchart for Safeguard Implementation**

**PMU/VCIC** conducts initial safeguard screening to exclude ineligible proposed subprojects that would cause significant adverse environmental and social impacts or trigger new safeguard policies.

**Eligible subproject:** PMU/VCIC identifies potential negative impacts (environment and social), mitigation measures and/or next actions by using the checklist forms, discuss the results with local government and/or communities - Apply criteria described in Annex 1.

Subproject that its potential negative impacts could be mitigated through application of ECOP or EPP.

**SME owner will:**
- Prepare EPP in line with the GoV’s regulations
- Make sure that ECOP is included in the bidding documents and contracts
- Disclose these documents as required

PMU/VCIC with assistance of the environmental consultant prepares periodic monitoring reports on safeguard compliance to submit to the Bank for information.

**Ineligible subproject:**
The Project will not finance proposed subprojects.

Subproject that its potential negative impacts could not be mitigated through application of ECOP or EPP.

**SME owner will:**
- Prepare ESMP in line with this ESMF to meet WB policy requirements
- Prepare EIA in line with the GoV regulations.
- Disclose these documents as required

**WB** will periodically supervise project’s safeguard compliance through ISMs.
5.4 Implementation, Supervision, Monitoring and Reporting

PMU/VCIC assigned by MOST is asked to take the lead in overseeing and monitoring of the implementation of project and this unit will periodically supervise and monitor the safeguard performance and include the progress/results in the Project Progress Report.

PMU/VCIC will hire an environmental consultant responsible for effective and timely safeguard implementation. This consultant will help PMU/VCIC with (i) reviewing subprojects proposed by SME owners in terms of environmental and social safeguards, (ii) monitoring and supervising safeguards compliance performance of subproject or activity, and (iii) preparing periodic monitoring reports on safeguards compliance at least twice per year.

The mitigation measures outlined in EA documents should be monitored to ensure that they are implemented in a timely and adequate manner. In some cases, it is necessary to take additional measures to ensure that all arising impacts are adequately addressed.

Construction supervision consultant (CSC) if any will be responsible for day to day supervision of mitigation compliance and monitoring activities which have been identified in EA documents. Local communities are encouraged to undertake monitoring. If there are complaints from local project-affected groups, PMU/VCIC should send their staffs in a timely fashion to assess the validity of complaints and take any necessary actions to remedy the situation. Reporting on safeguard compliance performance shall be sent to PMU/VCIC as part of the progress reports.

PMU/VCIC is responsible for providing technical guidance if necessary to CSC to enable them fulfill their supervision responsibilities and related reporting and documentation requirements.

VI. Implementation Arrangements

6.1 Responsibility for ESMF Implementation

PMU/VCIC shall be established to coordinate overall project activities. PMU/VCIC will be headed by a Projector Director appointed by the Minister of MOST.

MOST and PMU/VCIC will have overall responsibility for safeguard implementation including providing guidance, requirements and carrying out environmental monitoring to ensure the SME owner to adequately implement safeguard requirements. In addition, PMU/VCIC with assistance of its consultants will be responsible for ensuring safeguard compliance relating to subproject implementation. The responsibility of stakeholders for ESMF implementation is described in Table 3.
<table>
<thead>
<tr>
<th>No.</th>
<th>Who</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| 1.  | PMU/VCIC under NATEC | • To be responsible for overall coordination of Project implementation including safeguard performance.  
• Provide training and technical assistance as necessary to strengthen safeguard capacity for SME owners and Contractors.  
• Update the ESMF as necessary and take into account the lessons learnt during project implementation.  
• Provide necessary additional training to key affected people due to some impacts on livelihoods due to adoption of new technologies.  
• Hire a competent environmental consultant (EC) to assist in monitoring and supervision of project safeguard compliance. |
| 2.  | SME owner | • To be responsible for preparation of necessary EA documents for eligibly proposed subprojects in line with the GoV’s regulations and WB policy requirements.  
• To be responsible for compliance with safeguard requirements during subproject implementation. |
| 3.  | Environmental Consultant (EC) | • Review proposed subprojects to determine whether they are eligible in terms of environmental safeguards.  
• Review subproject EA documents prepared by SME owner for quality assurance.  
• Ensure that environmental, social, health and safety (ESHS) covenants are included into the detailed technical designs, bidding documents and contractual documents.  
• Ensure that responsibilities for safeguard monitoring and supervision are incorporated into the TORs, bidding and contractual documents.  
• Provide national/international guidelines on sustainable use of pesticides to SMEs that their subprojects involve pest management issues.  
• Review safeguard performance report submitted by SME owner.  
• Conduct periodic site visits.  
• Provide advice to PMU/VCIC on solutions to environmental and social issues of the project.  
• Prepare safeguard performance section in the project progress report. |
| 4.  | Awarded contractors | • To be responsible for compliance with agreed environmental covenants.  
• Propose replacement solutions in case current mitigation measures are not effective.  
• Collaborate with affected people and others relevant in dealing with complaint if any  
• Prepare monitoring reports on safeguard performance to submit to PMU/VCIC at least once every three months. |
<table>
<thead>
<tr>
<th>No.</th>
<th>Who</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Local authorities including DONRE, District People’s Committee</td>
<td>• Review and approve EA documents including EIA or EPP and carry out environmental monitoring as mandated by the GoV’s regulations.</td>
</tr>
</tbody>
</table>
| 6.  | Local community, Social organizations, NGOs and civil society groups | • Community: According to Vietnamese practice, the community has the right and responsibility to routinely monitor environmental performance during construction to ensure that their rights and safety are adequately protected and that the mitigation measures are effectively implemented by contractors and PMU/VCIC. If unexpected problems occur, they will report to PMU/VCIC.  
• Other organizations could be a bridge between the PPC/DPC, communities, contractors, and the PMU/VCIC by assisting in community monitoring.  
• Mobilizing communities' participation in the project, providing training to communities.  
• Participating in solving environmental problems if any. |

### 6.2 Reporting mechanism

The safeguard performance will be included in project progress reports. PMU/VCIC with assistance of EC will prepare a safeguard performance report at least twice per year to be included in the progress report describing the project compliance with the ESMF and other safeguard requirements, including the results of screening and safeguards documentation.

In order to exchange information effectively, PMU/VCIC will establish a database for monitoring the implementation of mitigation measures, and create an effective implementation of ESMP. It is essential to adopt a system of standard report at all levels of management as shown in the figure below.
VII. Capacity Building and Training

This section of the ESMF describes the capacity building, training, and technical assistance included in the project to ensure effective implementation of the ESMF.

7.1 Safeguard Capacity of NATEC

NATEC as the project owner is not familiar with WB safeguard policies. PMU will be established with staff not having knowledge of WB safeguard policies.

Thus, the project is required recruitment of a qualified environmental consultant (EC) to assist PMU/VCIC in overseeing environment and social safeguard issues and strengthening safeguard capacity for PMU/VCIC staff and others relevant.

7.2 Training

The objective of this training is to:

- support PMU, VCIC, SME owner, contractors, consultants, representatives and leaders of community groups to fully understand WB safeguard policies, the ESMF and associated environmental management of the project, identify, prepare, implement, and manage the environmental and social aspects of their subprojects;
- ensure that the POM and its requirements are understood;

Figure 4. Mechanism for safeguard performance monitoring and reporting
• ensure that SME owner has the capacity to prepare subproject proposals, and to appraise, approve and supervise the implementation of subprojects; and
• strengthen local NGOs and other service providers to provide technical support (including basic EIA, ESMP and ECOP) to PMU, VCIC and SME owner in safeguard implementation.

As early as possible the environmental consultant prepares training program with content of training courses, number of trainees, timing and budget estimates based on the actual training needs to submit to PMU and VCIC for approval.

VIII. ESMF Implementation Budget
PMU is responsible for adequate allocation of budget for ESMF implementation. The budget will be provided to the following activities:

• Institutional development activities;
• Training for affected people due to social impacts on livelihoods due to adoption of new technologies;
• Training for PMU, consultants, communities and local authorities to implement their ESMF responsibilities;
• Technical assistance to local authorities if needed;
• Allowances for the preparation of subproject EIA, ESMPs, EPP, etc. (the costs of implementing these plans is included in the subproject cost);
• Monitoring and site visits; and
• Preparation of semi-annual reports for submission to the World Bank.

IX. Grievance Redress Mechanism
A grievance redress and resolution mechanism to address grievances and complaints related to EMP implementation and the project in general. Every attempt should be made to establish a rapport between the affected communities and the implementing agencies through frequent interactions and transparency thereby maximizing the resolution of grievances at commune level. A three-stage procedure for redress of grievances is proposed based on practice as follows, before it can be transferred to the court:

Stage 1: Complaints from affected people on any environmental damage caused by the project implementation will be lodged verbally or in written form by the affected people. The staff from Ward/Commune Supervision Board will assess the level of environmental damage and report to the PMU/VCIC within 15 days of the receipt of the complaint;

Stage 2: If no resolution can be reached or if no response is received from the liaison officer within 15 days of registering the complaint, the affected people can take their complaint to the District People Committee who will conduct a site investigation to assess the damage and discuss with a contractor during the construction stage to determine and immediately take the appropriate remedial measures within 30 days of the receipt of the complaint; and

Stage 3: If the affected people are not satisfied with the decision of District People Committee or in the absence of any response, the affected people can appeal to the DONRE or City or Provincial People’s Committee. The DONRE, City PC or PPC
will provide a decision on the appeal within 45 days but not exceeding 60 days, from the day it is received by the City PC or PPC. In this stage, DONRE, City PC or PPC will enforce the PMU/VCIC to take the strong corrective action to resolve the problems either though enforcement of contractor’s duties under the signed contract or providing necessary additional actions under its overall duties of project implementation.

