



## **Environmental and Social Management Plan**

---

December 2015

**Viet Nam: Improving the resilience of vulnerable coastal communities to climate change related impacts**



## Table of Contents

	<b>Page No.</b>
<b>Executive Summary</b>	
1.0 Introduction	5
2.0 Project Description	5
3.0 Legal and Institutional Framework	7
4.0 Social and Environmental Risks and Impacts	15
5.0 Mitigation	17
6.0 Monitoring	23
7.0 Capacity Development and Institutional Arrangements	29
8.0 Stakeholder Engagement	29
9.0 Implementation Action Plan	30

## EXECUTIVE SUMMARY

The Government of Viet Nam (GoV) seeks assistance from the Green Climate Fund (GCF) through the United Nations Development Programme (UNDP) to fund its project in improving the resilience of vulnerable coastal communities to climate change-related impacts.

The Project will involve scale-up interventions that have been tested to increase resilience of vulnerable coastal communities through safe housing, robust mangrove coverage, and climate risk information to improve planning and protection efforts. An integrated participatory approach will be applied to engage coastal communities since their commitment is pivotal to ensuring a sustained resilience to climate change impacts. The estimated total cost of the Project is US\$ 29.523 million and is designed to have three major outputs:

- (i) Output 1: Storm and flood-resilient design features added to 4,000 new houses on safe sites benefiting 20,000 poor and highly disaster-exposed people in 100 communes
- (ii) Output 2: Regeneration of 4,000 hectares (ha) of coastal mangrove storm surge buffer zones
- (iii) Output 3: Increased access to an enhanced climate, damage, and loss data for private and public sector application

The implementation of the Project will start in April 2016 and will be completed in March 2021. The Water Resources Directorate (WRD) under the Ministry of Agriculture and Rural Development (MARD) will be the National Implementing Partner and under an agreement, will be supported by the Ministry of Construction (MOC), Viet Nam Administration of Forest, and the Provincial People's Committees of Thanh Hoa, ThuaThien Hue, Quang Ngai, QuangBinh, Quang Nam, Nam Dinh and Ca Mau.

The Project was screened following the UNDP's Social and Environmental Screening Procedure (SESP) which became effective in January 2015, and reference was made to its Social and Environmental Standards (SES), Green Climate Fund's (GCF) Annex III, Interim Environmental and Social Safeguards of the Fund (GCF/B.07/11, pp. 36-38), and Annex XIII, Gender Policy for the GCF (GCF/B.09/23, pp. 84-91). Overall, the Project is considered as **moderate risk** with positive social, environmental and gender benefits which include 20,000 people from the climate-resilient housing; 100,000 people from mangrove regeneration; and about 30 million coastal residents from the improved planning and strengthened risk-mapping due to reliable climate risk information.

The Project is not expected to involve land acquisition. However, risk assessments during implementation may highlight settlement areas that are unsafe due to climate change issues such as flooding and risk of storm surges. The process of checking the legality of land tenure for the ongoing housing programme of GoV will be similarly applied to the sites of the GCF-supported interventions. Sites selected for mangrove regeneration will be consistent to the conservation policies and priority areas of GoV.

Sediment movement during rehabilitation of mangrove areas may potentially expose acid sulfate soils. Relocation of aquaculture may be required, interrupting livelihood activity. And the construction of new and safe houses for households can generate waste. The Project can potentially cause lack of women participation and other vulnerable groups in project design and implementation.

These associated risks and impacts can be minimized by proper design, criteria for sites selection that are consistent with priorities and policies of GoV and best international practice including an effective and continuing stakeholder engagement. Where required, compensation, assistance or livelihood restoration plan will be undertaken.

Several key consultation meetings with stakeholders were conducted from January to December 2015. Stakeholder engagement activities will continue during implementation. To deal with potential



concern(s)/grievance on the Project's impacts and risks, UNDP's response mechanism, which provides for a three-tier entry points for submitting a concern, will be followed by the Project.

UNDP's SES and GCF's interim environmental and social safeguards are aligned with the environmental and social safeguard policies of the World Bank.

Implementation of the ESMP will be the responsibility of the Project Manager recruited by MARD and endorsed by UNDP. The draft ESMP prepared prior to Project approval will be updated and/or finalized during the Inception Workshop after the UNDP project documents have been signed by all the relevant parties. In case an unanticipated social and environmental risks and impacts become apparent during implementation, the ESMP will be updated by MARD and submitted to UNDP for review and approval.

## 1.0 INTRODUCTION

Studies show that Viet Nam is one of the countries most vulnerable to the impacts of climate change. According to the Fourth Assessment of the Intergovernmental Panel on Climate Change (IPCC), Viet Nam is considered a “hotspot of key future climate impacts and vulnerabilities...”<sup>1</sup> Majority of the population in Viet Nam live in low-lying river basins and coastal areas. Given this, it is estimated that more than 70 per cent of its population is exposed to risks from multiple hazards.

To increase the resilience of these vulnerable communities, the GoV requested support from the Global Climate Fund (GCF) through the United Nations Development Programme (UNDP). Major challenges to building resilience have been identified as inadequate climate risk information which is an essential input to effective adaptation planning and resource mobilization, coastal protection measures are not informed by best practices, and the ineffective collaboration between the ministries and programmes preventing regulations critical to long-term climate resilience. GCF involvement is expected to address these barriers.

## 2.0 PROJECT DESCRIPTION

The Project aims to increase the resilience of vulnerable coastal communities to climate change-related impacts through safe housing, robust mangrove coverage, and climate risk information to improve planning and protection efforts.

