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THE GOVERNMENT OF VIETNAM

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ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

VIETNAM - EMERGENCY NATURAL DISASTER RECONSTRUCTION PROJECT

(Final Draft)

July, 2017

ABBREVIATIONS

DARD	Department of Agriculture and Rural Development
DONRE	Department of Natural Resource and Environment
DPC	District People's Committee
DRM	Disaster Risk Management
EA	Environmental Assessment
ECOP	Environmental Codes of Practice
EM	Ethnic Minority People
EMDP	Ethnic Minority Development Plan
EMPF	Ethnic Minority Planning Framework
ENDR	Vietnam Emergency Natural Disaster Reconstruction Project
EPP	Environmental Protection Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
GCC	General Conditions of Contract
GoV	Government of Vietnam
IPMP	Integrated Pest Management Plan
MARD	Ministry of Agriculture and Rural Development
MONRE	Ministry of Natural Resources and Environment
PCC	Particular Conditions of Contract
PMF	Pest Management Framework
PMU	Project Management Unit
PPC	Provincial People's Committee
PPMU	Provincial Project Management Unit
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
WB	The World Bank

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Preface

This Environment and Social Management Framework (ESMF) has been prepared by the Client for the Vietnam Emergency Natural Disaster Reconstruction Project (ENDR) in accordance with the World Bank policy requirements. It is a safeguard instrument that examines the issues and impacts associated with the proposed project which consists of a series of sub-projects, and the impacts cannot be determined until sub-project details have been identified. The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts. This framework was developed as a standalone safeguard instrument to satisfy the WB's safeguard policies on Environmental Assessment (OP/BP 4.01), Indigenous Peoples (OP/BP 4.10), Involuntary Resettlement (OP/BP 4.12), Natural Habitats (OP/BP 4.04); Physical Cultural Resources (OP/BP 4.11), and Pest Management (OP 4.09). It is also connected to other safeguard instruments such as the Ethnic Minorities Policy Framework (EMPF), the Resettlement Policy Framework (RPF) as well as the safeguard action plans for the subprojects namely the Resettlement Action Plans (RAPs), the Ethnic Minority Development Plans (EMDPs) and the Environmental and Social Management Plans (ESMPs), including the Environmental Codes of Practice (ECOP). The ESMF will be applied to all subprojects to be financed under the Project.

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

EXECUTVIE SUMMARY

Project Development Objective: The Project Development Objective (PDO) is to reconstruct and rehabilitate infrastructure assets in disaster-affected project provinces and strengthen the capacity of the Government to effectively respond to future disaster events.The PDO will be achieved by rebuilding key infrastructure assets based on a 'build back better' approach emphasizing all stages of infrastructure life cycle including design, construction, and maintenance and strengthening institutional capacities for climate and DRM. Achievement of efficacy will be assessed with 85 percent weight on reconstruction and rehabilitation of infrastructure assets and 15 percent weight on strengthening of the capacity of the government to effectively respond to future disaster events.

Project Beneficiaries: The main beneficiaries of this project include communities in the five flood-affected provinces that will benefit from the restoration and improvement of damaged infrastructure. Direct beneficiaries include over 1.2 million inhabitants in five provinces, of whom 52 percent are women and 9.4 percent are poor. Ethnic minorities in each of the provinces[1] will also be direct beneficiaries of project-funded activities. The total population of the five provinces, around 5.1 million people, will also benefit, directly or indirectly, from the increased capacity of the provinces to 'buildbackbetter' infrastructure and respond more efficiently to disasters. Government officials from line ministries, including the MARD, MPI, MOF, and MOT, and the five provinces will benefit from enhanced disaster recovery capacity.

Project Components: The project consists of 03 components include: (1) Resilient Reconstruction of Damaged Public Use and Preventive Infrastructure at the Provincial Level; (2) Disaster recovery capacity enhancement; (3) Project ManagementSupport. Tentative time of the ENDR project implementation is 4 years, from 2017 and to 2021. The total project cost is US$ 135.83 million.

Applicable the World Bank's safeguard policies*:* The Project has been classified as category "B" and triggered the following safeguard policies: (i) Environmental Assessment (OP/BP 4.01); (ii) Natural Habitats (OP/BP 4.04); (iii) Pest Management (OP 4.09); (iv) Physical Cultural Resources (OP/BP 4.11); (v) Involuntary Resettlement (OP/BP 4.12); and (vi) Indigenous Peoples (OP/BP 4.10). The project also complies with the Bank policy on Access to Information.

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

Potential project impacts: The overall impacts will be positive. The negative impacts are due to activities to be carried out under Component 1, especially those related to: (i) Land acquisition and resettlement of local people including ethnic minority people and (ii) Site clearance and construction which could temporary increase levels of dust and other air pollution, noise, vibration, water pollution, local traffic volume, health and safety risk, and other impacts on local residents and businesses. However, these impacts are envisaged to beinsignificant and impact level ranges from low to moderate. These impacts are localized and temporary, and mitigable. Good construction management and practices with close supervision of contractors by field/site engineers and in consultation with local authorities and local residents will be measures to mitigate such impacts. Further, to mitigate these impacts a full Environmental Codes of Practice (ECOP) has been developed for proposed subprojects with moderate impact level while

[1] Binh Dinh: Bana, H're, Cham H'roi; Quang Ngai: Xo Dang, H're, Co; Ninh Thuan: Cham, Ragnai; Phu Yen: Cham, E de, Bana; Ha Tinh: Muong, Thai, Lao

simplified ECOP has been developed for the ones with minor impact level. The ECOP will be included in the bidding and contract documents for the Component 1 subprojects. There are UXO risks during construction but this risk is considered moderate and could be mitigated through an UXO examination and clearance (as needed) prior to commencing civil works. There are also risks during operation if the infrastructures are not properly designed and/or maintained adequately and/or sluices are not properly operated, but these risks are also considered moderate and could be mitigated through proper design, close consultation among stakeholders, and the capacity building activities to be carried out under Component 2. Risk related to coastal erosion could be mitigated through proper design of coastal structure and consultation with nearby local authorities and communities.

Potential negative impacts of the activities to be carried out under Components 1 will be limited to those related to small works/infrastructure such as reconstruction and rehabilitation of damaged critical provincial-scale infrastructure, specifically irrigation, flood control and road/bridge infrastructures. These impacts can be mitigated through the participatory planning process and/or the application of good construction practices. A simplified ECOP has also been developed and it will be included in bidding and/or construction contracts.

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

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

Public Consultation and Information Disclosure: The public consultations with key stakeholders have been carried out during ESMF preparation and their views have been taken into account. The draft ESMF in Vietnamese was locally disclosed on June 10, 2017 and the English version was disclosed at the Bank external website on June 20, 2017. The final safeguards instruments will be tentatively disclosed locally by 25 June, 2017 and at the Bank external website by June 28, 2017.

Institutional Arrangements: This will be in line with the overall institutional arrangements of the Project. Contractors will be responsible for implementation of agreed environmental covenants in the contracts. Supervision and monitoring of the compliance with the World Bank safeguard policies and the GoV's environmental regulations at both project and subproject levelswill be performed by PPMUs in coordination with their consultants and local communities.Reports on compliance will be periodically submitted to the Bank and relevant government agencies for information. Cost for implementation of safeguards policies will be included in the Project cost. Safeguard training will be provided to PPMUs and contractors at the early stage of project implementation.

1. INTRODUCTION

1.1 Project Overview

1. The Government of Vietnam received a loan from the World Bank for the Vietnam Emergency Natural Disaster Reconstruction Project including Binh Dinh, Phu Yen, Ninh Thuan, Quang Ngai and Ha Tinh provinces.The Project Development Objective (PDO) is to reconstruct and rehabilitate infrastructure assets in disaster-affected project provinces and strengthen the capacity of the Government to effectively respond to future disaster events. The PDO will be achieved by rebuilding key infrastructure assets based on a 'build back better' approach emphasizing all stages of infrastructure life cycle including design, construction, and maintenance and strengthening institutional capacities for climate and DRM. Achievement of efficacy will be assessed with 85 percent weight on reconstruction and rehabilitation of infrastructure assets and 15 percent weight on strengthening of the capacity of the government to effectively respond to future disaster events.

2. The specific objectives of the project include: (i) Repairing, restoration and upgrading of infrastructure works for production (works of irrigation, dykes, embankment, sea embankment, irrigation canals, reservoirs and so on) aims to restore production, protect lives safety, property for local people, mitigate the disaster risks and (ii) Damage restoration of transport infrastructure works for travelling of local people, commodity exchange and production development.In order to achieve these objectives, the project consists of 03 componentsinclude: (1) Resilient Reconstruction of Damaged Public Use and Preventive Infrastructure at the Provincial Level; (2) Disaster recovery capacity enhancement; (3) Project Management Support.Tentative time of the ENDR project implementation is 4 years, from 2017 and to 2021. The total project cost is US$ 135.83 million.

1.2 Purpose of the ESMF

3. To comply with the WB's Operational Policy on Environmental Assessment (OP/BP 4.01), as the proposed project is adopting a programmatic approach consisting of investment activities that could not be identified by appraisal, preparation and disclosure of an Environment and Social Management Framework (ESMF) is required before appraisal. This is to ensure that the proposed project has a concrete plan and process in place to avoid, minimize, and/or mitigate adverse environmental and social impacts of project investments and interventions when they are identified, planned, and implemented. The ENDR is classified by OP/BP 4.01 as Category Band six of the ten WB safeguard polices are triggered (see Section III). The ESMF sets out the principles, rules, guidelines and procedures to assess the environmental and social impacts. It contains measures and plans to reduce, mitigate and/or offset adverse impacts and enhance positive impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for addressing project impacts. The ESMF was developed in line with OP 4.01, based on desk reviews of the GoV's relevant laws and regulations as well as various reports and documents related to environmental and social conditions in the proposed provinces and/or project sites, field visits to some of the proposed subprojects sites including meetings with local authorities and communities which was conducted by Binh Dinh PPMU with assistance from national consultants.

4. The specific objectives of this ESMF are:

- to assess the potential environmental and social impacts of the proposed project, whether positive or negative and propose measures which will effectively mitigate these negative impacts and enhance positive impacts;

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

1.3 Scope of the ESMF

5. Following the WB guidelineson preparation of an ESMF for the Bank-financed projects in Vietnam, the ESMF includes the following sections: Introduction (Section 1); the project description (Section 2); the policy, legal, and administrative framework (Section 3); Project potential environmental and social impacts (Section 4); Measures to manage environmental and social impacts (Section 5); Procedures for review, clearance and implementation of subproject safeguard instruments (Section 6); Implementation arrangements (Section 7); capacity building, training, and technical assistance (Section 8); ESMF implementation budget (Section 9); Grievance redress mechanism (Section 10); and ESMF consultation and disclosure (Section 11). Annexes provide more details on locations of the project and first 18-month subprojects (Annex 1); safeguard screening guideline and key impacts of the first 18-month subprojects under component 1 (Annex 2); guideline for subproject ESMP preparation (Annex 3); ECOP (Annex 4); pest management framework (Annex 5); sample grievance registration form (Annex 6), and template of progress and monitoring reports (Annex 7).

6. In addition to the ESMF, there are two other related safeguard instruments which will be applied during implementation of the proposed project. The first is the Resettlement Policy Framework (RPF) which provides guidelines for preparation and execution of a Resettlement Action Plan (RAP) in compliance with the Bank Policy on Involuntary Resettlement (OP/BP 4.12) and it will be applied when the project activities/subprojects involve land acquisition, resettlements, and/or limited access to natural resources. The RPF was prepared in compliance with OP/BP 4.12. The second instrument is the Ethnic Minority Policy Framework (EMPF) which provides guidelines for undertaking free, prior and informed consultation with ethnic minorities in the project area and the preparation of Ethnic Minority Development Plan (EMDP) in compliance with Bank Policy on Indigenous Peoples (OP/BP 4.10) and it will be applied when the project activities and/or subprojects are implemented in area inhabited by ethnic minorities that meet the definitions of OP/BP 4.10. The EMDP was prepared in compliance with OP/BP 4.10. The ESMPs, RAP, Ethnic Minority Development Plans (EMDPs) of the first 18-month subprojects have been prepared separately and submitted to the Bank. The safeguard screening and preparation of ESMPs, RAPs, and EMDPs for the future subprojects will be carried out during implementation.These instruments are presented separately.

2. PROJECT DESCRIPTION

2.1 Project Objective and Components

7. The Project Development Objective (PDO) is to reconstruct and rehabilitate infrastructure assets in disaster-affected project provinces and strengthen the capacity of the Government to

effectively respond to future disaster events. The PDO will be achieved by rebuilding key infrastructure assets based on a 'build back better' approach emphasizing all stages of infrastructure life cycle including design, construction, and maintenance and strengthening institutional capacities for climate and DRM. Achievement of efficacy will be assessed with 85 percent weight on reconstruction and rehabilitation of infrastructure assets and 15 percent weight on strengthening of the capacity of the government to effectively respond to future disaster events.

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

Component 1: Resilient Reconstruction of Damaged Public Use and Preventive Infrastructure at the Provincial Level (US$121.08 million, of which US$110.69 million IDA and US$ 10.39 million counterpart fund)

9. The objective of Component 1 is to strengthen resilience of flood-affected communities in five selected provinces through the reconstruction and rehabilitation of damaged critical provincial-scale infrastructure, especially irrigation, flood control, and road/bridge infrastructure. This component will be implemented by the selected provinces. The affected areas will benefit from restored access to public services/facilities, thereby increasing the economic growth and access to social services. The reconstructed critical flood prevention structures and the restored roads and bridges will also increase the safety of people and assets and serve as supply and rescue lines in the event of a disaster. It will have five subcomponents, each of which will be implemented by the respective provinces:

(a) **Subcomponent 1: Resilient Reconstruction in Binh Dinh Province (US$49.75 million IDA, US$4.07 million counterpart fund).** This subcomponent will fund resilient reconstruction of damaged roads, bridges, irrigation systems and natural disaster prevention/control structures in Binh Dinh Province.

(b) **Subcomponent 2: Resilient Reconstruction in Phu Yen Province (US$15.05 million IDA, USS1.26 million counterpart fund).** This subcomponent will fund resilient reconstruction of damaged roads, bridges, irrigation systems, and natural disaster prevention/control structures in Phu Yen Province.

(c) **Subcomponent 3: Resilient Reconstruction in Quang Ngai Province (US$14.58 million IDA, US$2.21 counterpart fund):** This subcomponent will fund reconstruction of damaged roads, bridges, irrigation systems, and natural disaster prevention/control structures in Quang Ngai Province.

(d) **Subcomponent 4: Resilient Reconstruction in Ninh Thuan Province (US$14.84 million IDA, US$1.67 million counterpart fund).** This subcomponent will fund reconstruction of damaged roads, bridges, irrigation systems, rural water supply system and natural disaster prevention/control structures in Ninh Thuan Province.

(e) **Subcomponent 5: Resilient Reconstruction in Ha Tinh Province (US$16.47 million IDA, US$1.18 counterpart fund).** This subcomponent will fund reconstruction of damaged roads, bridges, irrigation systems, and natural disaster prevention/control structures in Ha Tinh Province.

Component 2: Disaster Recovery Capacity Enhancement (US$2.43 million, of which US$2.0 million GFDRR grant and US$0.43 million counterpart fund)

10. The objective of Component 2 is to strengthen the institutional capacity of the Government at the central and provincial levels to respond to future disasters. It will be implemented by the MARD.

11. Component 2 will finance (a) evaluation of the effectiveness of the existing flood risk reduction efforts in the Central Region, using the 2016 floods as a case study; (b) building capacity of DRM agencies on the damage and loss assessment methodology; and (c) the development of emergency reconstruction and recovery procedures. Counterpart funding will partially support the participation of provincial officials to the training and workshop organized by Component 2.

Component 3: Project Management Support (US$12.32 million, of which US$7.31 million IDA and US$5.01 million counterpart fund)

12. The objective of Component 3 is to support project management, safeguards, audits, and monitoring and evaluation (M&E). It will be implemented by the Binh Dinh Provincial People's Committee (PPC). It will fund activities related to supporting project implementation such as overall reporting, independent project-related financial audits, safeguards monitoring, M&E, project oversight, construction supervision and management, midterm reviews, and end-of-project impact evaluations. Component 3 will also fund equipment and provision of training to strengthen the Provincial Project Management Units (PPMUs), as well as individual consultants and operating costs. This component will also support coordination and reporting of the different components of the project.

2.2 Project target areas

13. The project area will cover 5 provinces: Binh Dinh, Phu Yen, Quang Ngai, Ninh Thuan, and Ha Tinh (see *Annex 1*).The locations of the subprojects are indicated in Figure 1.

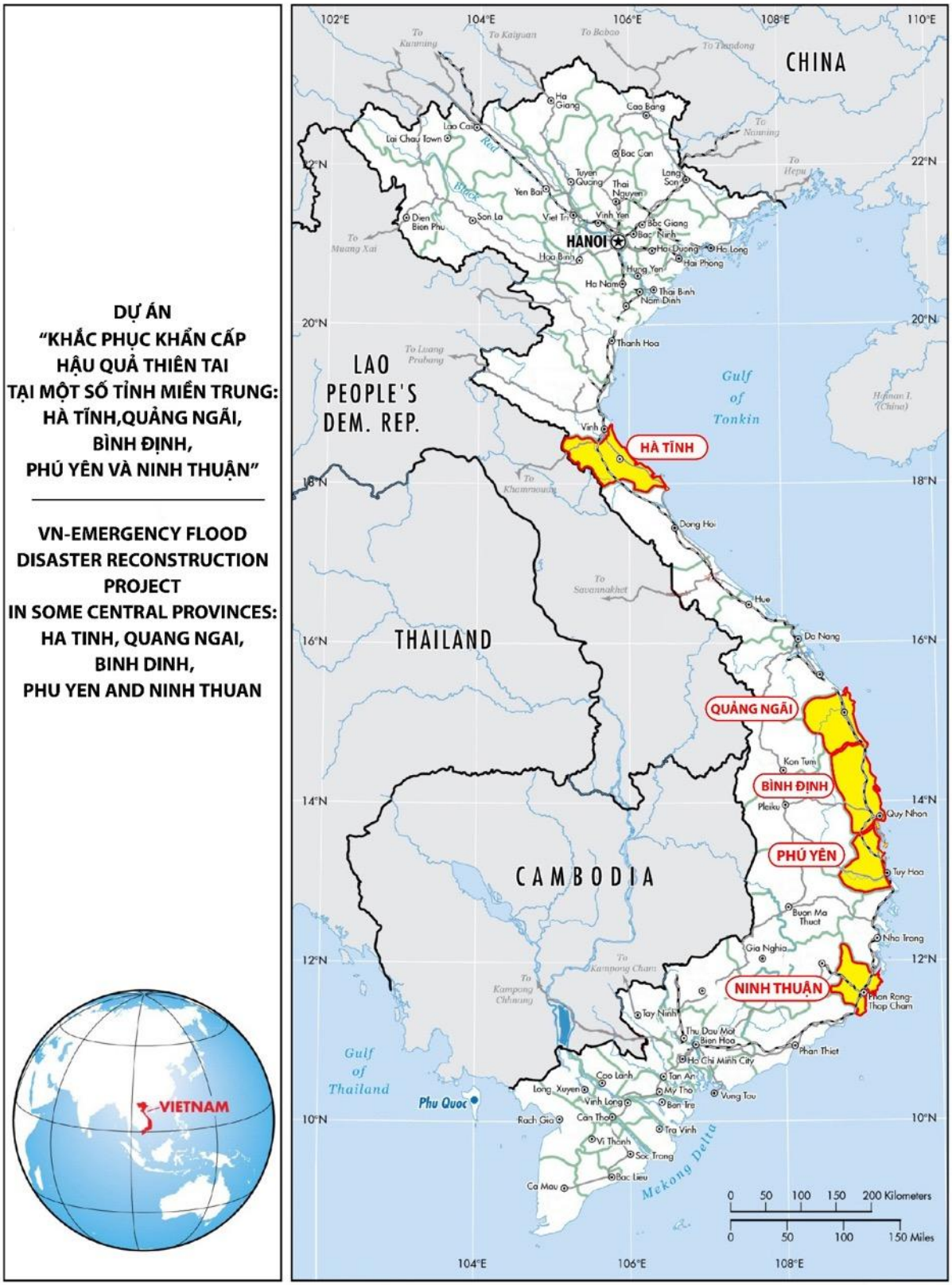

Figure 1. Location map of the project provinces

2.3 Anticipated Subproject Types

14. Components 1 of the project will support investments inthe reconstruction and rehabilitation of damaged critical provincial-scale infrastructure, specifically irrigation, flood

control and road/bridge infrastructures.This component will be implemented by the selected provinces.A subproject would involve two or more of the following typical small to medium scale investments:

- This sub-component of Binh Dinh subproject will fund reconstruction of damaged roads and bridges, including landslide protection and slope stabilization, associated drainage systems and other structures to increase resilience; (ii) damaged irrigation systems, including diversion structures, canals and canal structures, desilting and reshaping of drainage channels; and (iii) damaged flood prevention/control structures, including river embankment structures, dykes, revetments, etc.
- This sub-component of Phu Yen subproject will fund resilient reconstruction of damaged roads, bridges, irrigation systems and flood prevention/control structures in Phu Yen Province.
- This sub-component of Quang Ngai subproject will fund reconstruction of damaged roads, bridges, irrigation systems and flood prevention/control structures in Quang Ngai province.
- This sub-component of Ninh Thuan subproject will fund reconstruction of damaged roads, bridges, irrigation systems and flood prevention/control structures in Ninh Thuan province.
- This sub-component of Ha Tinh subproject will fund reconstruction of damaged roads, bridges, irrigation systems and flood prevention/control structures in Ha Tinh province.

15. Components 1 will comprise the subprojects which will be implemented in 2 phases, and the first 18-monthsubprojects (5 subprojects) have been identified. *Table 1* presents a list of first 18-month proposed subprojects; however, additional subprojects of the same nature may be considered and selected in close consultation between the Government of Vietnam (GoV) and the WB.

Table 1. Summary of subprojects including the first 18-monthsubprojects (the names of the subproject are to be updated in line with the final FS, PAD, ESMPs).

Table 1. The first 18-month subprojects

No.	Ref. No	Contract Description	Estimated Cost (USD)	Expected Bid-Opening Date	Expected Contract Award Date	Impl. Time (months)
I	**Construction works**		**42,191,000**			
I.1	BINH DINH province					
1	BĐ-01-XL	Repair and reconstruction of flood embankments/ dikes along La Tinh (severe damaged sections)	4,599,000	17-Jul	17-Aug	10
2	BĐ-02-XL	Repair and reconstruction of flood embankments/ dikes along Can River	2,123,000	17-Jul	17-Aug	10
3	BĐ-03-XL	Repair and reconstruction of flood embankments/ dikes along Kon River (severe damaged sections)	3,381,000	17-Jul	17-Aug	10
4	BĐ-04-XL	Repair and reconstruction of collapsed or severe damaged bridges	1,651,000	17-Jun	17-Aug	12
5	BĐ-05-XL	Repair and reconstruction of provincial roads number 635, 639 and 639B	2,359,000	17-Jul	17-Aug	10
I.2	HA TINH province					

No.	Ref. No	Contract Description	Estimated Cost (USD)	Expected Bid-Opening Date	Expected Contract Award Date	Impl. Time (months)
6	HT-01-XL	Repair and reconstruction of drainage system on 19/5 river along Phuc- Long- Nhuong dyke, Cam Xuyen District	1,515,000	17-Jul	17-Aug	8
7	HT-02-XL	Repair and reconstruction of Khe Tria drainage system, Nghi Xuan District; and Tan Dua and My Thuan spillway bridges	1,620,000	17-Jul	17-Aug	8
I.3	NINH THUAN province					
8	NT-01-XL	Reconstruction of embankment of Dinh river bank in Phuoc Son Commune, Ninh Phuoc District	1,726,000	17-Jul	17-Aug	8
9	NT-02-XL	Reconstruction of embankment to protect Ba Rau residential area, Thuan Bac District and Reconstruction of embankment to protect residential area, Ninh Phuoc District	1,718,000	17-Jul	17-Aug	8
I.4	PHU YEN province					
10	PY-01-XL	Reconstruction of embankment of Ba river, Phong Nien village, Ha Thang Commune, Phu Hoa District	3,976,000	17-Jul	17-Aug	12
11	PY-02-XL	Reconstruction of spillways and embankment of Suoi Da at An Hiep Commune; and reconstruction of An Hiep - An Linh road, Tuy An District	2,394,000	17-Jul	17-Aug	12
12	PY-03-XL	Reconstruction of embankment of Ky Lo river at Ngan Son bridge, Tuy An District	3,976,000	17-Jul	17-Aug	12
13	PY-04-XL	Reconstruction of provincial road ĐT-643, ĐT-650, ĐT-642 at Tuy An District, Dong Xuan Distrits,, and Song Cau Town	3,762,000	17-Jul	17-Aug	10
14	PY-05-XL	Reconstruction of road for management and maintainance of Xuan Binh lake, Xuan Binh Commune, Song Cau Town	1,759,000	17-Jul	17-Aug	12
I.5	QUANG NGAI province					
15	QN-01-XL	Embankment on northern bank of Cay Bua river, southern bank of Ve river at Duc Thang Commune; and northern bank of Ve river at Nghia Hiep Commune	1,553,000	17-Jul	17-Aug	10
16	QN-02-XL	Embankment on northern bank of Tra Khuc river	1,941,000	17-Jul	17-Aug	10

No.	Ref. No	Contract Description	Estimated Cost (USD)	Expected Bid-Opening Date	Expected Contract Award Date	Impl. Time (months)
17	QN-03-XL	Construction of Va Ranh bridges (Tra Lanh), Dam bridge,Dong Yen 3 bridges, Ha Rieng bridges and road to resettlement area in Ha Rieng village	2,138,000	17-Jul	17-Aug	10
II	**Consulting services**		**734,000**			
1	BĐ-10-TV	Construction supervision service for construction works: BĐ-01-XL, BĐ-02-XL and BĐ-03-XL	134,000	17-Jul	17-Aug	10
2	BĐ-11-TV	Construction supervision service for construction works: BĐ-04-XL and BĐ-05-XL	100,000	17-Jul	17-Aug	12
3	HT-01-TV	Construction supervision service for construction works: HT-01-XL and HT-02-XL	72,000	17-Jul	17-Aug	8
4	NT-02-TV	Construction supervision service for construction works: NT-01-XL and NT-02-XL	74,000	17-Jul	17-Aug	8
5	PY-01-TV	Construction supervision service for construction works: PY-01-XL	57,000	17-Jul	17-Aug	12
6	PY-02-TV	Construction supervision service for construction works: PY-02-XL and PY-03-XL	75,000	17-Jul	17-Aug	12
7	PY-03-TV	Construction supervision service for construction works: PY-04-XL and PY-05-XL	98,000	17-Jul	17-Aug	12
8	QN-16-TV	Construction supervision service for construction works: QN-01-XL, QN-02-XL and QN-03-XL	124,000	17-Jul	17-Aug	10

2.4 Project Implementation Arrangement

16. **Project coordination and management.** The project will be implemented in a decentralized manner under the direction of PPCs in each of the five provinces. The PPCs will guide, support, and supervise the respective PPMUs. Binh Dinh's PPC will play an oversight role at the provincial level, and its PPMU will be responsible for liaising and coordinating with the Project Management Units (PMUs) in the other four provinces. In addition to a regular PPMU's responsibilities, the Binh Dinh PPMU will be in charge of the day-to-day overall implementation and management of the project, except Component 2, which will be managed by the MARD. The Binh Dinh PPMU will hire a project monitoring and evaluation (M&E) and Coordination Consultant to help coordinate project activities.

17. **Project implementation.** The existing PPMUs at selected provinces, which are currently in charge of implementing the World Bank-funded Dam Rehabilitation and Safety Improvement Project, will be utilized for this project. These units are familiar with the World Bank's requirements and procedures forfiduciary and safeguard policies and include environmental and social safeguard specialists. As such, they will be in charge of the day-to-day management and implementation of the project in their respective provinces. However, additional staff will need to be added to each of the PPMUs who can dedicate efforts to implementation of the emergency

project. Qualified full-time senior Transport Engineers and Procurement Experts with an engineering background, fully responsible for handling the Systematic Tracking of Exchanges in Procurement (STEP, the World Bank's procurement network that is mandatorily used), and at least two senior Transport Engineers who have experience in road and bridge design and construction have been mobilized by all PPMUs. The PPMUs will be responsible for the preparation of engineering designs, safeguard instruments, procurement, financial management (FM), contract administration, and all aspects of project management at the provincial level.

18. Component 2 will be implemented by the MARD under the guidance of the CCNDPC). The CCNDPC will provide overall strategic, policy, and coordination among various Government agencies (for example, the MPI, MOF, MOT) and provinces to facilitate the implementation of the component as designed. A PMU will be established in the Directorate of Water Resource of the MARD to be in charge of the implementation monitoring, audit, procurement, FM, contract administration, and payment to contractors as well as handing over.

19. **Citizen engagement in this project is in line with broader efforts to mainstream good governance and a consultative process into operations, as guided by the principles of participation, transparency, and accountability of CPS 2012-2016.** During implementation, citizen engagement will be fostered through (a) active consultation with communities (for instance, those living alongside the roads or behind the dyke to be rehabilitated) in the design, construction, and maintenance of civil works; (b) formation of a community supervision group in each project location to provide oversight for subproject implementation according to the Vietnamese regulations; and (c) setting up of grievance redress mechanisms (GRMs). Environmental and social safeguards documents also emphasize consultations with project beneficiaries and affected communities. The preparation of safeguards as well as technical documents will collect baseline data for tracking citizen engagement, including relating to the accessibility of citizens to different types of roads and participation in labor-intensive work. During implementation, feedback will be collected from beneficiaries on project activities, results, and how grievances in relation to the implementation of the project are addressed. A citizen engagement indicator has also been included to assess the overall development impact of this project.

20. **Implementation readiness.** A number of steps are being undertaken to ensure implementation readiness. The existing PPMUs for the Dam Rehabilitation and Safety Improvement Project with core qualified staff members have already been assigned to be in charge of this project. In addition to the staff mobilization, the project target provinces have also been mobilizing available resources, experiences, and results gained from other ongoing projects for preparation of the feasibility study (FS), technical design, Project Operations Manual (POM), and so on to ensure both quality of the project documents and meeting of the emergency readiness conditions. Particularly, the draft POM, clarifying roles and responsibilities, was approved by PPCs in April 2017. A Project Procurement Strategy for Development (PPSD) and procurement plans for all five provinces have been prepared. Bid documents including detailed technical design for priority packages are under preparation. It is expected that the bidding process for some of the priority civil work packages will be completed during the preparation phase. The construction will then be started immediately after the project effectiveness period ends. In addition, key consultancies to support project implementation, such as construction supervision and project M&E, will be procured within the effectiveness period. To support this process, terms of reference for key consultancies (for example, for detailed designs and supervision of works) are under preparation and will be agreed upon before effectiveness. Financial reporting requirements and auditing arrangements have been agreed and are detailed in Annex 3.

21. **Coordination with other donor-financed projects in the five target provinces.** The world Bank is financing the following projects: (a) Dam Rehabilitation and Safety Improvement Project in all five provinces; (b) Vietnam - Managing Natural Hazards (VN-Haz) Project in Ha Tinh, Quang Ngai, Binh Dinh, and Ninh Thuan; (c) the Coastal Resources for Sustainable Development in Binh Dinh, Ha Tinh, and Phu Yen; (d) Vietnam Central Highlands Poverty Reduction Project in Quang Ngai; (e) Vietnam Irrigated Agriculture Improvement Project in Ha Tinh; and (f) Da Nang - Quang Ngai Expressway Development Project in Quang Ngai. The project will continue to coordinate with these ongoing projects to effectively support the provincial development priorities and project implementation, particularly on resource mobilization of counterpart finance, staff, procurement plan, M&E, and construction supervision.

22. The project will also support dialogue, during its implementation, to ensure complementarity of the project with the Integrated Rural Development Sector Project in the central provinces financed by the Asian Development Bank (ADB) and the ongoing disaster reduction initiatives supported by the Japan International Cooperation Agency (JICA). The dialogue will aim to strengthen coordination and leverage supports of development partners to contribute to the endeavors of the PPCs to achieve their sustainable development goals.

3. POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

3.1 Applicable National Laws and Regulations

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

- Environmental Protection Law No. 55/2014/QH13 of the National Assembly of Vietnam dated June 23, 2014. This law stipulates environmental protection activities; policies, measures and resources for environmental protection; right and obligations of organizations, households and individuals in environmental protection. Article 7 of Chapter 1 prescribes prohibited actions such as destroying and illegal exploiting natural resources; transportation and dumping of toxic product, radioactive substance, waste and hazardous waste not following technical regulations on environmental protection; disposal of untreated wastes, toxic product, radioactive substance, and other hazardous materials into land, water and air; generating noise and vibration that exceeds national technical regulation on noise and vibration; emitting dust, smoke and gases containing toxic chemicals and offensive smell into air; emitting radiation and radioactivity and ionization substances that exceeds national technical regulations. Article 18 of Chapter 2 stipulates Envionmental Impacts Assessment (EIA) for investment projects.
- Land Law No. 45/2013/QH13 ofthe National Assembly of Vietnam dated November 29, 2013prescribes the regime of land ownership, powers and responsibilities of the State in representing the entire-people owner of land and uniformly managing land, the regime of land management and use, the rights and obligations of land users involving land in the territory of the Socialist Republic of Vietnam. Article 12 of Chapter 1 prescribes prohibited actions such as encroaching and destroying of land; violating of land planning that was publicly disclosed; improper landuse; not providing or providing incorrect land information as per legal regulation. Article 16 of Chapter 2 stipulates land acquisition. Chapter 5 stipulates land acquisition, compensation, support and resettlement.
- Law on Natural Disaster Prevention and Control No. 33/2013/QH13 of the National Assembly of Vietnam dated on June 19, 2013 provides natural disaster prevention and control activities; specifies the rights and obligations of agencies, organizations, households and individuals engaged in natural disaster prevention and control activities; and details the state management of, and assurance of resources for, natural disaster prevention and control. Article 12 of Chapter 1 prescribes prohibited actions such as

implementing actions to cause an increase in natural disaster risks without mitigation measures, such as destroying protection forests, encroaching river plain, riverbed, creating block, obstructing water flow, illegal extraction of sand, gravel, and minerals to cause landslide of riverside and seaside. Article 30 of Chapter 2 stipulates natural disaster reconstruction activities.

- Law on Water Resources No. 17/2012/QH13 of the National Assembly of Vietnam dated June 21, 2012 provides on management, protection, exploitation and use of water resources, as well as the prevention of, combat against and overcoming of harmful effects caused by water in the territory of the Socialist Republic of Vietnam. Chapter 3 of this law stipulates Protection of Water Resources. Extraction and use of water resources must comply with the water resources planning. Article 9 of Chapter 1 prescribes prohibited actions, such as discharge of wastes and illegal exploitation of sand and gravel in stream, river, channel, and reservoir.
- Law on Biodiversity No. 20/2008/QH12 of the National Assembly of Vietnam dated November 13, 2008 provides for the conservation and sustainable development of biodiversity; rights and obligations of organizations, households and individuals in the conservation and sustainable development of biodiversity. Article 7 of Chapter 1 prescribes prohibited actions such as hunting, poaching and exploiting wildlife in strictly protected subregion of protected areas, except for scientific research purposes; encroaching land, destroying landscape, degrading natural ecological systems and rasing and growing alien species in protected areas; constructing works and houses in in strictly protected subregion of protected areas, except for works for defence and security purposes; illegal construction of works and houses in ecological recovery subregion of protected areas.
- The Law on Construction No. 50/2014/QH13 approved on 18th June 2014 by 7th National Assembly of the Socialist Republic of Vietnam. Article 12 of Chapter 1 prescribes prohibited actions such as use of materials to cause harm to the public health and environment. Article 16 of Chapter 2 stipulates environmental protection in construction. During construction, contractors are responsible for (i) establishing and implementing environmental protection measures, including air and water environment, solid wastes, noise and other requirements in accordance with Law on Environmental Protection, and (ii) compensating for damages caused by contractors.
- The Law on Roadway Traffic No. 23/2008/QH12 dated on 13/11/2008. Articles 8 of Chapter 1 prescribes prohibited actions such as driving vehicles without licences; driving vehicles with speed exceeding allowed speed; sounding horn between 10 p.m. and 5 a.m.; driving vehicles while the body is positive with drug. Article 55 of Chapter 4 stipulates ensuring technical safety quality and environmental protection for vehicles moving on roadways.
- The Law on Complaint No. 02/2011/QH13 dated 11 November 201.This law stipulates complaint and handling complaint; management and monitoring of complaint handling. Article 6 of Chapter 1 prescribes prohibited actions such as limited responsibility for handling complaint; creating wrong information and documents of compliant cases; intentionally handling complaint not following legal regulation; impeding and causing inconvenience for people who conduct complaint right; threatening, revenging, and victimizing complainant. Article 7 of Chapter 2 stipulates complaint procedures; Article 8 of Chapter 2 stipulates complaint form; Article 9 of Chapter 2 stipulates complaint prescription.
- The Law on Culture Heritage No. 28/2001/QH10. This law aims to (i) reinforce the state management effectiveness and (ii) raise responsibility of people for participation, protection and promotion of the value of cultural heritages. Article 13 of Chapter 1

prescribes prohibited actions such as destroying and causing potential destruction of cultural heritage; illegal excavation of archaeological sites; illegal construction and encroaching land of historical relics and famous landscape; appropariating of cultural heritage and making of untrue cultural heritage. Article 37 of Chapter 4 stipulates chance find procedures.

- The Law on Safety, Labor Sanitation No. 84/2015/QH13 dated June 25, 2015. This law stipulates ensuring safety and labour sanitation; policy and regulation for labour accident and occupational diseases; responsibility and right of organizations and individuals in safety and labour sanitation and state management of safety and labour sanitation. Article 12 of Chapter 1 prescribes prohibited actions such as cheating at verification, safety training, labour sanitation, monitoring labour environment; discrimination of gender in safety ensurance, labour sanitation; hiding or reporting untrue labour accidents; not implementing requirements and measures for safety ensurance, labour sanitation to cause harm or potential harm to human, assets and environment; use of equipment and machinery requiring strictly requirements on safety and labour sanitation but not verified or verified results not satisfying requirements. Article 14 of Chapter 2 stipulates training in safety and labour sanitation for employee. Article 16 of Chapter 2 stipulates employer's obligation in ensuring safety and labour safety at workplace.
- The Law on Dike No. 79/2006/QH11 dated on 29/11/2006. This law stipulates planning on flood prevention for river dike; dike planning; construction investment; dike rehabilitation; management, protection, maintenance and use of dike. Article 7 of Chapter 1 prescribes prohibited actions such as destroying dike; construction of works and houses within dike protection, excepr for works for flood control, auxiliary works and other special works; exploitation of soil, stone, sand, and gravel and other minerals; digging pond and well within dike protection and other activities to cause obstruction of water flow and flood drainage. Articles 20, 21 and 22 of Section 3 of Chapter 2 stipulate construction investment, rehabilitation and reinforcement of dike.
- The Law on Plant Protection and Quarantine No. 41/2013/QH13 dated on 25/11/2013. This law stipulates harmful pests prevention; plant quarantine; pesticides management. Article 13 of Chapter 1 prescribes prohibited actions such as application of measure for plant protection and quarantine not following this law; dispersion of harmful species; manufacture, trading, use, storage, collection, transportation, disposal and treatment of pesticides and containers not following this law; advertising pesticides banned in Vietnam; manufacture, import, and trading pasticides banned in Vietnam. Chapter 4 stipulates Management of Pesticides. Article 49 of Chapter 4 stipulates pesticides not registered or removed from the list of allowed pesticides in Vietnam. Article 68 of Chapter 4 stipulates Transportation of Pesticides, and Article 69 stipulates storage of pesticides. Article 75 of Chapter 4 stipulates collection and treatment of emptied containers of pesticides.
- Labor Law No.10/2012/QH13. This law stipulates labour standard; right and obligation of employee, employer, representative organization of employee, representative organization of employer in labour relations and other relations directly related to labour relations; state management of labour. Article 8 of Chapter 1 prescribes prohibited actions such as discrimination of gender, ethnicity, skin colour, social status, belief, religion, disability; labour forcing; use of untrained employee; use of employee with age not following legal regulation.
- Law on Fire Prevention and Fighting No.27/2001/QH10 dated June 29, 2001. This law stipulates fire prevention and fighting; establishing human resources, equipment and machineries and policy on fire prevention and fighting. Article 13 of Chapter 1 prescribes prohibited actions such as construction of works which the design for fire

prevention and fighting has not been reviewed and approved; approval and put into operation of works which have not yet satisfied conditions of fire prevention and fighting. Article 4 of Chapter 1 prescribes principles of fire prevention and fighting.

- Law on Electricity No.28/2004/QH11dated December 14, 2004. This law stipulates planning and investment in electricity; electricity saving; electricity market; right and obligation of organizations and individuals in electricity use; protection of electricity equipment and works; electricity safety. Article 7 of Chapter 1 prescribes prohibited actions such as destroying electricity equipment and works; violating safety regulations on electricity generation, transmission and distribution; violating regulations on protection of electricity network safety corridor, and safety distance between transmission line and substation.
- Decree No. 38/2015/ND-CP of 24 April 2015 of the Government on management of waste and discarded materials. Chapter 2 stipulates Mangement of Hazardous Wastes. Hazardous wastes must be classified according to hazardous wastes codes in order to store in proper containers. Hazardous wastewater must be treated to satisfy national standards. Hazardous wastes must be classified at the timing of storage or transportation to treatment area.
- Decree No. 39/2015/NĐ-CP of the Government dated 27 April 2015 on assistance policy applied to ethnic minority and poor women who comply the population policy will take effect as from 15 June 2015.
- Decree No. 18/2015/ND-CP dated February 14, 2015 of the Government on environmental protection planning, strategic environmental assessment, environmental impact assessment, and environmental protection commitment.
- Decree No.19/2015/ND-CP of 14 February 2015 of the Government detailing the implementation of a number of articles of the Law on Environmental Protection;
- Decree No.43/2014/ND-CP dated May 15, 2014 of the Government providing guidance on detailed implementation of some articles from the Land Law 2013.
- Decree No.44/2014/ND-CP dated 15 May 2014 of the Government providing regulations on land prices.
- Decree No.47/2014/ND-CP dated 15 May 2014 of the Government on compensation, support, and resettlement when land acquisition is required by the State.
- Decree No. 155/2016/ND-CP dated 18 November 2016 of the Government prescribing administrative sanctions for environmental protection. This decree stipulates administration violation in environmental protection including (i) violation of environmental protection plan, environmental impact assessment and environmental protection projects; (ii) actions to cause environmental pollution; (iii) violation of management of wastes, etc.
- Decree No. 25/2013/ND-CP of 29 March 2013 of the Government on environmental protection charges for wastewater. This decree stipulates that organizations or individuals who discharge wastewater into the environment pay environmental protection fee.
- Decree No. 67/2012/ND-CP of the Government dated 10 September 2012 on the amendment of Decree No. 143/2003/ND-CP of the Government dated 28 November 2003 on detailing the implementation of a number of articles of the ordinance on exploitation and protection of irrigation works.
- Decree No. 113/2010/NĐ-CP dated 3 December 2010 of the Government on valuation of damages caused to the environment. This decree stipulates assessment of environmental damage, calculation of damage, and determination of obligation of compensation for damage due to environmental pollution and degradation.

- Decree No. 174/2007/ND-CP of 29 November 2007 on environmental protection charges for solid waste. This desree stipulates the environmental protection fee for solid wastes, such as general solid waste (maximum 40,000 VND per ton) and hazardous wastes (maximum 6,000,000 VND per ton).
- Decree No. 59/2007/NĐ-CP dated 09/4/2007 of the Government on the management of solid waste. This decree stipulates right and obligation of organizations and individuals in relation to solid wastes. Article 6 of Chapter 1 describes prohibited actions such as storage of wastes in unapproved places; emitting dust and falling wastes during collection and transportation; mixing general wastes with hazardous wastes. This decree also stipulates storage, transportation and treatment of solid wastes.
- Circular No. 27/2015/TT-BTNMT dated 19 May 2015 of the Ministry of Natural Resources and Environment on strategic environmental assessment (SEA), environmental impact assessment (EIA), and environmental protection plan (EPP).
- Circular No. 36/2014/TT-BTNMT dated 30 June 2014, specifying detailed methods of valuation of land prices, construction, adjustment of land prices; specific land prices valuation and land prices valuation consulting service.
- Circular No.37/2014/TT-BTNMT dated 30 June 2014, providing detailed regulation compensation, assistance, and resettlement when the State acquires land.
- Circular No. 30/2014/TT-BTNM, regulating the records for land allocation or land lease, the change of land use purposes, land acquisition
- Circular No. 36/2015/TT-BTNMT dated 30/6/2015 of Ministry of Natural Resources and Environment on hazardous waste management. This circular stipulates details of execution of Decree 38/2015/ND-CP mentioned above.
- Circular No. 22/2010/TT-BXD dated 03/12/2010 of Ministry of construction providing labor safety in construction
- Circular No. 19/2011/TT - BYT of 06 June 2011 of the Minsitry of Health on guidance on labor hygiene, laborers' health and occupational diseases.
- Circular No 13/2007/TT-BXD of December 31st 2007. Providing guidance on a number of articles of decree no. 59/2007/nd-cp dated 09/4/2007 by the government on solid waste management.
- Decision No. 52/2012/QD-TTg, dated November 16, 2012 on the support policies on employment and vocational training to farmers whose agricultural land has been recovered by the State.

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

- QCVN 01:2009/BYT: National technical regulation on drinking water quality.
- QCVN 02:2009/BYT: National technical regulation on domestic water quality.
- QCVN 08-MT:2015/BTNMT– National technical regulation on surface water quality;
- QCVN 09-MT 2015/BTNMT– National technical regulation on ground water quality.
- QCVN 10:2008/BTNMT: National technical regulation on water quality in coastal areas.
- QCVN 14:2008/BTNMT: National technical regulation on domestic wastewater.
- QCVN 40:2011/BTNMT: National technical regulation on industrial wastewater.

- QCVN 39:2011/BTNMT: National technical regulation on Water Quality for irrigated agriculture.
- QCVN 38:2011/BTNMT: National technical regulation on Surface Water Quality for protection of aquatic lifes.
- QCVN 03-MT:2015/BTNTM - National technical regulation on the allowable limits of heavy metals in the soils.
- QCVN 15:2008/BTNMT: National technical regulation on the pesticide residues in the soils.
- QCVN 43:2012/BTNMT - National technical regulation on sediment quality in fresh water areas.
- QCVN 05:2013/BTNMT: National technical regulation on ambient air quality.
- QCVN 06:2009/BTNMT: National technical regulation on hazardous substances in ambient air.
- TCVN 6438:2005 - Road vehicles –Maximum allowable limits of gas emission.
- QCVN 26:2010/BTNMT: National technical regulation on noise.
- QCVN 27:2010/BTNMT: National technical regulation on vibration.
- QCVN 07:2009/BTNM: National Technical Regulation on Hazardous Waste Thresholds
- QCVN 17:2011/BGTVT: National technical regulation on Rules for Pollution Prevention of inland waterway ships.
- Decision 3733/2002/-BYT October 10, 2002: Promulgating 21 labor hygiene standards, 05 principles and 07 labor hygiene measurements.
- QCVN 18:2014/BXD – National Technical regulation on safety in construction.
- Other relevant sector technical regulation and standards.

Technical Specifications for Design of Roads, Bridges and Irrigation Works is as follows:

- TCVN 5045:2005: Highway – Specifications for Design. This standard stipulates requirements for design of new construction, rehabilitation and upgrading of highway. This standard also applies to design of rural roads.
- QCVN 07-2016/BXD – National technical regulation on infrastructure works and transportation infrastructure. This regulation stipulates technical requirements for investment in new construction and rehabilitation of municipal transportation infrastructures. This regulation does not apply to transporation infrastructures of subway, municipal railway, habour, and airport.
- TCVN 22 TCN272-05 – Specifications for Design of Bridges.
- TCVN 9902:2016: Irrigation Works – Specifications for Design of River Dikes.
- TCVN 4118:2012: Irrigation Wroks – Specifications for Design of Irrigation Canal Systems.

3.2 World Bank Safeguard Policies Triggered

25. The project has been classified as Category B under OP 4.01. All works will focus on rehabilitation and reconstruction of infrastructures damaged during the flood, which are expected to be of small and medium scale and to be implemented in the existing road's and bridge's right-of-way, generating only minor to moderate and localized environmental and social impacts that

can be easily identified, mitigated, and managed. No large-scale, significant, and/or irreversible impacts are expected. Overall, the expected environmental impacts are mostly associated with the construction phase of the rehabilitation works and include debris management, worker sanitation, noise control, use of hazardous materials, soil erosion, and so on. Further screening of subprojects should be undertaken during implementation to ensure their eligibility, and Category A subprojects will be excluded. The impacts and mitigation measureswill be addressed during the preparation of the project Environmental and Social Management Framework (ESMF) and Environmental and Social Management Plans (ESMPs) or Environmental Codes of Practice (ECOP) for these subprojects, including those associated with labor influx. Therefore, the project has been categorized as Category B for environment. The following World Bank safeguard policies have been triggered: (a) Environmental Assessment (OP 4.01); (b) Natural Habitats (OP/BP 4.04); (c) Pest Management (OP 4.09); and (d) Physical Cultural Resources (OP/BP 4.11); (e) Involuntary Resettlement (OP/BP 4.12); and (f) Indigenous Peoples (OP/BP 4.10).

Environmental Assessment (OP/BP 4.01)[2]

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

27. This policy is triggered due to the potential adverse impacts associated with activities under Component 1, requiring the identification, mitigation and monitoring of potential adverse environmental and social impacts associated with rehabilitation and of the existing roads, dykes, embankments, bridges, irrigation canals, and weirs, irrigation pumping stations, and water supply systems, and reconstruction of some bridges in disaster-affected areas. The project has been classified as Category B under OP 4.01 since the anticipated scale of potential adverse environmental or social impacts under the project are site specific, few if any of them are irreversible and in most cases, mitigation measures are readily available. Category A subprojects will be excluded from project financing due to the scope of the expected rehabilitation works and the restrictions in timing typical of an emergency operation.

28. All five subprojects for the first 18-month of implementation have been screened and confirmed to be Category B, and thus, either an Environmental and Social Management Plan (ESMP) or Environmental Codes of Practice (ECOP) will suffice. Alist of the remaining subprojects has also been identified, but the details of these subprojects have not been determined yet. Thus, this Environmental and Social Management Framework (ESMF) has been prepared to provide general guidelines to the Client to ensure that the proposed project is implemented in an environmentally and socially sustainable manner and in line with the applicable World Bank safeguard policies and Government regulations.

Natural Habitats (OP/BP 4.04)[3]

29. This policy prohibits the Bank from financing projects that cause significant degradation or conversion of critical natural habitats. It also states that the Bank will not support projects

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

[3]Full description of OP/BP 4.04 is available at http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543920~menuPK:1286576~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html

involving the significant conversation of natural habitats. If the environmental assessment indicates that the project would significantly convert or degrade natural habitats, the project includes mitigation measures acceptable to the Bank.

30. The project interventions are not located near or within any critical natural habitats and mainly involve rehabilitation and reconstruction activities on the existing infrastructures. Therefore, it will neitheraffect any protected areas nor rare and endangered flora or fauna species or high biodiversity areas. However, pollution risks related to removal and disposal of substantial quantities of non-hazardous construction materials associated with the destroyed structures (embankment protection devices, bridges) consisting of concrete, scrap metal, stone, sand from irrigation canals and small streams for rehabilitation and reconstruction works could affect natural habitats such as rivers or streams. Therefore, this policy is triggered. Impacts on natural habitats and associated mitigations measures will be addressed in the relevant subproject ESMPs.

Pest Management (OP 4.09)[4]

31. The project will not finance any procurement or use of pesticides. However, improvements in agricultural production from improved and more stable water supply may lead to the increased use of pesticides in some subprojects. In those situations, a pesticide management plan will be required to be included in the subproject ESMP. No pesticides are to be used for land clearance.

Physical Cultural resources (OP/BP 4.11)[5]

32. Physical Cultural Resources Policy (PCRs) is intended to ensure that projects identify and inventory cultural resources that are potentially affected by the project. PCRs include resources of archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance. The Project should include mitigation measures when there are adverse impacts on physical cultural resources. Appropriate agencies, NGOs and universities should be consulted.

33. It is not expected that the project will require relocation of significant PCRs such as monuments, temples, churches, religious/spiritual and cultural sites. However, rehabilitation and new construction activities supported under the project may involve relocation of normal graves which are also considered PCRs, and thus this policy is triggered. Some civil works may also include excavation activities, which may result in chance finds, so the "chance find procedures" will be included in the ESMP/ECOP and civil works contracts.

The Indigenous Peoples policy (OP/BP 4.10)[6]

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

35. An initial screening conducted by the Bank specialist has confirmed that there are ethnic minority communities as per the Bank OP 4.10 definition, to be affected by and benefited from the project hence the World Bank policy on Indigenous Peoples OP/BP 4.10 will be triggered.

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[4] OP 4.09 is fully described in detail at http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064720~menuPK:64701637~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html

[5] OP/BP 4.11 is accessible at http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543961~menuPK:1286639~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html

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

An Ethnic Minority Planning Framework (EMPF) will be prepared guiding procedures to ensure free, prior, and informed consultation with affected ethnic minority communities to ascertain their broad community support, measures to ensure they benefit from project supports and minimize/mitigate any adverse impacts on them. The EMPF outlines and guides the preparation and implementation of subproject Ethnic Minority Development Plans (EMDPs) based on social assessment to be carried out to identify ethnic minorities and potential project impacts on them in the project area.The social assessment (SA) and preparation of the EMPF will be carried out early in project implementation stage to allow adequately inform the preparation of site-specific EMDPs.

Involuntary Resettlement (OP/BP 4.12)[7]

36. OP 4.12 seeks to prevent severe long-term hardship, impoverishment, and environmental damage to the affected peoples during involuntary resettlement. It applies whether or not affected persons must move to another location. The Bank describes all these processes and outcomes as "involuntary resettlement," or simply resettlement, even when people are not forced to move. Resettlement is involuntary when the government has the right to expropriate land or other assets and when affected people do not have the option to retain the livelihood situation that they have.

37. The Bank's policy requires a RPF to be prepared and submitted by the borrower prior to appraisal, conforming to the policy. The purpose of the RPF is to clarify resettlement principles, organizational arrangements, and design criteria to be applied to subprojects. The Bank's policy also requires a RAP for any subproject that involuntarily displaces people from land or productive resources, and the displacement results in: i) relocation, the loss of shelter, the loss of assets or access to assets important to production; ii) the loss of income sources or means of livelihood; or iii) the loss of access to locations that provide higher incomes or lower expenditures to businesses or persons.

38. The project will support resilient recovery and reconstruction in five priority provinces affected by the 2016 floods and future climate-related events. Specific investments to be supported under the project are identified with objectives of causing no significant social impact which is expected to occur. Since the project will use build-back-better approaches for affected roads and infrastructures, there is a possibility that some subprojects may cause losses of land or assets. In addition, it is envisaged potential loss of livelihoods due to the temporary restriction of access and interruption of irrigation water supply during construction period.

39. The project will require land acquisition and hence the OP/BP 4.12 involuntary resettlement is triggered. As per GoV requirements set forth in the Land Law 2013 and Decree 16/2016/ND-CP guiding the ODA utilization and management, a Resettlement Policy Framework (RPF) for four project provinces will be prepared and submitted to the Prime Minister for approval during the project preparation though all other safeguards documents will be deferred to implementation stage. The RPF guides principles and procedures to identify, assess, minimize and mitigate social impacts, including screening criteria, eligibility criteria, entitlement matrix and valuation methodology; and implementation arrangements to be applied to subproject Resettlement Action Plans (RAPs). The RPF will be submitted to RSS for review and approval prior to project negotiations. The RPF will be approved by Prime Minister before the project implementation.

40. All subproject RAPs will be prepared and submitted to the Bank for approval. The respective Provincial People's Committee (PPC) will then approve the RAPs and all

[7] Detail of OP/BP 4.12 is available at http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,contentMDK:20543978~menuPK:1286647~pagePK:64168445~piPK:64168309~theSitePK:584435,00.html

compensation, assistance and resettlement activities should be completed prior to civil works commencement.

The World Bank policy on Access to Information[8]

41. The World Bank Access to Information Policy is intended to ensure that persons and groups affected by the project are kept informed of the project objectives and impacts, and are consulted throughout the project to ensure that their interests are represented. Safeguards documents are disclosed locally in the project areas and the World Bank external website, which includes a resource center in Washington DC and an electronic database, offering access to information on World Bank projects and program to the public.

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

World Bank Group Environmental, Health, and Safety Guidelines[9]

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

3.3 Gap Analysis and Gap Filling Measures

44. The application of environmental assessment policies in Vietnam, as well as various efforts directed to policy harmonization between the GoV and donors, has gradually narrowed the gap between the two systems. However, significant differences remain between the GoV's environmental policies and those of the World Bank. These differences and proposed gap filling measures are described in Table 2 below. The purpose of inclusion of this table into the ESMF is to ensure that PPMUs fully understand the differences of EA process and mandatory compliance with the World Bank safeguard policy requirements and the GoV's environmental regulations given that PPMUs are not aware of and will have to comply with both.

[8] Detail of World Bank Policy o Access to information is available at http://www.worldbank.org/en/access-to-information

[9] The EHS Guidelines can be consulted at www.ifc.org/ehsguidelines.

Table 2. Summary of the World Bank and National EA Processes and proposed gap mitigation for the project

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

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
	implementation of each instrument.		
Scope	- The World Bank helps the Borrower draft the TOR for EA report and identifiesthe scope of EA, procedures, schedule and outline of the EA report. - For Category A projects, ESIA TOR is required, and scoping and consultation are conducted for preparation of the TORs for the EA report.	- TORs for EA are not required. - Normally after consultation with the local DONRE or VEA for the EA category, the project owner will proceed with EA report preparation.	TORs for REA, SEA, ESMF, ESIA, and ESMP are a good practice to follow. - Follow the World Bank's TORs, scoping, and consultation requirements.
Public consultation	- During EA process, the Borrower consults project-affected groups and local NGOs about the project's environmental aspects and takes their views into account. - For Category A projects, the Borrower consults these groups at least twice: (a) shortly after environmental screening and before the TORs for the EA are finalized; and (b) once a draft EA report is prepared. In addition, the Borrower consults with such groups throughout project implementation as necessary to address EA-related issues that affect them. - For Category B project, at least one public consultation needs to be conducted. - For meaningful consultations, the Borrower provides relevant project documents in a timely manner prior to consultation in a form and language that are understandable and accessible to the group being consulted. - Minutes of the public meetings are included in the reports.	The project owner shall consult with the People's Committee of communes, wards and towns (hereinafter referred to as communes) where the project is carried out, with organizations or community under the direct impact of the project; research and receive objective opinions and reasonable requests of relevant entities in order to minimize the negative effects of the project on the natural environment, biodiversity and community health. - The People's Committee of the commune where the project is carried out and the organizations under direct impact of the project shall be consulted. The project owner shall send EIA reports to the People's Committee of the commune where the project is carried out and organizations under the direct impact of the project together with the written requests for opinions. Within 15 working days, from the date on which the EIA reports are received, the People's Committee of the commune and organizations under the direct impact of the project shall send their responses if they do not	- EA consultation as per the government's EA regulation is not enough and the Borrower and its consultant need to follow the World Bank's requirements on consultation and disclosure of information during EAprocess. - Good consultation brings benefits to the project design and contributes to project environmental outcomes

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
		approve the project. - The consultation with the community under the direct impact of the project shall be carried out in the form of community meeting co-chaired by project owner and the People's Committee of the commune where the project is carried out together with the participation of representatives of Vietnamese Fatherland Front of communes, socio-political organizations, socio-professional organizations, neighborhoods, villages convened by the People's Committee of the commune. All opinions of delegates attending the meeting must be sufficiently and honestly stated in the meeting minutes.	
Disclosure	Before the World Bank proceeds to project appraisal the EA report must be made available at public place accessible for project-affected groups and local NGOs. Once the World Bank officially receives the report, it will make the EA report in English available to the public through the Bank external website.	- After an EIA report is approved, the project owner shall formulate, approve and publicly display its EMP at the office of the commune-level People's Committee of the locality in which consultation of the community is made for people's information, examination and oversight. (Article 16, Decree 18/2015).	Follow the World Bank's Policy on Access to Information and Policy on disclosure of project information, including EA instruments.
Independent Expert	- For category A project, the Borrower retains independent EA experts not affiliated with the project to carry out EA. - For category A projects of high risk or multi-dimensional environmental concerns, the Borrower should also engage an advisory panel of independent, internationally recognized environmental specialists to advise on aspects of the project relevant to EA. - Experts/consulting firm will be selected through	- Not regulated in Vietnam policies. - Project owner shall make, or hire an institution meeting the conditions provided in Clause 1, Article 13 (Decree 18/2015) to prepare an EIA report. Project owner or consulting service provider must fully meet the following conditions: (i) Having staff members in charge of EIA must obtain at least Bachelor's degrees and Certificate in EIA consultancy; (ii) Having specialist staff members related to the project obtaining at least	Follow the World Bank requirements to avoid conflict of interest

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
	bid process under strict observation of the World Bank.	Bachelor's degrees; (iii) Having physical-technical foundations and special-use devices for measuring, taking, processing, and analyzing environmental samples, which meet technical requirements. In case of unavailability of qualified special-use devices, having a contract to hire a capable institution.	
EA review process	The Bank reviews the findings and recommendations of the EA to determine whether they provide an adequate basis for processing the project for Bank financing. When the borrower has completed or partially completed EA work prior to the Bank's involvement in a project, the Bank reviews the EA to ensure its consistency with this policy. The Bank may, if appropriate, require additional EA work, including public consultation and disclosure.	- The Ministry of Natural Resources and Environment shall assess and approve the EIA reports on projects prescribed in Appendix III of this Decree, except for projects subject to national defense and security secrets. - Ministries, ministerial agencies shall assess and approve the EIA reports on projects under their competence in approval for investment, except for projects in Appendix III of this Decree; - The People's Committee of the province shall assess and approve EIA reports on projects in the province, except for projects prescribed above. - The appraisal will take place no later than working 45 days at MONRE level and 30 working days at DONRE level and 5 working days at district level for after receipt of a full eligible EIA or EPP.	- In addition to the Government requirements, follow the World Bank's review and clearance procedures.
Number and language of EIA required for appraisal	- Number of copies are not specified. - Language requirement: English and Vietnamese. EA reports in Vietnamese are required for in-country disclosure and English is required for disclosure at the Bank external website	- The project owner has to submit at least seven copies of EIA report (depend on the number of appraisal council members) and one copy of the Feasibility Study or the Economic-Technical argument for the proposed project.	Follow the World Bank's guidance and the Government requirements

EA Process Stage	WB (stipulating in OP/BP 4.01 on Environmental Assessment)	Viet Nam (stipulating in Decree 18/2015/ND-CP, Circular 27/2015/TT-BTNMT	Gap Filling Measures
Content of EIA report	- For Category A projects, the content of an EA report follows Annex B of OP 4.01. - The scope of EA for a Category B project may vary from project to project, but it is narrower than that of Category A EA. The EMP is an integral part of Category A EAs (irrespective of other instruments used).EAs for Category B projects may also result in an ESMP with the content outlined in Annex C of OP 4.01	The content of an EA report should be in line with Circular No. 27/2015/TT-BTNMT	The content of an EA report should satisfy both the Bank policy requirements and the GoV's regulations.
EA supervision	- During project implementation, the World Bank supervises the project's environmental aspects on the basis of the environmental provisions and the Borrower's reporting arrangement agreed in the loan agreement and described in the other project documentation, to determine whether the Borrower's compliance with environmental covenant (primarily with EMP) is satisfactory. If compliance is not satisfactory, the World Bank will discuss with the Borrower action necessary to comply.	- The local DONRE is entrusted to supervise the environmental compliance of the project. - By the end of project construction stage, the Environmental Management Agencies will coordinate with Construction Management Agencies to supervise the compliance of environmental management activities stated in EA study.	- Project environmental management system needs to be established to monitor and supervise safeguards compliance during implementation. - Follow requirements in project Loan Agreement, EMP, and contract with contractor to monitor and supervise safeguards compliance.

4. PROJECT POTENTIAL ENVIRONMETAL AND SOCIAL IMPACTS

4.1 Potential Positive Impacts

45. The Project is expected to directly or indirectly benefit over one million people living in the five central provinces of Ha Tinh, Quang Ngai, Binh Dinh, Phu Yen, and Ninh Thuan as having suffered the worst devastation from the severe floods in October through December 2016. Majority of investments will be in located in the following four river basins: i) Ha Vang and Rac river basin – Ha Tinh province; ii) Ve river basin – Quang Ngai province; iii) Kon river basin – Binh Dinh province; iv) Ba river basin – Phu Yen province; and v) Dinh river basin – Ninh Thuan province. These river basins are considered to be Vietnam's most disaster-prone areas.Additional rural and urban households and agribusiness in upstream and downstream regions also directly or indirectly benefit from the project intervention.The affected areas will benefit from restored access to public services/facilities thereby increasing the economic growth and access to social services. The reconstructed critical flood prevention structures and the restored roads and bridges will also increase the safety of people and assets, and serve as supply and rescue lines in the event of a disaster.