Stage 4: In case a complainant brings his/her case to a provincial court and the court rules in favor of the complainant, the provincial authorities will have to increase the compensation up to such a rate as may be ruled by the court. In case the court’s ruling is in favor of the PPC, the complainant will be refunded the amount of money that has been paid to the court. The decision ruling the settlement of complaints will have to be sent to complainants and concerned parties, and shall be publicly posted at the headquarters of the People's Committee of the relevant level. The complainant will receive such ruling three days after the result of complaint resolution at the ward / commune / town level has been decided upon and 7 days at the district or provincial level.

X. ESMF Consultation and Disclosure

The project ESMF has been consulted with key stakeholders during project preparation and their views have been taken into account. In the process of preparing this ESMF, a consultation workshop on the ESMF was held during September 7-11, 2015. Key participants included representatives of SATI, MOST, NAFOSTED, and the National Science and Technology Policy Council. The consultations aimed to explore the potential social and environmental impacts of the project so as to, on the basis of the findings, inform project design/intervention strategy, as well as develop appropriate safeguards instruments. Stakeholders’ inputs provided during the consultation were taken into account in the preparation and finalization of the ESMF.

The ESMF was locally disclosed on the project website of MOST in Vietnamese language and on the Bank’s external website in English as of 1st October 2015.
XI. ANNEXES

Annex 1. Environmental and Social Safeguards Checklist

This subproject screening checklist is intended for the use of PMU/VCIC so that they can determine the appropriate type of safeguards documentation that will be required by the World Bank for the subproject, in conformance with the ESMF for the Project.

The PMU/VCIC is encouraged to send this checklist to the Task Team Leader (TTL) to ensure that the World Bank agrees with the results of the screening prior to the Borrower’s hiring of consultants to prepare safeguard documents.

<table>
<thead>
<tr>
<th>NAME OF SUBPROJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subproject Name:</td>
</tr>
<tr>
<td>Subproject Location: (e.g. region, district, etc.)</td>
</tr>
<tr>
<td>Type of activity: (e.g. new construction, rehabilitation, periodic maintenance)</td>
</tr>
<tr>
<td>SME owner and Address:</td>
</tr>
<tr>
<td>Environmental Category of the Main Project: (e.g., A or B)</td>
</tr>
</tbody>
</table>

Eligibility Screening

Eligibility screening is conducted to determine if a subproject is eligible for funding under the project. To avoid significant adverse environmental and social impacts, some projects may include criteria for ineligibility or have an ineligible activity list to screen out subprojects. These criteria or the ineligible list are included in the ESMF and during the project implementation subprojects are screened against these criteria.

In addition, there are certain types of projects that the World Bank does not fund at all (consult the World Bank safeguards policies). Please note that the owner of the subproject is expected to comply with all national legislation and standards and with obligations (standards, restrictions or similar) of the country under international conventions, treaties, agreements and protocols.

2. Technical Environmental Screening

The technical environmental screening of each proposed subproject is to determine the appropriate extent and type of EA. The outcome of this screening is used to classify the subprojects into one of three categories, depending on the type, location, sensitivity, and scale of the subproject and the nature and magnitude of its potential environmental impacts (OP 4.01, paragraph 8).

(a) Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.

(b) Category B: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas - including wetlands, forests, grasslands, and other natural habitats - are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects.
(c) Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

2.1 Category A Screening Criteria

The following set of screening questions is intended to determine if the subproject has the potential to cause significant adverse impacts (i.e., is the subproject a Category A).

Table 4. Category A Screening Criteria

<table>
<thead>
<tr>
<th>Screening Questions</th>
<th>Yes</th>
<th>No</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the subproject have the potential to cause significant adverse impacts to natural or critical natural habitats?</td>
<td></td>
<td></td>
<td>Indicate location and type of natural habitat and the kind of impacts that could occur, e.g., loss of habitat and how much, loss of ecosystem services, effects on the quality of the habitat. State why these impacts are or are not significant.</td>
</tr>
<tr>
<td>Leads to loss or degradation of sensitive Natural Habitats defined as: land and water areas where (i) the ecosystems’ bio-logical communities are formed largely by native plant and animal species, and (ii) human activity has not essentially modified the area’s primary ecological functions. Important natural habitats may occur in tropical humid, dry, and cloud forests; temperate and boreal forests; Mediterranean-type shrub lands; natural arid and semi-arid lands; mangrove swamps, coastal marshes, and other wetlands; estuaries; sea grass beds; coral reefs; freshwater lakes and rivers; alpine and sub alpine environments, including herb fields, grasslands, and paramos; and tropical and temperate grasslands.</td>
<td></td>
<td></td>
<td>Note that the World Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs.</td>
</tr>
<tr>
<td>Leads to loss or degradation of Critical natural habitat, i.e., habitat that is legally protected, officially proposed for protection, or unprotected but of known high conservation value. Critical habitats include existing protected areas and areas officially proposed by governments as protected areas (e.g., reserves that meet the criteria of the World Conservation Union [IUCN] classifications, areas initially recognized as protected by traditional local communities (e.g., sacred groves), and sites that maintain conditions vital for the viability of these protected areas. Sites may include areas with known high suitability</td>
<td></td>
<td></td>
<td>Note that the World Bank cannot fund any projects that result in significant conversion or degradation of critical natural habitats. Indicate location and type of critical natural habitat and state why they are or are not significant.</td>
</tr>
</tbody>
</table>
for bio-diversity conservation; and sites that are critical for rare, vulnerable, migratory, or endangered species.

<table>
<thead>
<tr>
<th>Does the subproject have the potential to cause significant adverse impacts to physical cultural resources?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leads to loss or degradation of physical cultural resources, defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. They may be located in urban or rural settings, above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community.</td>
</tr>
<tr>
<td>Describe location and type of cultural resources and the kind of impacts that could occur. State the level of protection (local, provincial, national or international). Are any of these sites considered important to preserve in situ, meaning that the resources should not be removed from their current location? State why impacts are or are not significant.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does the subproject have the potential to cause significant adverse impacts on the lands and related natural resources used by ethnic minorities?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentially result in impacts on lands or territories that are traditionally owned, or customarily used or occupied, and where access to natural resources is vital to the sustainability of cultures and livelihoods of minority peoples. Potentially impact the cultural and spiritual values attributed to such lands and resources or impact natural resources management and the long-term sustainability of the affected resources.</td>
</tr>
<tr>
<td>Describe the type and extent of impacts and the significance of alterations to the resources of the affected minorities. Note that an Ethnic Minority Development Plan will also be required in accordance with World Bank OP 4.10.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does the subproject have the potential to cause significant adverse effects to populations subject to physical displacement?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leads to physical displacement of populations dependent upon lands or use of specific use of resources that would be difficult to replace or</td>
</tr>
<tr>
<td>Indicate the numbers of households affected and the resources that will</td>
</tr>
<tr>
<td>Question</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Does the subproject entail the construction of a large dam?</td>
</tr>
<tr>
<td>Does the operation of the subproject rely on the performance of: an existing dam or a dam under construction (DUC); power stations or water supply systems that draw directly from a reservoir controlled by an existing dam or a DUC; diversion dams or hydraulic structures downstream from an existing dam or a DUC, where failure of the upstream dam could cause extensive damage to or failure of the new World Bank-financed structure and irrigation or water supply projects that will depend on the storage and operation of an existing dam or a DUC for their supply of water and could not function if the dam failed.</td>
</tr>
<tr>
<td>Does the subproject entail the procurement or use of pesticides?</td>
</tr>
</tbody>
</table>
or are there formulations of products in Class II?,

World Bank will not finance such products, if (a) the country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.

| Does the subproject have the potential to cause irreversible impacts or impacts that are not easily mitigated? |
| Leads to loss of aquifer recharge areas, affects the quality of water storage and catchments responsible for potable water supply to major population centers. |
| Name the water bodies affected and describe magnitude of impacts. |
| Leads to any impacts such that the duration of the impacts is relatively permanent, affects an extensive geographic area or impacts have a high intensity. |
| Describe any impacts considered to be permanent, affecting a large geographic area (define) and high intensity impacts. |

| Does the subproject have the potential to result in a broad diversity of significant adverse impacts? |
| Multiple sites in different locations affected each of which could cause significant losses of habitat, resources, land or deterioration of the quality of resources. |
| Identify and describe all affected locations. |
| Potential, significant adverse impacts likely to extend beyond the sites or facilities for the physical works. |
| Identify and describe the types of impacts extending beyond the sites or facilities of the physical works. |
| Trans-boundary impacts (other than minor alterations to an ongoing waterway activity). |
| Describe the magnitude of the trans-boundary impacts. |
| Need for new access roads, tunnels, canals, power transmission corridors, pipelines, or borrow and disposal areas in currently undeveloped areas. |
| Describe all activities that are new that are required for the main activity to function. |
| Interruption of migratory patterns of wildlife, animal herds or pastoralists, nomads or semi-nomads. |
| Describe how migrations of people and animals are affected. |

| Is the subproject unprecedented? |
| Unprecedented at the national level? |
| Describe why and what aspects are unprecedented. |
Unprecedented at the provincial level? | Describe why and what aspects are unprecedented.