To achieve this objective, the Project will involve an integrated participatory approach designed to engage coastal communities since their commitment is one of the key elements in ensuring sustained resilience to climate change impacts. The total cost of the Project is US\$ 29.523 million consisting of three outputs as follows:

- Output 1: Storm and flood-resilient design features added to 4,000 new houses on safe sites benefiting 20,000 poor and highly disaster-exposed people in 100 communes
- Output 2: Regeneration of 4,000 hectares (ha) of coastal mangrove storm surge buffer zones
- Output 3: Increased access to an enhanced climate, damage, and loss data for private and public sector application

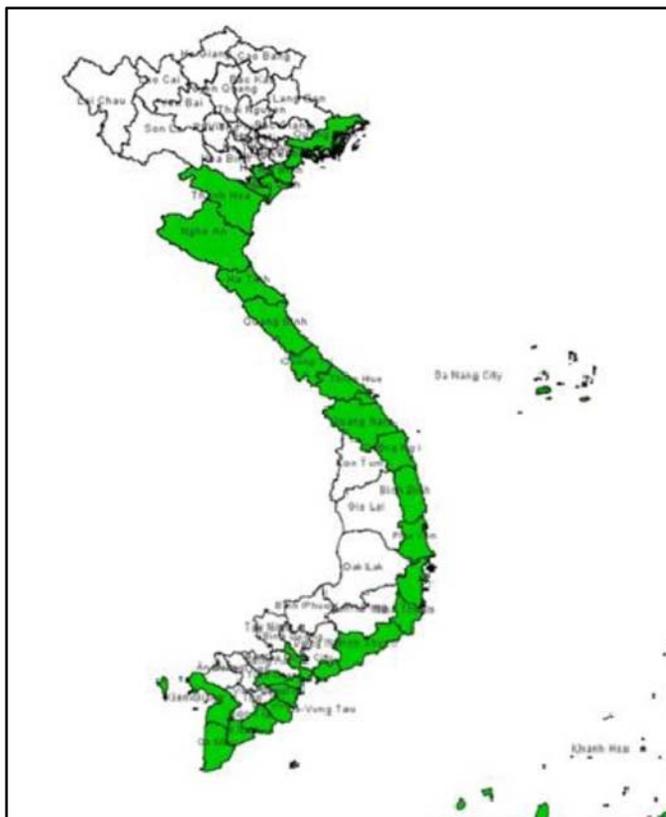
The Project will be implemented in 28 coastal provinces of Viet Nam (see **Table 2.1 and Figure 2.1**) and is expected to benefit 20,000 people from the climate-resilient housing; 100,000 people from mangrove regeneration; and about 30 million coastal residents from the improved planning and strengthened risk-mapping due to reliable climate risk information. **Table 2.2** presents the overview of the Project.

**Table 2.1 Coastal Provinces in Viet Nam**

Northern Coast	North Central Coast	South Central Coast	South East	South West
Quang Ninh	Thanh Hoa	Quang Nam	Ba Ria Vung Tau	Tra Vinh
Hai Phong	Nghe An	Quang Ngai	Ho Chi Minh	Soc Trang
Thai Binh	Ha Tinh	Binh Dinh	Tien Giang	Bac Lieu
Nam Dinh	Quang Binh	Phu Yen	Ben Tre	Ca Mau
Ninh Binh	Quang Tri	Khanh Hoa		Kien Giang
	Thua Thien Hue	Ninh Thuan		
	Da Nang	Binh Thuan		

Source: Annex IX-Maps, GCF Funding Proposal, 21 September 2015

<sup>1</sup> Comprehensive environment and climate change assessment in Viet Nam. International Fund for Agricultural Development. June 2014. Rome.



Source: Annex IX-Maps, GCF Funding Proposal, 21 September 2015

**Figure 2.1 Coastal Provinces in Viet Nam**

**Table 2.2 Overview of the Project**

Component	Sub-component	Activity		Amount (for entire project)		GCF funding amount, (Million \$)
				USD (\$)	Million Vietnamese Dong	
Increased resilience of vulnerable coastal communities to climate change related impacts	<u>Output 1:</u> Storm and flood resilient design features added to 4,000 new houses on safe sites, benefiting 20,000 poor and highly disaster-exposed people in 100 communes	1.1.	Grant support for cost of additional flood/storm resilient features to 4,000 houses	46.416	1,043,269	11.616
		1.2.	Community-based climate and disaster risk mapping and planning			
		1.3.	Knowledge products, developed based on lessons learned, for policy makers and communities			
	<u>Output 2:</u> Regeneration of 4,000 hectares of coastal mangrove storm surge buffer zones	2.1	Regeneration or replanting of 4000 hectares of mangroves in coastal areas vulnerable to climate change	53.469	1,201,975	11.469
		2.2	Community-based programme on mangrove rehabilitation, maintenance and monitoring for			

Component	Sub-component	Activity	Amount (for entire project)		GCF funding amount, (Million \$)
			USD (\$)	Million Vietnamese Dong	
		target communities			
		2.3 Knowledge products, developed based on lessons learned, for policy makers and communities			
	Output 3: Increased access to enhanced climate, damage and loss data for private and public sector application in all 28 coastal provinces of Viet Nam	3.1 Update disaster database and establish risk data repository, with mechanisms established for sharing/disseminating information	8.038	180,666	6.438
		3.2 Policy support for planning/line ministry staff at the national and sub-national levels to apply disaster/loss information to inform climate resilient planning			
		3.3 Analysis of risk transfer mechanisms for insurance, including for cases of large scale coastal climate related disaster (loss of more than 3% GDP)			
<b>Total project financing</b>			<b>107.923</b>	<b>2,425,730</b>	<b>29.523</b>

Source of Data: GCF Funding Proposal, 21 September 2015

The Project will be implemented following UNDP's National Implementation Modality (NIM) in accordance with the Standard Basic Assistance Agreement between the UNDP and the Government of Viet Nam (GoV), the Country Programme Action Plan (CPAP), and as policies and procedures outlined in the UNDP's Programme and Operations Policies and Procedures (POPP). See <https://info.undp.org/global/popp/ppm/Pages/Defining-a-Project.aspx>.

The Implementing Partner for this Project will be the Water Resources Directorate (WRD) in the Ministry of Agriculture and Rural Development (MARD) who will be accountable to UNDP for managing the project, monitoring and evaluation of project interventions, achieving project outcomes, and effective use of UNDP resources.

The Ministry of Construction (MOC), the Viet Nam Administration of Forestry (VNFOREST) and the Provincial People's Committees (PPCs) of seven provinces (Thanh Hoa, ThuaThien Hue, Quang Ngai, QuangBinh, Quang Nam, Nam Dinh and Ca Mau) will enter into agreements with WRD to assist in the successful delivery of Project outputs and will be directly accountable to WRD based on the terms of their agreement.

