Strengthening the resilience of smallholder agriculture to climate change-induced water insecurity in the Central Highlands and South-Central Coast regions of Viet Nam

Environmental and Social Management Plan

Ha Noi, 6 March 2024

QUALITY INFORMATION

Document: SACCR Environment and Social Management Plan (Rev1)

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Revision History

Version	Date	Details
ESMP	5 June 2023	Environmental and Social Management Plan has been accepted by GCF (5 June 2023)
ESMP Rev1	6 March 2024	Revised ESMP for submission to GCF following approval of project restructuring FP125-UNDP-13092023-RP (SACCR EMSF Rev1) – together with amended ESMF Rev1, IPPF Rev1, IPP Rev1 and GAP Rev1

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EXECUTIVE SUMMARY

This Environmental and Social Management Plan (ESMP) has been prepared in support of the project: "Strengthening the resilience of smallholder agriculture to climate change-induced water insecurity in the Central Highlands and South-Central Coast regions of Viet Nam" (GCF2-SACCR) implemented by the Government of Viet Nam (GoV) and UNDP and updated to reflect changes approved by GCF in response to the Restructuring Paper (RP) FP125-UNDP-13092023-RP.

The project aims to empower vulnerable smallholders in five provinces – particularly women and ethnic minority farmers – to manage increasing climate risks to agricultural production through implementation of two linked Outputs addressing (1) Improved access to water for vulnerable smallholder farmers for climate-resilient agricultural production in the face of climate-induced rainfall variability and droughts, and (2) strengthened capacities of smallholder farmers to apply climate and market information, technologies, and practices for climate-resilient water and agricultural management.

The project has been screened using UNDP's Social and Environmental Standards Procedure (SESP) and deemed to be a moderate risk project. The ESMP builds on the updated Environmental and Social Management Framework (ESMFRev1) developed for the project based on UNDP's Social and Environmental Standards (SES).

The ESMP provides mechanisms and measures to manage social and environmental impacts associated with construction activities to be implemented by the project under Activity 1.2: Establish last-mile connections between WEIDAP irrigation infrastructure and the poor and near poor farmer lands to help cope with increasing rainfall variability and drought; and Activity 1.3: Enhance supplementary irrigation for rain fed smallholders to cope with rainfall variability and drought.

All activities under Activity 1.1 using the leveraged co-financing from ADB and the GoV through the Water Efficiency Improvement in Drought-Affected Provinces (WEIDAP) Project are addressed through ADB's safeguard documents and not through this ESMP. Other non-construction environmental and social risks of the project are managed through the ESMF.

The ESMP adopts a risk-based approach, identifying a comprehensive overall set of potential environmental and social risks and associated mitigations related to construction activities, which is then applied to each specific construction activity and location throughout the life of the project. Site or activity specific plans will be prepared based on the guidance provided in this ESMP to deal with specific issues and/or phases of work according to the overall project workplan. An example of a site plan and typical construction drawings are provided in this ESMP. This ESMP covers all sites for Activity 1.2 and Activity 1.3; however, if a higher risk level or a new risk is identified, then the works at that given site (including the implementation of this ESMP) will be put on hold until that matter is resolved in accordance with GCF policy and the project's FAA. The Site Plans, which represent operational documents, are to be read in conjunction with this ESMP.

Contractors selected to carry out construction activities under Activity 1.2 (in four provinces, excluding Khanh Hoa as the interventions under Activity 1.2 were removed) and Activity 1.3 (in all five project provinces) need to prepare specific Construction Contractor Plans to that demonstrate how they will meet the requirements of this ESMP and the associated Site Plan on the sites under their management. These requirements will be clearly specified in the bidding documents for these construction works and included in all contracts signed with construction contractors.

The ESMP is structured around the principle of continual improvement and will be monitored and updated as required.

1 INTRODUCTION

This Environmental and Social Management Plan (ESMP) has been prepared in support of the project: "Strengthening the resilience of smallholder agriculture to climate change-induced water insecurity in the Central Highlands and South-Central Coast regions of Viet Nam" (GCF2-SACCR) implemented by the Government of Viet Nam (GoV) and the United Nations Development Programme (UNDP). This version of the ESMP has been updated to reflect GCF approved changes set out in the Restructuring Paper (RP) FP125-UNDP-13092023-RP to include two new districts of Khanh Hoa province (i.e., Khanh Son and Khanh Vinh).