Is the project highly contentious and likely to attract the attention of NGOs or civil society nationally or internationally?

Considered risky or likely to have highly controversial aspects. | Describe perceived risks and controversial aspects

Likely to lead to protests or people wanting to demonstrate or prevent its construction. | Describe the reasons that subproject is highly unwelcome.

If the answer is yes to any of the above screening questions, the subproject is likely to be considered a Category A and an EIA meeting World Bank standards, including an EMP, will be required. The PMU/VCIC is advised to discuss the results of this screening with the TTL, before starting environmental and social studies of the subproject. There are some differences in the World Bank and the government requirements for a World Bank category A project in terms of preparation of TORs, consultation, content and structures of the EIA report. Two separate EIAs to satisfy the World Bank and the government requirements will be needed.

Note: If the main project has not been categorized as a Category A, then any subproject where the answer is “yes” to the screening questions cannot be done.

2.2. Category C Screening Criteria

The following set of screening questions is intended to determine if the subproject has the potential to cause minimal or no adverse impacts (i.e., is a Category C).

Table 5. Category C Screening Criteria

<table>
<thead>
<tr>
<th>Screening Questions</th>
<th>Y</th>
<th>N</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subproject activities are limited to training, technical assistance and capacity building.</td>
<td></td>
<td></td>
<td>Describe activities.</td>
</tr>
<tr>
<td>Training, technical assistance and capacity building do not require use of chemicals, biological agents, pesticides.</td>
<td></td>
<td></td>
<td>Support this statement.</td>
</tr>
<tr>
<td>There is no infrastructure to be demolished or built.</td>
<td></td>
<td></td>
<td>Support this statement.</td>
</tr>
<tr>
<td>There are no interventions that would affect land, water, air, flora, fauna or humans.</td>
<td></td>
<td></td>
<td>Support this statement.</td>
</tr>
<tr>
<td>If scientific research is being performed, the research is of such a nature that no hazardous or toxic wastes are created and the research</td>
<td></td>
<td></td>
<td>If yes, discuss with the World Bank environmental specialists.</td>
</tr>
</tbody>
</table>
does not involve recombinant DNA or other research that would create dangerous agents should they be released from contained, laboratory conditions.

2.3 Category B Screening

Many of the subprojects to be proposed will be Category B. They may have similar types of impacts to Category A, but the impacts are not irreversible and they are less extensive, less intensive, less adverse, more easily mitigated, not likely controversial and not unprecedented.

After the screening for Category A and Category C is applied and if the conclusion is reached that the subproject is not A and is not C, then the subproject should be categorized as B.

Category B also requires an EIA or other EA instrument in accordance with the World Bank OP 4.01. The PMU/VCIC will apply the criteria of the Vietnamese regulation to determine whether to prepare an EIA or an EPP in accordance with the Law on Environmental Protection and associated EA Decree and Circular. In most cases, an EMP consistent with World Bank policy will be required (see Annex 4). For other case, a simplified EMP or an ECOP should suffice.

The issues that may need to be addressed in a Category B safeguards document are variable and will depend upon the type of subproject, its location and surrounding land uses and the kinds of construction and operational procedures that will be used.

2.4 Environmental and Social Impact Checklist

Table 7 presents a checklist and the purpose of which is to assist the Borrower in preparing the EA instrument, including the EMP.

Table 6. Potential Environmental and Social Impacts to be Addressed

<table>
<thead>
<tr>
<th>Does the subproject entail these environmental impacts?</th>
<th>No</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Not known</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Encroachment on historical/cultural areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Encroachment on an ecosystem (e.g. natural habitat sensitive or protected area, national park, nature reserve etc....)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Describe and briefly assess impact's level</td>
</tr>
<tr>
<td>3. Disfiguration of landscape and increased waste generation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Removal of vegetation cover or cutting down of trees during clearance for construction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. **Change of surface water quality or water flows** (e.g. Increase water turbidity due to run-off, waste water from camp sites and erosion, and construction waste) or long-term.
   *Indicate how and when this occurs.*

6. **Increased dust level or add pollutants to the air during construction**
   *Indicate how and when this occurs*

7. **Increased noise and/or vibration**
   *Indicate how and when this occurs*

8. **Resettlement of households? If yes, how many households?**
   *OP4.12 is not triggered*

9. **Use of resettlement site that is environmentally and/or culturally sensitive**
   *Briefly describe the potential impacts*

10. **Risk of disease dissemination from construction workers to the local peoples (and vice versa)?**
    *Note estimated number of workers to be hired for project construction in the commune/district and what kind of diseases they might introduce or acquire.*

11. **Potential for conflict between construction workers and local peoples (and vice versa)?**

12. **Use of explosive and hazardous chemicals**

13. **Use of sites where, in the past, there were accidents incurred due to landmines or explosive materials remaining from the war**

14. **Construction that could cause disturbance to the transportation, traffic routes, or waterway transport?**
<table>
<thead>
<tr>
<th></th>
<th>Construction that could cause any damage to the existing local roads, bridges or other rural infrastructures?</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>Soil excavation during subproject's construction so as to cause soil erosion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Need to open new, temporary or permanent, access roads?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Estimate number of and length of temporary or permanent access roads and their locations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Separation or fragmentation of habitats of flora and fauna?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Long-term impacts on air quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Accident risks for workers and community during construction phase</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Use of hazardous or toxic materials and generation of hazardous wastes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Risks to safety and human health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Acquisition (temporarily or permanently) of land (public or private) for its development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>Use land that is currently occupied or regularly used for productive purposes (e.g., gardening, farming, pasture, fishing locations, forests)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Does the subproject entail land acquisition or restriction of access to resources?**

<table>
<thead>
<tr>
<th></th>
<th>List land areas for permanent and temporary land acquisition, type of soils, duration and purpose of acquisition</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.</td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>25.</td>
<td>Displacement of individuals, families or businesses</td>
</tr>
<tr>
<td>26.</td>
<td>Temporary or permanent loss of crops, fruit trees or household infrastructure</td>
</tr>
<tr>
<td>27.</td>
<td>Involuntary restriction of access by people to legally designated parks and protected areas</td>
</tr>
</tbody>
</table>

If the answer to any of the questions 23-27 is “Yes”, please consult the ESMF. OP4.12 is not triggered by the project.

Are ethnic minority peoples present in the subproject area?

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Answer</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.</td>
<td>Ethnic minority groups are living within the boundaries of, or nearby, the subproject.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29.</td>
<td>Members of these ethnic minority groups in the area potentially could benefit or be harmed from the project.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If the answer to questions 28 or 29 is “Yes”, please consult the ESMF; and preparation of an Ethnic Minority Development Plan (EMDP is likely required.

Does the subproject entail construction of or depend upon a dam?

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Answer</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
<td>Involve the construction of a large dam?</td>
<td>See Table 1 for definition of a large dam.</td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Depend on water supplied from an existing dam or weir or a dam under construction?</td>
<td>Describe the functional relationship between the subproject and the existing dam or a dam under construction.</td>
<td></td>
</tr>
</tbody>
</table>

If the answer to question 30 or 31 is “Yes”, please consult the ESMF; OP4.37 is not triggered by the project.

Does the subproject entail procurement or use of pesticides?

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
<th>Answer</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.</td>
<td>What is the World Health Organization’s classification</td>
<td>See Table 1 for additional information on pesticides. To deal</td>
<td></td>
</tr>
<tr>
<td>of the formulation of the specific pesticides to be used?</td>
<td>with this issue, one must know the types of pesticides proposed.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*If the answer to question 32 is yes, please consult the ESMF: OP4.09 is triggered by the project.*

PMU/VCIC shall submit the screening report for review regarding the categorization.
Annex 2. Summaries of Selected Environmental and Legal Safeguard Policies

The safeguard policies are summarized briefly. The summary includes: the objectives of each safeguard policy; “triggers” for each policy; mechanisms for achieving policy objectives and consultation and disclosure requirements—for each safeguard policy and for The World Bank Policy on Access to Information. The summaries are advisory and are not intended to be a substitute for the policies and procedures which are binding. In the event of any inconsistencies between the policies/procedures and the matrix, the safeguard policies/procedures apply.

To consult the individual policies and procedures in their entirety, please go to: http://web.worldbank.org/WEBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPO L/0,,menuPK:584441~pagePK:64168427~piPK:64168435~theSitePK:584435,00.html

1) Environmental Assessment (OP/BP 4.01)

<table>
<thead>
<tr>
<th>Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To ensure that World 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 (OP 4.01, para. 1).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Triggers:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This policy is triggered if a project is likely to have potential (adverse) environmental risks and impacts in its area of influence.</td>
</tr>
</tbody>
</table>

Note: OP 4.01 (para 3) states: 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.** Involuntary resettlement, indigenous peoples natural habitats, physical cultural resources, pest management, forestry, and safety of dams are also covered by separate policies with their own requirements and procedures.