### 3.0 LEGAL AND INSTITUTIONAL FRAMEWORK

#### 3.1 Environmental and Social Requirements of UNDP

On 1 January 2015, the Social and Environmental Screening Procedure (SESP), and the Social and Environmental Standards (SES) were enforced by the UNDP to provide guidance to their programmes and projects and to ensure that the following objectives are achieved:

- (i) To strengthen the social and environmental outcomes;
- (ii) To avoid adverse impacts to people and environment;
- (iii) To minimize, mitigate, and manage adverse impacts, where avoidance is not possible;
- (iv) To strengthen UNDP and partner capacities in managing social and environmental risks; and,
- (v) To ensure full and effective stakeholder engagement.

SESP and SES are applicable to all UNDP projects with a budget of US\$ 500,000 or more. **Figure 3.1** presents an overview of the key elements of SES.



Source: UNDP Social and Environmental Screening Procedure (<http://www.undp.org/>)

**Figure 3.1 Overview of the key elements of SES**

The result of the SESP is a project categorization reflecting the significance of potential social and environmental risks and impacts, and the required social and environmental assessment. The project categories are as follows:

- *Low risk* – projects with minimal or no risks of adverse social or environmental impacts. No social and environmental assessment is required.
- *Moderate risk* – projects that may cause potential adverse social and environmental risks and impacts of limited scale, and can be readily addressed by mitigation measures and stakeholder engagement. An environmental and social management plan (ESMP), outlining the mitigation, monitoring, institutional capacity development and training (if required), implementation schedule, and cost estimates, is required. If specific components are still uncertain prior to project approval, an environmental and social management framework is required in place of ESMP.
- *High risk* – projects that may cause potential significant and/or irreversible adverse social and environmental risks and impacts. A strategic social and environmental assessment or an environmental and social impact assessment is required.

Based on SESP, the Project is categorized as “moderate risk” and requires an ESMP.

### **3.2 Environmental and Social Requirements of GCF**

For the environmental and social requirements, the GCF currently relies on Annex III: Interim Environmental and Social Safeguards of the Fund (GCF/B.07/11, pp. 36-38) which is essentially, an overview of the eight Performance Standards of the International Finance Corporation.

### **3.3 National Requirements**

#### **3.3.1 Regulatory Framework for Environmental Assessment**

The Law on Environmental Protection (LEP) originally passed in 2003 by the National Assembly of Viet Nam took effect in January 2004 but was revised in November 2005 (LEP No. 52/2005/QHII). The LEP defines the regulations that govern the strategic environmental assessment (SEA), environmental impact assessment (EIA) and the environmental protection commitment (EPC) of development activities. On 23 June 2014, the National Assembly approved the new LEP (No. 55/2014/QH13) which became effective on 1 January 2015. The new law incorporates a response to climate change (Chapter IV) and the development of a National Environmental Protection Plan.

Decree No. 18/2015/ND-CP (14 February 2015) sets the guidance and requirements on Environmental Protection Planning, Strategic Environmental Assessment, Environmental Impact Assessment and Environmental Protection Plans. Activities that will be involved in the Project are not subject to this Decree. Should the Project require relocation of households in the coastal areas to reduce their vulnerability to climate change, the Decree provides that projects for relocation of about 300 households would still be exempted from the requirements of the EIA.

#### **3.3.2 Regulations on Environmental Protection**

The following environmental protection and environmental technical regulations may be applicable to the Project:

- (i) Decree No. 59/2007/ND-CP (9 April 2007) on management of solid waste;
- (ii) Decree No. 174/2007/ND-CP (29 November 2007) on environmental protection charges for solid waste;
- (iii) Decree No.179/2013/ND-CP (14 November 2013) on handling administrative violations in the field of environmental protection;
- (iv) Circular No. 32/2013/TT-BTNMT (25 October 2013) by the Ministry of Natural Resources and Environment promulgating the national technical regulations on environment;
- (v) QCVN 10:2008/BTNMT: National technical regulation on coastal water quality
- (vi) TCVN 6696:2009: solid waste – general environment protection
- (vii) QCVN 03: 2008/ BTNMT - National Technical Regulations on the permissible limits of heavy metals in the soil
- (viii) Decree No. 110/2002/ND-CP – Labor Code covering labour safety, hygiene, and health; and,
- (ix) Decision 3733: 2002/BYT: Decision on issuing 21 labour hygiene standards, five principles and seven occupational health parameters.

#### **3.3.2 Regulatory Framework for Land Administration**

During the screening of potential risks and impacts according to SESP, the Project will not involve land acquisition. However, risk assessments during implementation may highlight settlement areas that are unsafe due to climate change issues such as flooding and risk of storm surges (Output 1). GoV will support resettlement of these household(s), if any since the Project will not provide support and/or assistance to construction on dangerous sites. For Output 2, areas that may be selected for mangrove regeneration may cause temporary disruption of livelihood activities or may need relocation of

aquaculture. In which case, compensation, assistance or a livelihood restoration plan including livelihood activities may be required.

Residential land in Viet Nam is leased from the GoV while mangrove forests are considered their property. The process of checking the legality of land tenure for the ongoing government housing programme will be similarly applied to the sites of the GCF-supported interventions. Sites selected for mangrove regeneration will be consistent to Government conservation policies and priority areas. Some national regulations on land acquisition, resettlement, compensation, and construction that may be relevant are the following:

- (i) Land Law No. 45/2013/QH13 (29 November 2013) approved by the National Assembly which took effect on 1 July 2014 and provides Viet Nam with a comprehensive land administration law.
- (ii) Decree No. 43/2014/ND-CP (15 May 2014) providing guidelines on the implementation of the Land Law.
- (iii) Construction Law No.50/2014/QH13, passed by the National Assembly on 18 June 2014 and became effective on 1 January 2015, has some new features such as requirement for insurance during construction period for works that affect public safety, environment, and works with specific technical requirements and complex conditions for construction; and has identified works that are exempted from construction permits.
- (iv) Decree No. 69 /2009/ND-CP, supplementary regulation on land use planning, land price, land acquisition, compensation, assistance, and resettlement.