46. Key positive impacts are highlighted as follows:

- The project's overall potential socio-environmental impacts would be positive as it is expected to bring about to the affected communities in the districts that were affected by loss of public service infrastructure that will be restored and improved under the project. Specifically, the project will benefit the population affected by the 2016 floods across five of the most-affected provinces. Under Component 1, direct beneficiaries will include some 1,273,045 inhabitants in 5 provinces, 9.5 percent of which are poor. In addition, the total population of the five provinces, around 5.1 million, will benefit either directly or indirectly from improvements expected to result from incorporating the build-back-better approach in the technical designs, as well as the increased capacity of the Provinces to manage and respond to disasters.

- Raising community awareness and natural disaster risk management capacity of different levels: Through the Project activities, local people would increase their awareness in natural disaster risks as well as community-based DRM capacity. Raising the community awareness on natural disaster prevention and response would help the residents and the communities change their attitudes and behaviours in their response to climate change, especially towards the environment, including: roads/bridges, drainages, water resources, dikes, and embankment; proactive response to natural disasters, mobilization of internal resources to rescue and support each other in disaster events and post-disaster reconstruction.

- Improvement in quality of living environment: The rivers in the Central region are narrow and steep. This characteristic forms a relatively high river flow in the flood season, which results in river bank erosion happening more frequently. The river bank erosion process is the result of increased content of suspended solids in the river water and it can largely affect domestic water quality of the riverside residents. The subproject group of upgrading river revetments would reduce the river bank erosion process, which will help improve the river water quality, especially in terms of suspended solids parameter. Besides, the Project activities would reduce the inundation currently occurring every year in the Central provinces at river basins. Preventing natural disaster would be an effective way in reducing the environmental degradation happening after storms and floods, and increasing the local residents' habitat quality because after flood events. It would help improve domestic water

supply sources during and after floods, reduce diseases (such as red eye sores, skin diseases, diarrhea, etc.), and limit environmental landscape degradation (with wastes, mud, dead animals and plants, offensive smell, etc.).

4.2 Potential Negative Impacts

47. Given that activities supported under Component 2 are to aim to strengthen the institutional capacity of the Government at the central and provincial levels to respond to future disasters, it is envisaged that there would be no potential negative impacts associated with such activities.

48. Potential negative environmental and social impacts are mainly connected to construction activities supported under Component 1. The main generic impacts are highlighted in the following paragraphs while specific impacts and mitigation measures for each subproject will be prepared as part of the ESMP preparation for the subproject.

49. The potential adverse social and environmental impacts would be those associated with construction and operation of the proposed physical investments under Component 1 and ancillary works such as quarry areas, sources of construction materials, disposal sites for non-hazardous wastes, and so on. These include commonly known construction impacts and risks, such as (a) safety risks related to unexploded ordinances left from the war; (b) loss of vegetation cover and trees (c) increased level of dust, noise, and vibration; (d) pollution risks related to removal and disposal of substantial quantities of non-hazardous construction materials associated with the destroyed structures (embankment protection devices and bridges) consisting of concrete, scrap metal, stone, and sand from irrigation canals and small streams; (e) traffic disturbance and increased traffic safety risks; (f) erosion and landslide risk on slopes and in deeply excavated areas as well as potential negative impacts on existing weak facilities; (g) interruption of existing infrastructure and services such as water and power supply; (h) disturbance to daily socioeconomic activities in the project areas; (i) health and safety issues related to the public and the workers at construction sites; (j) social impacts associated with business disruption by construction-related activities and mobilization of workers to the site including due to relocation of graves; (k) land acquisition in case of widening/improving the damaged structures; and (l) impact on ethnic minority communities in the project areas. Screening of the five subprojects for the first 18-month of implementation also confirmed these scopes of impacts.

(a) During pre-construction phase:

50. From the social perspective, the main negative impacts of the Project would be appropriation of the lands. These impacts are considered insignificant, particular in involuntary resettlementbecausethere are no displaced households in the project. All the negative impacts could be mitigated through effective consultation and adequate compensation. The project sites do not include physical cultural resources, and the five first subprojects do not involve relocation of any grave; however, throughout the implementation of other subprojects, relocation of gravesmay be required in the project areas. Relocation of graves is not uncommon in infrastructure projects, and it would not be asignificant issue if proper procedures, including compensation, restoration, and undertaking of reburials are conducted in agreement with affected households. This suggests a preparation of graveyard removal plan during the implementation of individual subproject. While a number of households would be affected, nohousehold will have to be relocated for implementation of the five first phase subprojects, and the mitigation can be carried out at the subproject level. Affected on ethnic minorities, mainly Cham people in Ninh Thuan province, Co; Ba Na People in Binh Dinh province and H’Re Peoples in Quảng Ngai provincewould be negligible.

Mitigation of these impacts will be made through effective implementation of RPF/RAP and EMPF/EMDP of the subproject. Main impacts would include:

- *Loss of land:* Based on initial surveyed information for the first phase subprojects, the total permanent affected area of the project is 704,462m^2, of which 290,615m^2 is agricultural land; 30,039m^2 is residential land; 2,420m^2 is forest land (plantations by the local people for a periodical exploitation such as eucalyptus, acacia,...; 31,524m^2 is aquaculture land and 348,142m^2 is public land (such as transportation, irrigation, unused land). There are 2,117 households affected by land acquisition for the ENDR, of which 276 households are severely impacted (losing 20% or more of agriculture land). No households need to be relocated. The estimated total area of land temporarily affected is 505,000 m^2. Table 3 provides details in land acquisition under the five subprojects.
- *Ethnic minority:* Of 2,117 households affected by the land acquisition for the frist 18-monthENDR project, there are 264ethnic minority households affected (68 AHs in NinhThuan province, 150 AHs in Binh Dinh province and 46 AHs in Quang Ngai province). The EM households are mainly Cham People in NinhThuan province; Ba Na Peoples in Binh Dinh province; Co and H'Re Peoples in Quang Ngai province. So, OP 4.10 is triggered, but that these provisions (e.g. on vulnerable APs) apply to individual EM households that may live scattered in the project areas. In addition to this RPF, other social safeguard documents will be prepared under the project including EMPF, RAPs and EMDPs but will be deferred to the project implementation. Given the nature of emergency for implementing the critical works to be completed before the upcoming flooding season in September 2017, subproject RAPs/EMDPs for critical works should be available and approved, implemented before the civil works commencement.
- *Safety risk due to UXO.* One of the ongoing consequences of the War of the 1960s and 1970s are unexploded ordnances (UXO). UXO has been uncovered throughout Viet Nam and there are casualties from accidents involving these materials. Mortar shells, aerial bombs, and other unexploded ordnance may all be found within the Project Areas. Of particular concern is the hazard posed by UXOs left from war, if the construction work will require entering into previously heavy war conflict areas in the construction sites. UXO may be concerned for some subprojects. To mitigate the risk, the subproject owner will contact the GoV agency responsible for UXO clearance to assess the risk, identify, and clear UXO before any construction/survey can be conducted.

Table 3. Preliminary Statistics on Land Acquisition and Resettlement in 05 subprojects

No.	Province	No. of AHs	No. of APs	No. of Relocated households	No. of AHs impacted by agricultural land		Acquired Land Area (m^2)						TOTAL
					Losing less than 20%	Losing 20% or more	Residential land	Perennial land	Rice land	Forest land (plantations)	Aquaculture land	Public land	
I	**HA TINH**	47	201	0	16	6	0	750	0	0	0	9,189	9,939
II	**QUANG NGAI**	384	1655	0	266	44	1,346	35,705	2,420	1,200	1,680	54,020	96,371
III	**BINH DINH**	1,098	4,614	0	598	72	20,130	107,536	0	30,324	42	33,500	191,532
IV	**NINH THUAN**	165	693	0	219	36	837	21,770	0	0	0	5,600	28,207
V	**PHU YEN**	423	2,024	0	263	118	7,726	124,854	0	0	0	245,833	378,413
	TOTAL	**2,117**	**9,187**	**0**	**1,362**	**276**	**30,039**	**290,615**	**2,420**	**31,524**	**1,722**	**348,142**	**704,462**

Source: Resettlement Policy Framework (RPF), June 2017.

(b) During construction phase

51. During construction, potential negative impacts on the local environment and the community will be moderate, localized, temporally, and could be mitigated and/or reduced. Main impacts will include increases in air pollution, noise, vibration, water pollution, waste generation, land and temporary interference with waterway transport, safety risks, and potential disturbance to local residents and other social impacts. Main sources of impacts will be due to preparation of land (clearance and land filling); transportation of materials and construction equipment, excavation of soil; construction of sluice gates; dike and embankment; installation of over-sluice structural bridges; and activities of contractor staff and workers at the work site and/or work camp. Key specific issues may include:

- *Habitat loss and landscape change.*Land clearance, dredging, digging, excavating, quarrying, sand extraction, and disposal of wastes may cause habitat lossof flora and fauna systemsand landscape change.
- *Sedimentation and temporary and permanent drainage.*Surface erosion and erosion of materials and soil piles and the sediment carried in surface run-off from work sites willcause small to moderate adverse impacts on land and water bodies close to these sites.
- *Wastes.*Construction generates many different types of wastes each requiring different methods to ensure its proper management. Wastes can pose threats to the environment, and may contain chemical or biological elements injurious to health and living organisms, and impairs aesthetics. Waste types under the project include: (i) Wastes from construction site preparation (cut-down trees and vegetables, demolished debris); (ii) Domestic solid wastes from worker camps (kitchen waste, food waste, dirty paper, ashes, etc.); (iii) Sewage and grey water; (iv) Hazardous waste (chemicals, paint waste & containers, waste oil, oily rags); and (v) dredged materials.
- *Interruption in irrigation and/or domestic water supply.* Water supply interruption will likely happen. This effect occurs due to cutting off water flows for constructions of sluice gates, spillway, and embankment. Most of the local residentslivein rural areas and dependon agricultural practices. Therefore, the interruption of water irrigation is the main issue to the local peopleand leads to reduction intheir incomes. The impact is assessed small to moderate leveland would be mitigable.
- *Risks to health and safety of local people and construction workers.*Dust, air pollutants, disease, accidents at work and traffic has direct effects on health of workers and local residents. Material transport and construction activities on the existing roadswill create the risk of effects on traffic safety and houses structure on road sides. Sewage from construction activities and worker camps. This will cause some respiratory diseases for local people as well as workers. Accidents may occur if during the construction, workers are not provided with safety equipment and obey construction regulations.
- *Local traffic may be disturbed during construction.* There is waterway transport network in the project area which can be disturbed during construction of the river embankment and bridges across the river. During consultation withlocal authorities and peoples, there are concerns on the need for construction of temporary bridge and/or bypass road during dredging would be needed.
- *Noise and air quality issues.* Earthmoving activities and operation of machineries in the construction sites will generate dusts and exhaust fumes. Construction activities,

operation of heavy equipment will produce noise and vibration and will be a nuisance to residents near the site. During the construction phase, dust will be generated by material transportation, clearing, grading, excavation, leveling, truck hauling, stockpiling, waste disposal, road development. In addition, the emission is also expected from construction machineries and transportation vehicles, especially during dry season. Noise will be produced by vehicular movement, excavation machineries, concrete mixing and other construction activities. It contributes an inconvenience condition to the people living around the sites and to the workers. The impacts are likely to be moderate. But these impacts are most likely to be reduced by applying an appropriate mitigation measures.

- *Possible spread of communicable diseases.* Many of the construction workers would likely come from other areas of the country and may bring in communicablediseases. They are also vulnerable to local diseases. Water, air, or contacts between workers and local people are most likely. The additional work force in the construction site may cause spreading of communicable and sexually transmitted diseases such as HIV/AIDS. Domestic waste generates from the camping site and constructing site without proper management and treatment is the main issue to local health (mosquitoes, flies). The hazardous material such as termite chemicals, oil leaking willdirectly affect water resources.
- *Loss/Alteration of culturally significant areas (if any).*Damage or destruction of newly discovered sites by chance may result from construction and transportation related activities. During clearing activities, there is also the potential of discovering unknown archaeological, historical or cultural site as well. A chance finds procedures has been prepared and included in the ESMF for subproject application.

(c) Potential impacts during operation phase

52. *Impacts on water quality, safety, and waterway traffic interruption during operation depending on type of infrastructure and (design) of sluice and its operation schedule/procedures.* Size of the sluice has been calculated to assure not only effective management of irrigation system (provide adequate water supply while reducing water level difference) and economically viable but also guarantee for sufficient discharge of waste and flooding water during the rainy season. Adequate operation and maintenance (O&M) of sluices and effective communication and consultation with water users upstream and downstream of the sluice gates are therefore critical for effective water supply service as well as ensuring acceptable water quality to key water users and reduce potential water use conflicts.

53. *Impacts on increasing use of agrochemicals.* Providing more freshwater for rice irrigation upstream would increase the use of agrochemicals causing negative impacts on the human health and environment e.g. soil, air, water due to exposure in the subproject and upstream areas. The GoV has been promoting a number of integrated pest management (IPM) practices to reduce the use of pesticides and agrochemicals both for rice, fruit, vegetable, etc. A Pest Management Framework (PMF) has been prepared and it will be applied for the project.

54. *Potential impacts on structure damage, landslide, soil erosion and sedimentation.* In some areas, structure will be flooded on some time which could damage the structure components and then shorten their life time. Improper operation of sluice gates willcause erosion or landslide in upstream and sedimentation at before and behind the sluice gates.

55. *Increase of water use conflict due to improper sluice gate system management.* If the operation of the sluice gate system doesn't work properly, it can lead to increase of water use conflict. Especially, those impacts will become more serious when the extreme changes of climate occur.

56. *Potential risks of project.* The project when put into operation will be facing with risks such as: structure damage, loss of economics due to disasters or extreme climate phenomenon.

5. MEASURES TO MANAGE ENVIRONMENTAL AND SOCIAL IMPACTS

57. To mitigate the potential impacts during construction, comments from the local authorities and local communities on negative impacts due to construction have been taken into account during project preparation. The PPMUs will closely supervise and monitor performance of contractors and ensure that the contractors conduct the subproject activities in compliance with Environmental, Social, Health and Safety Requirements under Section 7 0 Works' Requirements of SPDs. A simplified ECOP has been prepared and included as annex of the ESMF to address potential negative impacts associated with simple and small civil works [10] and will be included in the bidding and contract documents. However, if the procurement uses the standard procurement documents, there will be no such distinction for the elements hardwired into the GCC or PCC and approach, and it is already necessary for section 7 of the SPD (Works' requirements) to be made specific to the project. An ESMP with full ECOP will be prepared to address the potential negative environmental and social impacts associated with the proposed subproject in case these impacts go beyond the scope of the simplied ECOP. A full ECOP has been prepared as an annex of the ESMF to address the general construction-related impacts. The Bidder shall submit the following additional documents in its Bid, including code of conduct (ESHS) and Management Strategies and Implementation Plans (MSIP) to manage the (ESHS) risks. The Contractor shall be required to submit to PPMU/CSC for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 16.1, that includes the agreed Management Strategies and Implementation Plans. The C-ESMP includes setting up a grievance redress mechanism (GRM) and initiate and maintain close relations and consultation with local authorities and communities. The subproject owners will also hire qualified consultants to conduct periodic monitoring and reporting on contractor's performance as well as safeguard issues and actions undertaken during the subproject implementation. To mitigate the potential impacts during operation of sluice gates, specific plan will be prepared and finalized in consultation with local communities to ensure that sluice operations are acceptable to local authorities and communities. Safeguard training and technical assistance will also be provided at the early stage of implementation of the ENDR given mitigation measures for Component 1.

(a) Mitigation measures for land acquisition, relocation, and ethnic groups

- *Land Acquisition.* The impacts of land acquisition and resettlement are considered moderate and efforts will have to be made to avoid/reduce the need for land acquisition and/or relations, and if unavoidable, the affected people will be adequately compensated

[10] Simple and small civil works within the project might be defined as follows:
- Package value is low, e.g. less than US$ 20,000;
- Civil works might be implemented by local communities;
- Types of civil works may include (i) upgrading inter-village earth roads; (ii) rehabilitation of tertiary irrigation canals; (iii) construction or repair of community houses, classrooms, and cultural houses; and rehabilitation of rural footbridges; and
- Environmental screening concluded that potential negative impacts are minor.

in line with the Bank safeguard policy. A RPF has been developed in close consultation with local agencies and affected people, and specific policy and procedures has been finalized, including those related to grave relocation. Specific mitigation measures for land acquisition are addressed in the respective subproject RAP and in line with the policies and principles set out in the project RPF. RAPs for the first 18-month subprojects have also been prepared, including compensation and grave relocation.

- *Relocation of graves.*During the preparation of the fivesubprojects for the frist 18-month subprojects, there is no grave identified to be relocated. However, there are still potential relocation of some graves for the remaining construction items of the later phase or might be encountered during construction such as embankments, bridge abutments so relocation of individual graves would be carried out by households whose graves are affected (as a practice in Vietnam). Rituals for relocation of graves may be different among Kinh, and ethnic minority peoples. Affected households will receive compensation payment to conduct the relocation on their own. Payment to the grave relocation includes costs of excavation, relocation, reburial, purchasing land for reburial (if any), and all other reasonable costs associated with necessary rituals by the local practice. Local ritual means relocation of graves will be carried out in accordance with local cultural practices, taking into account cultural preferences which are typical for each ethnic group. Where graveyard - owned collectively by ethnic groups, are affected, appropriate consultation with affected groups will be conducted during social assessment under respective subproject to work out solutions acceptable to affected ethnic minorities. Relocation of graves will be done satisfactorily to the affected households prior to the commencement of construction. Grave relocation and compensation will be documented in respective subproject RAPs and Ethic EMDPs based on the consultation with affected households and ethnic minority peoples during project implementation.
- *Ethnic Minorities.* The Project will involve ethnic minority and an EMPF has been prepared in line with the WB safeguard policy. EMDPs for the first 18 months for Ninh Thuan, Binh Dinh and Quang Ngai subprojects, which involve ethnic minority people, have been prepared.

(b) UXO risk.

58. Safety risk related to UXO is considered moderate since most of the subprojects will involve existing infrastructures with very limited number of new construction (some small rescue roads). However, UXO risk assessment will be conducted for all the subproject sites and UXO clearance (if needed) will be carried out by qualified agencies. Construction activities will not be allowed prior to UXO clearance.

(c) Mitigation measures during site clearance and construction stage

59. The project screening and ESMPs of the first phase subprojects concluded that most of the key impacts will occur due to limited civil works and transportation of construction/waste materials. All of the potential negative impacts on physical, biological, and social environment could be mitigated through a set of general measures that are typically applied to most of construction projects to minimize impacts such as noise, dust, vibration, waste generation, traffic hindrance, public safety, etc. In this context, a full and simplified ECOP have been prepared describing specific requirements to mitigate the potential impacts considered to be generalconstruction-related impacts (see Annex 4).

60. In reference to ESMP/ECOP, PPMU ES should prepare the specifications for ESHS working with a procurement specialist/s. PPMU should attach or refer to the Employer's environmental, social, health and safety policies that will apply to the subproject. If these are

not available, the PPMU should use the following guidance in drafting an appropriate policy for the Works in accordance with Section VII - Works' Requirements of Standard Procurement Documents (SPDs), including (i) suggested content for an environmental and social policy, (ii) minimum content of ESHS requirements, (iii) minimum requirements for the code of conduct, and (iv) code of conduct requirement.

61. The typical mitigation measures for general construction-related impacts have been identified for the following aspects:

- Dust generation
- Air pollution
- Impacts from noise and vibration
- Water pollution
- Soil erosion
- Drainage and sedimentation control
- Management of stockpiles, quarries, and borrow pits
- Solid waste
- Chemical or hazardous wastes
- Workforce, Camps and Site Management
- Disruption of vegetative cover and ecological resources
- Traffic management
- Interruption of utility services
- Restoration of affected areas
- Worker and public Safety
- Communication with local communities
- Chance Find Procedures

62. For each subproject, there will be site-specific impacts that require site-specific measures both during construction and operation stages such as site-specific mitigation measures for UXO clearance, for impacts on irrigation canals, agricultural activities, and those related to ancillary and associated facilities at the subproject level such as disposal sites for dredged materials, quarries, access roads, etc. These measures are to be identified and incorporated into the subproject ESMPs. These specific measures should be used in conjunction with relevant government technical regulations and the ECOP of the subproject.

63. Monitoring of environmental quality during construction can be useful in ensuring adequacy of the mitigation measures being implemented by contractor. However, the monitoring parameters, locations, and timing should be designed in line with the subproject activities, locations, and nearby watercourse. The ESMP will clearly define the need for environmental quality monitoring with specific locations, monitoring parameters, frequency, and an estimated cost.

(d) Measures to address impacts during operation phase

64. The measures to mitigate the main impacts during operation of the subprojects would also be included in the designing phase to avoid and minimize impacts on local waterway transportation, erosion of the river banks and embankment subsidence risk, especially in the rainy season. Possible induced negative impacts during operation of the facilities, especially sluice gates, bridges, and embankments.

(e) Mitigation Measures for Component 2 Activities

65. Though there are no potential negative impacts envisaged under Component 2 at this stage, any Technical Assistance (TA) activities under this component should be reviewed in terms of their potential environmental and social implications, risk and impacts and therefore, subject to Bank safeguard policies when applicable. The Bank is responsible for the screening; environmental categorization and the selection of safeguard instruments of each proposed TA activity. Processing the TA will follow the interim guidelines of the Bank's Operations Policy and Country Services, Operational Risk Management (OPSOR), effective January 2014: *"Interim Guidelines on the Application of Safeguard Policies to Technical Assistance (TA) Activities in Bank-Financed Projects and Trust Funds Administered by the Bank".*

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

6.1 Objective and Approach

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

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

67. The first 18-monthssubprojects of Components 1 have gone through the first two steps and the subproject mitigation plans (RAPs, EMDPs, and ESMPs) have been prepared and they will be submitted to the WB for review, clearance, and public disclosure. The safeguard screening, impact assessment, and preparation of safeguard documents for all subprojects to be implemented during the second and follow-on phases will be carried out during the Project implementation and the safeguard documents (RAPs, EMDPs, and ESMPs) will be submitted to the WB for review and clearance prior to appraisal. Small works to be carried out under Components 1 will incorporate the simplified ECOP into the bidding and contract documents and consultant contracts and contractor'scompliance performance will be closely monitored by field engineers.

Table 4. Applications of ESMF Annexes

Annex	Content	Applicable to
2	Safeguard Screening	All subprojects and activities
3	Subproject ESMP Preparation	Subprojects that will cause potential impacts could not be addressed by the simplified ECOP
4 (b)	Simplified ECOP	Small-scle subprojects that involve potential impacts are considered negligible
5	Pest Management Framework (PMF)	Subprojects are anticipated leading to an increased use of pesticides
6	Sample Grievance Registration Form	All subprojects

7	Template of progress and monitoring reports	Whole project

6.2 Safeguard Screening and Impact Assessment

68. This step (Step 1) aims to confirm the eligibility of subproject and/or activities to be financed by the Project as well as identify the potential environmental and social impacts of the subprojects/activities including categorization of the subproject into A, B, or C, identification of the WB safeguard policies to be triggered, and identification of safeguard documents to be prepared as required by OP/BP 4.01, OP 4.09, OP/BP 4.10, and OP/BP 4.12 (see details in *Annex 2)*. PPMUs will be responsible for signing the screening from Components for each subproject. Consultation with the WB safeguard specialist for a complex subproject will be made as needed.

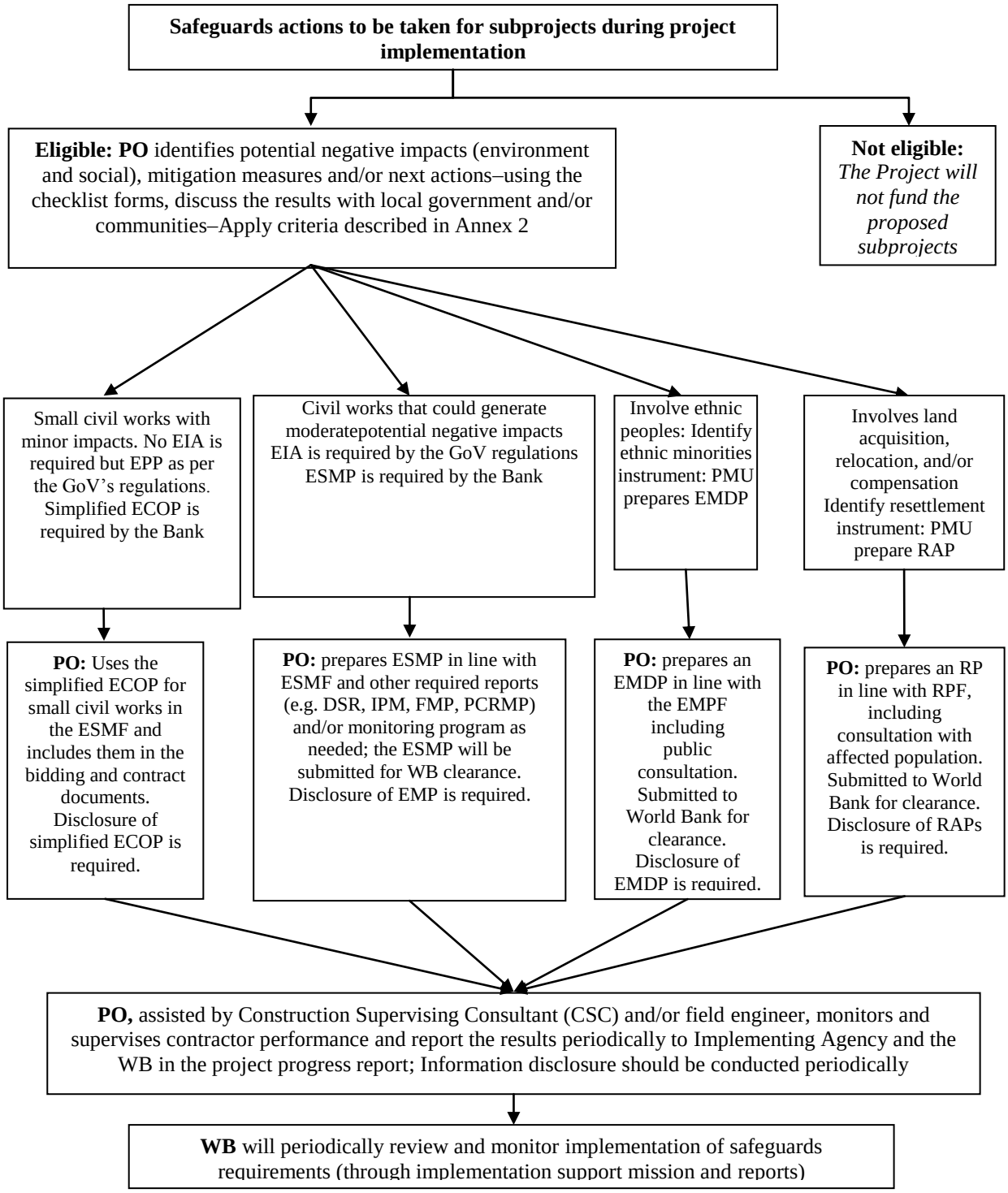
6.3 Development of Safeguard Documents

69. This step (Step 2) aims to prepare safeguard documents in line with the issues identified in Step 1. Guidelines on the preparation of ESMP are provided in Annex 3 while those for RAPs and EMPDs are provided in RPF and EMPF respectively. PPMUs will be responsible for preparation of safeguard documents for Component 1 for each subproject. Consultation with WB safeguard specialist for a complex subproject will be made as needed.

70. It is also necessary that PPMUs will also prepare documents such as EPP or EIA as required by the GoV's EIA regulation[11] and secure approval of responsible agencies.

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

Figure 2. Schematic Flowchart for Safeguard Actions for Subprojects [PO stands for Project Owner]



6.4 Review, Approval, and Disclosure of Safeguard Documents

71. ***WB review and clearance:*** Before approval and commencement of subproject works, all safeguards documents of the subproject will be submitted to the WB for safeguard review and clearance, and public disclosure. For the ENDR, the WB will review the ESMPs of all Category 'B'subprojects and also the ESMPs of the first 18-monthsubprojects (irrespective of category) of each province. However, this approval process will be reviewed from time to time and once the safeguard capacity of the implementing agencies (IA) has been built with

the support of the environmental and social safeguard consultants, the WB will randomly review some ESMPs.

72. All safeguard documents will be posted in the project website and made available at PPMU office and the subproject sites in Vietnamese. A notification will be published about the disclosure and comments will be sought within one month of the disclosure date. The English version of category 'B' subproject will be disclosed at the Bank external website.

73. ***Government approval:*** The WB also requires that the EIA or EPP documents as required by the GoV will be approved by responsible agencies. The EIA or EPP in Vietnamese as well as the approval conditions will be provided to the Bank for information. The approved EIA or EPP reports will also be disclosed to the public.

6.5 Implementation, Supervision, Monitoring, and Reporting

74. Safeguard implementation, supervision, monitoring, and reporting is an integral part of the Project and subproject implementation and specific safeguard staff will be assigned to be responsible for these activities. The WB safeguard specialists will also supervise and monitor the implementation of safeguard as part of the WB implementation support mission. Details on responsibility of agencies are described below.

75. The PPMU, as an implementing agency, will be responsible for the preparation and implementation of safeguard instruments, which will include monitoring. During project implementation, the PPMUs will be responsible for preparing and ensuring the effective implementation of safeguard measures (such as the RPF, EMPF, RAPs, EMDPs, ESMF, ESMPs, and ECOP) and regularly liaising with local authorities and communities. There will be regularly reporting on safeguard implementation. The PPMUs, contractors, construction supervision consultants will receive training on preparation and implementation of the project's safeguard instruments.

7. IMPLEMENTATION ARRANGEMENTS

7.1 Responsibility for ESMF Implementation

76. In line with the implementation arrangement discussed in Section II, the Subproject owner (PPMUs) considered as the implementing agency (IA) are responsible for implementation of the ESMF.The table and figure below summarize the roles and responsibilities of the key parties and their relationships regarding the implementation of the ESMP.

- Contractors will be responsible for implementing mitigation measures. These measures will be included in bidding documents and their costs are included in construction bid packages;
- CSC will be responsible for monitoring the day-to-day implementation of mitigation measures. Related costsare included in the CSC service contract;
- PPMU will be responsible for monitoring the overall subproject implementation, including environmental compliance of the subproject. PPMU will have the ultimate responsibility for ESMP implementation and environmental performance of the subproject during the construction and operational phases.

Figure 3.Organizational diagram for ESMP Implementation

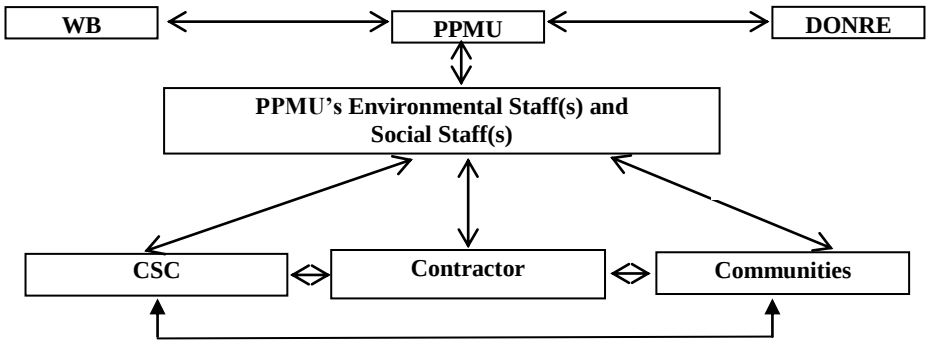


Table 5. Institutional responsibilities for the Project and Subproject Safeguard Implementation

Community/Agencies	Responsibilities
PPMU	- PPMU will be responsible for monitoring the overall subproject implementation, including environmental compliance of the subproject. PPMU will have the final responsibility for ESMP implementation and environmental performance of the subproject during the construction and operational phases. - Specifically the PPMU will: (i) closely coordinate with local authorities in the participation of the community during subproject preparation and implementation; (ii) Ensure that the detailed design include all environment provisions as indicated in the ESMP; (iii) monitor and supervise ESMP implementation including incorporation of ESMP into the detailed technical designs and bidding and contractual documents; (iv) ensure that an environmental management system is set up and functions properly; (v) be in charge of reporting on ESMP implementation to the DONRE and the World Bank. - In order to be effective in the implementation process, PPMU will assign Environmental Staff(s) (ES) to help with the environmental aspects of the subproject.
PPMU's Environmental and Social Staff(s) (ES)	- The ES is responsible for monitoring the implementation of the World Bank's environmental and social safeguard policies in all phases and process of the subproject. Specifically, ES will be responsible for: (i) helping PPMU incorporate ESMP into the detailed technical designs and civil works bidding and contractual documents; (ii) helping PPMU incorporate responsibilities for ESMP and RAP monitoring and supervision into the TORs, bidding and contractual documents for the Construction Supervision Consultant (CSC); iii) providing relevant inputs to the consultant selection process; (iv) reviewing reports submitted by the CSC and safeguard consultants; (v) conducting periodic site checks; (vi) helping the PPMU on solutions to handle social and resettlement issues of the subproject; and vii) preparing environmental and social performance section on the progress and review reports to be submitted to the DONRE and the World Bank.
Construction Supervision Consultant (CSC)	- The CSC will assgin Environmental and Social Staff(s) and will be responsible for routine supervising and monitoring all construction activities and for ensuring that Contractors comply with the

Community/Agencies	Responsibilities
	requirements of the contracts and the ECOP. The CSC will engage sufficient number of qualified staff (e.g. Environmental Engineers) with adequate knowledge on environmental protection and construction subproject management to perform the required duties and to supervise the Contractor's performance. - The CSC will also assist the PPMU in reporting and maintaining close coordination with the local community.
Bidder	The Bidder shall submit the following additional documents in its Bid: **Code of Conduct (ESHS)** • The Bidder shall submit its Code of Conduct that will apply to its employees and subcontractors, to ensure compliance with its Environmental, Social, Health and Safety (ESHS) obligations under the contract. • In addition, the Bidder shall detail how this Code of Conduct will be implemented. This will include: how it will be introduced into conditions of employment/engagement, what training will be provided, how it will be monitored and how the Contractor proposes to deal with any breaches **Management Strategies and Implementation Plans (MSIP) to manage the (ESHS) risks** • The Bidder shall submit Management Strategies and Implementation Plans (MSIP) to manage the following key Environmental, Social, Health and Safety (ESHS) risks. + *Traffic Management Plan to ensure safety of local communities from construction traffic*; + *Water Resource Protection Plan to prevent contamination of drinking water*; + *Boundary Marking and Protection Strategy for mobilization and construction to prevent offsite adverse impacts*; + *Strategy for obtaining Consents/Permits prior to the start of relevant works such as opening a quarry or borrow pit.*
Contractor	- The contractor shall assign Enviromental and Social Staff(s) to carry out Enviromental and Social mitigation measures proposed in ESMP. - The Contractor shall be required to submit to PPMU/CSC for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 16.1, that includes the agreed Management Strategies and Implementation Plans. - The Contractor is required to appoint a competent individual as the contractor's on-site *Safety and Environment Officer (SEO)* who will be responsible for monitoring the contractor's compliance with ESHS and MSIP which is set out in the Section VII – Works' Requirements of SPDs. - Take actions to mitigate all potential negative impacts in line with the objective described in the CESMP. - Actively communicate with local residents and take actions to prevent disturbance during construction.