The changes to the project design, as detailed in the Restructuring Paper (RP) FP125-UNDP-13092023-RP can be summarized as:

i. Change in the scope of Activity 1.1 and Activity 1.2 by removing interventions planned for the Khanh Hoa province with a consequential reduction in corresponding deliverables.

ii. Change in the scope of Activity 1.3 by moving interventions from the Cam Lam district of Khanh Hoa province to Khanh Son and Khanh Vinh districts and reallocation of GCF funding (USD 1,178,645) and government co-financing (USD 107,148) from Activity 1.2 to Activity 1.3 to finance additional interventions with consequential increases in corresponding deliverables.

iii. Change in the scope of Activity 1.4 and all activities under Output 2 by moving interventions from the Cam Lam district of Khanh Hoa province to Khanh Son and Khanh Vinh districts with no changes to deliverables.

iv. Amendment of the financial structure of the Project by reducing the amount of Co-financing by not more than USD 18,006,156

v. Reduction of Project beneficiaries from 222,412 to 200,798 individuals and of indirect beneficiaries from 335,252 to 330,544 individuals.

The changes were necessary due to a new Government of Viet Nam policy designating Cam Lam as an airport city and no longer prioritizing agriculture development in this district. As a result, WEIDAP investments in Khanh Hoa province were withdrawn. Withdrawal of the WEIDAP investment meant that complementary GCF investments under Activity 1.2 were no longer relevant in this province. The two new districts in Khanh Hoa province (Khanh Son and Khanh Vinh) are prioritized for agriculture and face climate change-induced water insecurity, with a significant presence of ethnic minorities and poor/near poor households, so they fitted into the overall project objectives.

The ESMP builds on the updated Environmental and Social Management Framework Rev1 (ESMF) developed for the project. The ESMP provides mechanisms and measures to manage social and environmental impacts associated with construction activities to be implemented by the project under Activity 1.2 and Activity 1.3. Specifically, Activity 1.2.1: Design and construct connection and distribution systems including installation and maintenance of irrigation equipment to cope with climate variability; and Activity 1.3.1: Construct or upgrade climate-resilient ponds. Other project risks are managed through the ESMF.

ABOUT THE PROJECT

The Government of Viet Nam, with support from UNDP, is implementing a project on adaptation to climate change impacts on smallholder farmers, in particular ethnic minorities and poor/near-poor farmers. The project seeks to improve the resilience of vulnerable communities to climate change impacts.

1.1.1 Development Challenge and Objective of the Project

The key problem the project proposes to address is the threat to vulnerable smallholder agricultural production posed by the impacts of climate-change induced rainfall variability and drought. The

objective of this project is to empower vulnerable smallholders in the Central Highlands and South-Central Coast regions of Viet Nam – particularly women and ethnic minority and poor/near-poor farmers - to manage increasing climate risks to agricultural production by securing water availability, adopting climate-resilient, water-efficient agricultural cropping systems, and using climate, agricultural and market information for risk assessment and water and agricultural planning and management. The project advances a paradigm shift away from short-term, stop-gap measures to more integrated, multistakeholder coordination of investments to sustain smallholder agricultural production through climate-risk informed water and agricultural management.

1.1.2 Summary of Project Outputs and Activities

To achieve its objective, the project addresses climate-induced water stress through a two-pronged approach: (i) from the supply-side, with provision of water efficient irrigation infrastructure and increasing water storage capacity to address the risk of water scarcity; (ii) from the demand-side, through introduction of climate-resilient crop diversification, land treatment and agronomic practices that reduce water input requirements for food / agricultural production. As such, the project invests in enabling smallholders, particularly poor/near-poor, ethnic minority and women farmers, to adapt to increasing climate-driven rainfall variability and drought through implementation of two inter-linked Outputs:

- Output 1 - Enhanced water security for agricultural production for vulnerable smallholder farmers in the face of climate-induced rainfall variability and droughts
- Output 2 - Increased resilience of smallholder farmer livelihoods through climate-resilient agriculture and access to climate information, finance, and markets.

Output 1: Enhanced water security for agricultural production for vulnerable smallholder farmers in the face of climate-induced rainfall variability and droughts

Activity 1.1: Establish large-scale irrigation infrastructure to bring irrigation water to seven farming areas across the target regions in four provinces, including Ninh Thuan, Binh Thuan, Dak Lak and Dak Nong. This activity will not be implemented in Khanh Hoa province due to the withdrawal of the WEIDAP project from this province, as explained in Restructuring Paper FP125-UNDP-13092023-RP. **(Activity 1.1 is covered by ADB's safeguard documents, not by this ESMP)**

Key sub-activities:

- 1.1.1 Develop modernized irrigation infrastructures serving at least 13,180 ha in the eight command areas by installing 146.5 km of piped irrigation systems including
- (i) Pressurized pipe systems taking water from canals or reservoirs, and supplying hydrants located at a reasonable distance from a farmer's field;
- (ii) Main system modernization including canal lining, control structure, balancing storage and installation of flow control and measurement devices with remote monitoring; and
- (iii) New and improved weirs which will replace farmer constructed temporary weirs and provide storage from which farmers can pump to irrigate HVCs.