**Table 3.1** presents a comparison of the environmental requirements of UNDP, GCF, and GoV.

#### **3.4 Relevant International Environmental Agreements**

- *Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington 1973)* – also known as CITES was signed on 20 November 1981. This Convention provides a framework for addressing the overharvesting and exploitation patterns that threaten species of flora and fauna. Under the Convention, the governments agree to restrict or regulate trade in species that are threatened by unsustainable patterns. The Project will ensure that it will not cause any harvesting and exploitation of wild flora and fauna during the regeneration of 4,000 ha of coastal mangrove storm surge buffer zones, and in the construction of 4,000 new houses to safe sites.
- *Convention on Biological Diversity (1992)* – entered into force on 29 December 1993 and ratified on 20 March 1994. This provides for a framework for biodiversity and requires signatories to develop a National Biodiversity Strategy and Action Plan. The Project will ensure that any replacement to cleared vegetation resulting from the potential relocation sites for the 4,000 new houses and the regeneration of mangroves along the coastal areas to cover 4,000 ha will be consistent with the objectives and priorities of the Action Plan.

Table 3.1 Comparison of Environmental Requirements

Project Stage	UNDP	GCF	GoV	Gaps, if any
Screening and Categorization	<ul style="list-style-type: none"> <li>• Uses social and environmental screening template and checklist to identify risks</li> <li>• Assigns categories based on potential risks and impacts:               <ul style="list-style-type: none"> <li>✓ Low – minimal or no risks of adverse social or environmental impacts</li> <li>✓ Medium – potential adverse social and environmental risks and impacts, limited in scale and can be addressed with mitigation measures and stakeholder engagement</li> <li>✓ High – potential significant and/or irreversible adverse social and environmental risks and impacts</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Based on IFC’s environmental and social safeguards, uses a process of environmental and social categorization to reflect the magnitude of risks and impacts.</li> </ul> <p><b>Category A:</b> potential significant adverse environmental or social risks and/or impacts that are diverse, irreversible, or unprecedented.</p> <p><b>Category B:</b> few potential adverse environmental or social risks and/or impacts that are site-specific, largely reversible, and can be addressed through mitigation measures.</p> <p><b>Category C:</b> minimal or no adverse environmental or social risks and/or impacts.</p> <p><b>Category FI:</b> investments in financial institutions or through delivery mechanisms involving financial intermediation.</p>	Projects that are subject to SEA, EIA, and Environmental Protection Plan (EPP) are identified by Law on Environmental Protection (No. 55/2014/QH13) effective 1 January 2015.	Applies similar principles of avoidance of impacts, minimize, mitigate, and/or compensate for adverse impacts on environment and people
Environmental Assessment	<ul style="list-style-type: none"> <li>• Identify potential impacts on physical, biological, physical cultural resources,</li> </ul>	<ul style="list-style-type: none"> <li>• SESA</li> <li>• ESIA</li> </ul>	<ul style="list-style-type: none"> <li>• SEA</li> <li>• EIA</li> </ul>	No major gap

Project Stage	UNDP	GCF	GoV	Gaps, if any
	<p>and socioeconomic aspects in the context of project's area of influence (i.e., primary project site and facilities, and associated facilities)</p> <ul style="list-style-type: none"> <li>• Strategic Environmental and Social Assessment (SESA)</li> <li>• Environmental and Social Impact Assessment (ESIA)</li> </ul>		<ul style="list-style-type: none"> <li>• EPP</li> </ul>	
Analysis of Alternatives	<p>For projects with potential significant impacts</p> <ul style="list-style-type: none"> <li>•Examine alternatives to the project's location, design, and technology</li> <li>•Present rationale selecting site, design and technology</li> <li>•Consider "no project" option</li> </ul>	Yes	No	<p>Considered a major gap as it does not provide for a range of alternatives including "no project" option. Inclusion of the analysis of alternatives is one of the best international practices in environmental assessment.</p>
Meaningful Consultation	<ul style="list-style-type: none"> <li>•Starts during project preparation early and continues during implementation</li> <li>•Undertaken in an atmosphere free of external manipulation, interference, coercion, and intimidation</li> <li>•Gender and age-inclusive and responsive</li> <li>•Tailored to the needs of vulnerable groups</li> </ul>	Yes	Yes	No major gap

Project Stage	UNDP	GCF	GoV	Gaps, if any
Information Disclosure	<p>To be disclosed -</p> <ul style="list-style-type: none"> <li>Stakeholder engagement plans</li> <li>Summary reports of stakeholder consultations</li> <li>Social and environmental screening reports</li> <li>Draft social and environmental assessments, including any draft management plans</li> <li>Final social and environmental assessments and associated management plans</li> <li>Any required social and environmental monitoring reports</li> </ul>	Yes	<p>Yes</p> <ul style="list-style-type: none"> <li>Environmental Management Plan (EMP) based on approved EIA should be posted at the premises of the People's Committee of the commune where the consultation has been done [Decree No. 18/2015/ND-CP, 14 February 2015, Article 16(2)].</li> <li>People's Committee of the province will post the approval and major content Environmental Protection Plan (EPP) on their website and other means within 30 working days from the date of issue (Decree No. 18/2015/ND-CP, 14 February 2015, Article 7).</li> </ul>	<ul style="list-style-type: none"> <li>Limited information disclosure to the public.</li> <li>A Project Brief can be prepared (e.g., a one-page flyer or FAQ) that will include the contact details of person(s) designated to receive concerns and suggestions. The Project Brief can be made available to the public from the offices of UNDP and MARD or posted in their websites.</li> </ul>
Grievance Redress Mechanism	<ul style="list-style-type: none"> <li>Response mechanism provides for a three-tier entry points to raise their concerns on the Project's impacts and risks</li> </ul>	Yes	<p>Law on Environmental Protection (No. 55/2014/QH13)</p> <ul style="list-style-type: none"> <li>Covered in Article 162 of Chapter XVIII (Investigating, inspecting and handling violation, settling environmental disputes, claims and accusations)</li> </ul>	No major gap
Use of	<ul style="list-style-type: none"> <li>Refers to the World Bank</li> </ul>	Yes	Law on Environmental	No major gap