Community/Agencies	Responsibilities
	- Ensure that all staff and workers understand the procedure and their tasks in the environmental management program. - Report to the PPMU and CSC on any difficulties and their solutions. - Report to local authority and PPMU and CSC if environmental accidents occur and coordinate with agencies and keys stakeholders to resolve these issues.
Local community	- 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 the PPMU. If unexpected problems occur, they will report to the CSC and PPMU.
Province and Distrcit People's Committees (PPCs/DPCs), Provincial DONRE	- Oversee implementation of subprojects under recommendations of DONRE and PPMU to ensure compliance with the Government policy and regulations. DONRE is responsible for monitoring the compliance with the Government environmental requirements.

77. Each ESMP/ECOP is to be included in any bidding document and in any awarded contract. The RPF, EMPF, RAPs, and EMDPs will be sent to local authorities and relevant organizations for implementation under the PPMU' guidance. The subproject PPMU will be responsible for supervising RAP/EMDP/ESMP/ECOP implementation and reporting to the World Bank as an element of normal project reporting requirements. The PPMU will establish a coordination and implementation group to address environmental and social issues, including environmental and social focal point. The focal point will be responsible for (a) coordination of environmental and social safeguards; (b) leading the preparation and implementation of safeguards instruments; (c) leading the environmental and social safeguard experts (consultants) and overseeing the training and capacity building activities; and (d) coordinating all safeguard activities with donors, implementing agencies, including local authorities, and/or other potential financial supporters. There will be regularly reporting on safeguard implementation. An independent monitoring consultant will be hired to monitor and evaluate safeguard instruments implementation as well.

78. All the implementing agencies (PPMUs) have intensive experience in implementing the World Bank safeguard policies under different World Bank-financed projects. Binh Dinh PPMU will be responsible for preparation of the ESMF, RPF, and EMPF, while all PPMUs, through their dedicated staff/unit, will be responsible for implementing and monitoring the safeguard instruments (ESMP, ECOP, EMDP, and RAP) as well as mitigation measures defined in the instruments. The implementation of safeguard instruments will be internally monitored by the PPMUs in close coordination with the respective peoples' committees, line departments at different administrative levels, and externally supervised by independent monitoring agencies. The subproject implementing agencies, through their PPMUs, will ensure that activities related to environmental and social safeguards will be properly tracked, reported, and documented. Independent monitoring will start around the same time as implementation of activities and will continue until the end of the project/subproject. The performance of and compliance with safeguard instruments will also be subject to regular supervision by the World Bank task team.

79. The PPMU, as an implementing agency, will be responsible for the preparation and implementation of safeguard instruments and its monitoring. The PPMU has recent and

relevant experiences of and are familiar with OP/BP 4.01, OP 4.09, OP/BP 4.12 and OP/BP 4.10 instruments preparation, implementation, and supervision through involvement in various development operations funded by the World Bank. During project implementation, the PPMUs will be responsible for preparing and ensuring the effective implementation of safeguard measures (such as RAPs, EMDPs, ESMPs, and ECOP) and regularly liaising with local authorities and communities.

80. A capacity needs assessment will be made at the outset of project implementation and if appropriate a capacity development plan for each province will be prepared and implemented. PPMU safeguard staff are experienced in implementing ODA-financed environmental and social safeguard policies. Enhanced training on environmental and social safeguard policy and requirements will also be provided to the PPMU staff during project preparation and implementation. The PPMUs, contractors and construction supervision consultants, local authorities, and local community representatives will receive training on the project's safeguard instruments.

81. After the approval of the ESMP, the subproject owner is responsible for ensuring that the ESMP is effectively implemented and that for all works contract, the full ECOP and site-specific mitigation measures areincluded in the Bidding Document and Contract Document and that contractor is aware and committed to effectively implementing offull ECOP and and site-specific mitigation measuresand the cost is part of the contract cost. Before construction, the subproject owner will assign the Construction Supervision Consultant (CSC) and/or field engineer to be responsible for day-to-day supervision of contractor performance on safeguard and report the results in the subproject progress report. PPMUs will work closely with DONRE during implementation of the subprojects.

7.2 Environmental Compliance Framework

82. Duties of the Contractor, the SEO and the CSC set out here that are not already addressed within the SPDs should be incorporated into the Employers Requirements (section 7 of the SPDs).

(i) Environmental Duties of the Contractor[12]

83. The contractor firstly shall adhere to minimize the impact that may be result of the project construction activities and secondly, apply the mitigation measures under ESMP to

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

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

prevent harm and nuisances on local communities and environment caused by the impacts in construction and operation phases.

84. The Contractor shall be required to submit for approval, and subsequently implement, the Contractor's Environment and Social Management Plan (C-ESMP), in accordance with the Particular Conditions of Contract Sub-Clause 16.2 [13], that includes the agreed Management Strategies and Implementation Plans.

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

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

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

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

[13] The Contractor shall not commence any Works, including mobilization and/or pre-construction activities (e.g. limited clearance for haul roads, site accesses and work site establishment, geotechnical investigations or investigations to select ancillary features such as quarries and borrow pits), unless the Project Manager is satisfied that appropriate measures are in place to address environmental, social, health and safety risks and impacts. At a minimum, the Contractor shall apply the Management Strategies and Implementation Plans and Code of Conduct, submitted as part of the Bid and agreed as part of the Contract. The Contractor shall submit, on a continuing basis, for the Project Manager's prior approval, such supplementary Management Strategies and Implementation Plans as are necessary to manage the ESHS risks and impacts of ongoing works. These Management Strategies and Implementation Plans collectively comprise the Contractor's Environmental and Social Management Plan (C-ESMP). The C-ESMP shall be approved prior to the commencement of construction activities (e.g. excavation, earth works, bridge and structure works, stream and road diversions, quarrying or extraction of materials, concrete batching and asphalt manufacture). The approved C-ESMP shall be reviewed, periodically (but not less than every six (6) months), and updated in a timely manner, as required, by the Contractor to ensure that it contains measures appropriate to the Works activities to be undertaken. The updated C-ESMP shall be subject to prior approval by the Project Manager.

- Carry out environmental site inspections to assess and audit the contractors' site practice, equipment and work methodologies with respect to pollution control and adequacy of environmental mitigation measures implemented;
- Monitor compliance with environmental protection measures, pollution prevention and control measures and contractual requirements;
- Monitor the implementation of environmental mitigation measures;
- Prepare audit reports for the site environmental conditions;
- Investigate complaints and recommend any required corrective measures;
- Advise the contractor on environment improvement, awareness and proactive pollution prevention measures;
- Recommend suitable mitigation measures to the contractor in the case of non-compliance. Carry out additional monitoring of noncompliance instructed by the ES of PPMU and CSC;
- Inform the contractor and ES (of PPMU and CSC) of environmental issues, submit contractor's ESMP Implementation Plan to the ES of PPMU and CSC, and relevant authorities, if required;
- Keep detailed records of all site activities that may relate to the environment.

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

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

(v) Compliance with Legal and Contractual Requirements

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

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

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

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

92. After reviewing the documents, the SEO or the ES shall advise the PPMU and the contractor of any non-compliance with the contractual and legislative requirements on

environmental protection and pollution control for them to take follow-up actions. If the SEO or the ES concludes that the status on license/permit application and any environmental protection and pollution control preparation works may not comply with the work measure or may result in potential violation of environmental protection and pollution control requirements, they shall advise the Contractor and the PPMU accordingly.

7.3 Reporting Arrangements

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

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

Table 6. Reporting Procedures

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

7.4 Incorporation of ESMF into Project Operational Manual

94. The ESMF process and requirements will be incorporated into the Project Operation Manual (POM) and Binh Dinh PPMU will provide training to ensure that the subproject owners as PPMUs understand them as well as will supervise and monitor the ESMF implementation periodically. The safeguard section in the POM will also make reference to the ESMF annexes as needed.

8. CAPACITY BUILDING, TRAINING, AND TECHNICAL ASSISTANCE

8.1 Institutional Capacity Assessment

95. At subproject level, PPMUs of Binh Dinh, Quang Ngai, Phu Yen, Ninh Thuan and Ha Tinh provinces may have some experience with the WB-financed projects in terms of safeguard requirements however their capacity remain limited. Moreover, most national consultants and local authorities also do not have adequate knowledge on the WB safeguard requirements therefore safeguard training program will be necessary during the implementation of the Project.

8.2 Institutional strengthening and capacity building

96. The PPMU will establish a coordination and implementation group to address environmental and social issues, including a social focal point and and an environmental focal point. The environmental and social focal points will be responsible for (a) coordination of environmental and social safeguards; (b) leading preparation and implementation of safeguards instruments; (c) leading the environmental and social safeguard experts (consultants) and overseeing the training and capacity-building activities; and (d) coordinating all safeguard activities with donors, implementing agencies, including local authorities and/or other potential financial supporters. All the implementing agencies (PPMUs) have intensive experience in implementing the World Bank safeguard policies under different World Bank-financed projects. All PPMUs, through their dedicated staff/unit, will be responsible for implementing and monitoring the safeguard instruments (ESMF, ESMP, ECOP, RPF, EMPF, EMDP, and RAP) as well as mitigation measures defined in the safeguard instruments. The implementation of safeguard instruments will be internally monitored by the PPMUs in close coordination with the respective PPCs and line departments at different administrative levels and externally supervised by independent monitoring agencies. Implementing agencies will ensure that activities related to environmental and social safeguards will be properly tracked, reported, and documented. Independent monitoring will start around the same time as implementation of activities and will continue until the end of the project/subproject. The performance of and compliance with safeguard instruments will also be subject to regular supervision by the World Bank task team. During the project implementation, the appropriate training will be provided to the PPMUs, consultants, and contractors. The training program will include: awareness raising of Good International Industry Practice during works; good practice for undertaking supervision during construction; the safeguard instruments to be applied to the subproject, and preparing bid documents in accordance with the Standard Procurement Documents.

97. During implementation of ENDR, safeguard training and technical assistance will be provided to both PPMUs and contractors.During the first 18-month,Binh Dinh PPMU with assistance from theenvironmental and social consultants will conduct at least 2 safeguard training workshops (one on preparation phase and one on construction phase) to the other subproject owners (PPMUs)and contractors regarding the ESMF process and needs for preparation of safeguard documents, especially those related to ESMP/ECOP, RPF/RAP and EMPF/EMDP. The WB safeguard specialist will participate in these training workshops as much as possible.

98. Priority for training should include, but not limited to, the followings:

(i) The ESMF process and guidelines onpreparation, implementation, and supervision of safeguard instruments (RAP/RPF, EMDP/EMPF, ESMP/ECOP) designed for the Project and subproject;

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

(iii) Specific training on supervision and monitoring of contractor performance, including forms and reporting process including basic knowledge on health, safety, and good construction practices for reducing potential negative impacts on local environment and people, including communication and GRM procedures and other social issues related to HIV/AIDs and other communicablediseases, etc;

(iv) Specific training on operation of sluice gates with active participation of local authorities and community to avoid/minimize potential negative impacts on water users.

99. Specific target groups for the key training for a beginning program include:

Table 7.Safeguard training at the beginning of project implementation

No	Contents	Target Groups for Training
1	RPF and EMPF including RAP and EMDP preparation	PPMUs
2	ESMF and environmental and social safeguard policies including ESMP preparation	PPMUs
3	Environmental management capacity improvement	PPMUs and contractors
4	Environmental and society monitoring skills improvement	PPMU, construction consultants; environmental consultants, local authorities and community representatives
5	Training on thefull and simplified ECOP compliance and environmental, health and safety (EHS) guidelines.	Contractors

100. ***Technical assistance on safeguards:*** Given different needs of safeguard training and limited capacity of the agencies, it is expected that a qualified national firm will be mobilized by Binh Dinh PPMU to provide safeguard training, supervision, monitoring, and reporting of safeguard to the WB. Binh Dinh PPMU will also mobilize an independent monitoring agency (IMA) for monitoring of RAP implementation as well as an international environmental safeguard advisor to assist in providing guidance on related technical assistance and safeguards. PPMUs will also mobilize their safeguard consultants (individual or firm) to assist in the implementation of safeguard measures.

9. ESMF IMPLEMENTATION BUDGET

101. The ESMF implementation budget comprises:

- Cost for preparation of safeguard documents (ESMPs, RAPs, EMDPs) including consultation for new subprojects;
- The costs of implementing the measures within the ESMP/ECOPs. This cost will be largely born by the contactor and in accordance with the recommendations in the SPDs, the cost of complying with the employers requirements will be incorporated into the cost of delivering the specified works (this enables more effective controls and more effective remedies to be applied).

102. Both the Government and the World Bank will co-finance the ESMF implementation budget.

103. The subproject PPMUs will be responsible for calculating the cost for environmental and social safeguard instrument preparation and implementation. Detailed cost allocation for safeguard implementation, including preparation of safeguard instruments, implementation of mitigation measures, and monitoring and supervision will be developed during implementation. PPC will give approval for land acquisition, allocation, and compensation rates. Compensation and land acquisition costs will be financed by counterpart funds.

Table 8. Cost Estimate for Environmental and Social Safeguard Implementation

Estimated Costs (in US$)	
A. Environmental and social instruments based on investment planning costs	
Component 1, 1% of estimated investment	US$1,227,000
Component 3, 0.5% of estimated investment	US$25,500
Subtotal	*US$1,252,500*
B. Safeguard training	
Safeguard capacity building (3 workshops first year)	US$5,000 per workshop
Specific training for local staff/contractors (4 workshop per year)	US$5,000 per workshop
Subtotal	US$95,000
Contingency 10%	US$134,750
TOTAL	**US$1,482,250**

10. GRIEVANCE REDRESS MECHANISM

10.1 Subproject Grievance Redress Mechanism (GRM)

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

105. During construction, the GRM will be managed by the Contractor under supervision of the CSC. This requirement shall be set out in the employer requirements of the SPDs. The Contractor will inform the communities and communes affected by the subproject about the GRM in place to handle complaints and concerns about the subproject. This will be done via the Information Disclosure and Consultation Process under which the Contractor will communicate with the affected communities and interested authorities on a regular basis: hold meetings at least quarterly, publish a monthly information brochure, place announcements in local media, post notices of upcoming planned activities, and so on (see ECOP on Annex 4 (a).

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

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

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

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

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

109. The main objective will be to resolve an issue as quickly as possible by the simplest means involving as few people as possible, at the lowest possible level. Only when an issue cannot be resolved at the simplest level and/or within 15-days, will other authorities become involved. Such a situation may arise, for example, when damages are claimed and the amount to be paid cannot be resolved or the cause of the damages determined.

10.2 WB Grievance Redress Service (GRS)

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

11. ESMF CONSULTATION AND DISCLOSURE

11.1 ESMF Consultation

111. The objective of the public consultation is to provide a summary of the proposed subproject's objectives, description, and potential impacts and proposed mitigation measures to subproject-affected groups including locally-affected people, local authority and NGOs and take their views into account during design and implementation. It aslo aims to promote two-way communication between the project owner and project stakeholders, including

affected people to ensure generally the public, and particularly the affected group, understand the subproject purpose, subproject design, potential positive and negative environmental impacts of the subproject, and subproject policy on involuntary resettlement. It creates opportunity for affected people to participate in all stages of project implementation. Meaningful feedback from consultations will be considered and integrated in the subproject design and mitigation measures. Consutlations with such groups will be carried out during implementation as neccesary to address environmental issues that affect them.

112. Public consultationson of the first 18-month subprojects on ESMPs, RAPs, EMDPs have been carried out during project preparation in March and April 2017 with affected groups including locally-affected people, authorities and NGOs at subproject level. Consulted groups agreed with forescasted environmental and social impactsand proposed mitigation plans. All stakeholders desire the project to be soon implemented to mitigate impacts of disasters.

113. During preparation of the ESMF, a consultation workshop on the ESMF has been carried out in from 9 to 13 June 2017. Key participants include staff of implementing agency, PPMUs, DONRE, MARD, representatives of the project provinces and districts, and local NGOs.

114. For meaningful consultations, Binh Dinh PPMU has provided relevant material in a timely manner such as draft ESMF, RPF, and EMDF prior to consultation to the consulted groups to seek their views. The participants include Representatives of DONRE; Department of Construction, Department of Agriculture and Rural Development; Women's Unions; District People's Committees, Commune People's Committees, etc. Comments and recommendations provided during the consultations were taken into account for finalization of the ESMF.

115. Table 9 summarizes results of the public consultations on the ESMF.

Table 9. Summary of ESMF consultation results

Province	Date	Stakeholder's comments	Responses
QUANG NGAI	June 15, 2017	All stakeholders agreed with the draft ESMF and recommended that proposed mitigation plans must be strictly complied with during project implementation.	Project owner is committed to implementing the project in line with this ESMF
PHU YEN	June 15, 2017	Ditto	Ditto
NINH THUAN	June 16, 2017	Ditto	Ditto
BINH DINH	June 15, 2017	Ditto	Ditto
HA TINH	June 16, 2017	Ditto	Ditto

11.2 Public Disclosure

116. Incompliance with the WB policy on access to information, all the draft safeguard documents prepared for the ENDR, including ESMF, RPF, EMPF, ESMPs, RAPs, and EMDPs in Vietnamese language were locally disclosed at the subproject sites on June 10, 2017. The English versions were disclosed at the Bank'sexternal website on June 20, 2017. The final safeguards instruments will be tentatively disclosed locally by 25 June, 2017 and at the Bank external website by June 28, 2017.

Annex 1. Project Areas and First 18-monthsubprojects

Project Areas: The Central Region of Viet Nam

SUMMARY OF DAMAGES AND LOSSES FROM THE DECEMBER 2016 FLOOD EVENTS

Brief Description of the Event

1. Since mid-October 2016 until the end of December 2016, 18 provinces in Central and South Central Vietnam and the Central Highlands were affected by five consecutive periods of flooding due to very heavy rainfall caused by a combination of tropical depressions and the north-eastern monsoon, which significantly affected its people and economy.

2. The total rainfall on average over a two-month period reached up to 2,000 mm, with peaks in Quang Nam (2,611 mm), Quang Ngai (2,729 mm), and Binh Dinh (2,417 mm). The 2016 floods were a rare event; while rainfall-induced flooding occurs annually in these regions, they rarely occur so frequently and this late in the year. During the three months, new floods were occurring in the low-lying areas of the South Central Coast regions, while the effects from the previous floods were still being felt, thus exacerbating the impacts. Irrigation and hydropower reservoirs in all affected regions reached their maximum capacity, leading to a series of controlled water discharges and further intensifying the flood impact.

Damages and Losses

General

3. **The six most affected provinces are: Binh Dinh, Phu Yen, Ha Tinh, Quang Ngai, Quang Binh, and Nghe An.** The flood periods and provinces affected were as follows:

- October 13-18: from Nghe An to Thu Thien Hue provinces;
- October 30-November 7: from Ha Tinh to Phu Yen, and the Central Highland provinces;
- November 29-December 4: from Thua Thien Hue to Binh Dinh provinces;
- December 5-9: South Central and Central Highland provinces (from Thua Thien Hue to Ninh Thuan); and
- December 12-18: Central and Central Highland provinces (Quảng Nam, Quảng Ngãi, Bình Định, Phú Yên, and Gia Lai).

4. Approximately 10–30 percent of people per province were affected, with over one million people temporarily displaced and in need of recovery assistance. As reported by the Government's CCNDPC and the UN in December 2016, the total damage and loss of all five floods in the 18 provinces was as follows:

(a) Human impact: 134 lives lost and missing and 151 people injured;

(b) Housing: 233,271 houses flooded (of which 163,682 were flooded above 1 meter) and 4,093 damaged or collapsed;

(c) Crops: 53,247 ha rice damaged, of which 23,294 ha perennial crops and 44,437 ha vegetables submerged;

(d) Livestock: 18,371 cattle and 1,218,449 poultry killed;

(e) Infrastructure: 1,782 km of roads damaged or eroded, and 585 bridges or culverts

and 60 km of dykes damaged;

(f) Estimated economic loss: VND 10,520 billion (approximately US$460 million).

5. On October 15, 2016, the GoV declared a state of emergency.

Per Province

6. Out of the four provinces, the rapid assessment showed that the most affected province is Binh Dinh, followed by Quang Ngai, Phu Yen, and Ninh Thuan. Table 1.1 shows a summary of the estimated damages and losses per province.

Estimated Disaster Effects (Damages and Losses) by Province[a]

Province	Damage		Loss		Total	
	(VND, millions)	(US$, millions)	(VND, millions)	(US$, millions)	(VND, millions)	(US$, millions)
Binh Dinh	1,785,443.5	78.7	183,619	8	1,966,883.5	86.7
Quang Ngai	736,754.5	32.5	220,564	10	963,554.5	42.5
Phu Yen	358,572.4	15.9	1,081,428	48	1,447,212.4	63.9
Ninh Thuan	221,036.0	9.7	369,022	16	583,916.0	25.7
Total	**3,101,806.4**	**136.8**	**1,854,634**	**82**	**4,961,566.4**	**218.8**

Note: a. The losses reported are only from the agriculture, livestock, and fishery sectors.

7. Subsequently, as mentioned in earlier sections, an extra province has been added to be covered under this project upon request from the GoV. Due to the extremely short time to collect damage and reconstruction need information for Ha Tinh province, the report is mainly on the flood protection and irrigation sectors. The reported disaster effects are as described in table 1.2.

Estimated Disaster Effects (Damages and Losses) for Ha Tinh

Province	Damage		Loss		Total	
	(VND, millions)	(US$, millions)	(VND, millions)	(US$, millions)	(VND, millions)	(US$, millions)
Ha Tinh (for flood protection and irrigation only)	219,380	9.7	n.a.	n.a.	689,007	30.4

Per Sector

8. In terms of impacts on the four sectors, the most affected is the road sector with a total damage of US$70 million (VND 1,588,501.0 million), followed by flood protection and irrigation infrastructure with a total damage of US$33.9 million (VND 769,507.8 million), agriculture, livestock, and fishery with a total damage of US$22.6 million (VND 512,142.8 million), and housing with a total damage of US$10.2 million (VND 231,655 million). Table 1.3 shows the breakdown of the estimated damage and reconstruction needs cost by sector. Only the agriculture sector included an estimate of the losses to the sector. In terms of reconstruction costs, flood protection and irrigation infrastructure is the sector with the most reconstruction need.

Estimated Disaster Effects and Needs by Sector

Sector	Disaster Effects						Needs	
	DAMAGE		Loss		Total		Reconstruction	
	VND, millions	US$, millions	VND, millions	US$, millions	VND, millions	US$, millions	VND, millions	US$, millions
Social Sectors								
Housing	231,655	10.2	-	-	231,655	10.2	394,208	17.4
Productive Sectors								
Agriculture	118,481	5.2	1,516,901	66.8	1,635,382	72	-	-
Livestock	377,574	16.6	35,336	1.6	412,910	18.2	-	-
Fisheries	16,088	0.7	302,398	13.3	318,486	14.0	-	-
Irrigation and Flood Control	973,585	42.9	-	-	973,585	42.9	451,7901	199.2
Infrastructure								
Transport	1,588,501	69.9	-	-	1,588,501	69.9	3,241,327	142.9
Total	**3,321,187**	**146.4**	**1,854,635**	**81.8**	**5,175,821**	**228.2**	**7,571,034**	**333.8**

Note: Exchange rate of US$1 = VND 22,680 was used for the conversion.

9. **Vietnam's transport infrastructure was extensively damaged by the flooding and landslides**. As reported, the five floods during October-December 2016 caused heavy damages to the transport infrastructure, mostly roads and bridges, in 18 provinces in the Central Region. The flood flows from various rivers, after overtopping and/or breaching the riverbanks and dykes, flooded the surrounding areas, including the roads, and at many places, washed away a length of the road and eroded the pavement and embankments and destroyed or damaged many bridges. In hilly terrains, the heavy rainfall caused landslides, blocking and damaging the roads, as well as heavy surface water flow down the steep slope caused erosion of the road foundations, leading to failure of the road pavement. Flooding and landslides had a major impact on road connectivity and the transport sector alone contributed to about 54 percent of the total damages in four provinces, namely Quang Ngai, Binh Dinh, Phu Yen, and Ninh Thuan, which are considered suffering most from the last events. Damages are mainly concentrated in Binh Dinh Province, representing nearly 55 percent of the total damage in the transport sector in the selected four provinces. Access to essential services was cut off as a result of the flooding and landslides, with destroyed bridges blocking access to even the most basic mode of transport-foot traffic. Road infrastructure remains vulnerable to further damage and failure until permanent repair works (including strengthening and raising of riverbanks and dykes) can be completed. The disaster has worsened the existing poor accessibility in the rural areas. The lack of access on the road network also restricts the delivery of emergency supplies and will continue to hamper recovery efforts for the most-affected communities. The rapid assessment estimates total damages in the transport sector in the selected four provinces at US$70 million, for which the recovery and reconstruction needs are approximately US$143 million considering a more resilient standard structure.

10. The flood control and irrigation infrastructure sector in the impacted provinces was also severely damaged. In this subsector, all damaged schemes and infrastructure identified

are public investments. The disaster caused damage to flood embankments/dykes, riverbank erosion protection works, irrigations canals and canal structures, temporary and raised dams and drainage culverts/sluices, and water supply schemes. However, the majority of the damage was to dykes, riverbanks, and irrigation canals. Major impacts were seen in rural areas and to rural infrastructure including dykes and embankments, riverbank protection works, irrigation canals, diversion dams, roads, bridges, culvers, and so on.

11. The reported damage to this sector in Binh Dinh Province exceeds that of the other provinces, as was observed by the assessment team during the field mission. The estimated direct damage for the four sectors under review in the rapid assessment for Binh Dinh Province was twice as highas the other provinces included in the rapid assessment.

12. Respective provincial governments with the assistance of the Central Government had undertaken temporary restoration measures such as initial and/or partial closing of breaches, strengthening critical bunds/revetments, and so on. Many of these works would require immediate attention and permanent measures to avert possibilities of losses and/or damages in the near future. This is particularly urgent as Vietnam is exposed to cyclonic storms and heavy rain during the monsoon season annually. Given the frequency of occurrence of severe events in Vietnam, it is important to carry out the repair and strengthening works of damaged infrastructure immediately.

13. The total estimated cost of damages to infrastructure including dyke/embankments, irrigation canals, and other infrastructure in the four provinces under review in this report is approximately US$113 million. The aggregate cost of reconstruction, with improved design standards for the flood control and irrigation infrastructure, in the five provinces that are the focus of the reconstruction project is estimated at US$200 million, with approximately half of the total required by Binh Dinh Province.

Government's Response

14. The Central Government has been acting promptly according to the prearranged response plans. Warnings and operational directives were disseminated via the media (television and radio) to guide the preparedness and response efforts.

15. At the provincial level, the Provincial Steering Committee for Natural Disaster Prevention of the PPC instructed the local governments, departments, and sectors to implement the preagreed response plan. The Steering Committee for Natural Disaster Prevention were on standby 24/7, collecting and disseminating information on the flood situations. For the response, the core principles of '4-on-spot motto' were carried out by the provincial governments: deploying human resources, devices, materials, equipment, water and food, preventative medicines, and other necessities.

16. Other actions taken by the provincial-, district-, and commune-level committees include the following:

- The operation of the reservoirs conducted according to the preagreed procedures, resulting in no major incidents;
- Traffic was guided to avoid areas with collapsed bridges, landslides, and flooded roads, ensuring safety;
- People living in the severely affected areas were evacuated promptly to safe places.

17. As of end-December 2016, all evacuated people have returned to their houses or are living with relatives. The media constantly provided updates of the situation and

disseminated instructions from the Central Committee for Natural Disaster Prevention and Control (CCNDPC) on actions to be taken by the residents being affected by the event.

18. The provincial governments annually set aside contingency budgets that can be used for supporting immediate relief operations following a natural disaster. The proportion of contingency budget is 5-10 percent of the annual budget. Using this contingency budget, relief items such as food and water, seeds for replanting, livestock, and search and rescue equipment were quickly mobilized. Temporary measures such as sand bags for breached riverbanks or erecting temporary shelters were put in place.

19. Following natural disasters in Vietnam, the provincial governments provide extraordinary financial support to social protection beneficiaries, that is, people affected by the events. For example, in Binh Dinh, for the 2016 events the provincial government provided VND 4.5 million per person for loss of life; VND 1.5 million per seriously injured person; VND 50 million per house for destroyed houses that can be rebuilt on the same plot; and VND 100 million per house for those that have been washed away and need to be relocated due to the vulnerability of the original plot to future events, with one alternate land plot granted without land use fee.

20. Provincial military supported the affected households by assisting in the cleanup of the inundated houses and erecting temporary shelters for those that cannot go back to their houses. Temporary dykes were also erected allowing for the winter-spring crops to be planted. Contaminated wells have been treated, and schools have been cleaned up so that children can resume their education. Most of the affected areas have had their electricity restored.

BASELINE DATA OF SUBPROJECT AREAS:

A1.1. Binh Dinh subproject

Introduction

The Emergency Flood Disaster Reconstruction Project for Central provinces - Binh Dinh province Subproject is implemented all over Binh Dinh Province, at all disaster-affected areas of which the priority is to reconstruct the essential works to ensure life, restore production and ensure smooth traffic connectivity.

Component projects to be implemented in the first 18 months (scheduled to begin in Q3/2017) include 4 work items (1) Emergency repair of some severely damaged dyke sections for La Tinh river (2) Emergency repair of some severely damaged dyke sections for Can River; (3) Emergency repair of some severely damaged dyke sections for Kon River; (4) Emergency reconstruction of some severely damaged bridges; and (5) Emergency reconstruction of some severely damaged road sections.

Social and environmental existing status in the project area:

Binh Dinh is a coastal province in the South Central Coast, with a natural area of 6,025 km² and 11 administrative divisions including Quy Nhon City and 10 districts and towns. The construction area of the sub-components in the first 18 months of Binh Dinh Subproject is scattered in some communes of An Lao, Hoai An, Hoai Nhon, Phu My and Phu Cat districts and An Nhon town of Binh Dinh province.