<table>
<thead>
<tr>
<th>Mechanisms for achieving policy objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When OP 4.01 is triggered, the World Bank classifies the project as category A, B, C, or FI according to the nature and magnitude of potential environmental impacts (OP 4.01, para. 8). For a category A project the Borrower prepares an EA report, normally an EIA or a suitably comprehensive regional or sectoral EA (OP 4.01, para. 8a&amp; Annex B). For category B projects, the scope of the EA may vary (OP 4.01, para. 8b) and it is narrower than that of a category A EA report.</td>
</tr>
</tbody>
</table>

Depending on the project and the nature of impacts, a range of instruments can be used to satisfy the World Bank’s EA requirement: environmental impact assessment (EIA), regional EA, sectoral EA, and strategic environmental and social assessment (SESA), environmental audit, hazard or risk assessment, environmental management plan (EMP) and environmental and social management framework (ESMF). EA applies one or more of these instruments, or elements of them, as appropriate. When the project is likely to have sectoral or regional impacts, sectoral or regional EA is required (OP 4.01, para. 7 and Annex A).

The Borrower is responsible for carrying out the EA. For category A projects, the Borrower retains independent EA experts not affiliated with the project to carry out the EA. For category A projects that are highly risky or contentious or that involve serious and multidimensional environmental concerns, the Borrower normally engages an advisory panel of independent, internationally recognized environmental specialists to advise on all aspects of the project.
relevant to the EA. Note that environmental (as defined above) can include the need for social/resettlement/indigenous peoples’ expertise also.

**Consultation and Disclosure Requirements (see also World Bank Policy on Access to Information)**

For (i) Category A and B projects and (ii) sub-projects categorized as A and B, the Borrower consults project-affected groups and local nongovernmental organizations (NGOs) and takes their views into account. The Borrower initiates such consultations as early as possible. For Category A projects, the Borrower consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference 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 necessary to address EA-related issues that affect them. The Borrower provides relevant information in a timely manner prior to consultation and in a form and language accessible to the groups being consulted.

For a Category A project, the Borrower provides for the initial consultation a summary of the proposed project's objectives, description, and potential impacts; for consultation after the draft EA report is prepared, the Borrower provides a summary of the EA's conclusions. In addition, for a Category A project, the Borrower makes the draft EA report available at a public place accessible to project-affected groups and local NGOs. For projects involving subprojects, the Borrower or FI ensures that EA reports for Category A subprojects are made available in a public place accessible to affected groups and local NGOs.

Any separate Category B report for a project proposed for IDA financing is made available to project-affected groups and local NGOs. **Public availability in the borrowing country and official receipt by the World Bank of Category A reports for projects proposed for IBRD or IDA financing, and of any Category B EA report for projects proposed for IDA funding, are prerequisites to World Bank appraisal of these projects.**

Once the Borrower officially transmits the Category A EA report to the World Bank, the World Bank distributes the summary (in English) to the executive directors (EDs) and makes the report available through the Bank’s external website. Once the Borrower officially transmits any separate Category B EA report to the World Bank, the World Bank makes it available through the Bank’s external website.

Separate Resettlement Plans and Indigenous Peoples Plans are disclosed with the relevant EA report. When there is no EA, it is required these reports to the Bank’s external website prior to appraisal.

---

2) **Forests (OP/BP 4.36)**

**Objectives:**

The objective of this policy is to assist Borrowers to harness the potential of forests to reduce poverty in a sustainable manner, integrate forest effectively into sustainable economic development and protect the vital local and global environmental services and values of forests.

**Triggers:**

The policy is triggered by whenever any World Bank-financed investment project (i) has the potential to have impacts on the health and quality of forests; (i) affects the rights and welfare of people and their level of dependence upon or interaction with forests; or (iii) aims to bring about changes in the management, protection or utilization of natural forests or plantations, whether they are publicly, privately, or communally owned.

**Mechanisms for achieving policy objectives:**
Mechanisms to achieve the forest policy objectives include:

i. use of appropriate economic, environmental and social assessments to identify the economic, environmental significance of forests and any activities involved in the World Bank-financed investment that may adversely affect the well-being of forests and the people who depend on them;

ii. use of information required from Borrower on policy, legal and institutional framework in sector in project design to address priority poverty, social and environmental issues needed to meet the economic, environmental and social objectives of World Bank-financed investment projects.

iii. use in project design of assessments of the adequacy of land use allocations for the management, conservations and sustainable development of forests in forests, including identification of any additional allocations needed to protect critical forest areas.

iv. use of clear standards for certification of forests management to guide any investment support for harvesting operations including time-bound action plans to achieve certification to acceptable standards of forest management; and

v. use of market assessments for the full range of goods and services from well managed forests to enhance returns from forest management and give preference to small-scale, community level management approaches where they best harness the potential of forests to reduce poverty in a sustainable manner.

vi. Furthermore, the World Bank specifically does NOT or will conditionally finance certain activities:

- No projects that would involve significant conversion or degradation of critical forest areas or other natural habitats;
- No projects that contravene applicable international environmental agreements;
- No plantations that involve any conversion or degradation of critical natural habitats, including adjacent or downstream critical natural habitats;
- May finance commercial harvesting operations or the purchase of logging equipment only when it has determined that the areas affected by harvesting are not critical forests or related critical natural habitats;
- Only finances industrial-scale commercial harvesting operations in areas outside critical forest areas where such operations are either certified as meeting standards of responsible forest management under an independent forest certification system acceptable to the World Bank or adhere to a time-bound, phased action plan acceptable to the World Bank for achieving certification to such standards;
- In areas outside critical forest areas, may finance harvesting operations by small scale landholders, local communities under community forest management or entities under joint forest management where these operations have either achieved a standard of forest management developed with the meaningful participation of locally affected communities (see paragraph 10 of OP 4.36) or adhere to a time bound action plan to achieve such a standard that has been developed with the meaningful participation of locally affected-communities and acceptable to the World Bank. All such operations must be monitored by the Borrower with the meaningful participation of locally affected people;
Consultation and Disclosure Requirements (see also World Bank Policy on Access to Information):

The World Bank requires Borrowers to identify and consult the groups interested in forest areas likely to be affected by World Bank-financed invest projects in and beyond the forest sector.

The disclosure requirements as set out in the EA Policy (OP 4.01) apply to all projects affecting forests. Aside from the required EA documentation, there is no free-standing document that is automatically required for all projects affecting forests. However, many forest related projects will generate free-standing reports (such as Forest Management Plans), which should be made publicly available as a matter of good practice. Experience has shown that transparent decision-making processes are important for good forest governance and good development outcomes and full disclosure of forest-related information should be encouraged wherever feasible.

3) Safety of Dams (OP 4.37)

Objectives:

**New dams**: to ensure that experienced and competent professionals design and supervise construction; the Borrower adopts and implements dam safety measures for the dam and associated works.

**Existing dams**: to ensure that any dam that can influence the performance of the project is identified, a dam safety assessment is carried out, and necessary additional dam safety measures and remedial work are implemented.

Triggers:

- **Actions** are triggered when the World Bank finances: construction of a large dam (15 m or higher) or a high hazard dam (see notes below) or a project dependent upon an existing dam. For a full definition of “large dam,” see the World Register of Dams, published by the International Commission on Large Dams and updated periodically. 10 to 15 m high dams are considered high hazard if they: have special design complexities, e.g. unusually large flood handling requirements; are located in a zone of high seismicity; have foundations that are complex and difficult to prepare; or retain toxic materials.

- **Dams under 10 meters in height** are treated as large dams if they are expected to become large dams during the operation of the facility.

- **The World Bank may finance projects** that do not include a new dam but will rely on the performance of an existing dam or a dam under construction (DUC): power stations or water supply systems that draw directly from a reservoir controlled by an existing dam or a DUC; diversion dams or hydraulic structures downstream from an existing dam or a DUC, where failure of the upstream dam could cause extensive damage to or failure of the new World Bank-financed structure; and irrigation or water supply projects that will depend on the storage and operation of an existing dam or a DUC for their supply of water and could not function if the dam failed. Projects in this category also include operations that require increases in the capacity of an existing dam, or changes in the characteristics of the impounded materials, where failure of the existing dam could cause extensive damage to or failure of the World Bank-financed facilities.

Mechanisms to achieve policy objectives:

For small dams, generic dam safety measures designed by qualified engineers are usually adequate.
For new large dams or high hazard dams, or the rehabilitation of existing large or high hazard
dams the World Bank requires:

- Reviews by an independent panel of experts throughout preparation, design, construction,
  and the start of operation;
- Preparation and implementation of detailed plans: a plan for construction supervision and
  quality assurance, an instrumentation plan, an operation and maintenance plan, and an
  emergency preparedness plan;
- Pre-qualification of bidders;
- A periodic safety inspection after the dam is completed.

For existing dams or DUC, the World Bank requires the Borrower to arrange for one or more
independent dam specialists to:

- Inspect and evaluate the safety status of the existing dam;
- Review and evaluate the owner’s operation and maintenance procedures;
- Provide a written report of findings and recommendations for any remedial work or safety-
  related measures.

Consultation and Disclosure Requirements (see also the World Bank Policy on Access to
Information)

Although not mentioned in the policy, Emergency Preparedness Plans (EPP) require public
awareness and training. Typically, projects that trigger the Dam Safety Policy will require an
EA and the information from the required studies should be summarized and/or annexed to the
EA.