Project Stage	UNDP	GCF	GoV	Gaps, if any
Environmental Standards	Group Environmental Health and Safety Guidelines (EHS) 2007	(World Bank Group EHS Guidelines 2007)	Protection (No. 55/2014/QH13) <ul style="list-style-type: none"> <li>Covered in Chapter XI (Environmental technical regulations and environmental standards)</li> <li>Also in relevant technical regulations</li> </ul>	
Monitoring and Reporting	<ul style="list-style-type: none"> <li>Progress of implementation of mitigation/management plans</li> <li>Concerns/grievances to be tracked and monitored;</li> <li>Follow-up on any identified corrective actions is tracked</li> </ul> <p>Frequency of reporting depends on concerns of affected communities but not less than annually.</p>	Yes	Law on Environmental Protection (No. 55/2014/QH13) <ul style="list-style-type: none"> <li>Covered in Chapter XII and Chapter XIII (Article 130, Article 131, and Article 134)</li> </ul>	No major gap

Source: Consultant Analysis, September 2015

#### 4.0 SOCIAL AND ENVIRONMENTAL RISKS AND IMPACTS

The Project was screened following the UNDP's Social and Environmental Screening Procedure (January 2015) and reference was made to the UNDP's Social and Environmental Standards (SES), Green Climate Fund's (GCF) Annex III, Interim Environmental and Social Safeguards of the Fund (GCF/B.07/11, pp. 36-38), and Annex XIII, Gender Policy for the GCF (GCF/B.09/23, pp. 84-91). Overall, the Project is considered as **moderate risk** with positive social, environmental and gender benefits. Adverse impacts identified during screening are considered to be site-specific, temporary, small-scale and can be managed or minimized by proper design, site selection, appropriate mitigation measures, and stakeholder engagement. **Table 4.1** presents the risks and impacts identified during screening while **Table 4.2** shows the SES principles and standards triggered by the Project.

**Table 4.1 Social and Environmental Risks and Impacts**

Risks	Impacts
<b>A. Environmental</b>	
Sediment movement during rehabilitation of mangrove areas	<p>Site preparation may potentially release sulfides reacting to oxygen to form sulfuric acid. This acidic soil condition could free iron, aluminum, and other heavy metals (particularly arsenic).</p> <p>Once mobilized, the acid and metals can create a variety of adverse impacts including killing vegetation, seeping into and acidifying groundwater and water bodies, killing fish and other aquatic organisms and degrading concrete and steel structures to the point of failure.</p> <p>Temporary turbidity due to site preparation may affect aesthetics and photosynthesis needed by aquatic biota.</p>
Exposure of acid sulfate soils	<p>Potential loss of vegetation resulting from drainage and oxidation of acid sulfate soils</p> <p>Movement of acid sulfate soils to the coastal waters (e.g., following rainfall or flashflood), acidity and aluminium toxicity may cause kills of aquatic life, particularly bottom-dwelling organisms such as oysters</p> <p>Oxidation in acid sulfate soils can also contribute to lowering of dissolved oxygen in coastal water.</p>
Generation of waste from construction of new homes	<p>Waste generated may not be accommodated by nearest disposal sites.</p> <p>Stockpiling of waste generated will affect aesthetics and potential public health and safety risks.</p>
Low survival rates of mangroves due to factors including community deforestation, pollution or other factors	<p>Objectives of the Project will not be achieved</p> <p>Social, ecological, and economic value of mangrove system will be threatened</p>
<b>B. Social</b>	
Lack of participation of women and other vulnerable groups in project design and implementation	Potential for continuing lack of empowerment of women and other vulnerable groups in 28 coastal provinces due to limited opportunities for participation

Risks	Impacts
	<p>Lack of awareness on the critical role/function of mangrove systems to climate change adaptation will continue</p> <p>Sustained success and achievement of Project objectives may be threatened</p> <p>Lack of trust and ownership to the Project</p>
Loss of livelihoods through removal of aquaculture ponds from mangroves	<p>Anger and distrust from affected persons due to economic displacement</p> <p>Potential to result in lack of cooperation and conflict from affected persons</p> <p>If not addressed properly, smooth Project implementation will pose challenges</p>

Source: Consultant Analysis, September 2015

**Table 4.2 Summary of Relevant UNDP Principles and Standards Triggered by the Project**

UNDP's SES		Triggered (Y/N)	Comments
Overarching Policy and Principles	Principle 2: Gender Equality and Women's Empowerment	Y	Participation of women and youth in Project activities/interventions is a focus in the Project. This is to ensure that they are also empowered to make decisions and also benefit as a result of project interventions.
Project-Level Standards	Standard 1. Biodiversity Conservation and Natural Resource Management	Y	The Project will have an overall benefit on biodiversity and natural resource management. It is expected to improve mangrove ecosystems through the rehabilitation and planting of mangroves in 28 coastal provinces. There will be temporal impacts such as loss of invertebrate biodiversity, however, these animals are known to be resilient and can quickly inhabit new ecosystems. The rehabilitation of mangroves will reduce sediment and acid sulfate soil movement resulting to improvement in water quality which can increase biodiversity.
	Standard 2. Climate Change Mitigation and Adaptation	Y	The project is designed to provide the community with habitats that will act as buffer during storm events and new

UNDP's SES		Triggered (Y/N)	Comments
			houses that can withstand these events.
	Standard 3. Community Health, Safety and Working Conditions	Y	The project will have positive benefit of increasing the communities' health and safety through improved mangroves and construction of storm-resilient houses, therefore providing valuable resources to both the environment and the community.
	Standard 5. Displacement and Resettlement	Y	<p>Risk assessments conducted during the project might highlight the settlement areas which are unsafe due to flooding and storm risk. In such cases, government programmes will support relocation since the Project will not provide support to house construction in dangerous sites.</p> <p>Areas selected for mangrove regeneration may require relocation of aquaculture. In such cases, a livelihood restoration plan, including livelihood activities related to mangrove regeneration (e.g. planting), will be developed to minimize the impact of the temporary interruption of livelihood activities.</p>

Source: Annex VI- Environmental and Social Impact Assessment, GCF Funding Proposal, 21 September 2015

## 5.0 MITIGATION

To minimize the impacts identified during screening, mitigation measures have been included and presented in **Table 5.1**.