Binh Dinh is annually hit by natural disasters such as typhoons, tropical depression, floods, hot sun, droughts, hurricanes, tides, saline intrusion, landslide and other climatic extremes such as sea level rise, hot dry west wind and North East monsoon. Storms and tropical depression usually occur in the rainy season from September to December, most in October and November. Annually, the province is under direct impact of 1-2 storms. From 1975 up to present, the wind observation has shown that wind reached speed of 40 m/s in Quy Nhon, An Nhon and Hoai Nhon (1984, 1995). Floods occur on a large scale, with 3.5 floods per year. The highest frequency happened in the year 1999 with 8 floods and the lowest frequency was 2 floods (2004). The most frequent floods are major floods occurring in October and November. The May-rain floods occur during the summer in May. Early floods appear in September and late floods occur in December. Each flood usually exists 2-3 days or even up to 5 days. The total precipitation is from 200 to 300 mm and even 400 - 750 mm. Drought occurs in January to August when rainfall is low, 50-70% lower than the average rainfall in multiple years in the same period, temperature is high and humidity is low. Most of the river

basins dry up in prolonged hot sun while the water demand for production and daily life in the dry season is huge. Many rivers and streams have dried up completely in recent years.

Topographic characteristics. The terrain of the province is relatively complex, gradually sloping from west to east, with an elevation difference of about 1,000 m. Popular terrain types are mountainous and highland area, hilly area, plain and coastal area. The hilly and highland area cover 4,200 km2 with the average elevation from 500 - 1,000 m. The mountains run north to south with steep slopes. Many mountainous areas are adjacent to the sea, forming rocky mountains along the coast, steep cliffs and narrow sandbanks. The hilly area borders the western mountain range and the eastern plain, covering an area of 1,600 km2, with an elevation of less than 100m and a relative slope of 100-150. The plain area is about 1,000 km², separated from the sea by lagoons, sand dunes or mountain ranges. The coastal area consists of sand dunes forming a narrow sandbanks running along the coast, with elevation of dozens of meters. In addition, Bih Dinh province has 33 large and small islands, of which Nhon Chau Island is the largest island with an area of 3.64 km² and more than 2,000 inhabitants.

Climatic characteristics. Binh Dinh is located in the region with South Central Coastal - Eastern Truong Son climatic regime. There are two distinct seasons, the dry season from January to August, the rainy season from September to December. In rainy season, the province is usually affected by storms with an average frequency of 1-2 attacks per year. Binh Dinh's climate is divided into three main climatic zones: Zone 1 is the northwestern mountainous area of the province, including An Lao, Vinh Thanh districts and communes in the west of Hoai An district and mountainous communes in the west of Hoai Nhon district. This region has a total annual rainfall of 2,200 mm or more and average annual temperature under 26°C. Zone 2 is the mountainous area in the south of the province, including Tay Son and Van Canh districts and western communes of Phu Cat district, with a total annual rainfall of 1,800-2,100 mm and annual average temperature of less than 26°C. Zone 3 is the coastal plain of the province, with total annual rainfall below 1,700 - 2,200 mm and average annual temperature over 26°C.

River characteristics. The rivers are not large with high slope, short, low sediment content and have total water reserve of 5.2 billion m³. There are four main river basins namely Lai Giang, La Tinh, Kon and Ha Thanh Rivers.

The ambient air quality shows that dust concentrations and noise are within acceptable limits following current regulations. Data analysis for surface water quality in Binh Dinh Province from 2006 up to now shows that the quality of river water at monitoring sites on big rivers such as Kon, Lai Giang, Ha Thanh and La Tinh rivers is rather good, mainly is coliform contaminated. Groundwater pollution also occurs at some places. According to the 2007 data, at many places in Hoai Nhon, Hoai An, An Lao, Phu My and An Nhon districts, content of mercury, Cadmium, Ba, NH4 and microorganisms exceeded the allowable limits. Sedimentation of rivers has heavy metal content within acceptable limits.

Socio-economic development conditions: In 2016, the gross domestic product (GRDP) increased 5.0%, reaching the plan; Total social investment reached VND16,670 billion, up 5.1% over the previous year. Most of industrial products increased, of which Dung Quat refinery exceeded planned capacity (6,787 million tons). GRDP per capita reached 50 million VND/person, equivalent to 2,293 USD/person.

Roads: Binh Dinh province has all forms of transportation including roads, railways, inland waterways, airway and sea. Of which, the road traffic system is over 9,437 km with the distribution density of 0.87 km/km2. Highway system in the province has total length of

308.5 km including National Highways 1A, 1D, 19, 19B, 19C. The local road system consists of 455.3 km of provincial roads, 490.1 km of district roads, 613.4 km of urban roads, 207 km of service roads and 7,363 km of rural roads. At present, the rural transport system has basically reached the standard; The village backbone roads are concretized about 70% and 50% in the plain and in the mountainous area respectively.

Population and labor characteristics: The population of Binh Dinh in the period of 2014 - 2016 was estimated to be 1,514,500 people (in which 51% female and 49% male). The rural population was 1,045,000 people, accounting for 69.0% of the province's population; The city population was 469,500 people, accounting for 31.0% of the province's population. The population consists of many ethnic groups living together, in which Kinh people accounted for 98%; Ba Na ethnic group accounted for 1.14%; The Hre ethnic group accounted for 0.4%, the Cham ethnic group accounted for 0.2%, and other ethnic groups accounted for 0.26%. The average population density of the province was 250.3 people/km2 and polulation distribution was not even, with population density in the mountainous areas as 31 - 115 people/km2, in the coastal plain as 497-845 people/km2 and in the urban area approximately with 1,000 people/km2.

Specific environmental and social conditions in the project areas: (1) Repairing and upgrading the dyke system on La Tinh and Can rivers: water spilled over the dyke causing breakage and erosion of many dyke sections, sediments and waterlogging damaging the fields, destruction of houses, and damage of the infrastructure along the river banks caused by floods in 2016 on the dykes in the basins of the La Tinh and Can rivers affecting daily activities and life of people; (2) Repairing dykes of Kon river: river banks were severely eroded, water flowing strongly on the embankment foot causing erosion of foot and embankment, high floods overflowing the dyke surface breaking the dyke and damaging the flood spillway and other works on the dyke of Kon river due to the floods in 2016 affecting daily activities and the life of people; (3) Repairing, upgrading and constructing some collapsed and degraded bridges: after the floods in 2016, some bridges totally collapsed, some bridge abutments and girders were destructed not guaranteeing load bearing capacity and connectivity for transportation; (4) Repairing and upgrading some severely damaged provincial roads: after the floods, many roads were destructed with damaged surface, slope erosion and breakage, damaged road surface and broken sewer system.

Important natural habitats and natural reserve. There are no significant natural habitats, protected areas being in or near or at risk of being affected by the activities of the subproject. The project areas are located more than 20 - 30 km away from the natural reserve area/forest area of the western mountainous districts (part of An Toan Natural reserve area and An Son Forest Plantation belongs to An Lao district in the northwest of Binh Dinh Province, adjacent to Quang Ngai and Kon Tum provinces).

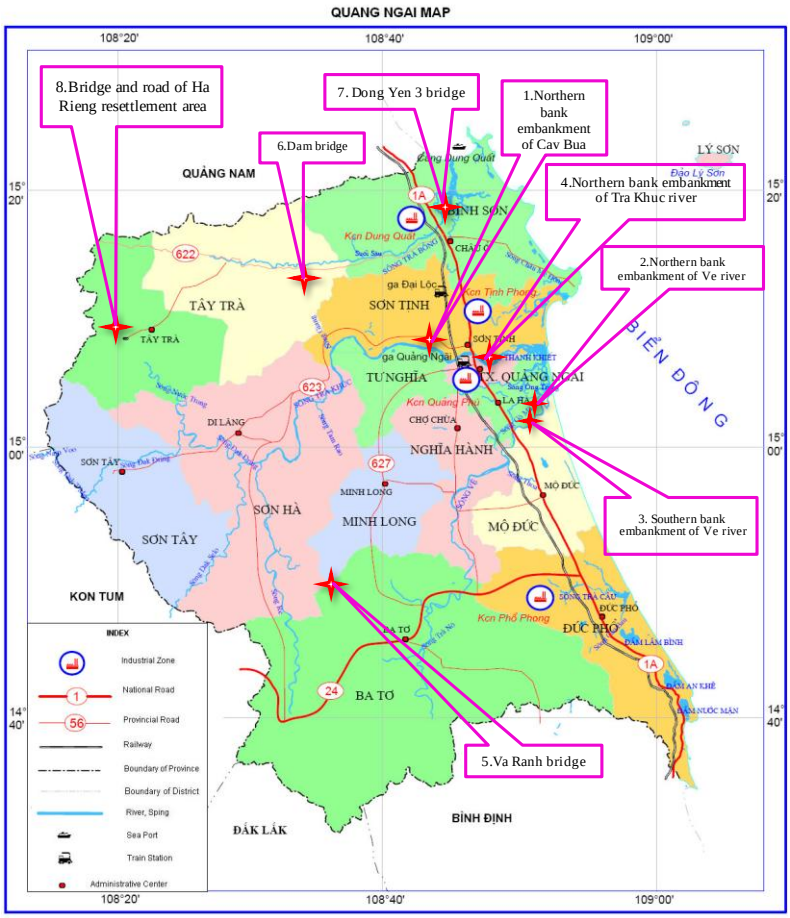
Physical cultural resources. There are no significant physical cultural resources in or near the subproject area. The subproject areas are located at a minimum distance of 7 km to the historical sites of Binh Dinh Province such as: Sa Huynh Cultural Monuments on Binh Dinh land (Cuom cave, Go Thap, Ca Cong, Bau Nang, Phu Nhuan, Cong Luong (Hoai Nhon), Truong Xe, Go Loi, Thuan Dao, Chanh Trach (Phu My), Hoi Loc, Ngang mountain, Diep hill (Quy Nhon), Champa Monument, Thap Doi Quy Nhon, Bac tower, Duong Long tower (or Nga tower), Canh Tien Tower, Phu Loc Tower (also called Golden Tower), Binh Lam Tower, Thu Thien Tower, Tay Son Monuments, Emperor Palace, Quang Trung spiritual Museum, Vo Van Dung temple, Bui Thi Xuan temple, Mai Xuan Thuong tomb, Dao Tan tomb, Nui Ba base, Thap Thap pagoda, Son Long pagoda, Long Khanh pagoda, Linh Phong pagoda, Quy Nhon church…

A1.2. Quang Ngai subproject

Introduction

The Emergency Flood Disaster Reconstruction Project for Central provinces – Quang Ngai province Subproject is implemented all over Quang Ngai Province with general objectives namely: repairing disaster-affected infrastructure assets, restoring production, ensuring safety and stable life for people suffered from natural disasters like floods, droughts and enhancing flood prevention capacity for vulnerable areas in the future.

The subproject's components for the first 18 months (scheduled to begin in Q3/2017) are: (1) Embankment on the northern bank of Cay Bua river, (2) Embankment on the southern bank of Ve river (Duc Thang commune), (3) Embankment on the northern bank of Ve river (Nghia Hiep commune), (4) Embankment on the northern bank of Tra Khuc river, (5) Va Ranh bridge, (6) Dam bridge with L = 12m (Tra Lanh), (7) Dong Yen 3 bridge, Ha Rieng bridge and (8) the road to the resettlement site in Ha Rieng hamlet.



Social and environmental existing status in the project area in the first 18 months:

Quang Ngai province has 04 plain districts adjacent to the sea, with a total coastline of 130 km, giving the province great potential for marine economic development but also potential risks of landslide due to waves and erosion. The area of 06 mountainous districts of the province covers over 62% of the province's natural area with relatively complex topological features and sparse population density. In some areas, due to geological changes, landslides and potential landslides have put pressure on people's mood and threaten people's life and property.

Due to geographic and topographical conditions, Quang Ngai province is often subject to the monsoon circulation, trade winds and is under direct influence of tropical turbulence. Therefore, Quang Ngai is affected by almost all types of natural disasters: storms, tropical depressions; flood; landslide; thunder, lightning; northeast's wind; flash floods, ... which have become more and more complex and tended to increase both in frequency and intensity.

Topographical condition: 8 work items of Quang Ngai subproject are located in 6 districts/city of Quang Ngai province both on plain (Quang Ngai city, Tu Nghia district, Mo Duc district, Binh Son district) and mountainous area (Ba To district, Tay Tra district). The plain is rather flat, densely populated, and adjacent to the sea with great potential in term of

marine economic development but also at high risk of being affected by freak wave, erosion causing coastal landslide. The mountainous area has rather complex terrain with abrupt mountain range, great slope, sparse population. There are some geological disturbances at some areas causing landslide and erosion risk threatening people's mental health, living condition, life and property.

Climatic conditions: The climate of Quang Ngai province is divided into two distinct seasons, including rainy season and sunny season. Quang Ngai has special precipitation with average annual rainfall of 2,685mm, mainly concentrated in the last four months of the year, the other months suffer from drought. The average annual rainy day is 129 days, most in the months of 9,10,11,12. Quang Ngai has much southeast wind, little northeast winds because of its terrain and mountain range. Average temperature in the year is 25°C, the highest is 41.5^{o}C and the lowest is 8°C. Temperature spread varies widely between day and night and months of the year. The hottest month (May) has an average temperature of 34.7^{o}C, the coldest month (January) has an average temperature of 18.8^{o}C. There is difference between temperature of the mountainous area compared to temperature in the plain: mountainous area's average temperature is lower, but the maximum temperature is higher and the minimum temperature is lower. The average humidity in the year is 84%, the monthly average humidity is 90% to be maximum and 60% to be minimum.

Hydrological conditions: The subproject has 4 work items of river embankment on 3 rivers (among the 4 major rivers) of Quang Ngai province, including Tra Bong, Tra Khuc and Ve rivers. These rivers all run latitudinally or semi-latitudinally and rather evenly distributed all over the plain of Quang Ngai province. Hydrological conditions of the main rivers are presented in following:

River name	**Length of river (km)**	**Length of basin (km)**	**Width of basin (km)**	**Area of basin (km^2)**
Tra Bong	45	56	12.4	697
Tra Khuc	135	123	26.3	3,240
Ve	90	70	18.0	1,260
Tra Cau	32	19	14.0	442

(Source: http://www.quangngai.gov.vn)

According to the report on Environmental monitoring results of Quang Ngai province in 2016, the quality of surface water in big rivers such as Ve river and Tra Khuc river (upstream and downstream) is relatively good except for some areas at the Ban Thuyen stream, Bau Lang canal downstream from the industrial zones which have signs of organic and microbial pollution with some criterion like BOD5, COD, Coliform, ... exceeding the acceptable limit regulated in the National standard QCVN 08-MT: 2015/BTNMT (column B1); Groundwater quality at most sampling sites is acceptable compared with QCVN 09-MT:2015/BTNMT, except for some groundwater sampling sites near Nghia Ky landfill in Nghia Ky commune of Tu Nghia district where the content of Coliform and Ammonium exceed the acceptable limit; Ambient air quality and noise: The dust content is within acceptable limits compared to QCVN 05: 2013/BTNMT (Average 1 hour) at the traffic, tourism, industrial areas and rural clusters; However, noise levels in some traffic areas, industrial areas and tourism areas exceed the acceptable limits stipultated in QCVN 26: 2010/BTNMT but acceptable in rural areas; the content of CO, SO2, NOx in most of the areas has reached the acceptable limits; Content of heavy metals in soil is within acceptable limits compared with QCVN 03-MT: 2015/BTNMT for agricultural and forestry land.

Socio-Economic development conditions: Gross Regional Domestic Product (GRDP)

increased by 1-2% (2010 price); of which the gross product excluding petroleum refining products increased by 9-10%; GRDP per capita: USD 2,321/person (VND 51.8 million/person); the proportion of trained workers accounted for 49% of the total work force; the rate of poor households decreased from 1.85% following the new criteria; forest coverage was 51.1%; the percentage of rural population using hygienic water was 88%; 87% of urban population was supplied with clean water.

Road systems: For 8 work items of the project which will be constructed at different areas of Quang Ngai project, the transport system leading to construction sites is mainly road, including different types of road like national highway, provincial road, inter-communal road, hamlet road with existing status as follows: National highway 1A: The section running through the province with length of 98km, width of 40m, road pavement of asphalt concrete with good quality, convenient for vehicle movement. National highway 1A runs through the start point of the 2 project work items namely embankment on northern bank of Cay Bua river and embankment on northern bank of Tra Khuc river; National highway 24: connecting NH 1A (the section running through Thach Tru, Mo Duc district of Quang Ngai province) with Kon Tum province, with length of 69km. NH 24B has length of 108km and NH 24C is 118km long; Provincial road: Including 18 routes with total length of 520.5km, road pavement of asphalt concrete, rather good quality, except for some sections running through mountainous area (near the project area in Tay Tra district and Ba To district) which have been seriously damaged due to natural disaster event in 12/2016; Inter-communal and hamlet roads: mainly cement concrete road, width of 5 - 12 m, rather good quality. Some roads at mountainous communes are soil road or aggregate, different for movement, …

Population and labor characteristics: The average population of Quang Ngai province in 2015 was 1,247,644 people with an average population density of 242 people/km2. There were about 324,000 households in the whole province with an average of 3.75 people/household. Urban population accounted for 14.62% and rural population accounted for 85.38%. In the period of 2011 - 2015, the natural population increased about 0.9%/year. By gender classification, female population accounted for 50.7%, and the male population accounted for 49.3%. Total population of the Hre ethnic group in Quang Ngai province was 132,745, of which 48,852 people in Ba To district, 65,823 people in Son Ha district, 13,748 people in Minh Long districts and 4,592 people living in other districts and Quang Ngai city; The Co ethnic group now has a population of about 36,000 people. For the Quang Ngai Subproject during the first 18 months, there are 3 communes (Ba Dien of Ba To district, Tra Lanh and Tra Phong of Tay Tra District) having ethnic minority (46 households of Co people and Hre people, equivalent to 185 people) who will be affected by the implementation of the project.

Important natural habitats and natural reserve. There are no significant natural habitats, protected areas in or near or at risk of being affected by the activities of the subprojects. **Plain area:** In general, some work items of the project are constructed on plain, including (1) embankment on the northern bank of Cay Bua river; (3) Embankment on northern bank of Ve river- Tu Nghia district, (2) Embankment on southern bank of Ve river- Mo Duc district, (4) Embankment on northern bank of Tra Khuc river - Quang Ngai city and (7) construction of Dong Yen 3 bridge - Binh Son district. These areas have agricultural ecosystem, with no precious animal and plant resources but mainly manmade biological and ecological resources so their stability and sustainability are not high, and with little ecological value; **Mountainous area:** The project area in the mountainous area consists of 3 work items. (5) Construction of the Va Ranh bridge – Ba To district; (6) Construction of Dam bridge and (8) construction of road and bridge to the resettlement area in Ha Rieng - Tay Tra district. All these subproject areas are 15-30 km away from the nature reserve/forest of these 2

mountainous district (for example, part of Kon Chu Rang nature reserve in Ba To district, Quang Ngai province, part of rain forest in south of Truong Son mountain is in Tay Tra district). There is no appearance of animals or plants in the Red Book of Vietnam and IUCN Red List Species as well. The forest scatteredly disbitruted near the project area is productive forest with mainly plants of eucalyptus, acacia mangium, A.auriculiformis which are harvested periodically. In particular, the construction of the road and bridge to the resettlement area in Ha Rieng hamlet - Tay Tra district will acquire about 2,420 m^2 of land for productive forest from 6 households. This area is mainly planted with Acacia mangium for periodic timber harvesting with sparse density, small canopy and small trunk size.

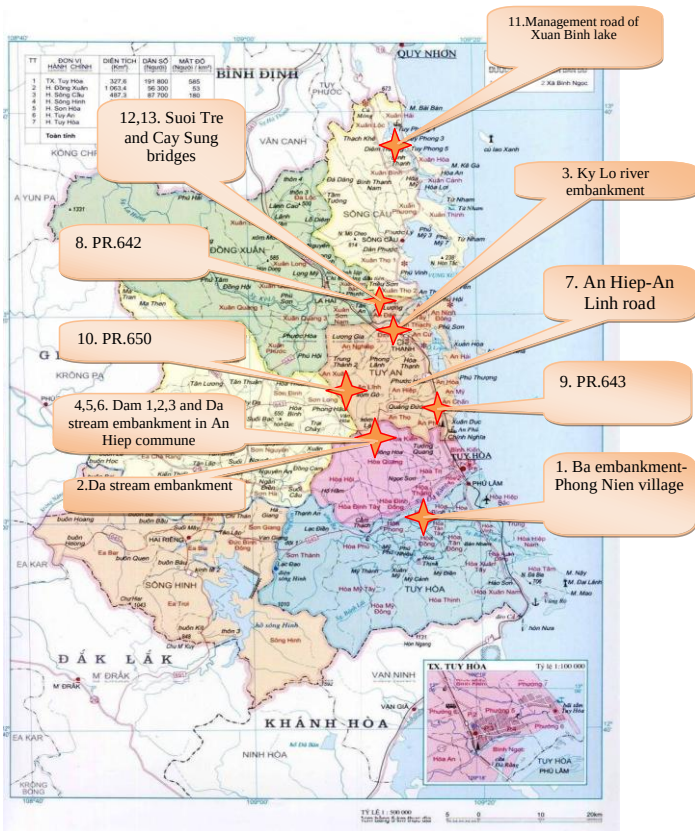
Physical cultural resources. There are no significant physical cultural resources in the subproject area. The subproject areas are located at a minimum distance of 5 kmfrom the valuable historical sites of Quang Ngai Province such as Chau Sa citadel, Son My vestige area, Pham Van Dong monument, Dang Thuy Tram monument, Thien An Niem Ha, Thien Xuan ancient town, relics of Van Tuong victory…

A1.3. Phu Yen subproject

Introduction

The Emergency Flood Disaster Reconstruction Project for Central provinces – Phu Yen Subproject is implemented all over Phu Yen Province with the general object of supporting the Government in long-term overcome from distaster consequences via reconstruction of the prioritized infrastructure at some flood-affected provinces in 2016 and resilient capacity enhancement for natural diasters in the future.

The subproject components in the first 18 months (scheduled to start from Q3/2017) are: Repairing and restoration of provincial roads 643, 650 and 642. These roads have been damaged, subsided and some sections have been damaged seriously. The section of the provincial road 642 at the Sung bridge (which is a weak temporary steel bridge) is usually flooded and some road sections near Ky Lo river are eroded and damaged.



Social and environmental existing status in the project area in the first 18 months:

Phu Yen Province is located in the South Central Coast, with geographical coordinates from 12042'36 "to 13041'28" North latitude, from 108040'40 "to 109027'47" East longitude. Theprovince borders with Binh Dinh Province to the north, Khanh Hoa Province to the South, Gia Lai and Dak Lak Provinces to the West and the East Sea to the East with a coastline of 189km long.

Climatic characteristics: Phu Yen shares the common characteristics of the southern tropical monsoon climate in the South of the South Central region with typical characteristics: There are two seasons of the North

East and Southwest winds, high temperature, hot sun, no cold winter but only rainy and dry seasons with prolonged dry season and flood season. The average temperature is 26.9^{o}C; average sunny hours is 2,476 hours/year; average humidity is 79.4%; and average rainfall is 1,795.6 mm/year.

The typhoon season in Phu Yen province is determined from September to December every year with the highest frequency happens in October and November, but there were times when storms attacked since late June and early July (the year 1978). The dry season lasts for 8 months (from January to August) with average annual rainfall of 300-700mm, accounting for 16-31% of total annual rainfall. Flood season in Phu Yen province lasts for 4 months, from September to December. Heavy rains cause floods of considerable intensity, the highest daily rainfall during the flood season is 190-300 mm on aveage. Along with the amount and intensity of heavy rain, the characteristics of hilly terrain with great slope, short rivers and have made the floods become more serious.

Topographical condition: Components of Phu Yen province subproject include 3 embankments, 3 dams, 5 roads and 2 bridges in 12 communes/townships of 3 districts and 1 town. These work items are constructed on rather flat terrain (Hoa Thang commune of Phu Hoa district) and on rather steep mountainous terrain (i.e. communes of An Hiep, An Linh, An Dinh, Chi Thach township, An Xuan and An My communes of Tuy An district; Xuan Tho 2, Xuan Binh and Xuan Loc of Song Cau town, Xuan Son Bac commune and La Hai township of Dong Xuan district). **Plain area** has relatively flat terrain, river elevation varies from +8.4 to +10.5m. This area is adjacent to the river facilitating the transportation and exchange of goods and services, contributing into the economic development. However, this is also the cause for the area to be at risk of erosion and landslide; **Mountainous area** has uneven and unflat terrain with elevation varying from +0.1m to +20.79 m; or even +2.1 m to +6.3 m, or +47.07m to +58.74 m at some sections… The banks of the rivers/streams are usually at risk of being eroded and the riverbed is at risk of sedimentation, blocking water flow.

Existing status of ecosystems and biological resources: The area has a poor ecosystem, no rare and endangered plants and animal species, the current ecosystem is an agricultural ecosystem. There are aquatic ecosystems in five areas, including four communes and one town, namely Hoa Thang commune (for construction of Ba river embankment); An Hiep Commune of Tuy An District (Da Stream embankment), An Dinh Commune and Chi Thanh Township of Tuy An District (Ky Lo River embankment), Xuan Binh Commune of Song Cau Town (for Xuan Binh road). However, these aquatic systems are poor and have no rare and endangered aquatic plants and species, only some species of algae and small fishes and shrimps are living in Ba River, Ky Lo River, Da stream and Xuan Binh Lake like tilapia, grass carp, catfish, goby, Cranoglanis, shrimp, crab, snail, mussel ... with small quantity. Terrestrial ecosystems are mostly agricultural ecosystem in 10 communes and 2 townships of 3 districts and 1 town in Phu Yen Province. Terrestrial plants include perennial trees such as A. auriculiformis, small eucalyptus about 2-3 years old, bamboo and some fruit trees such as mango, banana, jackfruit, pineapple ... and some kinds of shrubs which grow wildly or are planted by people along the river bank/stream bank for periodic exploitation at small scale and low economic value. Fauna system is mainly frogs and domestic animals.

According to the Environmental Protection Plan of Phu Yen province, August 2016: In 2015, an environmental monitoring program was conducted with 128 environmental quality monitoring points with priority being given to ecologically sensitive areas, key areas or areas with sources of pollution; Distribution of monitoring points and environmental quality were as follows: In general, the quality of ambient air quality in Phu Yen was better than in 2013 and 2014, Noise level at some monitoring points exceeded the allowable standards but not

significantly; For surface water environment: The analysis of results obtained from the monitoring points showed that the water quality in the Ba River is still good, meeting the demand for water supply and irrigation of people but needs appropriate treatment method; The water quality in Ban Thach river is relatively good, meeting the demand for water supply and drainage of people, but still needs appropriate treatment method. However, for water sample taken at Da Nong bridge (950m distance in the northwest) of Dong Hoa district, the quality of surface water is heavily polluted and needs to be treated in the future; Coastal water environment: The analysis results for water samples in Tuy Hoa city and Dong Hoa district showed that water has the oil/grease content greater than the allowed standard 2-7 times, coliform content in sea water in the province tends to increase; Groundwater environment: The results of the analysis showed that the concentration of most of the pollution parameters in the groundwater at the monitoring sites tends to fall within the permissible limits of QCVN 09: 2008/BTNMT or not significantly beyond; only E.Coli and Coliform parameters exceeded allowable standards; Soil environment: The soil environmental quality at the monitoring points in the province is within the allowable limits of the standard.

Socio-economic development conditions: The average growth rate of the period up to 2010 was 13.6%/year; In the period from 2011 to 2015, it reached 15.2%/year and the period from 2016 to 2020 it will be 15.3%/year. The income per capita 2010 was $ 750, $ 1,600 in 2015 and will be $ 3,000 in 2020.

The province's transport system is well developed in all types. In the project area, rural roads have been concretized and some sections are still soil roads. These include the inter-communal rural roads, provincial road 643, 642, 641 and 650 and district road 8, National highways such as NH 25, NH 1A and NH 19C. The width of the road is about 3 - 10m, the provincial road is usually cement concrete road, the highway is the asphalt road and the inter-communal rural road is soil road. These are the routes that will carry the transportation of materials, waste ...

Population and labor force characteristic: The average population of Phu Yen province (by 2015) was 1,247,644 people with the population density in 2015 as 242 people/km2. Total labor force in Phu Yen economy was 498,710 people of which, 295,236 people employed in the agriculture, forestry and fishery sector, accounting for 59.2%; 81,789 people worked in the industry-construction sector, accounting for 16.4%; and 121,685 people worked in the service sector, accounting for 24.4% of total employment in the national economic sectors.

Important natural habitats and natural reserve. There are no significant natural habitats, protected areas in or near or at risk of being affected by the activities of the subproject. The subproject areas are located more than 30 km away from the natural reserve for the western mountainous districts, namely Krong Trai Natural reserve area on the land of 2 communes of Krong Trai and Krong Pa of Son Hoa district; the Ea Bar natural reserve area in Song Hinh district.

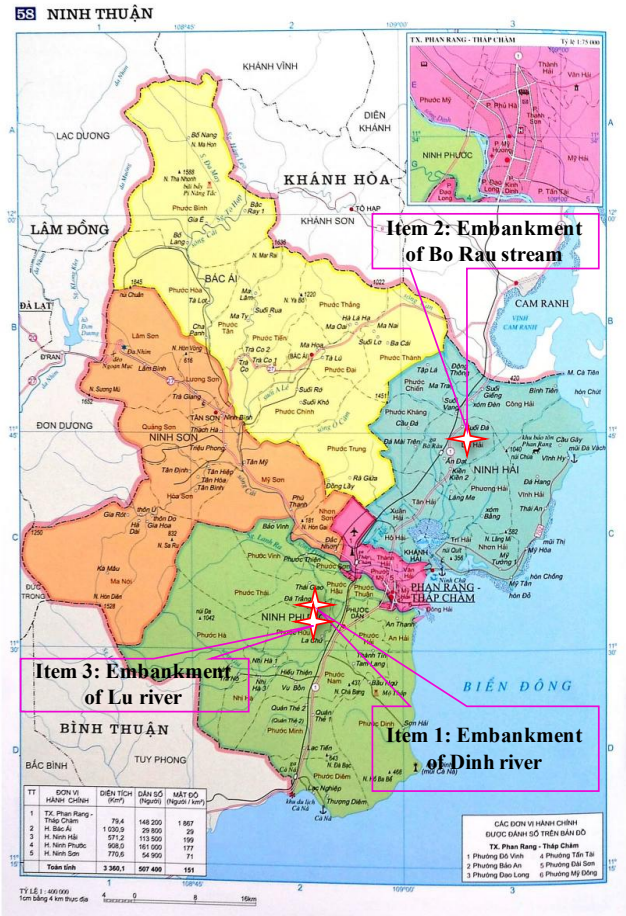
Physical cultural resources. There are no significant physical cultural resources in or near the subproject. The subproject areas are located at a minimum distance of 7 km from the valuable historical sites of Phu Yen such as: Nhan Tower, Luong Van Chanh Temple, Tu Quang Pagoda (White stone pagoda)), Le Thanh Phuong temple and tomb where the first Communist Party Division of Vietnam was established in Phu Yen, monument of Ngan Son - Chi Thanh massacre, No-name ship on Vung Ro sea, Road No. 5 which was the place for Hoa Thinh ris-in-arm in- Tay Hoa district, O Loan lagoon in Tuy An district, Da Dia reef om An Ninh Dong commune - Tuy An district, Ho Dynasty Citadel in Phu Hoa district, An Tho citadel in An Dan commune -Tuy An district , ...

A1.4. Ninh Thuan subproject

Introduction

The Emergency Flood Disaster Reconstruction Project for Central provinces – Ninh Thuan province Subproject is implemented all over Ninh Thuan Province with general objectives namely: repairing disaster-affected infrastructure assets, restoring production, ensuring safety and stable life for people suffered from natural disasters like floods, droughts and enhancing flood prevention capacity for vulnerable areas in the future.

Component of the subproject to be implemented in the first 18 months (scheduled to begin in Q3/2017) are: (1) Embankment for Dinh river in Phuoc Son commune, Ninh Phuoc district; (2) Embankment to protect Ba Rau residential area in Loi Hai commune, Thuan Bac district, (3) Embankment for Lu river to protectct inhabitants of Phuoc Dan township



Social and environmental existing status in the project area in the first 18 months:

Ninh Thuan is one of the South Central Coast provinces with very complex climatic and topographical features. It is affected by most natural disasters that occur in Vietnam such as storms, tropical depression, floods, flash floods, erosion, landslide, high tide, hurricane, thunderstorm, drought and saline intrusion…The most popular natural disasters that Ninh Thuan province usually suffer from are storms, tropical depression, thunderstorm, heavy rain, flash flood, landslide, hot sun, drought and other types of natural disasters.

The hurricane season is concentrated in November, December and sometime until the next January. The highest rainfall in 24 hours recorded was 180mm. Key areas usually facing with flash floods include Thuan Bac district with villages of Kien Kien 1, Kien Kien 2, Ba Rau 1, Ba Rau 2 of Loi Hai commune; villages Ba Thap, Go San of Bac Phong commune, Phuoc Khang commune; Hiep Thanh village and Suoi Da village of Cong Hai commune. Areas usually suffered from floods and inundation include Ninh Phuoc district with villages of Thuan Hoa, Phuoc Khanh, Phuoc Loi and Van Phuoc of Phuoc Thuan commune; Phuoc Thien 3 village, Ninh Quy 2 and 3 of Phuoc Son commune; Thai Giao and Hoai Ni villages of Phuoc Thai commune; residential cluster 2, 5 and 6 of Phuoc Dan township; Tu Tam and Thanh Tin villages of Phuoc Hai commune; Long Binh 1, 2, Hoa Thanh, An Thanh 1 and 2 villages of An Hai commune. In addition, some areas are also significantly affected by road erosion, landslide, river bank erosion and saline intrusion, etc.