4) Pest Management (OP 4.09)

✓ Pest management is governed by OP 4.09 and BP 4.01 Annex C.
✓ The OP and BP apply to all projects involving pest management, whether or not the
  project finances pesticides.
✓ For the purpose of this summary, the term ‘pest’ includes disease vectors.
✓ The Guidebook on Pest Management provides further guidance, background, tools and
  references.

Objectives:

- Promote the use of biological or environmental control and reduce reliance on synthetic
  chemical pesticides.
- Strengthen capacity of the country’s regulatory framework and institutions to promote and
  support safe, effective and environmentally sound pest management.

More specifically the policy aims to:

a) Ascertain that pest management activities in World Bank-financed operations are based on
integrated approaches and seek to reduce reliance on synthetic chemical pesticides
(Integrated Pest Management (IPM) in agricultural projects and Integrated Vector
Management (IVM) in public health projects).
b) Ensure that health and environmental hazards associated with pest management, especially the use of pesticides, are minimized and can be properly managed by the user.

c) As necessary, support policy reform and institutional capacity development to (i) enhance implementation of IPM-based pest management, and (ii) regulate and monitor the distribution and use of pesticides.

**Triggers:**

- Procurement of pesticides or pesticide application equipment is envisaged (either directly through the project, or indirectly through on-lending, co-financing, or government counterpart funding).
- The project may affect pest management in a way that harm could be done, even though the project is not envisaged to procure pesticides. This includes projects that may (i) lead to substantially increased pesticide use and subsequent increase in health and environmental risk, (ii) maintain or expand present pest management practices that are unsustainable, not based on an IPM approach, and/or pose significant health or environmental risks.

**Mechanisms to achieve policy objectives:**

- **EA:** Pest and pesticide management issues relevant to the project are addressed in the EA.
- **Criteria for Pesticide Selection and Use** are applied according to OP 4.09, para 6.
- The World Bank does not finance formulated products that fall in WHO classes IA and IB, or formulations of products in Class II, if (a) the country lacks restrictions on their distribution and use; or (b) they are likely to be used by, or be accessible to, lay personnel, farmers, or others without training, equipment, and facilities to handle, store, and apply these products properly.
- **Pest Management Plan (PMP):** A separate PMP is prepared when there are significant pest management issues, or when financing of substantial quantities of pesticides is envisaged (BP 4.01 Annex C).
- **List of pesticides authorized for procurement under the project:** Such a list is established prior to financing of pesticides and complies with selection criteria in OP 4.09.

**Consultation & Disclosure:**

Public Consultation and Disclosure requirements are those required under the EA policy (OP 4.01).

5) **Physical Cultural Resources (OP/BP 4.11)**

**Definition:**

For the purposes of this policy, ‘physical cultural resources’ are defined as movable or immovable objects, sites, structures, groups of structures, natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above ground, underground, or underwater. Their cultural interest may be at the local, provincial or national level, or within the international community.

**Objectives:**

The World Bank assists countries to avoid or mitigate adverse impacts of development projects on physical cultural resources.
**Triggers:**

The following projects are classified during the environmental screening process as Category A or B, and are subject to the provisions of this policy: (a) any project involving significant excavations, demolition, movement of earth, flooding, or other environmental changes; (b) any project located in, or in the vicinity of, physical cultural resources site recognized by the Borrower; and (c) projects specifically designed to support the management or conservation of physical cultural resources.

**Mechanisms to achieve policy objectives:**

- The Borrower assesses the project’s potential impacts on physical cultural resources as an integral component of the Environmental Assessment (EA). The process steps for the physical cultural resources component of the EA are the same for Category A and B projects.

- The physical cultural resources component of the EA provides for (a) an assessment of physical cultural resources likely to be affected by the project, (b) documentation of the characteristics and significance of these resources, and (c) an assessment of the nature and extent of potential direct and indirect impacts on these resources.

- Where the EA predicts adverse impacts on physical cultural resources, the cultural resources component of the EA includes a management plan which includes: (a) actions to mitigate adverse impacts, (b) provisions for the treatment of physical cultural resources discovered during project implementation and operation (hereafter referred to as “chance finds”), (c) any necessary measures for strengthening institutional capacity to implement the management plan, and (d) a monitoring system to track progress of these activities.

**Consultation & Disclosure (see also the World Bank Policy on Access to Information):**

- The Borrower consults relevant stakeholders as part of the overall consultation process for the EA, including relevant project-affected groups, concerned government authorities, and relevant NGOs in documenting the presence and significance of physical cultural resources, assessing potential impacts, and exploring avoidance and mitigation options.

- The findings of the cultural resources component of the EA are normally disclosed to the public as per OP 4.01, except where the Borrower, in consultation with the World Bank and persons of relevant expertise, determines that such disclosure would compromise or jeopardize the safety or integrity of the physical cultural resources involved (e.g. the location of sacred sites or movable cultural resources of value), or would endanger the source of information about the physical cultural resources. In such cases, sensitive information relating to these particular aspects may be omitted from the EA report.

**6) Natural Habitats (OP 4.04)**

**Objective:**

The conservation of natural habitats is essential to safeguard their unique biodiversity and to maintain environmental services and products for human society and for long-term sustainable development. The World Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions in its project financing, as well as policy dialogue and economic and sector work. The World Bank supports, and expects Borrowers to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development.

**Triggers:**
The Natural Habitats Policy is triggered by any project (including any subproject under a sector investment or financial intermediary loan) with the potential to cause significant conversion (loss) or degradation of natural habitats, whether directly (through construction) or indirectly (through human activities induced by the project).

Natural habitats are land and water areas where most of the original native plant and animal species are still present (see OP 4.04, Annex A for full definition). Natural habitats comprise many types of terrestrial, freshwater, coastal, and marine ecosystems. They include areas lightly modified by human activities, but retaining their ecological functions and most native species. Significant conversion is the elimination or severe diminution of the integrity of a critical or other natural habitat caused by a major, long-term change in land or water use. Significant conversion may include, for example, land clearing; replacement of natural vegetation (e.g., by crops or tree plantations); permanent flooding (e.g., by a reservoir); drainage, dredging, filling, or channelization of wetlands; or surface mining. In both terrestrial and aquatic ecosystems, conversion of natural habitats can occur as the result of severe pollution. Conversion can result directly from the action of a project or through an indirect mechanism (e.g., through induced settlement along a road).

Degradation is modification of a critical or other natural habitat that substantially reduces the habitat's ability to maintain viable populations of its native species.

Mechanisms for achieving policy objectives:

The Natural Habitats Policy distinguishes between critical and other natural habitats.

Critical natural habitats are:

(i) existing protected areas and areas officially proposed by governments as protected areas (e.g., reserves that meet the criteria of the World Conservation Union [IUCN] classifications), areas initially recognized as protected by traditional local communities (e.g., sacred groves), and sites that maintain conditions vital for the viability of these protected areas (as determined by the environmental assessment process); or

(ii) sites identified on supplementary lists prepared by the World Bank or an authoritative source determined the World Bank. Such sites may include areas recognized by traditional local communities (e.g., sacred groves); areas with known high suitability for bio-diversity conservation; and sites that are critical for rare, vulnerable, migratory, or endangered species. Listings are based on systematic evaluations of such factors as species richness; the degree of endemism, rarity, and vulnerability of component species; representativeness; and integrity of ecosystem processes.

The World Bank does not support projects that, in the World Bank's opinion, involve the significant conversion or degradation of critical natural habitats. The environmental assessment process (OP 4.01) should identify any critical natural habitats within a proposed project’s area of influence.

Wherever feasible, World Bank-financed projects are sited on lands already converted (excluding any lands that in the World Bank's opinion were converted in anticipation of the project). The World Bank does not support projects involving the significant conversion of non-critical natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs (see OP 4.04, Para. 5). If significant conversion or degradation of a non-critical natural habitat is needed to achieve a project’s key objectives, the project must include mitigation measures acceptable to the World Bank. Such mitigation measures include, as appropriate, minimizing habitat loss (e.g., strategic habitat retention and post-development
restoration) and establishing and maintaining an ecologically similar protected area under the same project.

**Consultation and Disclosure Requirements (see also the World Bank Policy on Access to Information)**

In projects subject to the Natural Habitats Policy, the public consultation and document disclosure requirements are those required under the EA Policy (OP 4.01). Aside from the required EA documentation (including the Environmental Management Plan), no free-standing document is automatically required for all projects which trigger the Natural Habitats Policy. However, in the process of complying with this policy, many projects generate free-standing reports (such as protected area Management Plans) which should be made publicly available as a matter of good practice.

7) **Projects on International Waterways (OP 7.50)**

**Objectives:**

To ensure that World Bank-financed projects affecting international waterways would not affect:

i. relations between the World Bank and its Borrowers and between states (whether members of the World Bank or not), and

ii. the efficient utilization and protection of international waterways.

**Triggers:**

This policy covers the following types of international waterways:

a) Any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more states, whether World Bank members or not;

b) Any tributary or other body of surface water that is a component of any waterway described under (a); and

c) Any bay, gulf strait, or channel bounded by two or more states, or if within one state recognized as a necessary channel of communication between the open sea and other states, and any river flowing into such waters.