Activity 1.2: Establish last-mile connections between WEIDAP irrigation infrastructure and the poor and near poor farmer lands to help cope with increasing rainfall variability and drought. This activity will be implemented in four provinces: Ninh Thuan, Binh Thuan, Dak Lak and Dak Nong. This activity will not be implemented in Khanh Hoa province due to the withdrawal of the WEIDAP project from this province, as explained in Restructuring Paper FP125-UNDP-13092023-RP.

Key sub-activities:

- 1.2.1 Design and construct 3,733 connection and distribution systems including installation and maintenance of irrigation equipment to cope with climate variability.
- 1.2.2 Train 3,733 poor and near poor farmers households on climate-risk informed utilization of irrigation equipment and system maintenance.
- 1.2.3 Establish Water Users Groups for O&M of communal or shared systems, including structures and agreements on potential funding mechanisms.

Activity 1.3: Enhance supplementary irrigation for rain fed smallholders to cope with rainfall variability and drought. This activity will be implemented in all five project provinces.

Key sub-activities:

- 1.3.1 Construct or upgrade 1,507 climate-resilient ponds (based on site-specific designs construct 849 new ponds and upgrade 658 existing ponds).
- 1.3.2 Train aprox. 17,000 poor and near-poor farmer beneficiaries in climate-resilient water resource management to enhance supply.
- 1.3.3 Establish 218 pond-management groups for O&M, including structures and agreements on potential funding mechanisms.

Activity 1.4: Increase smallholder capacities to apply on-farm water efficient practices and technologies to maximize water productivity in coping with rainfall variability and drought **(covered by ESMF, not by this ESMP)**

Key sub-activities include:

- 1.4.1 Train over 21,200 farmers through 900 Farmer Field Schools on soil and biomass management to enhance moisture-holding capacity, recharge of groundwater, and water productivity to cope with evolving climate risks on water security (in conjunction with Activity 2.1)
- 1.4.2 Train 30 DARD staff and champion farmers in 15 districts (one course in years 2, 4 and 6) to support farmers' groups in co-design, costing and O&M of climate-resilient, water efficient technologies
- 1.4.3 Install on-farm water efficiency systems for 8,621 poor/near-poor smallholders linked to performance-based investment support (linked to Activity 2.1)
- 1.4.4 Train smallholder farmers in five provinces on climate-risk informed O&M of water efficiency technologies

Output 2: Increased resilience of smallholder farmer livelihoods through climate-resilient agriculture and access to climate information, finance, and markets (covered by ESMF, not by this ESMP)

Activity 2.1: Investments in inputs and capacities to scale up climate-resilient cropping systems and practices (soil, crop, land management) among smallholders through Farmer Field Schools

Key sub-activities:

- 2.1.1 Sensitize smallholders to establish/re-activate 900 Farmer Field Schools.
- 2.1.2 Train DARD personnel and lead farmers, as well as other interested parties (NGOs, Farmers and Women's Unions, etc.) to build a cadre of farmer champions to galvanize adoption and application of CRA packages (15 provincial level workshops for 30 DARD staff in years 2, 4 and 6; 30 district and 136 commune level trainings for 30 lead farmers in years 2 and 6).
- 2.1.3 Train farmers and value chain actors - particularly private sector input providers, buyers, processors, transporters - through 900 FFS on scaling up of climate resilient cropping systems and practices. (Each FFS will conduct 1-day trainings twice per year).

- 2.1.4 Investment support to 8,621 targeted poor/near poor smallholders to acquire inputs and technologies for implementation of the CRA packages through vouchers.
- 2.1.5 Participatory auditing of implementation of voucher systems for climate resilient cropping systems and practices (One 1-day meeting for 100 participants in each of the 68 communes in Years 2, 4 and 6)

Activity 2.2 Technical assistance for enhancing access to markets and credit for sustained climate-resilient agricultural investments by smallholders and value chain actors.