Table 5.1 Mitigation Measures

Risks	Impacts	Mitigation Measures	Estimated Costs	Responsibility	
				Implementation	Supervision
<b>A. Environmental</b>					
Sediment movement during rehabilitation of mangrove areas	Site preparation may potentially release sulfides reacting to oxygen to form sulfuric acid. This acidic soil condition could free iron, aluminum, and other heavy metals (particularly arsenic).	<ul style="list-style-type: none"> <li>An erosion control sediment plan will be prepared. The plan will include the installation of sediment curtains to reduce sediment movement and covering of sediment, where practicable.</li> </ul>	Included in the cost of Output 2	Project Manager/WRD and MOC	National Project Director/Project Board/UNDP
	Once mobilized, the acid and metals can create a variety of adverse impacts including killing vegetation, seeping into and acidifying groundwater and water bodies, killing fish and other aquatic organisms and degrading concrete and steel structures to the point of failure.	<ul style="list-style-type: none"> <li>Prior to any excavation, sediments will be tested for the presence of acid sulphate soils and/or potential acid sulphate soils. If result is positive, the sediment can be treated by a range of techniques such as liming the sediment. Reference will be made to appropriate standards and guidelines for testing and control.</li> </ul>			
	Temporary turbidity due to site preparation may affect aesthetics and photosynthesis needed by aquatic biota.	<ul style="list-style-type: none"> <li>Sediment curtains will be installed to minimize suspension of sediments.</li> <li>Monitoring of turbidity or total suspended solids will be done during mangrove planting</li> </ul>			



Risks	Impacts	Mitigation Measures	Estimated Costs	Responsibility	
				Implementation	Supervision
Exposure of acid sulfate soils	Potential loss of vegetation resulting from drainage and oxidation of acid sulfate soils	<ul style="list-style-type: none"> <li>• Soil analysis and/or acidity profiling within the Project area</li> <li>• Liming of coastal waters can be done if the level of acidification is high</li> </ul>	Included in the cost of Output 2	Project Manager/WRD and MOC	National Project Director/Project Board/UNDP
	Movement of acid sulfate soils to the coastal waters (e.g., following rainfall or flashflood), acidity and aluminium toxicity may cause kills of aquatic life, particularly bottom-dwelling organisms such as oysters.				
	Oxidation in acid sulfate soils can also contribute to lowering of dissolved oxygen in coastal water.		Included in the cost of Output 2		
Generation of waste from demolition of existing homes and construction of new homes	Waste generated may not be accommodated by nearest disposal sites.	<ul style="list-style-type: none"> <li>• All waste such as glass, damaged concrete and metal sheeting will be stored in an appropriate manner to reduce impacts on the environment.</li> <li>• Reusable and/or recyclable materials will be sorted to determine if they can still be utilized for housing.</li> <li>• Materials to be used for new houses may be prefabricated and cut to size prior to transport to the designated communities.</li> </ul>	Included in the cost of Output 1	Project Manager/WRD and MOC	National Project Director/Project Board/UNDP

Risks	Impacts	Mitigation Measures	Estimated Costs	Responsibility	
				Implementation	Supervision
		<p>at least twice a week, or coordinated with the schedule of collection of the local government.</p> <ul style="list-style-type: none"> <li>Collection points will be identified and designated for waste generated from Project activities.</li> </ul>			
Low survival rates of mangroves due to factors including community deforestation, pollution or other factors	<p>Objectives of the Project will not be achieved</p> <p>Social, ecological, and economic value of mangrove system will be threatened</p>	<ul style="list-style-type: none"> <li>Affected local communities and stakeholders will be consulted throughout the Project implementation to ensure participation and ownership</li> <li>Monitoring of all planting sites will be carried out to determine any potential threat to the survival rate of mangroves</li> </ul>	Included in the cost of Output 2	Project Manager/WRD and MOC	National Project Director/Project Board/UNDP
<b>B. Social</b>					
Lack of participation of women and other vulnerable groups in project design and implementation	<p>Potential for continuing lack of empowerment of women and other vulnerable groups in 28 coastal provinces due to limited opportunities for participation</p> <p>Lack of awareness on the critical role/function of mangrove systems to climate change adaptation will continue</p>	<ul style="list-style-type: none"> <li>Identify women groups/NGOs working locally on mangrove rehabilitation, if any to develop partnership and knowledge sharing</li> <li>Collection and collation</li> </ul>	Included in the costs of Output 1 and Output 2	Project Manager/WRD and MOC	National Project Director/Project Board/UNDP

Risks	Impacts	Mitigation Measures	Estimated Costs	Responsibility	
				Implementation	Supervision
	<p>Sustained success and achievement of Project objectives may be threatened</p> <p>Lack of trust and ownership to the Project</p>	<p>of sex-disaggregated data and related gender information from the local level to determine level of women participation particularly in training and employment</p> <ul style="list-style-type: none"> <li>Identify roles and/or work that women can do in areas of mangrove nursery development and maintenance; mangrove planting; and mangrove management, protection and maintenance</li> </ul>			
Loss of livelihoods through removal of aquaculture ponds from mangroves	Anger and distrust from affected persons due to economic displacement	<ul style="list-style-type: none"> <li>Careful planning and stakeholder consultations will be undertaken prior to selection of planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh to ensure that any temporary interruption to livelihoods (e.g. relocation of aquaculture) is addressed by existing government programmes.</li> </ul>	Included in the cost of Output 2	Project Manager/WRD and MOC	National Project Director/Project Board/UNDP
	Potential to result in lack of cooperation and conflict from affected persons		Included in the cost of Output 2		
	Challenges in implementing the Project due to lack of cooperation from affected persons			Project Manager/WRD and MOC	National Project Director/Project Board/UNDP
	Reduction in available land and aquatic environment due to rehabilitation and planting of mangroves				



Risks	Impacts	Mitigation Measures	Estimated Costs	Responsibility	
				Implementation	Supervision
		<ul style="list-style-type: none"> <li>• A livelihood restoration plan, if needed, will be developed to ensure households have been provided with financial means equal to their existing livelihood income during any interruption.</li> <li>• To the extent possible, the CBDRM mechanism will be used to engage and compensate communities to undertake propagation, planting and maintenance of the mangroves, thereby providing a social benefit to the community.</li> </ul>			

## 6.0 MONITORING

Table 6.1 shows the Project’s monitoring plan.