Climatic characteristics: Ninh Thuan province has typical characteristics of tropical monsoon

climate as hot dry, windy, strong evaporation, the average annual temperature from 26-27°C, the average rainfall of 800-900mm, air humidity from 75-77%. Solar radiation is high at 160 Kcl/cm2. Total heat is from 9,500 to 10,000^{o}C. There are two distinct seasons: rainy season from September to November; dry season from December to September of the following year. Water resources are distributed unevenly, mainly in the northern area and central areas of the province; Ground water is just one third of the national average.

According to the Report for Ninh Thuan environmental existing status in 2011-2015, the surface water quality at some locations in the Cai River, Nam Canal and Bac Canal had signs of organic pollution with content of DO and BOD_5 in the water. DO content in the surface water of Bac canal at Phan Rang branch was low in 2011 and 2012. Content of BOD_5 did not exceed the standard but tended to increase over the years; Coliform in the surface water of the Lu and Quao rivers at most monitoring points exceeded the acceptable limit stipulated in the QCVN 08: 2008/BTNMT column B1 from 2.2 to 18.5 times, except for Phuoc An Village (in the first 6 months of 2015) where the value of Coliform was lower than the standard; Can stream and Than river had some signs of pollution such as high content of Ammonium, TSS or Coliform. The monitoring results for ambient air at some specific locations and areas in Ninh Thuan province in the period 2012-2015 showed that, most of the pollutant parameters were within the allowable standard; Only a few parameters: Noise, suspended sediment and CO at some observation sites exceeded standard values but not considerable. Therefore, the quality of air in the monitoring areas in particular and in the province in general was quite good, no signs of air pollution caused by transport activities, industrial and agricultural production, tourism area and fishing port. Heavy metal content in most of soil samples for different purposes fell in allowable limits regulated in the QCVN 03: 2008/BTNMT - National Technical Regulation on the limit of heavy metals in soil; Salinity in the agricultural land in the province was popular but not at high level, soil quality was rather good for different purposes.

Socio-economic development conditions: In 2011-2014, the average GDP growth rate of the province was 11.07%. GDP per capita was 26.8 million VND, with agriculture, forestry and fishery accounted for 38.5%; industry and construction accounted for 23.8% and services accounted for 37.7% of the economic structure.

The population in Ninh Thuan province in 2014 was 590,400 people, of which 213,800 people in urban areas (36.2%) and 376,600 people in rural areas (63.80%). Compared with the whole country, the proportion of urban population in the province was higher than the national average (the urban population in the whole country was 29.6%). However, this was still a region with high proportion of rural population and ethnic minorities accounted for a large percentage (Cham, Raglai people). For the two subproject districts in the first 18 months: The population of Ninh Phuoc district in 2015 was 128,790 people, with 69% Kinh, 30% Cham and 1% Rac Lay ethnic group. The population of Thuan Bac district in 2015 was 41,342 people in total 9,856 households of which Kinh poeople accounted for 30.54%, ethnic minorities accounted for 69.46% (mainly Raglai: 62.23%, Cham: 7. 23%).

Important natural habitats and natural reserve. There are no significant natural habitats, protected areas in or near or at risk of being affected by the activities of the subproject. The subproject areas are located over 20 km away from the natural reserve/forest of Ninh Thuan Province such as: Nui Chua National Park in Ninh Hai District, a small part of Kalon Song Mao Nature Reserve in Ninh Phuoc district.

Physical cultural resources. There are no significant physical cultural resources in the subproject area. The subproject areas are located at a minimum distance of 10 km away from the historical sites of Ninh Thuan province, such as: Po Rome Tower in Ninh Phuoc District,

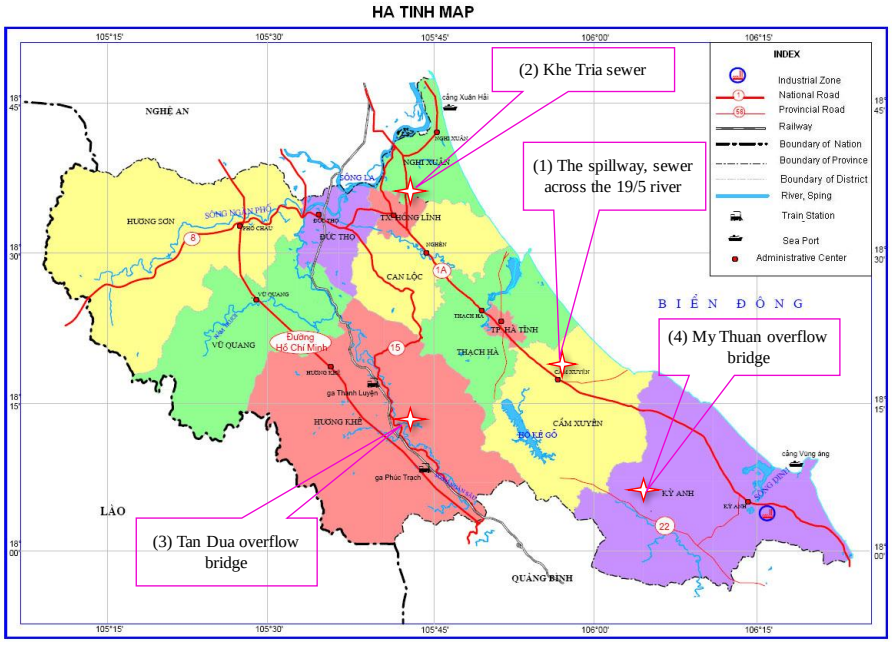
Pi Nang Tac Stone Trap - Bac Ai District, Cha Bang mountain and Po Nai festival - Ninh Phuoc district, O Cam place - Bac Ai district, Dinh mountain in Phuong Cuu village in Ninh Hai district.

A1.5. Ha Tinh subproject

Introduction

The Emergency Flood Disaster Reconstruction Project for Central provinces – Ha Tinh province Subproject is implemented all over Ha Tinh Province with the general object of supporting the Government in long-term overcome from distaster consequences via reconstruction of the prioritized infrastructure at some flood-affected provinces in 2016 and resilient capacity enhancement for natural diasters in the future.

Subproject components to be implemented in the first 18 months (scheduled to begin in Q3/2017) are: (1) Emergency overcoming and repairing for the spillway and culvert on Phuc-Long-Nhuong dyke to River 19/5 in Cam Xuyen district; (2) construction of Khe Tria culvert; (3) restoring and repairing Tan Dua spillway and (4) repairing My Thuan spillway



Social and environmental existing status:

Ha Tinh is a province in the North Central Coast, with natural area of 6,055 km² with 13 administrative units including Ha Tinh City and 12 districts and towns. The province borders Nghe An province to the north, Quang Binh province to the south, two provinces of Laos (Bo Ly Kham Xay and Kham Muon) to the west and adjacent to the East Sea in the east. Ha Tinh is annually affected directly by natural disasters including typhoons, tropical depression, floods, hot suns, droughts, thunderstorms, tides, saline intrusion and erosion and other extreme weather phenomena such as sea level rise, hot dry west wind, northeast monsoon. Typhoons and tropical depressions usually occur in rainy seasons from September to December, most in October and November. On average, each year the province has to suffer from 2-3 storms.

Topographical condition: Ha Tinh is located in the east of Truong Son Range with narrow and sloping terrain tilting towards the East. Mountainous terrain occupies nearly 80% of the natural area, the plain area is small and is divided by mountains, rivers and streams. **Mountainous area**: low-rise folded mountain terrain which covers most of the province's area under 1,000m with relatively complex geological structure; **Plain area**: lying along the coast with an average elevation of less than 3 meters, tilting towards the sea from the western hill and narrowing to the south.

Climatic characteristics: Ha Tinh is located in the tropical monsoon climate with typical characteristics of the Northern area's cold winter. The average temperature in many years varies within 23.8° C; from May to September the average temperature is above 26°C. The hottest month is June with the absolute maximum temperature up to 40.1^{o}C. The absolute minimum temperature observed was 6.8°C on December 28, 1982. Precipitation is unevenly distributed by time, space and months in a year. Over time, the rainfall is concentrated in August, September and October, in which rainfall accounts for 60 ÷70% of total annual rainfall.

Hydrological conditions: Ha Tinh province has diverse system of rivers and canals but the rivers are short. The longest river is the Ngan Sau River with length of 131 km and the shortest is the Cay River with length of 9 km; Rivers in the province can be divided into three networks: Ngan Sau river network has basin area of 2,061 km2 and many small rivers such as Tiem, Rao Tro and Ngan Truoi rivers in which Tiem river already has dam system; Ngan Pho river network: 86 km in length and 1,065 km2 in the basin area, receiving water from Huong Son and Ngan Sau rivers towards the La rive with a length of 21km, then merging with the Lam river to Cua Hoi estuary; The system of river estuaries and coastal estuaries includes: Cua Hoi, Cua Sot, Cua Nhuong and Cua Khau estuaries.

According to the summary of Ha Tinh environmental status in the period 2011 - 2015: In general, surface water quality in Ha Tinh area had no signs of pollution except in some rivers near the urban areas of Ha Tinh city, Hong Linh town, Ky Anh town and near the discharging areas of some seafood processing factories, which have been contaminated organically. Groundwater quality was mainly polluted in areas having pesticide residues, oil leaks from the war period (mineral oil contamination). Groundwater in solid waste landfills, industrial clusters, health centers and resettlement sites have the concentration of nitrogen, iron and Mn negligibly higher than the acceptable levels. Water quality at coastal area had criteria basically within the allowable limits, except for some coastal aquaculture areas, beaches, seas and estuaries where some water parameters were higher thanthe allowable limits, namely: Thien Cam beach, Thach Bang, Ky Ninh when the iron content exceeded the allowable limit, the mineral oil content exceeded standards from 3 to 5.5 times, TSS and coliform in most beaches varied seasonally, higher than the standard value from 1.2 to 1.5 times and tended to increase over the years. The air quality at the central locations and the key traffic junctions, and processing blocks exceeded the acceptable indicator in noise and dust but not much (from 1.001 to 1.23 times). Contents of gases at most of the monitoring locations are within allowable limits.The content of heavy metals in the soil was within acceptable limits except for areas having pesticide residue from the wartime, and the untreated landfills.

Socio-economic development conditions: GRDP growth in 2015 was estimated at 17.5%, of which industry and construction increased by 19.6%, agriculture-forestry-fishery increased 7.7%, trade-services increased 19.7%. GRDP per capita in 2015 reached over VND38.9 million. Policies and instruments on poverty reduction were implemented timely and thoroughly; By the end of 2015, the rate of poor households in the province was 5.82%; Proportion of near poor households was 8.89%.

Population and labor characteristics: By 2015, the population size was about 1.28 million, with the average population density of 213 people/km2. There were about 324,000 households in the whole province with average 3.75 people/household. The urban population accounted for 14.62% and the rural population accounted for 85.38%. This is the abundant labor force of the province. The population is mainly Vietnamese (Kinh), accounting for 99% of the population. There are only hunderds or dozens of Thai, Muong, Chut and Lao people living among communities in some communes of Huong Khe, Huong Son and Vu Quang

districts.

Road systems: The road network of Ha Tinh province has a total length of 16,655.16km. Particularly, the national highway system and provincial roads have a length of 850.03 km, including 7 national highways with a total length of 492.50 km, provincial roads including 10 routes with total length of 357.53 km. The national highways and provincial roads have formed a system of arterial roads in combination with the rural road system forming a continuous road network in Ha Tinh province, facilitating connectivity between the province's areas, with other provinces and with Laos country. Except for some sections of NH15, NHL8B and NHL8 which have been constructed for a long time but have not been upgraded and expanded, the remaining sections on national highways all meet the standard of grade III and grade IV roads with the exploitation load of 10 tons/vehicle. Road and bridge loading capacity is over 30 tons.

Important natural habitats and nature reserves. There are no significant natural habitats, protected areas in or near or at risk of being affected by the activities of the subproject. The subproject areas are located 15 km away from the nature reserve/forest of Ha Tinh province such as Ke Go Nature Reserve (adjacent to the borders of Huong Khe, Ky Anh, Cam Xuyen districts) and Vu Quang National Park in Vu Quang district.

Physical cultural resources. There are no significant physical cultural resources in or near the subproject areas. The subproject areas are located at a minimum distance of 10 km away from historical sites of Ha Tinh province, such as: Am Pagoda, Cao Thang Temple, Holy Mother Temple, Roc Con historical relics, Tu My Village temple, Do Dai Temple, Bien Son Temple, ...

Annex 2: Safeguard Screening Guideline and Key Impacts of the First 18-month Subprojects under Component 1

Table A2.1 presents the technical guideline on safeguard screening for subprojects under component 1. The subproject specific ESMP has been prepared and will be submitted to WB for clearance and disclosure. The safeguard screening and identification of key impacts for the follow-on subprojects will be carried out during project implementation.

Table A2.1. Technical Guideline on Safeguard Screening and Actions to be takenfor Subprojects under Component 1

Potential negative impacts	Required mitigation actions (If Yes)	Required document	Remarks
(1) Permanent or temporary loss of land or resources for any families	Identify the amount and nature of land required, owner, and/or other issues and prepare a RAP to provide compensation and/or assistance following the RPF.	RAP	Prior consultation with WB, proper documentation, and Post review by WB may be necessary.
(2) Likely involve ethnic minorities and/or adversely affect ethnic groups	Carry out social assessment process through free, prior, and informed consultations and prepare an EMDP in accordance with guidance in the EMPF. The project will support increasing awareness of affected population, in respective languages of ethnic minority groups, about the Grievance Redress mechanisms, and building capacity of those involved in the existing Grievance Redress mechanism on the required tasks, including dealing with or mediating complaints from individual and/or ethnic groups, recording and reporting, and monitoring proposed resolutions.	EMDP	Prior consultation with WB, proper documentation, and Post review by WB may be necessary.
(3) Likelycause negative impact on PCRs	Develops a physical cultural resources management plan that includes measures for avoiding or mitigating any adverse impacts on physical cultural resources, provisions for managing chance finds, any necessary measures for strengthening institutional capacity, and a monitoring systemto track the progress of these activities.	RAP/ESMP	Consider avoiding significant adverse impacts on PCRs, especially significant PCRs. Subprojects that are envisaged to cause significant adverse impacts on significant PCRs will be excluded.
(4) Likely involve UXO risk?	If identified at the feasibility stage, include the clause in the ESMP. The	ESMP	PPMU will be responsible for

Potential negative impacts	Required mitigation actions (If Yes)	Required document	Remarks
	procedures would include: contact responsible agencies and complete the clearance before conducting construction activities. The subproject will be required to provide a UXO clearance certificate before undertaking site clearance and/or construction.		contacting the concerned agencies and obtain clearance to secure safety of the project area.
(5) Involve civil works which will generate air pollution due to dust and exhaust emission, noise and vibration impacts, solid and liquid wastes, water and soil pollution, soil erosion, landscape change, damage to exsiting public infrastructures, health and accident risks during site clearance and construction	Include the full ECOP and site-specific mitigation measures into bidding and contract documents and ensure that Construction Supervising Consultant (CSC) and/or field engineer closely monitor performance of contractor.	ESMP	PPMU will ensure that the ECOP and site-specific mitigation measures are included in the contract and the CSC responsibility to supervise the contractors is included in the TOR.
	For small-scale civil works: Include the simplified ECOP into bidding and contract documents and ensure that Construction Supervising Consultant (CSC) and/or field engineer closely monitor performance of contractor.	Simplifed ECOP	PPMU will ensure that the simplified ECOPis included in the contract and the CSC responsibility to supervise the contractors is included in the TOR.
(6) Likely cause negative impacts on non-citical natural habitats	Avoid activities that cause significant conversion or degradtion of non-critical natural habitats. Develop specific mitigation measures as part of the ESMP acceptable to the Bank.	ESMP	Consult with the Bank on mitigation measures during preparation as neccessary
(7) Likley cause significant conversion or degradation of critical forest areas or related critical natural habitats	Exclude from the list of subprojects financed by the project.	N/A	Ineligible subprojects
(8) Involve dredging and/or possible contamination of soil and water quality from the disposal of dredged	Prepare a Dredge Materials Disposal Plan (DMDP) during the preparation of the ESMP.	ESMPincluding DMDP	Technical guidelines are provided in Annex 3.

Potential negative impacts	Required mitigation actions (If Yes)	Required document	Remarks
materials during construction			
(9) Likely involve activities of dam rehabilitation/upgrading	Exclude from the list of subprojects financed by the project as the project does not finance dam rehabilitation and upgrading	N/A	Ineligible subprojects
(10) Likely cause land/water use conflicts due to dyke safety and/or sluice operation	Identify areas/local community with high risks and provide capacity building as part of the ESMPs.	ESMP	PPMU should ensure if this is the case
(11) Likely cause an increase in use of pesticides for crop development as the subproject results	Apply PMF and prepare IPMP as part of the ESMP	ESMP including IPMP	PPMU should ensure if this is the case
(12) Likely create coastal erosion nearby during operation.	Conduct a review for potential erosion in nearby area and identify areas/local community with high risks and provide capacity building as part of the ESMPs.	ESMP	PPMU should ensure if this is the case

Screening for Category A subprojects

A proposed subproject is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive[14], diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.

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

Table A2.2. Screening Criteria for Category A Subprojects			
Screening Questions	**Yes**	**No**	**Remarks**
1. Does the subproject have the potential to cause significant adverse impacts to non-critical or critical natural habitats?			
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			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. Note that the World Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible

[14] A potential impact is considered "sensitive" if it may be irreversible (e.g., lead to loss of a major natural habitat) or raise issues covered by OP 4.04, Natural Habitats; OP/BP 4.10, Indigenous Peoples; OP/BP 4.11, Physical Cultural Resources or OP 4.12, Involuntary Resettlement.

lakes and rivers; alpine and sub alpine environments, including herb fields, grasslands, and paramos; and tropical and temperate grasslands.			alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs.
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 International Union for Conservation of Nature (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 for bio-diversity conservation; and sites that are critical for rare, vulnerable, migratory, or endangered species.			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.
2. Does the subproject have the potential to cause significant adverse impacts to physical cultural resources?			
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.			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.
Potentially results in a contravention of national legislation, or national obligations under relevant international environmental treaties and agreements, including the UNESCO World Heritage Convention or affect sites with known and important tourism or scientific interest.			Describe any impacts that might contravene national or international legislation concerning cultural resources. If considered not significant, explain why.
3. Does the subproject have the potential to cause significant adverse impacts on the lands and related natural resources used by ethnic minorities?			
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			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.

the affected resources.			
4. Does the subproject have the potential to cause significant adverse effects to populations subject to physical displacement?			
Leads to physical displacement of populations dependent upon lands or use of specific use of resources that would be difficult to replace or restore? Otherwise lead to difficult issues in the ability of the subproject to restore livelihoods?			Indicate the numbers of households affected and the resources that will be difficult to replace in order to achieve livelihood restoration. Note that a Resettlement Action Plan will need to be prepared in accordance with World Bank OP 4.12.
5. Does the subproject entail the construction of a large dam?			
Does the subproject require construction of a dam that is: • 15 meters or more in height • between 10 and 15 meters in height with special design complexities--for example, an unusually large flood-handling requirement, location in a zone of high seismicity, foundations that are complex and difficult to prepare, or retention of toxic materials. • under 10 meters in height but expected to become large dams during the operation of the subproject?			Describe the issues and note the requirements of OP 4.37 concerning the appointment of an Independent Panel of Experts.
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.			If yes, this may not always mean that a Category A EIA is required, but special care must be taken, because the World Bank has specific requirements to ensure the safety of the performance of the existing dam or dam under construction. World Bank requires inspection and evaluation of dam or DUC, its performance and operation and maintenance procedures, and recommendations for any remedial work or safety-related measures; previous assessments can also evaluated.
6. Does the subproject entail the procurement or use of pesticides?			
Do the formulations of the products fall in World Health Organization classes IA and IB, or are there formulations of products in Class II?,			If yes, this may not always mean that a Category A EIA is required, but special care must be taken.The 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.
7. 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.
8. 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.
9. 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.
10. Is the subproject 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 subproject. A full ESIA including an ESMP will be required in accordance with OP 4.01 (Environmental Assessment). PPMUs are advised to discuss the results of this screening with the TTL, before starting EA 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 TOR, consultation, content and structures of the ESIA report. Two separate ESIA reports to satisfy the World Bank and the GoV requirements will be needed.

Screening for Category C subprojects

A proposed subproject 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.

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.Category C subprojects).

Table A2.3. Screening Criteria for Category C Subprojects			
Screening Questions	**Y**	**N**	**Remarks**
1. Subproject activities are limited to training, technical assistance and capacity building.			Describe activities.
2. Training and capacity building do not require use of chemicals, biological agents, pesticides.			Support this statement.
3. Subproject without infrastructure to be demolished or built			Support this statement.
4. Subproject without interventions on land, water, air, flora, fauna or humans.			Support this statement.
5. If scientific research is being performed, the research is of such a nature that no hazardous or toxic wastes are created and the research does not involve recombinant DNA or other research that would create dangerous agents should they be released from contained, laboratory conditions.			If yes, discuss with the World Bank environmental specialists.

Screening for Category B subprojects

A proposed subproject 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 subprojects. 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 subprojects. The scope of EA for a Category B subproject may vary from project to project, but it is narrower than that of Category A EA. Like Category A EA, it examines the project's potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance

After the screening for Category A and Category C is applied and if the conclusion stated that the subproject is neither A nor C, then the subproject would be Category B.

Category B also requires an ESIA or other EA instruments in accordance with the World Bank OP 4.01. PPMUs will also apply the criteria of the Vietnamese regulation to determine whether to prepare an EIA or an EPP in according with the Law on Environmental Protection

and relevant EA Decrees and Circulars. In majority of cases, an ESMP consistent with World Bank policy is adequate.

Key impacts of the first 18-month subprojects under Component 1

Table A2.3 summarizes results of preliminary safeguard screening and impacts assessment of potential subprojects for the frist 18-month subprojects. The screening and assessment are done based on investment items of the subproject and information provided by the province. They could be changed during ESMPs preparation.

Table A2.4. Key impacts of the first 18-month subprojects under Component 1

No.	Subproject name	Scope of Works	Type of works	River basins	Potential negative impacts per the screening criteria indicated in Table A2.1	Safeguard documents prepared as per the WB	GOV's EIA requirement
I	**Binh Dinh**						
	Repair and reconstruction of flood embankments/ dikes along La Tinh (severe damaged sections)	(i) Embankment of La Tinh river from Vinh Thanh hamlet to Thai Phu hamlet with total length of 2,510m (ii) Embankment of La Tinh river at the downstream of Quang dam with total length of 810m. (iii) Embankment of La Tinh river from Chanh Thang hamlet to Chanh Hung hamlet with total length of 608.6m (iv) Embankment of downstream of spillway outlet of Hoi Son lake with total length of 1,053m (v) Embankment of La Tinh river downstream at My Chanh and My Hiep communes with total length of 2,234m	Embankments /Dyke	La Tinh river	(1), (4), (5), (6), (10), (12)	RAP,EMDP, ESMP	EIAs or EPPs
	Repair and reconstruction of flood embankments/ dikes along Can River	(i) Embankment of Can river at My Chanh commune with total length of 718.3m (ii) Tu Tinh embankment in in Duc Pho river, Cat Minh commune, and Phu Cat district with total length of 2,796m (iii) Lach Moi drainage embankment	Embankments	Can river	(1), (4), (5), (6), (12)		EIAs or EPPs

No.	Subproject name	Scope of Works	Type of works	River basins	Potential negative impacts per the screening criteria indicated in Table A2.1	Safeguard documents prepared as per the WB	GOV's EIA requirement
		at My Thanh commune with total length of 1,100m					
	Repair and reconstruction of flood embankments/ dikes along Kon River (severe damaged sections)	(i) Thang Cong 2 embankment at Nhon Phuc commune, An Nhon township with total length of 292m (ii) Ta Dinh and Xem stream embankment at Vinh Thuan commune, Vinh Thanh district with total length of 1,200m. (iii) Embankment of Dai An river, section in Dai Hao villagewith total length of 1,477m. (iv) Truong Giang embankment from Truong Giang spillway to Bo culvert in Phuoc Son commune, Tuy Phuoc district with 467.33m length. (v) Queo river embankment at Binh Tan commune, Tay Son district with 814m length. (vi) Embankment of Kon river, Lai Nghi villageat Binh Nghi and Binh Hoa commune, Tay Son district with 3,321m length. (vii) Embankment of Kon river in Vinh Thanh town with 1,934.25m length. (viii) Cut river embankment at Phu Tho village, Tay Phu commune, Tay	Embankments /dyke	Kon river	(1), (2), (3), (4), (5), (6), (10), (12)		EIAs or EPPs

No.	Subproject name	Scope of Works	Type of works	River basins	Potential negative impacts per the screening criteria indicated in Table A2.1	Safeguard documents prepared as per the WB	GOV's EIA requirement
		Son district with 753.5m lenth. (ix) Phu Ngoc embankment at Nhon Phuc commune, An Nhon township with 1,202m. (x) The embankment for flooding prevention in the center of An Nhon township with 3,721m length.					
	Repair and reconstruction of collapsed or severe damaged bridges	(i) Trang Bridge at Cat Lam commune, Phu Cat district with 49.55m length and width of 9m. (ii) Dich Nghi bridge at Cat Son commune, Phu Cat district with 55.95m length and 7m width. (xii) Suoi San bridge at Tam Quan town, Hoa Nhon district with 22.01m length and 6.5m width. (iv) Phu Son bridge at Hoi Phu village, Hoai Hao commune, Hoai Nhon district with 16.5m length and 5.5m width. (v) Bu Nu bridge at Kim Son – Nghia Dien, Bok Toi commune, Hoai An district with 52.95m length and 7m width.	Bridges	Kon river	(1), (4), (5), (6), (12)		EPPs
	Repair and reconstruction of provincial roads number 635, 639 and 639B	(i) Former PR.635 (NH 1 – NH 19B) at Cat Trinh and Cat Tuong communes, Phu Cat district with 6,146m length and 6.5m width.	Roads	-	(1), (4), (5), (6)		EIAs or EPPs

No.	Subproject name	Scope of Works	Type of works	River basins	Potential negative impacts per the screening criteria indicated in Table A2.1	Safeguard documents prepared as per the WB	GOV's EIA requirement
		(ii) PR.639 (Nhon Hoi – Tam Quan) at Cat Chanh, My An, Hoai Huong, Hoai Thanh communes with 7,100m length and 6.5m width. (iii) PR.639B (Chuong Hoa – Nhon Tan) at Cat Lam commune, Phu Cat district with 8,200m length and 6.5m width.					
II	**Ha Tinh**						
	Repair and reconstruction of drainage system on 19/5 river along Phuc- Long-Nhuong dyke, Cam Xuyen district	Spillway with 62m length and 79cm width; Outlet on Phuc-Long-Nhuong Dike.	Outlet/ Dyke	19/5 river	(1), (3), (4), (5), (6), (8), (10)	RAP, ESMP	EPPs
	Repair and reconstruction of Khe Tria drainage system, Nghi Xuan district and Tan Dua and My Thuan spillway bridges	(i) Khe Tria Outlet and a Channel with the size of (bxh) = (3x1,8) m (ii) Tan Dua spillway bridgewith 337.55m length and 6m width. (iv) My Thuan spillway bridge with 174.43m length and 7m width.	Outlet/Spillway bridges	-	(1), (3), (4), (5), (6), (8), (10)		EPPs
III	**Ninh Thuan**						
	Reconstruction of embankment of Dinh river bank in Phuoc Son commune, Ninh Phuoc District	(i) Protective embankment of Dinh river in Phuoc Son commune with total length of 1,373m and width of embankment top is 4m. (ii) Lu river embankment for	Embankment	Dinh river	(1), (2),(3) (4), (6), (12)	RAP, EMDP, ESMP	EIAs

No.	Subproject name	Scope of Works	Type of works	River basins	Potential negative impacts per the screening criteria indicated in Table A2.1	Safeguard documents prepared as per the WB	GOV's EIA requirement
		protection of residential area in Phuoc Dan town, Phuoc Ninh district with length of 2,139.88m, embankment top is 5m wide.					
	Reconstruction of embankment to protect Ba Rau residential area, Thuan Bac District	(iii) Ba Rau stream embankment for protection of Ba Rau residential area in Loi Hai commune, Thuan Bac district with total length of 1,500m, embankment top is 3m wide.	Embankment	Ba Rau stream	(1), (2), (4), (6), (12)		EIA
IV	**Phu Yen**						
	Embankment of rivers and streams	(i) Ba river embankment, section across Phong Nien hamlet, Hoa Thang commune with 2,119m length. (ii) Da stream embankment- An Hiep commune with total length of 4,000m (iii) Ky Lo river embankment in An Dinh commune, Tuy An district with 2,038m length.	Embankment	Ba river; Ky Lo river.	(1), (4), (6), (12)	RAP, ESMP	EIAs
	Repair and reconstruction of small dam	Irrigation dams No. 1,2,3 in An Hiep commune – Tuy An district with 27m length of Dam No.1 and Dam No.3; 30m length of Dam No.2	Dam	-	(1), (4), (7), (8), (10), (12)		EPP
	Urgent repair and reconstruction of provincial roads number 463, 650, and 642	(i) An Hiep – An Linh roads in An Hiep – An Linh communes, Tuy An district with 909.96m length and 4.50m width of roadbase.	Road/bridge	-	(1), (4), (5), (6)		EIAs or EPPs

No.	Subproject name	Scope of Works	Type of works	River basins	Potential negative impacts per the screening criteria indicated in Table A2.1	Safeguard documents prepared as per the WB	GOV's EIA requirement
		(ii) The provincial road.642 in Xuan Tho 2 commune–Song Cau township and Xuan Son Bac commune, Chi Thanh town –Dong Xuan district with total length of 7,690m and 6.5m width. (iii) Construction of provincial road 643 in An My commune, Tuy An district with 117.07m length and 6.5m width. (iv) Construction of provincial road 650 in An Xuan commune, Tuy An district with 99.61m length and 6.5m width. (v) Construction of Xuan Binh reservoir road in Xuan Binh and Xuan Loc communes, Song Cau township with 9,784m length and 6.5m width. (vi) Suoi Tre and Cay Sung bridges on the provincial road.642 in Xuan Tho 2 commune–Song Cau township with 32.1m length and 9m width.					
V	**Quang Ngai**						
	Embankment on northern bank of Cay Bua river, southern bank of Ve river (Duc Thang commune), northern	(i) Embankment on 780m northern bank of Cay Bua river; (ii) Embankment on 445m southern bank of Ve river; (iii) Embankment on 542m northern bank of Ve river	Embankment	Cay Bua river; Ve river	(1), (4), (5), (6)	RAP, EMDP, ESMP	EPPs

No.	Subproject name	Scope of Works	Type of works	River basins	Potential negative impacts per the screening criteria indicated in Table A2.1	Safeguard documents prepared as per the WB	GOV's EIA requirement
	bank of Ve river (Nghia Hiep commune)						
	Embankment on northern bank of Tra Khuc river	(iv) Embankment on 1,030m northern bank of Tra Khuc river	Embankment	Tra Khuc river	(1), (4), (5), (6)		EIA
	Construction of Va Ranh (Tra Lanh), Dong Yen 3, Ha Rieng bridges and road to resettlement area in Ha Rieng village	(v) Consruction of Va Ranh bridge accrossing Va Ranh stream with length of 38m and width of 6m by reinforced concrete; (vi) consruction of Dan bridge and road with length of 1 km and width of 6m by cement concrete; (vii) consruction of Dong Yen 3 bridge accrossing Tra Bong river with length of 158 m and width of 5.5 m by reinforced concrete; (viii) consruction of Ha Rieng road with length of 1.7 km and width of 6m by cement concrete.	Bridge/Road	Tra Bong river	(1), (2), (4), (5), (6)		EPPs

*Note: (1) Involve land acquisition and/or resettlement, (2) involve ethnic minority, (3) involve PCR, (4) involve UXO risk;(5) involve civil works; (6) involve dredging; (7) involve dam safety; (8) likely to involve land/water use conflicts; (9) involve dam rehabilitation; (10) Likely cause land/water use conflicts due to dyke safety and/or sluice operation; (11) Likely cause an increase in use of pesticides for crop development as the subproject results; (12) Likely create coastal erosion nearby during operation.

Annex 3: Guideline for Subproject ESMP Preparation

This annex presents technical guideline for preparation of ESPM for subproject including scope of ESMP report (Section A3.1), public consultation (Section A3.2), Guideline for preparation of Dredge Material Disposal Plan (DMDP) (Section A3.3), and preparation of EIA/EPP as required by the Government's EIA regulations (Section A3.4). Result from technical screening and issues identified in Annex 2 will be used as the basis of preparation of scope and extent of the mitigation measures.