Key sub-activities:

- 2.2.1 Establish and operationalize multi-stakeholder Climate Innovation Platforms (CIP) in each province and at the level of agro-ecological zones (Annual stakeholder meetings organized once every two years in each of the 5 provinces).
- 2.2.2 Provide technical assistance and training to enable market linkages with input, information and technology providers and buyers for climate-resilient agricultural production (two trainings, two networking workshops and three trade fairs in each of the 15 districts over four years).
- 2.2.3 Provide technical assistance and train farmers to enable access to credit through financial intermediaries (One workshop in each of the 68 communes in years 2 and 4).

Activity 2.3 Co-development and use of localized agro-climate advisories by smallholders to enhance climate-resilient agricultural production.

Key sub-activities:

- 2.3.1 Train 50 Hydromet and DARD staff on generating and interpreting down-scaled forecasts for use in agricultural planning (eight trainings over four years for 50 participants).
- 2.3.2 Provide technical assistance for the formation ACIS technical groups and training of 450 participants at district level (1-day workshops for 30 participants in each of the 15 districts).
- 2.3.3 Co-develop, through Participatory, Scenario Planning (PSP) of seasonal and 10-day/15-day agro-climate advisories with smallholder farmers (20 provincial level trainings for 30 staff and 60 district level trainings for 60 participants over four years).
- 2.3.4 Disseminate advisories to 132,836 households in the 68 communes.

1.1.3 Project co-financing with the WEIDAP project

Activity 1.1 of the project is fully financed by the ADB- and GoV-funded Water Efficiency Improvement in Drought Affected Provinces (WEIDAP) project. GCF funding will not be used for this activity. All activities under Activity 1.1 are addressed through ADB's safeguard documents, and therefore are not within the scope of this ESMP.

1.1.4 Project Locations

Project target areas are focused on five provinces in two regions: the Central Highlands and the South Central Coast. In the Central Highlands the project is targeting Dak Lak and Dak Nong, while in the South Central Coast region the project is targeting the provinces of Khanh Hoa, Ninh Thuan and Binh Thuan (**Error! Reference source not found.**).

Figure 1 Regions of Viet Nam – indicating target provinces of the GCF2-SACCR project

The project will be undertaken in the five provinces shown in Figure 1 in association with WEIDAP sub-project sites, resulting in selection of 15 districts and 68 communes (Figure 2). The majority of the 68 communes (including all WEIDAP project areas) are a combination of irrigated and rainfed cropping systems, with 36 communes more irrigated than rainfed, and 32 communes more rainfed than irrigated.