This policy applies to the following types of projects:

a) Hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways as described in para 1 of OP 7.50; and

b) Detailed design and engineering studies of projects under (a) above, including those to be carried out by the World Bank as executing agency or in any other capacity.

**Mechanisms for achieving policy objectives:**

- Ascertain whether the riparian states have entered into agreements or arrangements or have established any institutional framework for the waterway concerned;

- Beneficiary state must formally notify the other riparian states of the proposed project and its details.

**Consultation and Disclosure Requirements:**

Beneficiary state must notify other riparian states of proposed project and its details. If the prospective Borrower indicates to the World Bank that it does not wish to give notification,
normally the World Bank itself does so. If the Borrower also objects to the World Bank's doing so, the World Bank discontinues processing of the project. The executive directors concerned are informed of these developments and any further steps taken. Following notification, if the other riparian states raise objections to the proposed project, the World Bank in appropriate cases may appoint one or more independent experts to examine the issues in accordance with BP 7.50, paras. 8-12. Should the World Bank decide to proceed with the project despite the objections of the other riparian states, the World Bank informs them of its decision.

8) Projects in Disputed Areas (OP 7.60)

<table>
<thead>
<tr>
<th>Objectives:</th>
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<tbody>
<tr>
<td>To ensure that projects in disputed areas are dealt with at the earliest possible stage:</td>
</tr>
<tr>
<td>(a) so as not to affect relations between the World Bank and its member countries;</td>
</tr>
<tr>
<td>(b) so as not to affect relations between the Borrower and neighboring countries;</td>
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<tr>
<td>(c) so as not to prejudice the position of either the World Bank or the countries concerned.</td>
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<thead>
<tr>
<th>Triggers:</th>
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<tbody>
<tr>
<td>The policy is triggered if the proposed project will be in a “disputed area.”</td>
</tr>
<tr>
<td>• Is the Borrower involved in any disputes over an area with any of its neighbors?</td>
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<tr>
<td>• Is the project situated in a disputed area?</td>
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<tr>
<td>• Could any component financed or likely to be financed as part of the project situated in a disputed area?</td>
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<tr>
<th>Mechanisms for achieving policy objectives:</th>
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<tr>
<td>The World Bank should be satisfied that the other claimants to the disputed area have no objection to the project or special circumstances of the case support the World Bank’s financing the project notwithstanding any objection or lack of approval by the other claimants. (OP 7.60, para. 3)</td>
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<tr>
<th>Consultation and Disclosure Requirements:</th>
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<tr>
<td>Project may proceed if governments concerned agree that, pending the settlement of the dispute, the project proposed for country A should go forward without prejudice to the claims of country B.</td>
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<tr>
<td>The MOP bears a disclaimer stating that, by supporting the project, the World Bank does not intend to prejudice the final determination of the parties’ claims.</td>
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Annex 3: Environmental Codes of Practice (ECOP) for Small Civil Works

1. Objectives

The Environmental Codes of Practice (ECOP) is prepared to manage small environmental impacts during construction. The ECOP will apply to manage small scale infrastructure investments subproject. ECOP will be a mandatory part of construction contract or bidding documents so that contractor complies with environmental covenants. PMU/VCIC and construction supervisors will be responsible for monitoring of compliance with ECOP and preparing the required reports.

There are a number of national technical regulations related to environmental, health and safety that apply to construction activities below:

- **Wastewater** (QCVN 14:2008/BTNMT; QCVN 40:2011/BTNMT)
- **Air Quality** (QCVN 05:2013/BTNMT, QCVN 06:2008/BTNMT)
- **Soil Quality** (QCVN 03-MT:2015/BTNMT)
- **Solid Waste Management** (TCVN 6696:2009, QCVN 07:2009)
- **Vibration and Noise** (QCVN 27:2010/BTNMT, QCVN 26:2010/BTNMT)
- **Labor Health and Safety**: Decision No.3733/2002/QĐ-BYT issued by Ministry of Healthcare dated on 10/10/2002 about the application of 21 Labor health and safety standards that concerned about microclimate, noise, vibration, Chemicals – Permitted level in the working environment

2. Responsibilities

The SME owner and Contractors are the key entities responsible for implementation of this ECOP. Key responsibilities of PMU/VCIC and the contractors are as follows:

**(a) PMU**

- PMU/VCIC is responsible for ensuring that the ECOP is effectively implemented. The PMU/VCIC will assign a qualified staff to be responsible for checking implementation compliance of Contractors, include the following: (a) monitoring the contractors’ compliance with the environmental plan, (b) taking remedial actions in the event of non-compliance and/or adverse impacts, (c) investigating complaints, evaluating and identifying corrective measures; (d) advising the Contractor on environment improvement, awareness, proactive pollution prevention measures; (e) monitoring the activities of Contractors on replying to complaints; (f) providing guidance and on-the-job training to field engineers on various aspects to avoid/mitigate potential negative impacts to local environment and communities during construction.

**(b) Contractor**

- Contractor is responsible for carrying out civil works and informs PMU, local authority and community about construction plan and risks associated with civil
works. As such, contractor is responsible for implementing agreed measures to mitigate environmental risks associated with its civil works.

- Contractor is required to obey other national relevant legal regulations and laws.

**Part 1 – Contractor’s Responsibilities**

This is an example and is not necessarily a full treatment of all requirements for a specific project. For example, there might be reason to have contractor deal with sexually transmitted diseases, medical and hazardous waste (e.g., oil from vehicle or furnace repair and similar, oily rags).

<table>
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<tr>
<th>Issues/Risks</th>
<th>Mitigation Measure</th>
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</table>
| 1) Dust generation/ Air pollution | - The Contractor implement dust control measures to ensure that the generation of dust is minimized and is not perceived as a nuisance by local residents, maintain a safe working environment, such as:  
  - water dusty roads and construction sites;  
  - covering of material stockpiles;  
  - Material loads covered and secured during transportation to prevent the scattering of soil, sand, materials, or dust;  
  - Exposed soil and material stockpiles shall be protected against wind erosion. |
| 2) Noise and vibration | - All vehicles, construction equipment and machinery must have appropriate “Certificate of conformity from inspection of quality, technical safety and environmental protection” following Decision No. 35/2005/QD-BGTVT to avoid exceeding noise and vibration emission from poorly maintained machines. |
| 3) Water pollution | - 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 water body.  
  - Wastewater over permissible values set by relevant Vietnam technical standards/regulations must be collected in a conservancy tank and removed from site by licensed waste collectors.  
  - At completion of construction works, water collection tanks and septic tanks shall be covered and effectively sealed off. |
| 4) Drainage and sedimentation | - The Contractor shall follow the detailed drainage design included in the construction plans, to ensure drainage system is always maintained cleared of mud and other obstructions.  
  - Areas of the site not disturbed by construction activities shall be maintained in their existing conditions. |
| 5) Solid waste | - At all places of work, the Contractor shall provide litter bins, containers and refuse collection facilities.  
  - Solid waste may be temporarily stored on site in a designated area approved by the Construction Supervision Consultant and relevant local authorities prior to collection and disposal. |
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<tr>
<th>Issues/Risks</th>
<th>Mitigation Measure</th>
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<tr>
<td>• Waste storage containers shall be covered, tip-proof, weatherproof and scavenger proof.</td>
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<td>• No burning, on-site burying or dumping of solid waste shall occur.</td>
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<td>• 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.</td>
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<tr>
<td>• 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.</td>
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<td>6) Chemical or hazardous wastes</td>
<td>• Used oil and grease shall be removed from site and sold to an approved used oil recycling company.</td>
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<td>• 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.</td>
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<td>• Unused or rejected tar or bituminous products shall be returned to the supplier’s production plant.</td>
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<td>• Store chemicals in safe manner, such as roofing, fenced and appropriate labeling.</td>
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<td>7) Disruption of vegetative cover and ecological resources</td>
<td>• Areas to be cleared should be minimized as much as possible.</td>
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<td>• 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.</td>
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<td>• The application of chemicals for vegetation clearing is not permitted.</td>
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<td>• Prohibit cutting of any tree unless explicitly authorized in the vegetation clearing plan.</td>
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<td>• When needed, erect temporary protective fencing to efficiently protect the preserved trees before commencement of any works within the site.</td>
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<td>• The Contractor shall ensure that no hunting, trapping shooting, poisoning of fauna takes place.</td>
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<td>8) Traffic management</td>
<td>• Before construction, carry out consultations with local government and community and with traffic police.</td>
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<td>• Significant increases in number of vehicle trips must be covered in a construction plan previously approved. Routing, especially of heavy vehicles, needs to take into account sensitive sites such as schools, hospitals, and markets.</td>
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<td>Issues/Risks</td>
<td>Mitigation Measure</td>
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| 1. Installation of lighting at night must be done if this is necessary to ensure safe traffic circulation.  
2. Place signs around the construction areas to facilitate traffic movement, provide directions to various components of the works, and provide safety advice and warning.  
3. Employing safe traffic control measures, including road/rivers/canal signs and flag persons to warn of dangerous conditions.  
4. Avoid material transportation for construction during rush hour.  
5. Signpost shall be installed appropriately in both water-ways and roads where necessary. |  
| 9) Interruption of utility services | • Provide information to affected households on working schedules as well as planned disruptions of water/power at least 2 days in advance.  
• Any damages to existing utility systems of cable shall be reported to authorities and repaired as soon as possible. |
| 10) Restoration of affected areas | • Cleared areas such as disposal areas, site facilities, workers’ camps, stockpiles areas, working platforms and any areas temporarily occupied during construction of the project works shall be restored using landscaping, adequate drainage and re-vegetation.  
• Trees shall be planted at exposed land and on slopes to prevent or reduce land collapse and keep stability of slopes.  
• Soil contaminated with chemicals or hazardous substances shall be removed and transported and buried in waste disposal areas. |
| 11) Worker and public Safety | • Training workers on occupational safety regulations and provide sufficient protective clothing for workers in accordance with applicable Vietnamese laws.  
• Install fences, barriers, dangerous warning/prohibition site around the construction area which showing potential danger to public people.  
• The contractor shall provide safety measures as installation of fences, barriers warning signs, lighting system against traffic accidents as well as other risk to people and sensitive areas.  
• If previous assessments indicate there could be unexploded ordnance (UXO), clearance must be done by qualified personnel and as per detailed plans approved by the Construction Engineer. |
| 12) Solid waste generated from rehabilitation | • The Contractor shall develop a solid waste control procedure (storage, provision of bins, site clean-up schedule, bin clean-out schedule, etc.) before construction and strictly comply with developed procedure during construction activities.  
• The Contractor shall provide litter bins, containers and waste collection facilities at all places of work.  
• The Contractor store solid waste temporarily on site in a designated place prior to off-site transportation and disposal through a licensed waste collector. |
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<tr>
<th>Issues/Risks</th>
<th>Mitigation Measure</th>
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| • The Contractor shall dispose of waste at designated place identified and approved by local authority. Opened burn or bury of solid waste in hospital shall not be allowed. Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas, such as watercourses.  
• Recyclable materials such as wooden plates for trench works, steel, scaffolding material, site holding, packaging material, etc shall be segregated and collected on-site from other waste sources for reuse or recycle (sale).  
• The removal of asbestos-containing materials or other toxic substances shall be performed and disposed of by specially trained and certified workers. | 13) Communication with local communities  
• The contractor shall coordinate with local authorities (leaders of local 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 these ECOPs and of other relevant environmental safeguard documents shall be made available to local communities and to workers at the site.  
• Disseminate project 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, project status and project implementation results.  
• Inform local residents about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate.  
• Notification boards shall be erected at all construction sites providing information about the project, 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. |
| 14) Chance find procedures  
• 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); |
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<th>Issues/Risks</th>
<th>Mitigation Measure</th>
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<tbody>
<tr>
<td>• 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;</td>
<td></td>
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<tr>
<td>• 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;</td>
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<tr>
<td>• If the cultural sites and/or relics are of high value and site preservation is recommended by the professionals and required by the cultural relics authority, the Project’s Owner will need to make necessary design changes to accommodate the request and preserve the site;</td>
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<td>• Decisions concerning the management of the finding shall be communicated in writing by relevant authorities;</td>
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<tr>
<td>• Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the heritage.</td>
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**Part 2 – Contractor’s Workers Environmental Codes of Conduct**