A3.1 Preparation of ESMP Report

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

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

(a) Scope and Content of ESMP report

The ESMP outline and content should be as follows:

- ***Executive summary:*** The executive summary summarizes the key findings of the ESMP. It should be clear and concise, ranging from 3-5 pages, and briefly address the following topics: Introduction (based on Section I); World Bank's safeguard policies and national

laws and regulations applied to the project (based on Section II), Project description (based on Section III), baseline datas (based on Section IV), Environmental and social impacts and mitigation measures (based on Section V), monitoring (based on Section VI), ESMP implementation arrangement (based on Section VII), Capacity building, training and technical assistance (based on Section VII), ESMP Implementation budget (based on Section IX) and ESMP consultation and disclosure (based on Section X).

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

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

Table 1. Template of mitigation measure matrix

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

- ***Monitoring (Section VI)*:** Monitoring of ESMP implementation would encompass environmental compliance monitoring and environmental monitoring during subproject implementation as described in details below:
  - Environmental compliance monitoring includes a system for tracking environmental compliance of contractors such as checking the performance of contractors or government institutions against commitments expressed in formal documents, such as contract specifications or loan agreements.
  - The objectives of environmental monitoring is: a) to measure the effectiveness of mitigating actions (e.g. if there is a mitigating action to control noise during construction, the monitoring plan should include noise measurements during construction); b) To meet Borrower's environmental requirement; and c) to respond to concerns which may arise during public consultation (e.g. noise, heat, odor, etc.), even if the monitoring is not associated with a real environmental issue (it would show good faith by the Borrower). The monitoring program should clearly indicate the linkages between impacts identified in the EA report, indicators to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions, and so forth. The cost of environmental monitoring should be

estimated and included in sub-project's total investment costs. It is crucial to monitor and collect data that is useful and will actually be used. There is no value in spending money to collect data that is not properly analyzed, that is not reported or even if reported, no actions can or will be taken. It is useful to know the kinds of analysis to which the data will be subjected before collecting the data to ensure that one can do the anticipated analyses.

Table below provides an example of how monitoring is structured.

Template of monitoring plan

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

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

- *Environmental compliance framework*: During subproject implementation, the Borrower reports on compliance with environmental commitments, the status of mitigative measures, and the findings of monitoring programs as specified in the subproject documents. The World Bank bases supervision of the subproject's environmental aspects of the ESMP as set out in the legal agreements for the subproject. This subsection elaborates on the environmental duties of the contractor and its safety and environment officer, compliance with legal and contractual requirements, and environmental supervision during construction supervision, and a penalty framework.
- *Reporting procedures*: Procedures to provide information on the progress and results of mitigation and monitoring measures should be clearly specified. As a minimum, the recipients of such information should include those with responsibility for ensuring timely implementation of mitigation measures, and for undertaking remedial actions in response to breaches of monitoring thresholds. In addition, the structure, content and timing of reporting to the World Bank should be designed to facilitate supervision. Responsibility of different actors for reporting and the type of reports should also be clearly indicated.

- ***Institutional Strengthening Plan (Section VIII):*** This section describes institutional needs to assure successful implementation of the mitigation and monitoring plans. This may include equipment purchases, training, consultant services, and special studies. Most subprojects would mainly require capacity strengthening in ESMP implementation through training for different stakeholders. All relevant stakeholders should undergo general environmental awareness training and training about their responsibilities under the ESMP. The training should ensure that they understand their obligation to exercise proper environmental management during subproject implementation. Environmental training should include: a site induction, familiarization with the requirements of the ESMP; environmental emergency response training; familiarization with site environmental control; targeted environmental training for specific personnel such as environmental staff of PMU, safety and environment officer of the contractor, construction supervision engineer. The need for additional or revised training should be identified and implemented from the outputs of monitoring and reviewing the ESMP. Records of all training should be maintained and include: who was trained; when the person was trained; the name of the trainer; and a general description of the training content.
- ***Estimated Budget for ESMP Implementation (Section IX):*** These should be specified for both the initial investment and recurring expenses for implementing all measures contained in the ESMP, integrated into the total project costs, and factored into loan negotiations. It is important to capture all costs, including administrative, training, environmental monitoring and supervision, costs for mitigation measures to be implemented by contractors, costs for additional environmental studies, and operational and maintenance costs. The aim is to satisfactorily mitigate adverse impacts at least cost. The costs of preparing an ESMP, which are borne by the Borrower, vary depending on factors such as the complexity of potential impacts, the extent to which international consultants are used, and the need to prepare separate ESMPs for subprojects.

(b) Consultation and Information Disclosure (Section X)

Consultation*:* The ESMP should clearly describe and justify the proposed mitigation measures to facilitate public consultation. Consultation with affected people and NGOs should be integral to all Category A and B projects in order to understand the acceptability of proposed mitigation measures to affected groups. In some situations, the development of environmental awareness amongst stakeholders is important to ensure effective consultation on the ESMP. Where projects

involve land acquisition or resettlement, these issues should be fully addressed in resettlement action plan (RAP), and where appropriate in ethnic minority development plan (EMDP).

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

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

A3.2 Guidance on Public Consultation

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

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

A3.3 Guideline for Preparation of Dredged Material Disposal Plan

Some subprojects will involve maintenance dredging of existing rivers/streams. Details will be prepared during feasibility study and ESMP. However, the dredging would be carried out exclusively in the man-made existing canals, and therefore potential impacts on natural habitats and physical cultural resources would be expected to be small. Nevertheless, clauses on (a) restriction on the dredging near natural habitats and (b) a "chance find' procedure would be introduced to ensure the full compliance with the Bank's safeguard policy. Main environmental and social issues to be addressed when the subproject involve dredging includes the following items:

- Pollution during the transport of the dredged soil from the dredging site to the disposal area;
- Potential increase in turbidity and pollution of the water in the canals due to the dredging;
- Contamination of soil and water source including groundwater nearby the disposal area;
- Potential misuse of the contaminated dredged materials for public infrastructure and households;

In preparing for the mitigation for above-mentioned potential impacts resulting from transport and disposal of the dredged materials, it should be noted that the estimate is preliminary, subject to the detailed analysis during the detailed design stage. Further, it should also be noted that the dredging would be carried out in an extensive subproject area through multiple contracts over 2-3 years of implementation period. Lastly, it should also be noted that preparation of the dredge disposal would be better prepared when the plan on the land appropriation is planned and implemented. In this context, the dredged material disposal plan (DMDP) would be prepared during the detailed design stage by the subproject owners with assistance of the detailed design engineers. DMDP would be a part of C-ESMP for contractors to follow.

The DMDP would cover the following aspects;

- Identifying water users that may be affected by the dredging and monitor water quality that could be used to monitor the potential impacts. Priority should be given to monitor the areas that are sensitive to change in water quality (high suspended solid (SS), low pH, high BOD or COD, high salinity, etc.) especially where the water is used as a source of water supply for domestic AND agricultural uses. In areas where dredging may cause negative impacts to these water users, respective subproject owner is required to inform/consult them and develop a series of actions to address their concerns, including conduct water quality monitoring in the DMDP.
- Identifying the nearby natural habitats which are important for fish and birds. If identified, a separate management plan should be prepared to minimizing the potential impacts. Such plan should include: (a) current status of the concerned natural habitats including water quality, and (b) periodical monitoring on water quality and turbidity.
- Assessing the quality of the sediments. The assessment would be carried out to confirm that the sediments would not include large amount of environmentally harmful materials such as heavy metals, sulfur soils, and residual pesticides. If these materials are found to be more than the thresholds stipulated by the national standards, a special disposal plan should be prepared with a monitoring plan. The special disposal plan should also set out a program to protect the nearby community residents from using the disposed dredged materials for house construction or gardening. The assessment would be carried out based on a sampling basis, and the following guidelines shall be used for the number of samples and items to be measured;

Volume of Spoils in cubic m	***No of Sediment Samples***
Up to 25,000	3
25,000 to 100,000	4-6
100,000 to 500,000	6-10
500,000 to 2,000,000	10-20
For each 1,000,000 above 2,000,000	Additional 10

Parameters	Unit						
Lead	mg/kg						
Cadmium	mg/kg						
Copper	mg/kg						
Zinc	mg/kg						
Nickel	mg/kg						
Chromium	mg/kg						
Mercury	mg/kg						
Arsenic	mg/kg						
Organic Materials							
Organic Materials	%						
Mineral Oils	mg/kg						

- Identifying the available land for disposing the dredged materials. The plan should also identify the possible lands to be appropriated for the disposal of dredged materials. Public land, land for construction of rural roads, public works, private land, etc. may be used, with an agreement with the project affected households. It should also meet local plans for land use. The identified land should be large enough to accommodate the detailed estimated amount of the dredged materials. The selected disposal land should be located at least 1 km from any Bird Sanctuary or protected sites, at least 200 m from public works (schools, administrative offices, and markets), temples and churches, and at least 200 m from aquaculture farms.

- Preparing for a transportation plan. In case, the dredge disposal area is far away from the dredged sites, the DMDA shall set out a transportation plan including: (a) methods of transportation (pipeline, barges, hopper barges) and uploading to the disposal area. If trucks are used, indicate proposed route of the transport from the dredged site to the disposal area, (b) time of operation, (c) type of vehicles/trucks and proposed measures to reduce the leakage of the dredged materials from the transport trucks, (d) contractors' responsibilities for cleaning the roads and carry out remedial works if necessary, and (e) a communication plan for the nearby communities including contact number for possible complaints.

- Plan for managing the disposal areas including: (a) plan for reducing the drainage (refer the next bullet), (b) construction of the perimeter dykes, (c) construction of sub-containment area, if applicable, (d) planned thickness of the dredged materials (typically less than 1.5 meters), (e) any measures to protect ground water and soils (e.g., installation of PVC membrane).

- Designing the Draining for Disposal lands. As the dredged materials are in the state of mud at first and soil particles are suspended for 24 to 48 hours. All drainage water from disposal land shall be driven to the drains and discharged back to the canal. In order to limit the negative impacts of mud (produced by dredging) on the environment as well as the water quality of the canals, the dredged sediment will be transported to a containing area which is appropriately located and properly design with an adequate size. The dredged spoil will be pumped to the disposal land and then overflow to a settlement pond, where turbidity and total suspended solids are settled. After some time, effluent is returned to the canals. A typical design of the dike around each disposal may be as follows: Height: 2m, Footing width: 5 m, and Surface width: 1m. The plan should set out a basic layout.

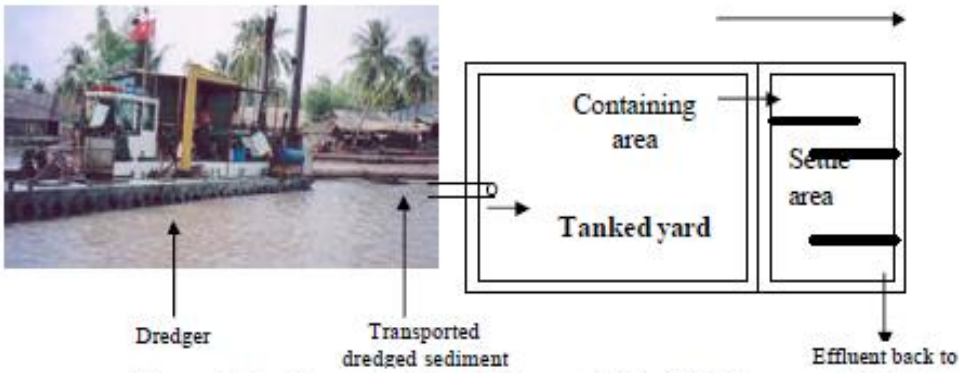


Figure 5.1 Layout of Spoil Disposal Site (SRAs)

A dike around each SRA is designed as follows:

- Height: 2m
- Footing width: 5 m
- Surface width: 1m

- Identification of the disturbance on local businesses and transportation. The DMDA shall carry out an inventory analysis on the possible affected local businesses, access to water, and transportation (mainly due to the dredging) and provide a plan to compensate the disturbances of the businesses (through the respective RAPs) and make a plan for constructing temporary bridges. If access to water is affected for some households by the disposal of the dredged materials, a plan to provide alternative access to water shall be included in the DMDA.
- Monitoring the Disposed Dredged Materials.A plan for monitoring the dredged materials as well as water quality of effluent would be required. As stated before, an intensive monitoring would be required if the dredged materials contain higher content of the heavy metals and other harmful materials than the national thresholds.
- In order to mitigate the issue of turbidity during dredging operation, the DMDA shall set out dredging equipment and/or techniques suitable to the particular site. On laying dredging machines on a barge, contractors can use a proper mud –stopping net for enclosing the dredging site and keeping back mud on land, not to let it goes back to the canal. If the disposal site for dredge materials is located far away from the dredger, a suction dredger should be used to transfer all the mud and soil in water to the disposal sites. The length of dredging sections should be limited less than 1 km and the dredging should be done one by one.
- As for the sections with acid sulphate soil or potential acid sulphate soil, the following measures should be considered: dredging should be carried out in the rainy season when more fresh water could be available for diluting acidic water; Treating acidic water in the disposal areas before returning effluent to the canals; and proper locate and design of the disposal area not to affect the nearby agricultural land.
- At the completion of the contract, carry out an assessment on dredged materials, and determine the use of the dredged materials for activities such as: (a) construction (roads and dykes), (b) basis for individual houses, and (c) gardening.

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

In addition, the subproject is that funded within the framework of the project will be prepared

with EAdocuments required by the Government of Vietnam. The details areas follows:

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

Annex 4 (a): Full Environmental Codes of Practice (ECOP)

This ECOP may be adjusted during subproject preparation depending upon the details of identified subprojects.

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURES	VIETNAM CODE/REGULATION
1. Dust generation	• The Contractor is responsible for compliance with relevant Vietnamese legislation with respect to ambient air quality. • The Contractor shall implement dust suppression measures (e.g. water spray vehicles, covering of material stockpiles, etc.) as required; • Construction vehicles shall comply with speed limits and haul distances shall be minimized. • Material loads shall be suitably covered and secured during transportation to prevent the scattering of soil, sand, materials or dust. • The Contractor shall be responsible for any clean-up resulting from the failure by his employees or suppliers to property secure transported materials. • Exposed soil and material stockpiles shall be protected against wind erosion and the location of stockpiles shall take into consideration the prevailing wind directions and locations of sensitive receptors. • Dust masks should be used where dust levels are excessive.	• QCVN **05: 2009/BTNMT**: *National technical regulation on ambient air quality* • QCVN 06:2008: National technical regulation on hazardous substances in ambient air.
2. Air pollution	• All vehicles must comply with Vietnamese regulations controlling allowable emission limits of exhaust gases. • Vehicles in Vietnam must undergo a regular emissions check and get certified named: "Certificate of conformity from inspection of quality, technical safety and environmental protection" following Decision No. 35/2005/QD-BGTVT. • Vehicles should be maintained in accordance with manufacturers specifications. • There should be no burning of waste or construction materials or cleared vegetation on site. • Cement processing plants should be far from residential areas.	• **TCVN 6438-2005:** *Road vehicles Maximum permitted emission limits of exhaust gas.* • No. 35/2005/QD-BGTVT • QCVN 05:2009/ BTNMT; QCVN 06:2009

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURES	VIETNAM CODE/REGULATION
3. Impacts from noise and vibration	• The contractor is responsible for compliance with the relevant Vietnamese legislation with respect to noise and vibration. • All vehicles 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 emission from poorly maintained machines. • Vehicles should be maintained in accordance with manufacturers specifications • When needed, measures to reduce noise to acceptable levels must be implemented and could include silencers, mufflers, acoustically dampened panels or placement of noisy machines in acoustically protected areas. • Avoiding or minimizing transportation though or material processing near community areas.	• QCVN 26:2010/ BTNMT: *National technical regulation on noise* • QCVN 27:2010/ BTNMT: *National technical regulation on vibration*
4. Water pollution	• The Contractor must be responsible for compliance with the relevant Vietnamese legislation relevant to wastewater discharges into watercourses. • Portable or constructed hygienic 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 standards set by relevant Vietnam technical standards/regulations must be collected in a conservancy tank and removed from site by licensed waste collectors. • Using techniques as berming or diversion during construction to limit the exposure of disturbed sediments to moving water. • Before construction, all necessary wastewater disposal permits/licenses and/or wastewater disposal contract have been obtained. • At completion of construction works, wastewater collection tanks and septic tanks shall be safely disposed or effectively sealed off.	• QCVN 09:2008/ BTNMT: National Technical Standard on underground water Quality • QCVN 14:2008/ BTNMT: National technical regulation on domestic wastewater; • QCVN 24: 2009/ BTNMT: National technical regulation on industrial wastewater; • TCVN 7222: 2002
5. Soil erosion	• Limiting or avoiding construction activities in rainy days. • Using geo-textiles to temporarily cover the land area prone to erosion.	

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURES	VIETNAM CODE/REGULATION
	• Applying a layer of mulch to the soil top allows the soil to slowly soak up water. • Building retaining walls around the area of erosion to prevent water runoff. • Stabilizing land surface prone to erosion with vegetation or concrete.	
6. Drainage and sedimentation control	• The Contractor shall follow the detailed drainage design included in the construction plans, intended to prevent storm water from causing local flooding or scouring slopes and areas of unprotected soil resulting in heavy sediment loads affecting local watercourses. • 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. • Earthworks, cuts, and fill slopes shall be properly maintained, in accordance with the construction specifications, including measures such as installation of drains, use of plant cover. • To avoid sediment-laden runoff that could adversely impact watercourses, install sediment control structures where needed to slow or redirect runoff and trap sediment until vegetation is established. Sediment control structures could include windrows of logging slash, rock berms, sediment catchment basins, straw bales, storm drain inlet protection systems, or brush fences. • Site de-watering and water diversions: In the case that construction activities require that work be carried out within the watercourse (e.g. culvert or bridge crossing construction, retaining wall construction, erosion protection works), the work area must be dewatered to provide for construction in dry conditions. The sediment laden water pumped from the work area must be discharged to an appropriate sediment control measure for treatment before re-release to the stream.	• TCVN 4447:1987: Earth works-Codes for construction • Decree No. 22/2010/TT-BXD on regulation of construction safety; QCVN 08:2008/ BTNMT – National technical regulation on quality of surface water • QCVN 07:2009/BTNM • QCVN 43:2012/BTNMT
7. Management of stockpiles, quarries, and borrow pits	• Large scale borrows pits or stockpiles of more than 50,000 m^3 will need site-specific measures that go beyond those in these ECOP. • All locations to be used must be previously identified in the approved construction specifications. Sensitive sites such as scenic spots, areas of natural habitat, areas near sensitive receptors, or areas near water should be avoided. • An open ditch shall be built around the stockpile site to intercept wastewater. • Stockpile topsoil when first opening a borrow pit and use it later to restore the area to near natural	

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	conditions. • In cases of high risk of slope failure, disposal sites shall include a retaining wall. • If the need for new sites arises during construction, they must be pre-approved by the Construction Engineer. • If landowners are affected by use of their areas for stockpiles or borrow pits, they must be included in the project resettlement plan. • If access roads are needed, they must have been included in the environmental assessment and EMP.	
8. Solid waste	• Before construction, a solid waste control procedure (storage, provision of bins, site clean-up schedule, bin clean-out schedule, etc.) must be prepared by Contractors and it must be carefully followed during construction activities. • Before construction, all necessary waste disposal permits or licenses must be obtained. • Measures shall be taken to reduce the potential for litter and negligent behavior with regard to the disposal of all refuse. At all places of work, the Contractor shall provide litter bins, containers and refuse collection facilities. • Solid waste 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 through a licensed waste collector, for example, URENCO in urban areas or local environment and sanitation companies. • Waste storage containers shall be covered, tip-proof, weatherproof and scavenger proof. • No burning, on-site burying or dumping of solid waste shall occur. • Recyclable materials such as wooden plates for trench works, steel, scaffolding material, site holding, packaging material, etc shall be collected and separated on-site from other waste sources for reuse, for use as fill, or for sale. • If not removed off site, solid waste or construction debris shall be disposed of only at sites identified and approved by the Construction Supervision Consultant and included in the site-specific measures. Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas, such as in areas of natural habitat or in or close to watercourses.	• Decree No. 59/2007/ND-CP on solid waste management. • QCVN 07:2009/BTNM: National Technical Regulation on Hazardous Waste Thresholds •

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9. Chemical or hazardous wastes	• Chemical waste of any kind shall be disposed of at an approved appropriate landfill site and in accordance with local legislative requirements. The Contractor shall obtain needed disposal certificates. • The removal of asbestos-containing materials or other toxic substances shall be performed and disposed of by specially trained and certified workers. • Used oil and grease shall be removed from site and sold to an approved used oil recycling company. • 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. • Used oil or oil-contaminated materials that could potentially contain PCBs shall follow procedures provided in the EMF to avoid any leakage or affecting workers. The local DONRE must be contacted for further guidance. • Unused or rejected tar or bituminous products shall be returned to the supplier's production plant. • Relevant agencies shall be promptly informed of any accidental spill or incident. • Store chemicals appropriately and with appropriate labeling. • Storage should be on an impermeable surface that readily able to be cleaned, and that is appropriately bunded to contain any spills or leaks. The storage area should be covered to prevent rainwater from accumulating in the bunded area • Appropriate communication and training programs should be put in place to prepare workers to recognize and respond to workplace chemical hazards. • Prepare and initiate a remedial action following any spill or incident. In this case, the contractor shall provide a report explaining the reasons for the spill or incident, remedial action taken, consequences/damage from the spill, and proposed corrective actions.	• Decision No. 23/2006/QD-BTNMT with list of hazardous substances • Decree No. 38/2015/NĐ-CP dated 24/04/2015 on waste and scrap management • Circular No. 36/2015/TT-BTNMT on hazardous waste management
10. Workforce, Camps and Site Managemen	• Worker's camps will be located at least 200 m away from schools and health care centres and not be located on steep slopes. The workforce shall be provided with safe, suitable and comfortable accommodations and safe portable water. They have to be maintained in clean and sanitary conditions. • Site offices, worker camps, mixing stations, and workshops shall be located NOT within 100m from	

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t	any water courses, 500 meters of existing residential area. • Engineers and workers shall register their temporary residence with the local authority. • Allocate officer to be the Contractor's Workplace Safety and Environment Officer responsible for environmental and safety issues including training for workers. • Septic tank toilets must be provided at all construction camp areas where there will be concentration of labor. • First aid boxes shall be provided in each construction camp site.	
11. Disruption of vegetative cover and ecological resources	• The Contractor shall prepare a Clearance, Revegetation and Restoration Management Plan for prior approval by the Construction Engineer, following relevant regulations. The Clearance Plan shall be approved by Construction Supervision Consultant and followed strictly by contractor. Areas to be cleared should be minimized as much as possible. • Site clearance in a forested area is subject to permission from Department of Agriculture and Rural Development. • The Contractor shall remove topsoil from all areas where topsoil will be impacted on by rehabilitation activities, including temporary activities such as storage and stockpiling, etc; the stripped topsoil shall be stockpiled in areas agreed with the Construction Supervision Consultant for later use in re-vegetation and shall be adequately protected. • The application of chemicals for vegetation clearing is not permitted. • Prohibit cutting of any tree unless explicitly authorized in the vegetation clearing plan. • When needed, erect temporary protective fencing to efficiently protect the preserved trees before commencement of any works within the site. • No area of potential importance as an ecological resource should be disturbed unless there is prior authorization from CSC, who should consult with PMBs, and the relevant local authorities. This could include areas of breeding or feeding of birds or animals, fish spawning areas, or any area that is protected as a green space. • The Contractor shall ensure that no hunting, trapping shooting, poisoning of fauna takes place.	• Law on Environment Protection No. 52/2005/QH11

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12. Traffic management	• Before construction, carry out consultations with local government and community and with traffic police. • 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. • Installation of lighting at night must be done if this is necessary to ensure safe traffic circulation. • Place signs around the construction areas to facilitate traffic movement, provide directions to various components of the works, and provide safety advice and warning. • Employing safe traffic control measures, including road/rivers/canal signs and flag persons to warn of dangerous conditions. • Avoid material transportation for construction during rush hour. • Passageways for pedestrians and vehicles within and outside construction areas should be segregated and provide for easy, safe, and appropriate access. Signpost shall be installed appropriately in both water-ways and roads where necessary.	• Law on traffic and transportation No. 23/2008/QH12 • Law on construction No. 50/2014/QH13 • Decree 46/2016/ND-CP on administrative penalty for traffic safety violation • Decree No. 22/2010/TT-BXD on regulation of construction safety
13. Interruption of utility services	• Planned and unplanned interruptions to water, gas, power, internet services: The Contractor must undertake prior consultation and contingency planning with local authorities about the consequences of a particular service failure or disconnection. • Coordinate with relevant utility providers to establish appropriate construction schedules. • Provide information to affected households on working schedules as well as planned disruptions (at least 5 days in advance). • Interruptions of water supply to agricultural areas must also be avoided. • The contractor should ensure alternative water supply to affected residents in the event of disruptions lasting more than one day. • Any damages to existing utility systems of cable shall be reported to authorities and repaired.	Decree No. 73/2010/ND-CP on administrative penalization security and society issues
14. Restoration of affected areas	• Cleared areas such as borrow pits which are no longer in use, disposal areas, site facilities, workers' camps, stockpiles areas, working platforms and any areas temporarily occupied during construction of	• Law on Environment Protection No.

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	the project works shall be restored using landscaping, adequate drainage and revegetation. • Start revegetation at the earliest opportunity. Appropriate local native species of vegetation shall be selected for the planting and restoration of the natural landforms. • Spoil heaps and excavated slopes shall be re-profiled to stable batters, and grassed to prevent erosion. • All affected areas shall be landscaped and any necessary remedial works shall be undertaken without delay, including green-spacing, roads, bridges and other existing works. • 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. • Restore all damaged road and bridges caused by project activities.	55/2014/QH13
15. Worker and public Safety	• Contractor shall comply with all Vietnamese regulations regarding worker safety. • Prepare and implement action plan to cope with risk and emergency. • Preparation of emergency aid service at construction site. • Training workers on occupational safety regulations. • If blasting is to be used, additional mitigation measures and safety precautions must be outlined in the ESMP. • Ensure that ear pieces are provided to and used by workers who must use noisy machines such as piling, explosion, mixing, etc., for noise control and workers protection. • During demolition of existing infrastructure, workers and the general public must be protected from falling debris by measures such as chutes, traffic control, and use of restricted access zones. • Install fences, barriers, dangerous warning/prohibition site around the construction area which showing potential danger to public people (such as unfinished power pole foundation, high risk electrical shock areas, etc.). • 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.	• Decree No. 22/2010/TT-BXD on regulation of construction safety • Instruction No. 02 /2008/CT-BXD on safety and sanitation issues in construction agencies • TCVN 5308-91: Technical regulation on safety in construction • Decision No. 96/2008/QD-TTg on clearance of UXO.

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	• If previous assessments indicate there could be unexploded ordnance (UXO), clearance must be done by a relevant army unit.	
16. Communication with local communities	• Maintain open communications with the local government and concerned communities; the contractor shall coordinate with local authorities (leaders of local wards or communes, leader of villages) for agreed schedules of construction activities at areas nearby sensitive places or at sensitive times (e.g., religious festival days). • Copies in Vietnamese of relevant parts of the ECOP should be contained in contractor documents and of other relevant environmental safeguard documents shall be made available to local communities and to workers at the site. • Reduced playground space, loss of playing fields and car parking: The loss of amenities during the construction process is often an unavoidable source of inconvenience to users in sensitive areas. However, early consultation with those affected, provides the opportunity to investigate and implement alternatives. In all cases damages shall be compensated. • 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. • Provide all information, especially technical findings, in a language that is understandable to the general public and in a form of useful to interested citizens and elected officials through the preparation of fact sheets and news release, when major findings become available during project phase. • Monitor community concerns and information requirements as the project progresses; • Respond to telephone inquiries and written correspondence in a timely and accurate manner. • Inform local residents about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate. • Provide technical documents and drawings to PC's community, especially a sketch of the construction area and the ESMP of the construction site.	• Decree No. 73/2010/ND-CP on administrative penalization security and society issues

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	• 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.	
17. Chance Find Procedures	Where the risk and identification process determines that there is a chance of impacts to cultural heritage, the Contractor will retain competent professionals to assist in the identification and protection of cultural heritage. If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall: • Stop the construction activities in the area of the chance find. • Delineate the discovered site or area. • Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the Department of Culture and Information takes over. • Notify the Construction Supervision Consultant who in turn will notify responsible local or national authorities in charge of the Cultural Property of Viet Nam (within 24 hours or less). • Relevant local or national authorities would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values. • Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage. • If the cultural sites and/or relics are of high value and site preservation is recommended by the professionals and required by the cultural relics authority, the Project's Owner will need to make necessary design changes to accommodate the request and preserve the site. • Decisions concerning the management of the finding shall be communicated in writing by relevant	• Law on Cultural Heritage (2002) • Law on Cultural Heritage (2009) for supplementary and reformation • Decree No. 98/2010/ND-CP for supplementary and reformation

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	authorities. • Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the heritage.	

Annex 4(b): Simplified Environmental Codes of Practice (ECOP) for Small Civil Works

This simplified ECOP comprises four parts: (i) General provisions, (ii) Good environmental and housekeeping practices, (iii) Prohibitions and (iv) Chance Find procedures. It will be applied for the Project activities to be implemented under **Component 1** that are involved small and simple civil works. The simplified ECOP will be included in the bidding document and contract. Monitoring of the simplified ECOP implementation at the subproject level will be responsible by PPMU. Results will be included in the subproject and/or Project progress reports.

I. General provisions

1. Preconstruction stage
   - Design drawings. Prior to commencement of construction, the project owner should develop design drawings. The design should be based on examination of land boundaries and the quality of the ground planned for construction or on the construction survey report, if any, and results of examination of the conditions of adjacent and neighboring works; complying with construction technical regulations, technical standards and other relevant laws; and assuring safety for the construction without adversely affecting adjacent and neighboring works.
   - Prior to commencement of construction, the project owner must inform the Commune and Ward People's Committees of the place of construction within 7 working days, as well as adjacent and neighboring project owners.
2. Construction stage
   - The construction must guarantee work quality, labor safety and environmental sanitation; comply with provisions of the construction permit; and does not adversely affect adjacent and neighboring works. Especially, mitigation measures for noise, dust, vibration, scraps and wastes, etc. must be strictly complied.
   - The project owner may assign each job to each contractor. Agreement between the project owner and contractors shall be made in written construction contracts, especially for construction surveyors, work construction designers and builders.
3. Construction completion
   - On completion of the works the project owner or the Contractor will clear away and remove all materials and rubbish and temporary works of every kind. The site will be left clean and in a condition to the satisfaction of the PPMU.

II. Good Environmental and Housekeeping Practices

4. This practice is intended to minimize the potential negative impacts during construction for small civil works given attention to address the issue related to human and environmental safety and minimize disturbance of local residents. The Contractor will strictly implement the following practices as relevant to the activities and locations of works:

   DO:

   - Limited working hour during the day time, especially in residential areas, and control driving speed;

- Minimize earth excavation and dispose spoils in designated areas;
- Minimize opening of new borrow pits and ensure leveling and re-vegetation of the affected areas;
- Minimize traffic congestion, dust and noise generation;
- Proper maintenance of construction equipment and vehicles;
- Provide appropriate safety sign (day and night) and closely inform local residents;
- Avoid spill of used oil and other toxic materials, including safe transportation and storage;
- Apply good housekeeping in the construction and/or storage sites to ensure safety of workers and peoples
- Ensure access to clean water and latrines by workers and provide mosquito net.
- Avoid social/cultural conflict between workers and local population.

DO NOT:

- Do not permit rubbish to fall freely from any locations of the project and/or access by animals (dogs, cats, pigs, etc.). Use appropriate containers.
- Do not throw tools or other materials.
- Do not raise or lower any tool or equipment by its own cable or supply hose.
- Use grounding straps equipped with clamps on containers to prevent static electricity buildup.
- Do not allow hunting of animals by workers in protected areas.

SPECIAL NOTE ON FLAMMABLE/EXPLOSIVE MATERIALS:

- Store flammable or explosive materials such as gasoline, oil and cleaning agents apart from other materials.
- Storage should be on an impermeable surface that readily able to be cleaned, and that is appropriately bunded to contain any spills or leaks.
- Keep flammable and explosive materials in proper containers with contents clearly marked.
- Dispose of greasy, oily rags and other flammable materials in approved containers.
- Store full barrels in an upright position.
- Store empty barrels separately.
- Post signs prohibiting smoking, open flames and other ignition sources in areas where flammable and explosive materials are stored or used.
- Store and chain all compressed gas cylinders in an upright position.
- Mark empty cylinders and store them separately from full or partially full cylinders.
- Ventilate all storage areas properly.