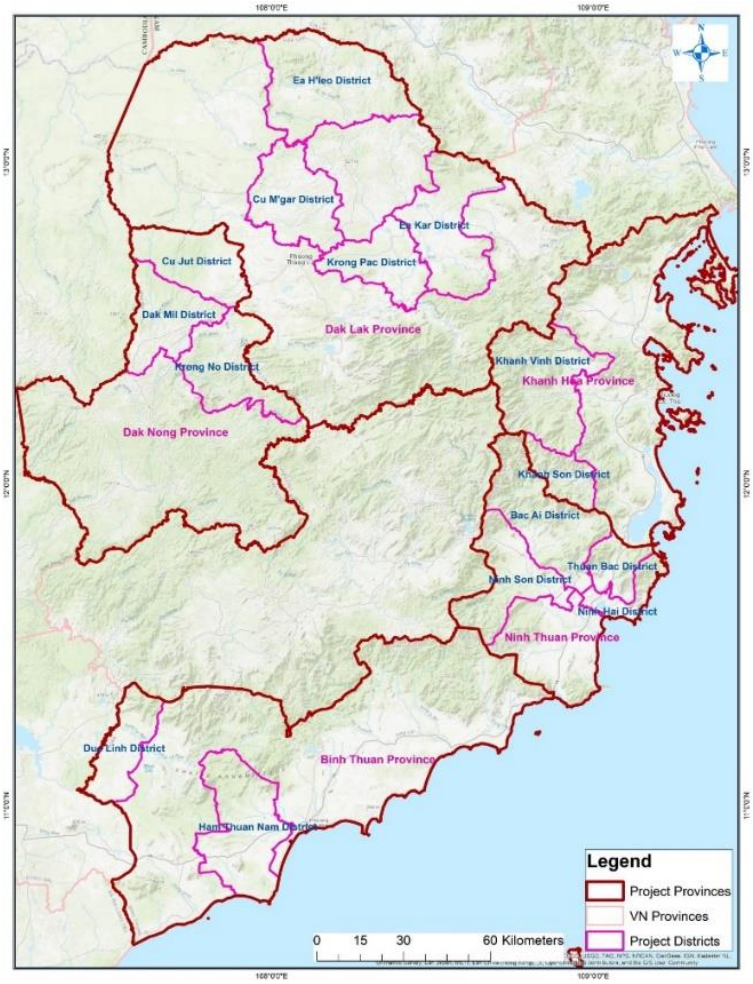

Figure 2: Map of five target provinces for SACCR project

Figure 2 shows the 154 district and 680 communes, with the MARD-UNDP project area in purple and the MARD-ADB WEIDAP sub-projects in green. Note, due to changes to the provincial master plan for Khanh Hoa province in 2023, the co-financing project (WEIDAP) has withdrawn from Cam Lam district of Khanh Hoa province. Thus, Khanh Hoa Provincial People Committee proposed that GCF2-SACCR project activities be implemented in other districts of the province instead of Cam Lam district. Khanh Vinh and Khanh Son districts have been selected as the substitute districts, as these are planned for agricultural production and possess social and environmental characteristics that are suitable for GCF2-SACCR interventions. Initial screening showed that there are no new or significant risks associated with the change. This ESMP, outlining generic rather than site-specific measures and strategies, is therefore still applicable to the same activities in different locations. In addition, this ESMP will be also reviewed and updated as outlined in case of any local context changes.

1.1.5 Project Safeguard Documents

This ESMP is part of a suite of interconnected documents that address safeguards on the project ensuring that the project is compliant with the UNDP SES[1]. The project safeguard documents are:

- Social and environmental Screening Procedure (SESP)
- Environmental and Social Management Framework (ESMF)
- Environmental and Social Management Plan (ESMP – this document)
- Stakeholder Engagement Plan (SEP)
- Indigenous Peoples Planning Framework (IPPF)
- Indigenous Peoples Plans (IPP)
- Gender Action Plan
- Compliance checklists (refer to Table 13. Potential environmental risks and mitigation measures)

This ESMP has been prepared for use by personnel involved in the management and delivery of the GCF- and GoV-funded construction activities of the project, which take place under Activity 1.2 and 1.3. Non-construction activities are managed through the application of the ESMF and other related safeguard plans (as noted above).

This ESMP covers all sites under Activity 1.2 and 1.3. The ESMP will be applied at each site and completed with an operational site plan according to the guidance provided in the present document. If a higher (or new) risk is identified through site screening using the SESP, then the works at that given site (including the implementation of this ESMP) will be put on hold until that matter is resolved in accordance with GCF policy and the project's FAA.

The objective of the ESMP is to ensure that all potential environmental and social impacts that could reasonably be expected to occur during the delivery of the construction activities supported by the project fall within acceptable and agreed limits. This is achieved through pro-active environmental and social management planning prior to carrying out construction activities.

1.1.6 .Assessment activities supporting the development of the ESMP

Building on the assessments undertaken during the project formulation phase (as described in the ESMF), environmental and social risks and potential impacts have been further identified through a series of workshops and rounds of consultation undertaken by the UNDP, CPO and PPMUs, as well as support from the project environmental and social specialists. In total, three trainings for safeguards specialists have been organized by UNDP.

The consultant team from the Central Project Office (CPO) within the Ministry of Agriculture and Rural Development (MARD), in collaboration with safeguards specialists at the Provincial Project Management Units (PPMUs), have conducted consultations in eight project communes and organized a consultation workshop in Dak Lak province to finalize this ESMP and additional consultations in the two new districts of Khanh Son and Khanh Vinh with participation of project officers and representatives of local communities. Information on these consultation activities is summarized in Table 1.

[1] The latest UNDP's Social and Environmental Standards (SES) 2015 is applied for this project.