This is an example for typical project, but for a specific project, some other requirements might be relevant. For example, washing hands protocol, or agreeing to attend STDs (Sexually Transmitted Diseases) workshops.

<table>
<thead>
<tr>
<th>Do:</th>
<th>Do not</th>
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<tbody>
<tr>
<td>Use the toilet facilities provided – report dirty or full facilities</td>
<td>Remove or damage vegetation without direct instruction.</td>
</tr>
<tr>
<td>Clear your work areas of litter and building rubbish at the end of each day – use the waste bins provided and ensure that litter will not blow away.</td>
<td>Make any fires.</td>
</tr>
<tr>
<td>Report all fuel or oil spills immediately &amp; stop the spill from continuing.</td>
<td>Poach, injure, trap, feed or harm any animals – this includes birds, frogs, snakes, etc.</td>
</tr>
<tr>
<td>Smoke in designated areas only and dispose of cigarettes and matches carefully. (littering is an offence.)</td>
<td>Enter any fenced off or marked area.</td>
</tr>
<tr>
<td>Confine work and storage of equipment to within the immediate work area.</td>
<td>Drive recklessly or above speed limit</td>
</tr>
<tr>
<td></td>
<td>Allow waste, litter, oils or foreign materials into the stream</td>
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<tr>
<td></td>
<td>Litter or leave food lying around.</td>
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<td></td>
<td>Cut trees for any reason outside the approved construction area</td>
</tr>
<tr>
<td></td>
<td>Buy any wild animals for food;</td>
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<tr>
<td></td>
<td>Use unapproved toxic materials, including lead-based paints, asbestos, etc.;</td>
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<td>Use all safety equipment and comply with all safety procedures.</td>
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<tr>
<td>Prevent contamination or pollution of streams and water channels.</td>
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<tr>
<td>Ensure a working fire extinguisher is immediately at hand if any “hot work” is undertaken e.g. Welding, grinding, gas cutting etc.</td>
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<tr>
<td>Report any injury of workers or animals.</td>
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<tr>
<td>Drive on designated routes only.</td>
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<tr>
<td>Prevent excessive dust and noise.</td>
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<tr>
<td>Disturb anything with architectural or historical value</td>
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<tr>
<td>Use of firearms (except authorized security guards)</td>
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<tr>
<td>Use of alcohol by workers during work hours</td>
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<tr>
<td>Wash cars or machinery in streams or creek</td>
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<tr>
<td>Do any maintenance (change of oils and filters) of cars and equipment outside authorized areas</td>
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<tr>
<td>Dispose trash in unauthorized places</td>
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<tr>
<td>Have caged wild animals (especially birds) in camps</td>
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<tr>
<td>Work without safety equipment (including boots and helmets)</td>
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<tr>
<td>Create nuisances and disturbances in or near communities</td>
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<tr>
<td>Use rivers and streams for washing clothes</td>
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<tr>
<td>Dispose indiscriminately rubbish or construction wastes or rubble</td>
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<tr>
<td>Spill potential pollutants, such as petroleum products</td>
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<tr>
<td>Collect firewood</td>
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<td>Do explosive and chemical fishing</td>
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<tr>
<td>Use latrines outside the designated facilities; and</td>
<td></td>
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<tr>
<td>Burn wastes and/or cleared vegetation.</td>
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Annex 4: Outline of an Environmental and Social Management Plan

**Subproject description** – this section provides information on proposed subproject (e.g., subproject name; subproject scale; layout; subproject proponent; implementation schedule; environmental, economic and social conditions of subproject area; subproject area of influence)

**Potential impacts and mitigation measures** – This section identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental impacts to acceptable levels. It includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient. Specifically, this section:

(a) identifies and summarizes all anticipated significant adverse environmental impacts (including those involving indigenous people or involuntary resettlement);

(b) describes—with technical details—each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;

(c) estimates any potential environmental impacts of these measures; and

(d) provides linkage with any other mitigation plans (e.g., for involuntary resettlement, indigenous peoples, or cultural property) required for the project.

**Monitoring** – Environmental monitoring during subproject implementation provides information about key environmental aspects of the subproject, particularly the environmental impacts of the subproject and the effectiveness of mitigation measures. Monitoring provides

(a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and

(b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

**Capacity development and training** – This section provides a specific description of institutional arrangements—who is responsible for carrying out the mitigatory and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). To strengthen environmental management capability in the agencies responsible for implementation, most ESMPs cover one or more of the following additional topics: (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes

**Implementation arrangement** – For all three aspects (mitigation, monitoring, and capacity development), this section provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

**Consultation and information disclosure** – this section provides summary on consultation activities and stakeholders on the ESMP and concerns raised and responses. Locations and dates of ESMP to be disclosed should be provided.
Annex 5. Guidelines on the sustainable use of pesticides

1. Pesticide purchase

The subproject is not allowed to procure pesticides that fall into (i) Appendix III of Rotterdam Convention, and (ii) WHO classes IA and IB, or formulations of products in Class II.

2. Operator training

Operators of spray equipment must receive suitable training before handling and applying pesticides. Training should be provided by a recognized provider and courses are frequently offered by local training groups, agricultural colleges, government extension departments, spray equipment manufacturers and the chemical industry. The satisfactory completion of a course may result in a recognized certificate of competence to cover:

- safe product handling,
- delivery of the product to the target
- instruction on using the relevant spray equipment.

It is important that as technology moves forward, field spray operators are kept up to date with new methodology to help ensuring that pesticides are safely used. In some countries where spray operators are licensed, they can only renew their operator’s license if they attended regular refresher courses. Operator training is best be organized and provided through sustainable permanent national structures.

3. Spray equipment selection

The selection of appropriate and suitable spray equipment is essential safe and effective pesticide use. International and national equipment testing schemes have been established in many countries where after thorough testing under laboratory and field situations, sprayers are given certificates of approval. Where testing is not in place equipment manufacturers can be required to confirm that a sprayer complies with the requirements in countries where testing is mandatory or the equipment meets the appropriate FAO guidelines.

Equally important when selecting spraying equipment is access to spare parts, service and support facilities.