**Table 6.1 Monitoring Plan**

Issue	Parameter	Recommended Location	Monitoring Frequency	Responsibility		Cost Estimate
				Implementati on	Supervision	
<b>Project Preparation Phase</b>						
<i>Output 1: Storm and flood resilient design features added to 4,000 new houses on safe sites, benefiting 20,000 poor and highly disaster-exposed people in 100 communes</i>						
Site selection	<ul style="list-style-type: none"> <li>• Coastal population most vulnerable to climate change</li> <li>• Value of property damages</li> <li>• Incidence of climate hazards such as typhoon, storm surge, etc.</li> <li>• Services available such as Red Cross Office, Disaster Control, etc.</li> </ul>	Thanh Hoa, ThuaThien Hue, Quang Ngai, QuangBinh, and Quang Nam	During project initiation phase, and implementation as needed depending on timing and coordination of activities	Project Manager/WRD and MOC	Project Board/UNDP	Included in the cost of Output 1
Women participation and other vulnerable groups	<ul style="list-style-type: none"> <li>• Number of local women groups/NGOs</li> <li>• Number of women attending town hall meetings, focus group discussions, etc.</li> </ul>	Thanh Hoa, ThuaThien Hue, Quang Ngai, QuangBinh, and Quang Nam	During project initiation phase, and implementation as needed depending on timing and coordination of activities			
<i>Output 2: Regeneration of 4,000 hectares of costal mangrove storm surge buffer zones</i>						
Site selection	<ul style="list-style-type: none"> <li>• Type of soil</li> <li>• Topography</li> <li>• Sedimentation rate</li> <li>• Site hydrology</li> <li>• Intertidal position, wave height</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam	Prior to actual planting	Project Manager/WRD and VNFOREST	Project Board/UNDP	Included in the cost of Output 2

Issue	Parameter	Recommended Location	Monitoring Frequency	Responsibility		Cost Estimate
				Implementation	Supervision	
	<ul style="list-style-type: none"> <li>• Presence of seagrass or scattered growth of grasses</li> <li>• Presence of predatory animals like monkeys and crabs</li> <li>• Support of local community</li> </ul>	Dinh.				
Type of mangrove species to be planted (i.e., shade tolerant or not,	<ul style="list-style-type: none"> <li>• Native species</li> <li>• Availability of seeds or propagules</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Prior to actual planting			
Land tenure of planting sites	Ownership or Lease agreement	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Prior to actual planting			
Type of land (i.e., abandoned shrimp farming, drier marginal land, newly accreted mudflat, etc.) – soil quality	<ul style="list-style-type: none"> <li>• Nutrients level</li> <li>• Sulfates</li> <li>• Presence of barnacle infestations</li> <li>• Presence/indication of <i>Acrostichum</i> fern infestation (if site was used for timber and charcoal production</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Prior to actual planting			Included in the cost of Output 2
<b>Construction Phase</b>						
<i>Output 1: Storm and flood resilient design features added to 4,000 new houses on safe sites, benefiting 20,000 poor and highly disaster-exposed people in 100 communes</i>						
Generation of waste	<ul style="list-style-type: none"> <li>• Volume of waste</li> <li>• Number of waste collection stations</li> </ul>	Thanh Hoa, ThuaThien Hue, Quang Ngai, QuangBinh, and Quang Nam	Monthly	Project Manager/WRD and MOC	Project Board/UNDP	Included in the cost of Output 1

Issue	Parameter	Recommended Location	Monitoring Frequency	Responsibility		Cost Estimate
				Implementation	Supervision	
Women participation and other vulnerable groups	<ul style="list-style-type: none"> <li>• Number of local women groups/NGOs</li> <li>• Number of women attending town hall meetings, focus group discussions, etc.</li> <li>• Number of women employed and/or trained</li> </ul>	Thanh Hoa, ThuaThien Hue, Quang Ngai, QuangBinh, and Quang Nam	Quarterly			
<i>Output 2: Regeneration of 4,000 hectares of costal mangrove storm surge buffer zones</i>						
Site preparation	<ul style="list-style-type: none"> <li>• Presence of debris such as coconut trunks, bamboos, etc.</li> <li>• Presence of seagrass weed species such as <i>Finlaysonia maritima</i> and <i>Acanthus ilicifolius</i> which may stifle the growth of planted seedlings</li> <li>• Sedimentation rate</li> <li>• Turbidity or total suspended solids</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Quarterly	Project Manager/WRD and VNFOREST	Project Board/UNDP	Included in the cost of Output 2
Status/condition of adjacent mangrove planting or rehabilitation site	<ul style="list-style-type: none"> <li>• Provision of shelter for young seedlings</li> <li>• Presence of degraded areas close to the rehabilitation sites</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Weekly			Included in the cost of Output 2
Waste generation	<ul style="list-style-type: none"> <li>• Collection and disposal</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Weekly			
Lack of local participation	<ul style="list-style-type: none"> <li>• Number of community-based organization/NGO involved</li> <li>• Number of</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue,	Quarterly			

Issue	Parameter	Recommended Location	Monitoring Frequency	Responsibility		Cost Estimate
				Implementation	Supervision	
	meetings/workshop/consultation events	Quang Ngai, Ca Mau, and Nam Dinh.				
Women participation	<ul style="list-style-type: none"> <li>Number of women trained and/or employed</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Quarterly			
<b>Operation Phase</b>						
<i>Output 1: Storm and flood resilient design features added to 4,000 new houses on safe sites, benefiting 20,000 poor and highly disaster-exposed people in 100 communes</i>						
Development impact of new houses	<ul style="list-style-type: none"> <li>Number of people benefitted</li> <li>Feedback from recipients of new houses</li> <li>Number of concern(s) from recipient households, if any</li> </ul>	Thanh Hoa, ThuaThien Hue, Quang Ngai, Quang Binh, and Quang Nam	Annually	Project Manager/WRD and MOC	Project Board/UNDP	Included in the cost of Output 1
<i>Output 2: Regeneration of 4,000 hectares of coastal mangrove storm surge buffer zones</i>						
Coverage of area planted	<ul style="list-style-type: none"> <li>Aerial photos of sites</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Semi-annually	Project Manager/WRD and VNFOREST	Project Board/UNDP	Included in the cost of Output 2
Surface water quality	<ul style="list-style-type: none"> <li>Salinity</li> <li>Total suspended solids or turbidity</li> </ul>	Representative sampling stations of coastal areas in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh in consultation with experts or	Quarterly during the first year; semi-annual until project completion			