Table 1: Field consultations, validation workshops and capacity building on SES

Activities	Venue	Time	Contents	Notes
Field consultations				
Field consultations in Ninh Thuan province	Xuan Hai commune, Ninh Hai district and Phuoc Thanh commune, Bac Ai district	July 6-7, 2022	Consultations with local communities and authorities to: - Identify and review the overall potential risks of projects with focus on: • Identify and review the risks to ethnic minorities (EM) groups, impacts if any on lands, rights, territories and traditional livelihoods and heritage, the need of IPP, and going through Free, Prior and Informed Consent (FPIC) checklist questions • Identify if the project construction works will be near protected areas, cultural heritage and/or sacred sites and cause any impacts • Impacts of construction works - Introduce mitigation measures and get feedback from communities - Introduce the Grievance Redress Mechanism (GRM) - Collect socio-economic information and other relevant data to draft the ESMP	These consultations were conducted by national social and environmental consultants from CPO. PPMU staff supported and learned the consultation procedures to continue with relevant consultations in their provinces
Field consultations in Ninh Thuan province	My Thanh commune, Ham Thuan Nam district and Tra Tan commune, Duc Linh district	July 8-9, 2022		
Field consultations in Dak Nong province	Tam Thang commune, Cu Jut district and Duc Minh commune, Dak Mil district	July 10-11, 2022		
Field consultations in Dak Lak province	Ea Sar commune, Ea Kar district and Krong Buk commune, Krong Pak district	July 12-13, 2022		
Validation workshop for the development of ESMP				
Validation workshop	Buon Me Thuot, Dak Lak	July 21-22, 2022	- Review and validate the risks and mitigation measures from the outcomes of consultations in 8 sample communes - Coach on IPP and FPIC procedures - Present the draft ESMP for eliciting further inputs	60 participants from: • Representatives of local communities and EM communities • Representatives of local authorities (commune and district levels) • PPMU staff • Staff and consultants from CPO and UNDP The participants included representatives of communities and authorities from Khanh Son and Khanh Vinh
Capacity building for PPMU staff				

Activities	Venue	Time	Contents	Notes
1st training on safeguards	Zoom meeting	Jan 10, 2022	Trainings on: - UNDP's overall safeguards policies and SES - Screening methods - Establish and operate GRMs	
2nd training on safeguards	UN house, Hanoi, Viet Nam	May 6, 2022	Trainings on: - Identify and manage risks - Develop site plans	
Specific consultations in two new districts of Khanh Son and Khanh Vinh, Khanh Hoa province				
Field consultations in Khanh Vinh	Khanh Nam and Khanh Binh communes, Khanh Vinh district, Khanh Hoa province	17-18 August 2022	Consultations with local communities and authorities to: - Identify and review the overall potential risks of projects with focus on: • Identify and review the risks to ethnic minorities (EM) groups, impacts if any on lands, rights, territories and traditional livelihoods and heritage, the need of IPP, and going through Free, Prior and Informed Consent (FPIC) checklist questions • Identify if the project construction works will be near protected areas, cultural heritage and/or sacred sites and cause any impacts • Impacts of construction works (climate-proof ponds) - Introduce mitigation measures and get feedback from communities - Introduce the Grievance Redress Mechanism (GRM) - Collect socio-economic information and other relevant data as input to the ESMP	
Field consultations in Khanh Son	To Hap and Ba Cum Nam communes, Khanh Son district, Khanh Hoa province	15-16 February 2023		

Table 2 presents contact information for safeguard focal persons on this project.

Table 2: Environmental and social specialists of the project

No.	Name	Units	Position	Tel	Email
I	PPMU Dak Lak province				
1	Bui Thanh Son	Environmental Safety Policy Officer	Officer of PPMU	0933598885	sonvnsatdaklak@gmail.com

No.	Name	Units	Position	Tel	Email
2	Nguyen Duc Anh	Social Safety Policy Officer	Officer of PPMU	0904466664	ducanhnguyen.pm@gmail.com
II	PPMU Dak Nong province				
1	Trinh Thi My Duyen	Environmental Safety Policy Officer	General Planning Department	0945338028	lemyduyen610@gmail.com
2	Pham Thi Hong Tuyen	Social Safety Policy Officer	General Planning Department	0916083337	tuyenapm@gmail.com
III	PPMU Binh Thuan province				
1	Le Phuong Thao	Environmental Safety Policy Officer	Officer of PPMU	0943763803	thao.amui@gmail.com
2	Nguyen Thi Ha Giang	Social Safety Policy Officer	Officer of PPMU	0918120576	hagiang.hpn@gmail.com
IV	PPMU Ninh Thuan province				
1	Nguyen Thi Thanh Hang	Social Safety Policy Officer	Officer of PPMU	0947892805	thanhhangeco@gmail.com
2	Vo Yen Oanh	Environmental Safety Policy Officer	Officer of PPMU	0907495560	voyenoanh@gmail.com
V	PPMU Khanh Hoa province				
1	Tran Quoc Long	Environmental and Social Safety Policy Officer	Officer of PPMU	0935701000	Longtq89@gmail.com
2	Nguyen Hoang Van Ha	Gender Officer	Officer of PPMU	0939086881	nhvha81@gmail.com
VI	CPO[2]				
1	Nguyen Quang An	Environmental Safety Policy Officer	Officer of CPO	0989550535	nguyenquangancpo@gmail.com
2	Tran Van Hang	Social Safety Policy Officer	Officer of CPO	0904461599	hangcpo@gmail.com
VII	UNDP				
1	Le Ngoc Dung	Impact and Inclusion Assurance Specialist	GCF2-SACCR project management team	0961070890	Le.ngoc.dung@undp.org
VII	ADB-WEIDAP				
1	Vu Ngoc Chau	Responsible for safety and social environment	Senior officer	0911089090	vungocchau@adb.org

[2] Environmental and Social safeguards of the GCF-funded GCF2-SACCR project are being undertaken in association with the ADB-funded WEIDAP project.