- Ensure that all electric fixtures and switches are explosion proof where flammable materials are stored.

III. Prohibitions

5. The following activities are specifically prohibited:

    - Cutting of trees for any reason outside the approved construction area or poaching of any description; Explosive and chemical fishing;
    - Spillage of potential pollutants, such as petroleum products; Burning of wastes and/or cleared vegetation outside the project area; Indiscriminate disposal of rubbish or construction wastes or rubble; and
    - Disturbance to anything with architectural or historical value; Use of firearms (except authorized security guards); Use of alcohol by workers in office hours; Driving in an unsafe manner in local roads; Creating nuisances and disturbances in or near communities.

IV. "Chance find" Procedures

6. Where the risk and identification process determines that there is a chance of impacts to cultural heritage, the Contractor will retain competent professionals to assist in the identification and protection of cultural heritage.
7. If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor will carry out the following steps:

    - 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 National Culture Administration take over;
    - Notify the supervisory Project Environmental Officer and Project Engineer who in turn will notify the responsible local authorities and the Culture Department of Province immediately (within 24 hours or less);
    - Responsible local authorities and the Culture Department of Province 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 by the archaeologists of National Culture Administration. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
    - Decisions on how to handle the finding shall be taken by the responsible authorities and Culture Department of Province. This could include changes in the layout (such as when finding an irremovable remain of cultural or archaeological importance) conservation, preservation, restoration and salvage;
    - Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and

- Construction work could resume only after permission is given from the responsible local authorities or Culture Department of Province concerning safeguard of the heritage.

Annex 5: Pest Management Framework (PMF)

1. This annex provides technical guidelines for actions to be carried out by the subproject owner and its consultant when the subproject involves development/rehabilitation of irrigation that may increase the use of pesticides and/or other toxic agrochemicals, OP 4.09 (Pest Management) is triggered, and preparation of a Pest Management Plan (PMP) is required. The annex provides information on the objectives and basic principles of the PMP (Section A5.1), key policy and regulations related to management of pesticides and toxic agrochemicals (Section A5.2), and technical considerations (Section A5.3). The PMF will be applied and/or considered during the safeguard screening and assessment of potential impacts (see Annex 2) and preparation of an Environmental and Social Management Plan (ESMP) of the subproject (see Annex 3).

A5.1 Objectives and Basic Principles of PMF

2. The project will not finance any procurement or use of pesticides. However, improvements in agricultural production from improved and more stable water supply may lead to the use of pesticides in some subprojects. To mitigate this potential impacts as a 'good practice', the subproject owner will prepare and implement a PMP aiming to increase famers knowledge on Government regulations, policies, and/or technical guidelines related to safe use (application, storage, and disposal) of pesticides and toxic agrochemicals likely to be used by farmers as well as promote the application of an Integrated Pest Management (IPM) practice[15] that are appropriate for the agriculture productions (rice, shrimp, aquaculture, etc.) in the subproject area through training and other capacity building activities.

4. ***Objectives:***Main objective of the PMP is to support Government policy to reduce the use of pesticides and toxic agro-chemicals in agriculture production in the Project area by continued enhancing farmer knowledge and understanding on ways to reduce the use of pesticides and toxic agrochemicals in the production process as well as reduce the risks to human health and/or possible contamination of local environment (soil, water) in the Project provinces. *Specifically, the PMP aims to:*

- Support the local agencies to implement Government regulations, strategy, and plans related to effective use of pesticides and toxic agrochemicals in the subproject areas including the application of IPM practices in the context of food hygiene and safety, food security, adaptation to climate change, and the concerned international conventions that Vietnam is a member.
- Improve farmer's knowledge and capacity to safely use pesticides and other toxic agrochemicals in rice farming, shrimp farming, aquaculture, and other agricultural products including promotion of IPM practices and other capacity building activities that are being applied in the subproject areas.

5. ***Basic principles and approach:*** To achieve the objectives, the following principles will be applied during the preparation of ESMP/PMP of the subprojects:

- The subproject will not finance the purchase of fertilizers, pesticides, or other toxic agrochemicals. In normal conditions, if pesticide use is considered to be the

[15]IPM refers to a mix of farmer-driven, ecologically based pest control practices that seeks to reduce reliance on synthetic chemical pesticides. It involves (a) management (keeping them below economically damaging levels) rather than seeking to eradicate them; (b) relying, to the extent possible, on nonchemical measures to keep pest populations low; and (c) selecting and applying pesticides, when they have to be used, in a way that minimizes adverse effects on beneficial organisms, humans, and the environment.

necessary option, only pesticides registered with the government and the international recognition will be used and the Project will also provide technical and economic information for the type and amount of the chemicals. The subproject will also consider other options (including the management of non-harmful chemicals) that can also reduce reliance on the use of pesticides. The measures will be incorporated into the subproject design to reduce risks related to the handling and use of pesticides by farmers.

- During the preparation of the ESMP/PMP for the subproject, the subproject owner and consultant will identify the need for training and capacity building in close consultation with the local authorities and other key stakeholders including chemical suppliers to enhance close cooperation and understanding among them. The subproject will apply IPM practices in line with the national IPM program and aquaculture/shrimp farming management programs being implemented by MARD as a means to minimize the potential negative impact of the increased use of fertilizers, pesticides, and toxic chemicals. Main activities may include training, sharing of knowledge and experience in the use of fertilizers and chemicals through research surveys, study visits, and/or selecting safe use of non-chemicals, other techniques. Key policies, regulations, and technical guidelines described in Sections A5.2 and A5.3 will be considered.
- The PMP will identify the agency responsible for implementation including fund flow and reporting arrangements. Binh Dinh PPMU will be responsible for planning and implementation of PMP activities while farmers will be responsible for actively participation during the planning and implementation. PPMUs will be responsible for supervision and monitoring of the ESMP including PMP activities after it has been approved by WB. The activities will be planned and implemented in close consultation with farmers, local authority, and local community organization especially women.The implementation budget will be included as part of the ESMP cost and the activities, outputs, and impacts will be monitored as part of the ESMP implementation.

A5.2 Key Policies, Regulations, and Agencies Related to Pesticides and IPM

6. ***National policies and plans:***Application of the IPM concept in Vietnam has been introduced in early 1990's. A national IPM program was prepared and implemented and a Steering Committee on IPM, chaired by a vice-Minister of MARD, was established and responsible for supervision of the program. During the period, a number of policy and regulations supporting the IMP was developed including bans and restrictions of toxic pesticides and operations of an inspection system. Since then additional measures to reduce the use of pesticides in rice production have been carried out throughout the country including the Central Region.

7. ***Pesticides control:***In 1990, Vietnam officially approved and adopted the *International Code of Conduct on the Distribution and Use of Pesticides* of the Food and Agriculture Organization of the UN (FAO) and a regulatory system was developed in line with FAO guidelines in mid 1990's. The Ordinance on Plant Protection and Quarantine was enacted in February 1993, followed in November by Decree 92/CP with regulations on pesticides management. These regulations are updated periodically and are being applied by the agencies. During 1995-97, a total of 45 pesticides were banned for use in Vietnam (see Box A5.1) and 30 have been restricted (amount cannot exceed 10% of total pesticides sold in Vietnam). These include the highly toxic pesticides such as carbofuran, endosulfan, methamidophos, monocrotophos, methyl parathion, and phosphamidon. In 1998, Vietnam

stopped the registration of new insecticides for leaf-folders into the country since IPM activities had shown that insecticides use against leaf-folders is unnecessary.

8. Below lists key regulations related to pesticides and toxic chemicals used in agriculture productions control in Vietnam:

- Decision 193/1998/QD BNN-BVTV dated December 2nd, 1999 by MARD promulgating the regulations on quality control, pesticide surplus and new pesticide testing in order to registration in Vietnam.
- Decision 145/2002/QD/BNN-BVTV dated December 18th, 2002 by MARD promulgating the regulations on procedures for screening production, processing, registration, export and import, trading, storage and disposal, label, packaging, seminars, advertising and use of plant protection pesticides; This is the basis for GoV monitoring the use and storage of pesticides.Box A5.2 highlights key procedures for transportation, storage, and uses of pesticides.
- MARD Decision No. 1503/QD-BNN-TCTS on Good Practices for Aquaculture in Vietnam (referred to as VietGAP), May 07, 2011;Decision No. 1617/QD-BNN-TCTS giving guidelines for implementation of VietGAP for growing P. hypophthalmus), P.monodon) and P. vannamei); Government Decision 72/QĐ-TT-QLCL (March 04, 2013) assigns Vietnam Certification Centre (QUACERT) as the organization responsible for certification including for VietGAP for fruit & vegetables, tea, rice and coffee. Box A5.3 highlights key requirements for VietGap for aquaculture.

Box A5.2: List of Plant Protection Drugs Banned in Vietnam	
COMMON NAMES - TRADE NAMES	
Pesticides, preservatives forest	
1	Aldrin (Aldrex, Aldrite)
2	BHC, Lindane (Gamma - BHC, Gamma - HCH, Gamatox 15 EC, 20 EC, Lindafor, Carbadan 4/4G Sevidol 4/4G)
3	Cadmium compound (Cd)
4	Chlordance (Chlorotox, Octachlor, Pentichlor)
5	DDT (Neocid, Pentachlorin, Chlorophenothane)
6	Dieldrin (Dieldrex, Dieldrite, Octalox ...)
7	Eldrin (Hexadrin)
8	Heptachlor (Drimex, Heptamul, Heptox)
9	Isobenzen
10	Isodrin
11	Lead compound (Pb)
12	Methamidophos: (Dynamite 50 SC, Filitox 70 SC, Master 50 EC, 70 SC, Monitor 50 EC, 60 SC, Isometha 50 DD, 60 DD, Isosuper 70 DD, Tamaron 50 EC)
13	Methyl Parathion (Danacap M25, M40; Folidol - M50 EC; Isomethyl 50 ND; Metaphos 40 EC, 50 EC; (Methyl Parathion) 20 EC, 40 EC, 50 EC; Milion 50 EC; Proteon 50 EC; Romethyl 50 ND; Wofator 50 EC)
14	Monocrotophos: (Apadrin 50SL, Magic 50 SL, Nuvacron 40 SCW/DD, 50 SCW/DD, Thunder 515 DD)
15	Parathion Ethyl (Alkexon, Orthophos, Thiopphos)

16	Sodium Pentachlorophenate monohydrate (Copas NAP 90 G, PDM $_4$ 90 powder, P-NaF 90, PBB 100 powder)	
17	Pentachlorophenol (CMM 7 liquid oil, Oil eradicate termites M-4 1.2 liquid)	
18	Phosphamidon (Dimeccron 50 SWC/DD)	
19	Polychlorocamphene (Toxaphene, Camphechlor)	
20	Stroban (Polychlorinate of camphene)	
Crops Fungicides		
1	Arsenic compound (As) except Dinasin	
2	Captan (Captane 75 WP, Merpan 75 WP)	
3	Captafol (Difolatal 80 WP, Folcid 80 WP)	
4	Hexachlorobenzene (Anticaric, HCB)	
5	Mercury compound (Hg)	
6	Selenium compound (Se)	
Rodenticides		
1	Talium compound (TI);	
2	2.4.5 T (Brochtox, Decamine, Veon)	

Box A5.2 Procedures for Transportation, Storage, and Uses of Pesticides

- *Procedures for Safety transporting pesticides:* The following procedures will be followed while transporting pesticides for application under this PMP: pesticide concentrate will only be carried in a secure lockable and compartment with proper signage; pesticide concentrate will only be transported in original labeled containers; pesticide concentrate will always be carried separately from food and drinking water, safety gear and people; spill-containment and clean up equipment will be carried separately from pesticides but in close proximity to the pesticide on each vehicle during pesticide transport and use; appropriate documents such as operations records and material safety data sheets (MSDS) will be carried in each vehicle during pesticide transport and use.
- *Procedures for Safety storing pesticides:* In summary, the storage area must: be ventilated to the outside atmosphere; be locked when left unattended; be entered only by persons who are authorized to do so; have a placard affixed and maintained on the outside of each door leading into the facility in which the pesticides are stored bearing, in block letters that are clearly visible, the words "WARNING – CHEMICAL STORAGE – AUTHORIZED PERSONS ONLY". In addition, the person responsible for the storage area shall notify the closest fire department of the presence of pesticides on the premises, if stored in one place for a period longer than 60 days. Persons responsible for the pesticide storage shall ensure that all pesticides are stored in a locked canopy, or similar arrangement, separate from the driver and personal protective equipment.
- *Procedures for Safety Mixing, Loading and applying pesticides:* All mixing, loading and applicators of pesticides shall be carried out by certified pesticide applicators, or someone under the direct supervision a certified pesticide applicator in the appropriate category of certification; Mixing of pesticides must always be conducted in a safe manner; Safety spill kits, spill response plans and first aid supplies shall be present on or near the treatment and mixing sites; Eye wash station(s) and protective clothing as recommended on the respective product labels shall be available on or near the treatment and mixing sites; Product labels and Material Safety Data Sheets will be available on or near the treatment and mixing sites to ensure that quantities of pesticides being mixed and used are consistent with label rates; There shall be no mixing or loading of pesticides within 15 metres of sensitive environmental features.
- *Procedures for the Safe Disposal of Empty Pesticide Containers and Unused pesticides:* Empty

containers shall be disposed of in accordance with the manufacturer's instructions as noted on the product label or provincial instructions and recommendations. As a minimum, empty pesticide containers shall be: returned to the pesticide distributor as part of their recycling program; or triple rinsed or pressure rinsed, then altered so they cannot be reused; and disposed of in a permitted sanitary landfill or other approval disposal site.

- *Procedures for Responding to Pesticide spills:* Spill treatment equipment shall be at or near storage (including mobile storage), mixing and loading sites, and it shall include at least the following: personal protective equipment; absorbent material such as sawdust, sand, activated charcoal, vermiculite, dry coarse clay, kitty litter or commercial absorbent; neutralizing material such as lime, chlorine bleach or washing soda; and long handled broom, shovel, and waste-receiving container with lid. The following procedures must be followed if a spill occurs: all personnel shall be protected from pesticide contamination by wearing appropriate protective clothing and safety gear; any person exposed to a pesticide shall be moved away from the place of the spill; first aid should be administered, if required; the source of the spill should be stopped; the spilled material should be stopped from spreading by creating a dam or ridge; the owner shall ensure operations cease until the spill is contained and the source is repaired; absorbent material shall be spread over the spill, if applicable, to absorb any liquid; the absorbent material shall be collected in garbage bags or containers with the contents clearly marked; contaminated soil or other material will be removed from the spill site and placed in garbage bags or containers; the owner shall contact an approved representative of the province for shipping instructions and disposal requirements; when more than one kilogram of product of pesticide is spilled, or any amount into a water body, the owner will immediately report it to the Provincial Emergency Program by telephoning 115 or, where that is impractical, to the local police; and an approved representative of PPD will be notified of the details related to the spill as soon as is practical by the owner.

9. ***Institutions and capacity***: MARD, through the Plant Protection Department (PPD), the Fisheries and Aquaculture Department (FAD), and other research centers/institutes, is the lead ministry responsible for ensure effective management of pesticides and toxic agrochemical used in agriculture productions in Vietnam. PPD functions are operated through the central office in Hanoi as well as PPD regional offices and provincial PPDs (PPDs). Fisheries and aquaculture development has more or less similar institutional structure. The FAD functions are operated through the FAD Hanoi office as well as the Research Institute for Aquaculture No. 2 (based in the Ho Chi Minh City), and the provincial office (namely the aquaculture center) of DARD. There are universities and other specialized research center/institutes as well as mass organization and local unions/associations involved in promotion of IPM practices and management of agrochemicals use in rice farming, shrimp farming, and aquaculture.

10. The PPPDs, university, and research centers in the Project provinces are quite familiar with the IPM and participated in the previous research and training. *However, their coordination and cooperation as well as technical and management capacity regarding regulatory monitoring and laboratory analysis appears inadequate. Moreover, limited Government budget has limited the Government and the provinces to play an active role in ensuring effective management of pesticides and toxic agro-chemicals in the Central Region.*

A5.3 Technical Considerations

11. ***IPM principles and demonstration of IPM models:***To be in line with OP/BP 4.09 the subproject will apply the IPM practices and if appropriate and effective, the PMP activities may include an IPM demonstration measures in pilot areas and the following considerations should be considered:

- The IPM models should follow the general IPM principles (see Box A5.4) and the planning and designed should be conducted in close consultation with central and local technical agencies as well as farmers and the model should also build institutional capacity including group leaders and farmers network. Given different in local environment and types of crops, size the model should range between 5-10 ha/model.
- In addition to technical assistance and training the subproject support should also include materials and other incentives to encourage effective household participation in the demonstration models.
- Development of IPM guiding documentation for major crops (rice, vegetables, etc.) and promotion of scaling up efforts.

12. ***TOT (Training of Trainers) and Farmer Field School (FFS):*** The subproject may support:

- *Workshops and training of IPM staff:* Scope of the training may include: Distinguish the major and secondary pests; Identify the natural enemies of pests and diseases in the field; Investigate methods to detect worms and diseases; Understand the impact of two pesticides, using appropriate pesticides; The techniques pest control under IPM principles; and Advanced farming techniques.
- *FFS activities:* To strengthen understanding both in theory and practical application in the field. The training can be made through thematic groups: farming techniques, identification and detection methods of pests and their natural enemies, and the IPM techniques in production for both crops and fisheries products.

13. ***Information exchange and stud visits:*** The activities may be considered when found to be relevant and effective. Building connection and networking of farmers and their associations as well as cooperation among local authorities could contribute significantly to improve adaptive capacity to address climate changes issues.

Box A5.4 IPM principles
• *"Grow a healthy crop".* The focus is on cultural practices aimed at keeping the crop healthy. Selection of varieties that are resistant or tolerant to pests is an important aspect. Attention to soil, nutrient and water management is part of growing a healthy crop. Many IPM programs therefore adopt a holistic approach and consider a wider range of agro-ecological parameters related to crop production. • *"Manage the agro-ecosystem"* in such a way that pests remain below economic damaging levels, rather than attempt to eradicate the pest. Prevention of pest build up and encouragement of natural mortality of the pest is the first line of defense to protect the crop. Non-chemical practices are used to make the field and the crop inhospitable to the insect pest species and hospitable to their natural enemies, and to prevent conditions favorable to the build up of weeds and diseases. Decisions to apply external inputs as supplementary controls are made locally, are based on monitoring of pest incidence and are site-specific. External inputs may include predators or parasites (bio-control), labor to remove the pest manually, pest attracting lures, pest traps, or pesticides. The choice of external input varies for each situation. Pesticides are generally used if economically viable non-chemical pest control inputs are not available or failed to control the pest. They are applied only when field monitoring shows that a pest population has reached a level that is likely to cause significant economic damage and the use of pesticides is cost-effective in terms of having a

positive effect on net farm profits. Selection of products and application techniques should aim to minimize adverse effects on non-target species, people and the environment.

- *IPM is not an input or a technology but an approach that should be applied according to the local conditions.* IPM encourages farmers to find specific solutions to the pest problems they encounter in their fields based on understanding of agro-ecological principles, monitoring interactions among crops, pests and natural enemies of pests, and selecting and implementation of adequate control measures. In addition to crop production, IPM also calls *for non-chemical alternatives* to post harvest loss prevention. This is particularly important as losses due to post harvest damage can be significant and use of chemicals on stored produce is a common cause of poisoning people.
- *Support for IPM extension and farmer training* should be the core element of an IPM program, however it should be designed to connect with existing capacity and organization structure and cropping systems. Increasing knowledge and skills of farmers may be conducted through a variety of measures, including but not limited to: (a) demonstration plots and trials as traditionally known in agricultural extension, (b) distribution of information via television and radio broadcast, newsletter, and internet services; and training of individual farmers or in groups. Application of the Farmer Field School[16] (FFS) approach and/or the Farmer Participatory Training and Research (FPTR) approach (as promoted by CABI and others) may be applied as appropriate. International and national agricultural research centers are using FPTR to bridge the gap between research and implementation by farmers.
- *Outreach and sharing of experience* is also a critical element of the IPM approach. The program should be designed to increase knowledge on good practices that are likely to be practical in the projects/subprojects areas taken into account the socioeconomic conditions of farmers. IPM does not necessarily involve sophisticated information gathering and decision making. The IPM approach can be introduced at any level of agricultural development. For example, improvement of basic crop management practices, such as planting time and crop spacing, can often be effective in reducing pest attack. IPM is a dynamic process. A useful beginning can be made with relatively limited specialized information or management input. Later, additional information, technologies, and mechanisms can be developed to enhance the effectiveness of the system.
- *Research and development and technical assistance:* There is no "blueprint" for planning interventions in support of IPM in a particular setting. The on-going research, extension activities, and training to staff and farmers related to IPM in the fields should be reviewed and if found appropriate the IPM program for the subproject should be built on the strength and address the weaknesses. When possible, providing support to research is an important element of an IPM intervention strategy because there is still a lack of locally adapted solutions to pest problems. Additionally, new pests constantly emerge with the change of farming systems. Close relationship between the research and extension services must be ensured. Involvement with the private sector to promote non-chemical and/or “green and safe” IPM options should also be considered.
- There is a *wide variety of techniques* that can be applied under IPM approach. Applicability of individual techniques depends on various factors, including: the crop, the cropping system, the pest problems, the climate, the agro-ecological conditions, etc. Generally, IPM

[16] The concept of FFS comprises usually a season-long group training exercise for a group of farmers in an on-site location. Emphasis is put on agro-ecosystem analysis as a way to acquire environmental management knowledge in learning by doing approach. FFS have been used in many Asian countries to address pest problems caused by injudicious and over use of insecticides, especially in irrigated rice. The approach has been promoted by the Systemwide Programme on IPM (SP-IPM) which is based at FAO and supported by the Bank. In Vietnam, it is not clear about the economic impact and the financial sustainability of the FFS concept as costs per trained farmer can be substantial.

involves a combination of techniques. Some examples of such techniques include:

- *Cultural practices that can help prevent build up of pests such as* Crop rotation, Inter-cropping, Field sanitation and seed bed sanitation, Use of pest-resistant crop varieties, Managing sowing, planting or harvesting dates, Water/irrigation management, Soil and nutrient management (including mulching, zero/low tillage, fertilizer management), Practices to enhance the buildup of naturally existing predator populations, Hand-picking of pests or hand-weeding, Use of traps or trap crops, and Post harvest loss prevention;
- *Biological inputs* -include Biological control through release of predators, parasites or pathogens; Biological control through fish, ducks, geese, goats, etc.; Release of sterile male insects; Bio-pesticides; and Biological preparations (e.g. name extract).
- *Chemical inputs* such aschemicals that disrupt insect behavior (e.g.: pheromones) and Growth-regulators.
- *Conventional pesticides:* The use should be technically and economically justified.

- *Careful selection of pesticides and application techniques is important* to minimize impact on beneficial organisms, humans and the environment. There is a broad range of pesticides with varying degree of impact on beneficial organisms, humans and the environment. When selecting pesticides one would search for a product that: (a) is effective in controlling the pest; (b) is highly specific to the pest and does not significantly affect beneficial organisms; (c) has a low human toxicity. In addition, it is important to look at applications methods, as the amount of pesticides used may vary significantly. Use of insect traps (attractant combined with a pesticide) for instance requires far less pesticides than foliar application of pesticides onto crops.

A5.3 Technical Guidelines on IPM for Rice and Maize

14. Below section provides guidelines for application of IPM practices for rice and maize that should be considered:

(a) Application of IPM practices:

- ***Five basic principles of IPM practices for rice farming*** *are***:**
  - Planting and health care of crops: Choose good seed, suitable for local conditions; Choose healthy and qualified crops; and Planting, cared for properly techniques to grow good crops which are resistant and high yielding;
  - Check fields regularly, understand the progress of the growth and development of plants, pests, weather, land, water to take timely remedial measures;
  - Farmers become experts in the field: Farmers' technical knowledge, management skills need to advocacy field for many other farmers;
  - Pest prevention includes Using appropriate preventive measures, depending on the severity of disease, parasitic natural enemies in each stage; Using of chemical drugs has reasonable and proper technique; and
  - Protect natural enemies: Protecting the beneficial organisms to help farmers kill pests.
- ***For rice farming,*** depending on specific crops and localities of the subproject, the following IPM measures should be considered:

- *Cultivation methods:* Soil, field sanitation, crop rotation, intercropping, crop seasons, reasonable sowing and planting density, rational use of fertilizers; appropriate caring measures;
- *Using seed:* the tradition seed and the proposed seed in use;
- *The biological measures:* taking advantage of available natural enemies in the field, using probiotics;
- Determination of the level of harm and prevention threshold; and
- *Chemical measures:* safe using with natural enemies, the economic threshold; correct use of medicines.

- ***Farming methods***
  - *Early land preparation and field sanitation:* Land preparation and field sanitation soon after planting to kill many caterpillars and pupae live in the rice stem borer and rice stubble, loss of shelter and food source of the brown plant hopper, green hoppers... Brokers are the transmission of viral diseases for rice as dangerous illness blighted gold, rice ragged stunt disease; Principles of impact of field sanitation measures and handling crop residues after harvest is cut off the ring cycle of pests from the crop to other crops and pests limited source accumulation, transmission spread at beginning of the crop.
  - *Crop rotation:* Rice rotation with other crops to avoid pathogen accumulation in rice from the crop to another crop.
  - *Appropriate Planting:* Planting rice to ensure appropriate growth and good development, achieve high productivity, avoids the risk of the weather. The determination of appropriate the crop having to rely on the characteristics of the damage incurred pests important to ensure that rice avoiding peak of the epidemic.
  - *Use healthy seeds, pest resistant and short seeds:* Healthy seeds, free disease helps to rice facilitate development; Using resistant rice seeds reduce drug use chemical pest control, reduce pollution, protect natural enemies; keep balance agricultural ecosystems; Rice seed with short growth period of about 100-110 days, plant earlier in the season could have been avoided borer, deep bite panicle. Rice seed with extremely short growing period is 80-90 days brown planthopper prevention measures effective for brown plant hopper could not accumulate in sufficient quantities to cause severe damage in extremely short day breeds.
  - *Cultivation density is reasonable:* The density and sowing techniques, depending on the rice seeds transplanting, crop, soil and nutrition, aged rice, rice quality, process agricultural intensification; The density is too thick or too little will affect productivity, while also affecting the generation and development of pests, weeds; The rice fields are often sown too thick closed up early, causing high humidity, creating conditions for sheath blight and brown plant hopper damage incurred at the end of the crop.
  - *Using reasonable fertilizers:* Fertilization excessive or unreasonable fertilizer will make plants grow normally and not prone to pest infestation. Rice fields fertilization are more susceptible to infectious diseases rice blast, sheath blight, leaf blight.

- ***Manual methods:***

- Light traps catch butterflies, break eggs, rub stripping foil fencing using leaf spray, dig down to catch mice.

- ***Biological methods***:
  - Creating a favorable environment for beneficial organisms are natural enemies of pest development to contribute to kill pests;
  - Protection of natural enemies to avoid toxic chemicals by using selective medication drugs, narrow-spectrum drugs, drugs used when absolutely necessary and should be based on economic thresholds;
  - Create habitat for natural enemies after planting by intercropping, planting legumes on bunds, disintegrator for lurking natural enemies; and
  - Application of cultivation techniques to facilitate reasonable development natural enemies.

- **Priority use drugs Biological Plant Protection**
  - The medicines are effective only biological pest control, non-toxic to beneficial organisms, safe to human health and the environment.

(b) Norms of fertilizer use: The following norms of fertilizer use should be as follows:

- ***For direct sowing rice:*** *The following will be considered:*
  - The amount of fertilizer is 1ha (8-10 tons) of manure, 250 kg Urea, 500 kg superphosphate, K chloride 150kg.
  - Whole basal fertilizing of manure, phosphate + 20% urea + 30% K.
  - Additional fertilizing tillering 60-70% urea + 20% K.
  - Note: The spring crop only put down fertilizer when the weather is not too cold and nitrogen fertilizer limited when rice is in ear to avoid fall in the end of the crop pests.

- ***For transplanted rice:*** Amount of the fertilizer for 1 acres: 4-5 kg decomposed manure, urea nitrogen 8-12 kg 6-12 kg K chloride, Lam Thao superphosphate 15-25 kg. Specific fertilizer depending on the frame with rice, soil properties:
  - High-yielding hybrid rice varieties grown on sandy soils, silver colored, fertilize with manure maximum.
  - Domesticated rice varieties, nutrient-rich soil fertilizer with a minimum quantity.
  - Sandy soil, silver colored, with mineral fertilizer ratio 1 N: 1 K2O: 1 P2O5 (1 protein: 1 K: 1 time per pure fertilizer concentration).
  - Boggy land, wetlands regularly, typically acidic, rich in protein, lack of time, lack of potassium fertilizer lime powder before transplanting 7-10 days and reduced nitrogen fertilizers, increasing phosphorus, K, etc.
  - Recommendation on manufacturing: For initiative water soil, the total amount of fertilizer deeply lined manure, 30-40% protein + phosphate, K before transplanting harrow. None initiative water land is not nitrogen fertilizer liner to prevent cold rice death.

- The 1st additional fertilizing when rice plants have taken root in green (15-20 days after transplanting). Apply 50-80% protein 20-40% + K, water levels flooded 5cm.
- Additional fertilizing Series 2: When the rice stand, about 1-4 to 10-4 every year, 10% nitrogen fertilizer notes and other potassium. Nitrogen pay attention to the color of the leaf, if the leaf is dark green, do not apply nitrogen fertilizer to increase the amount of K, so until flowering rice, the leaves are green ginger is good, keep humidity saturated soil (soft land, subsidence feet).
- In addition to ensuring high yield and stability need to better control some pests and diseases of rice such as BPH, stem borer, sheath blight, blast, etc.
- Note: only rice cultivation and nitrogen fertilizer when the outdoor temperature is greater than 15^0C.

- ***Hybrid maize crops:***
  - The amount of seed for 1 ha: 15 kg
  - Organic manure: lowland areas reach at least 4-5 tons.
  - Urea 300 kg
  - Phosphate 400 - 500 kg
  - Potassium fertilizer 150 kg

- ***Domesticated maize crop:***
  - The amount of seed for 1 ha: 25 kg
  - Organic manure: lowland areas reach at least 4-5 tons.
  - Urea 200 - 250 kg
  - Phosphate 350 - 400 kg
  - Potassium fertilizer 100 - 120 kg
  - (If using other kind fertilizer to apply, must be taken to ensure the regularization the amount of according to 3 kinds of NPK fertilizer)

(c) Intensive technical guidance for rice plants

- About seed, cultivated by the new hybrid rice varieties, limit the use of the old hybrids, steering simultaneously sowing of seasonality, monoculture on the same field, due to time of growth, leading to different characteristics difficult disease management, water control and take care.
- Regarding technical aspects
  - For rice sowing: Continue to apply the sowing areas with convenient conditions to ensure irrigation water, flat land (with accompanying technical process).
  - For rice plants: a new technique is applicable implanted moderately high density 55-60 clusters/m2, less transplant dedicated to saves Seed and time shorten the tillering, apply enough fertilizer under the guidance of technical staff.
  - Apply day intensive from Seed stage, saving seeds, apply integrated pest management (IPM), reduced plant pesticide to reduce input costs.

(d) Intensive technical guidance for maize *crop*

- *About seeds:* lowland areas and upland in the uplands and upland villages of communal planting some of the maize hybrids. The area is not cultivated maize, maize buy pure, pure, high yield potential. Maize must originate clear, good quality seeds, the specialized agencies testing before supply for sowing.
- *Technique:* Planting density from 5.5 to 6 thousand plants / ha, only 1 tree / hole, the upland districts in density from 5 to 5.5 thousand plants / ha (1-2 plants / hole), enough organic fertilizers and inorganic fertilizers are balance, earlier additional fertilizing as instructed.

Annex 6. Sample of Grievance Registration Form

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

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

Annex 7: Template of Progress and Monitoring reports

A7.1 Monthly Progress Report of Subprojects/Activities Form

Instructions: This form will be completed and sent to the Project Director every month without fail. Attach additional information as needed should the form below not provide enough space.

Progress report for the monthof:_____

Subproject Name:_____

Subproject Number:_____

Village/area:_____

District:_____

Progress: (List all the subproject components and the progress to date)

Component/subproject	Description of subproject implementation to date	Remarks
1.		
2.		
3.		

Comments on Subproject Safeguard Issues:

(Report if there have been any ES problems that require the attention and assistance of the Project Director or safeguard specialist/consultants).

Problem/Issue	Comments

A7.2 Project Safeguard Reporting Form

4. Form below should be used for 6 month and/or annual reporting for the Project. Attach additional information as needed should the form below not provide enough space.

Progress report for the period of:_____

Subproject/Activity Owner:_____

Environmental and Social Progress Report Format

No	Project investment (subproject or activity)	Key environmental and social issues	Mitigation measures to be taken	Implementation and monitoring of ESMP	Training & capacity-building programs implemented	Lessons learnt	Remarks