Issue	Parameter	Recommended Location	Monitoring Frequency	Responsibility		Cost Estimate
				Implementation	Supervision	
		reference to available baseline and/or secondary data				
Growth rate	<ul style="list-style-type: none"> <li>• density of seedlings or trees (no. of trees per hectare)</li> <li>• diameter at breast height (DBH) (cm)</li> <li>• height (m)</li> <li>• volume (m<sup>3</sup> per hectare)</li> </ul> Annual changes of these parameters will be determined	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Semi-annually	Project Manager/WRD and VNFOREST	Project Board/UNDP	Included in the cost of Output 2
<ul style="list-style-type: none"> <li>• Survival rate</li> <li>• Potential threats to survival of mangroves</li> <li>• Source of external pressures</li> </ul>	<ul style="list-style-type: none"> <li>• level of failure of seedlings</li> <li>• incidence of pests and diseases</li> <li>• level of rubbish accumulation</li> <li>• impact of grazing, cutting, fish ponds and fishing</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Semi-annually			
Unauthorized or illegal harvesting of mangroves	Impact of harvesting	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Semi-annually			
Lack of local participation	<ul style="list-style-type: none"> <li>• Number of community-based organization/NGO involved</li> <li>• Number of meetings/workshop/consultation events</li> <li>• Number of concern(s)/grievance received</li> </ul>	All planting sites in Thanh Hoa, ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.	Semi-annually			
Women participation	<ul style="list-style-type: none"> <li>• Number of women trained and/or employed</li> </ul>	All planting sites in Thanh Hoa,	Semi-annually			



Issue	Parameter	Recommended Location	Monitoring Frequency	Responsibility		Cost Estimate
				Implementation	Supervision	
		ThuaThien Hue, Quang Ngai, Ca Mau, and Nam Dinh.				



## **7.0 CAPACITY DEVELOPMENT AND INSTITUTIONAL ARRANGEMENTS**

### **7.1 Capacity Building**

The central and provincial levels of MARD have experience in implementing projects and considered to have been successful in addressing environmental and social impacts of World Bank-funded projects. The World Bank applies 10 environmental and social safeguard policies to identify, avoid, and mitigate the potential negative impacts associated with its lending operations. UNDP's SES and GCF's interim environmental and social safeguards are aligned with the environmental and social safeguard policies of the World Bank.

Nonetheless, the Project will include capacity building on the social and environmental requirements and compliance of UNDP and GCF. The Project will incorporate and/or mainstream to the extent possible, the social and environmental requirements of UNDP and GCF in climate change adaptation, risk mapping and planning.

### **7.2 Institutional Arrangements**

The Project will be implemented from April 2016 until March 2021. While there is a **National Project Director** who will be responsible for overall managing of the project, on behalf of WRD, it will be the **Project Manager** who will be tasked for the daily monitoring and implementation of the Project. Part of the responsibility is to ensure that the ESMP is implemented in compliance to the requirements of UNDP and GCF.

Prior to the start of Project activities, an orientation and/or briefing will be conducted to staff, workers, and other organization(s) who will be involved in the implementation about the key elements of the ESMP. This orientation aims to create awareness on the environmental and social requirements and their responsibility for compliance.

The Project Manager will designate a staff to oversee the implementation of ESMP, responsible for preparing an annual report on the status of ESMP implementation, and to coordinate the resolution of concern(s)/grievance, if any, lodged by affected persons or from stakeholders. Environmental and Social staff of UNDP Country Office will provide technical support to the Project Manager or designate.

## **8.0 STAKEHOLDER ENGAGEMENT**

Full participation of relevant local communities within the 28 coastal provinces from planning, implementation, and monitoring is critical to the sustainable success of the Project. Stakeholder engagement activities will continue during implementation.

### **8.1 Consultation**

During Project preparation, several key consultation meetings with a number of identified stakeholders were undertaken from January to December 2015. At the Inception Phase, MARD and MOC will continue to consult stakeholders such as NGOs, academia, and the private sector to develop concrete partnership roadmap and action plan which will also consider social and environmental compliance of the Project. A stakeholder consultation plan will be developed during the Project's initiation phase and the details are given in Section E.5.3 of the GCF Proposal for the Project. Stakeholder consultation will continue until completion of the Project.

## **8.2 Grievance redress mechanism**

To deal with potential concern(s)/grievance on the Project's impacts and risks, the UNDP's response mechanism provides for a three-tier entry points.

- (i) 1<sup>st</sup> level will be the grievance resolution mechanism of MARD regardless of whether this was set up for the Project or not.
- (ii) 2<sup>nd</sup> level will be the UNDP Office in Viet Nam through the Project Board or direct contact with relevant UNDP programme manager.
- (iii) 3<sup>rd</sup> level will be the Stakeholder Response Mechanism through the UNDP's Social and Environmental Compliance Unit which provides for a more formally structured submission of grievance with relevant guidelines and forms to complete. Given that the Programme is categorized as moderate risk, UNDP expects that concerns, if any, will be resolved at the 1<sup>st</sup> level.

## **8.3 Information Disclosure**

As required by the para. 21 of UNDP's SES (January 2015), Access to Information, the stakeholder consultation plan will be disclosed. A Project Brief can be prepared (e.g., a one-page flyer or FAQ) that will include the contact details of person(s) designated to receive concerns and suggestions. The Project Brief can be made available to the public from the offices of UNDP and MARD or posted in their websites.

## **9.0 IMPLEMENTATION ACTION PLAN**

This ESMP is prepared prior to Project approval and will be updated and/or finalized during the Inception workshop after the UNDP project documents has been signed by all the relevant parties. The workshop will be an opportunity to discuss the roles and responsibilities of the Project Team including the implementation of the ESMP.

In the event of an unanticipated social and environmental risks and impacts become apparent during implementation, the ESMP will be updated by MARD/MOC and submitted to UNDP for review and approval.