1.1.7 Scope of the ESMP

The scope of this ESMP is focused on the construction components of the project that are anticipated to be Moderate Risk (Table 3). There are no activities that require an ESIA. Typical design drawings for the activities below are provided in Appendix 7..

Table 3: Project activities anticipated to be of moderate risk

Province	District	Communes	Activity 1.3: New ponds (number of ponds)	Activity 1.3: Upgraded ponds (number of ponds)	Activity 1.2: Last mile connections (m)
Dak Nong	Cu Jut	Ea T'Ling	24	12	101,500
		Nam Dong	18	9	77,000
		Dak DRong	14	7	65,800
		Tam Thang	16	8	69,300
		Cu Knia	5	2	168,700
		Truc Son	5	2	7,700
	Dak Mil	Dak Lao	2	4	6,300
		Duc Manh	3	6	18,900
		Long Son	2	4	12,600
		Dak Sak	7	14	46,900
		Thuan An	1	2	10,500
		Duc Minh	5	10	34,300
	Krong No	Dak Sor	6	13	
		Nam Xuan	5	10	110,600
		Dak Dro	8	16	
		Nam Nung	9	19	
Dak Lak	Ea Hleo	TT. EaDRang	10	7	14,500
		EaSol	14	12	
		Dlie Yang	7	6	35,500
	Cu M'Gar	Quang Tien	4	3	19,250
	Ea Kar	Ea So	14	12	
		Ea Sar	25	21	
		Xuan Phu	4	4	15,050
	Krong Pac	Krong Buk	20	23	118,300
		Ea Phe	15	17	22,750
		Ea Yong	7	9	144,500
		Ea Kenh	12	14	27,500
Binh Thuan	Ham Thuan Nam	TT Thuan Nam	10	11	8,750
		My Thanh	11	13	
		Ham Can	20	24	
		Tan Lap	9	11	
		Tan Thuan	5	6	21,350
		Tan Thanh	5	6	4,900
	Duc Linh	Tan Ha	8	12	14,500
		Dong Ha	9	14	8,000
		Tra Tan	7	11	35,500
Ninh Thuan	Ninh Hai	Phuong Hai			7,700
		Xuan Hai	7	6	47,950
		Tri Hai	11	4	19,600
		Nhon Hai	8	3	58,100
	Ninh Son	My Son	34	19	
		Nhon Son	5	3	99,400
	Thuan Bac	Phuoc Chien	28	18	
		Phuoc Khang	16	10	
		Loi Hai	32	20	70,000

Province	District	Communes	Activity 1.3: New ponds (number of ponds)	Activity 1.3: Upgraded ponds (number of ponds)	Activity 1.2: Last mile connections (m)
		Bac Son	18	11	156,100
		Bac Phong	4	2	33,950
	Bac Ai	Phuoc Tan	16	10	
		Phuoc Thang	18	12	
		Phuoc Thanh	20	13	
		Phuoc Trung	7	2	52,150
Khanh Hoa	Khanh Vinh	Khanh Vinh town	0	1	Not applicable. Activity 1.2 was cancelled in Khanh Hoa as approved change in RP FP125-UNDP-13092023-RP.
		Khanh Binh	6	10	
		Khanh Dong	10	3	
		Khanh Hiep	2	7	
		Khanh Nam	6	16	
		Khanh Phu	15	23	
		Khanh Thanh	14	11	
		Khanh Trung	2	20	
		Song Cau	2	4	
	Khanh Son	To Hap town	11	16	
		Ba Cum Bac	7	9	
		Ba Cum Nam	22	8	
		Son Binh	28	27	
		Son Hiep	15	24	
		Son Lam	8	22	
		Son Trung	1	8	
		Thanh Son	50	22	

Sources: Pre-feasibility report

1.1.8 Activities in the scope of ESMP

Activities 1.2.1 and 1.3.1, in particular, are under the scope of this ESMP with potential adverse impacts during construction works. These activities are anticipated to be of Moderate Risk; however, it has been determined that **none of these activities require an ESIA nor an EIA** as these activities are under category III per national legislation (i.e. Vietnam's Law on Environmental Protection, 2020).