Ideally, equipment selection should not be based primarily on cost. Safety, design, comfort and ease of use must be major considerations, and ease of maintenance must be a high priority. Knapsack sprayer maintenance should require only simple tools.

The combination of operator training to a recognized standard, combined with the selection of appropriate spray equipment will contribute to improving the accuracy of pesticide delivery as well as protecting the environment.

4. Using pesticides correctly

Pesticides should only be used if there is an economically important need and all pesticides must be used strictly in accordance with their label recommendation. Product selection must
assess the potential exposure hazard of the selected formulation and determine what control measures and dose rates the label recommendations advocate.

5. Managing operator exposure

The use of Personnel Protective Equipment (PPE) is be essential for protecting operator health and advice on its use will be found on the product label. Effective health monitoring records will be able to provide early warnings and identify changes in operator health, which may be attributed to working with pesticides.

As well as the workers handling and spraying pesticides the public must be safeguarded, both during, and after spraying, for example where they might have access to a treated area. Maybe livestock also ought to be prevented from re-entering treated areas immediately after spraying.

6. Do not use unapproved and non-labeled product

The product label carries statutory instructions for the user, which must cover the crops for which it is registered, the recommended dose rate, the number of permitted treatments during the growing season and how many days before harvest the last treatment may be applied. Additionally, the label will inform the user of the correct Personal Protective Equipment to be used when handling and applying the product and advise on environmental protection measures to be carried out.

Labels may refer to “non-spray” barriers for when products are to be used near waterways or sensitive environmental areas. The widths of unsprayed barriers are dictated by the pesticide, the sprayer type and setting, and its drift potential. Equally important to prevent environmentally sensitive areas are the weather conditions at the time of application.

Label information on suitable application technology, nozzle selection, volume of spray solution and correct spray timing will also help to improve product safely.

The label also provides other relevant and useful safety information, which will include the product common name, chemical name, the manufacturers name and a contact in the event of an accident. The label must also be available for medical staff treating anyone who has been accidentally poisoned or contaminated by the pesticide. A good copy of the label must be retained as reference for the emergency services in the event of an accident.

Information on the decontamination and disposal of empty containers is also usually included on the label.

7. Product transport and storage

Care must be taken when using farm vehicles to transport pesticides as the chemicals must be secures and isolated and spills must be covered with a non-combustible absorbent material, which must be correctly disposed of.

Pesticide containers must be kept closed when not in use and must be secured against unauthorised interference, particularly when spray operators are working away from mixing areas and cannot always see the chemical containers.

The storage of pesticides on the farm should be covered by local legislation and farm stocks of pesticides must be kept to a workable minimum to cover peak demand. Correct storage is
essential to maintain a safe working environment, to maximise product shelf life and to minimise the risk of fires and spillage. Varying climatic conditions and specific product demands (flammability-toxicity) make it difficult to offer other than general recommendations in these guidelines. The Guidelines for the Packaging and Storage of Pesticides (FAO 1985) offer a more comprehensive reference.

Pesticides must be kept in a dedicated store, which is accessible in case of emergency and can be locked when not in use. When considering erecting a pesticide store guidelines relating to construction materials, design, siting, emergency procedures etc can be obtained from FAO, or from national regulatory authorities.

Under no circumstances must pesticides be stored near foodstuffs!

8. Personal protection

There are three principal routes that chemicals enter the body:

   a) Accidental or deliberate ingestion
   b) Dermal, through handling, measuring and pouring the concentrate.
   c) Inhalation of small particles or dust during handling and spraying.

Dermal exposure represents the most common hazard. Avoiding exposure by using PPE and by paying attention to personal hygiene by washing exposed parts of the body after work and before eating, smoking and toileting will minimize risk. Personnel Protective equipment must be selected in accordance with the label recommendation. It must be comfortable to wear/use and be made of material, which will prevent penetration of the pesticide.

PPE will only remain effective if it is correctly selected and maintained. Where the equipment is damaged, repairs must restore it to its original condition otherwise the item must be replaced. Items such as the respirator must be checked on a regular basis and filter elements changed in accordance with the manufacturer’s instructions.

Remember, products containing the same active ingredient but sold under different brand names may pose different risks due to the product formulation. Care must be taken to always refer to the individual label for the product being used.

9. Chemical handling

Water is probably the most sensitive environmental issue involved with pesticide use and the, site of the sprayer filling and pesticide mixing area is critical. Water and environmental agencies should be consulted when selecting filling sites.

Permanent filling sites, for example for tractor sprayer use, must provide a washing apron where rinse water and spillage’s can be retained and an area that can be kept secure. Siting must take into consideration the proximity of waterways and the soil type in relation to the speed of liquid percolation. The use of filling and mixing sites adjacent waterway is common and temporary mixing sites should be regularly rotated between locations.

Absorbent material to contain spills must be available at the filling site, as should suitable first aid equipment and secure facilities for PPE. Where present, a dedicated chemical store must
be kept locked when not in use and should have a secure section for storing empty chemical containers before their disposal.

10. Chemical container handling

To help keep tractor sprayer-operator exposure to a minimum, wherever possible preference must be given to using pesticide packs handled via closed transfer systems.

All operators must be correctly trained to handle chemical containers, remove seals, measure, pour and them after use. Where mechanical rinsing is not available, triple manual rinsing will decontaminate empty liquid containers; three rinses with clean water (Use 20% container volume) will remove chemical residues and leave the container ready for disposal. Containers must be rinsed immediately after use and the rinsate emptied into the spray tank. If the operator is using the induction hopper to load the concentrate into the tank, the liquid level in the bowl must be high enough to prevent the pump drawing in air when introducing the chemical.

Where knapsack sprayers are being refilled from “nurse-tanks” containing pre-mixed spray solution it is important that the tank pumping system provides adequate re-circulation while the spray mix is standing. Where knapsack sprayers are being refilled from “nurse-tanks” containing pre-mixed spray solution it is important that the tank pumping system provides adequate re-circulation while the spray mix is standing.

Handling the undiluted pesticide presents the operator with the highest exposure risk so correct safety equipment and clothing must be available and operators trained to use and maintain it properly. Operator protection may be different for the actual application when the product is diluted with water.

Engineering controls, closed transfer systems, returnable pesticide containers, water dispersible sachets etc, should be used wherever possible. EMPTY CHEMICAL CONTAINERS MUST NOT BE RE-USED.

Partially used chemical containers must be re-sealed and then taken back to store.

11. Disposal of surplus spray

Pesticide waste is present in the form of surplus diluted spray solution and surplus undiluted product. Contaminated safety equipment and clothing, tractor cab filter elements and material used to absorb spills, also have to be disposed of.

Pre-planning should that surplus spray solution is kept to a minimum and only enough product for the area to be treated is purchased.

Unused dilute spray and tank washings can cause serious problems, particularly on horticultural holdings where many different chemical treatments may be used each day. Installing a dedicated effluent plant to deal with washings should be seriously considered.

Applying surplus spray and tank washings to the crop is a first priority, even if it means that the dose rate for the penultimate tank load is reduced so that the overall label dose rate is not exceeded.

Good product stock control will keep surplus concentrate materials to a minimum. In some countries unused chemicals can be returned to the retailer, otherwise a registered disposal
contractor will have to be used. Where this service is used, the waste chemicals must be securely packed and clearly labeled in accordance with local legislation so as not to constitute a hazard when transported.

12. Disposal of empty chemical containers

Before final disposal, empty chemical containers must be thoroughly cleaned either by using an approved rinsing nozzle or by the manual triple rinse technique. Such rinsing must be done when the containers are first emptied so that the washings can be added to the spray tank in the field. If this is not possible, the rinsate must be collected, clearly labeled and stored for future use as a spray diluents. Empty containers must be securely stored before disposal by in accordance with local legislation.

Different countries have different approved ways of container disposal, which may include burial, incineration or removal by registered contractor. Empty chemical containers must be thoroughly cleaned and rendered unusable (punctured/crushed) before burial. The burial site must not be near surface or ground water. Soil type and natural drainage must be taken into consideration when selecting the site. Burial depth should be greater than 1m. Moreover, pits must avoid land drains. Site location and content must be recorded.

Not all containers can be burnt; reference to the product label will indicate if the container held a flammable product or was an aerosol. Containers must be thoroughly cleaned before burning. Additionally, burning containers may present a further hazard if smoke drifts over roadways or becomes an inconvenience.

13. Pesticide storage

Unused pesticide must be returned to store. Pesticides in or damaged containers should be emptied into clean replacement containers, which are fully labeled. Store stock control must ensure that old stock is used before recently purchased similar new products.

Good stock control and accurate planning will mean that waste concentrate and diluted spray is kept to a minimum. However, where old or obsolete chemical products have to be disposed of an approved contractor must be used. Chemicals for disposal must be secure in their original containers, fully labeled in accordance with local regulations.

14. Personal Protective Equipment (PPE)

PPE is only as good as its maintenance and should be provided to individuals. To make sure safety equipment gives maximum protection full operator training is important.

Wearing protective clothing on its own does not guarantee total protection if equipment becomes defective through wear or damage so regular visual checking must be carried out. Specialist equipment, such as respirator must be checked in accordance with the manufacturer’s recommendation. The periods between checks will be more frequent when working conditions are more severe. Faults must be recorded and corrected before further use.