Table 4: Activities with moderate risk potential that need to be considered

No.	Activities	Environmental Aspect	Potential environmental impacts
1	1.2.1. Design and construct 3,733 connection and distribution systems including installation and maintenance of irrigation equipment to cope with climate variability	Displacement	Disruption to farming during construction Reduced income due to disruption of farming activities during construction
		Construction impacts – air pollution, noise, waste, community safety	Construction may impact air quality and generate noise This results mainly from excavation, site grading, vehicle loading and unloading, and other construction-related activities Potential impacts on ambient air quality would result from odours and gaseous emissions
		Groundwater	Potential contamination of groundwater due to construction activities

No.	Activities	Environmental Aspect	Potential environmental impacts
			Potential contamination by fertilisers during operation of irrigation areas
		OSH (Related to WEIDAP project)	Pumping equipment operation – requires high voltage power supply to operate pumps, which has associated safety/health risks.
		Unexploded ordnance	Unexploded ordnance – poses risk of human injury
		Erosion / water quality	Erosion and sedimentation – excavation and removal of vegetation will leave ground exposed to erosion and potential deterioration of surface water quality.
		Ecology	Impacts to ecology by labourers and construction workers Removal or disturbance of natural vegetation, A loss or disturbance to a unique, rare or threatened plant community
		Sustainability	Lack of O&M can result in failure of schemes
		Improper design	SCADA facilities may impose incorrect release patterns from reservoirs
		Waste	Construction waste – solid waste will increase during construction e.g. bulk transport and packing waste, waste from construction camps, offcuts and scrap materials
		Community OHS risk	Pumping equipment operation – requires high voltage power supply to operate pumps, which has associated safety/health risks
		Climate change	Drought and flood risk: The most frequent disaster events have been heavy rainfall-induced floods, storms, landslides, heat waves, strong winds and drought Droughts are becoming more severe and are impacting a larger area than before
2	1.3.1. Establish 218 pond-management groups for O&M, including structures and agreements on potential funding mechanisms	Impact due to waste	Waste generated during construction
		Impact due to noise and vibration	Noise and vibration generated during construction
		Impact due to emission of pollutant gases	Vehicles and machinery operating on the construction site must comply with Viet Nam's regulations on emission limits
		Waste	Construction waste generated during pond excavation
		Impact due to water pollution	Uncontrolled domestic wastewater of workers will cause pollution of water sources
		OHS risks to the community	Increased traffic in the project area and around the project area High-risk construction area should be temporarily fenced to minimize the number of people accessing during construction period
		Ecology	Removal or disturbance of natural vegetation, Loss or disturbance of a unique, rare or threatened plant community Ecological impact due to worker's and worker's activities Barriers or dams can prevent upstream fish migration
		Impact due to drainage system	Uncontrolled construction waste will clog drainage pipes

No.	Activities	Environmental Aspect	Potential environmental impacts
		Impacts caused by domestic waste	Domestic waste of workers who are disposed of indiscriminately outside will cause negative impacts on people's lives
		Disruption of utility services	Disruption of agricultural activities during construction Reduced income due to disruption of agricultural activities during construction
		Traffic Safety	Affecting the safety of people participating in traffic
		Safety and prevention of fire and explosion	Poor maintenance or improper handling of equipment can result in fires. Improper power connections to living quarters for workers
		Impact on vegetation cover and ecological resources	Restoration of affected areas after construction
		Safety for workers and community	Traffic volume is higher There is no sign to warn of the depth of the pond, as well as a safety measure for the possibility of life-threatening drowning Failure to comply with requirements on labour protection, labour safety
		Relations with local communities	The bad/sociable relationship between the construction contractor and the local people will lead to unnecessary misunderstandings
		Procedures for the accidental discovery of cultural property	During excavation or construction, archaeological sites, sites of historical value, ruins and objects, including grave sites and/or single tombs, have been discovered
		Procedures for the detection of landmines and explosives left over from the war	Unexploded ordnance that can endanger human life (Example: Unexploded ordnance left in war)
		Prevention of COVID-19	The COVID-19 epidemic and other diseases can cause disruptions during the construction process

The ESMP will be used as the reference document for the management of environmental and social risks associated with project construction activities. The ESMP has been designed to cover all anticipated construction risks and mitigation requirements. This ESMP provides detailed information on these potential environmental and social risks and sets out mitigation strategies, including timing and responsibilities for mitigation activities.

Given the nature of the impacts associated with this project and its geographical extent, the main text of the ESMP outlines overall environmental and social management work methods/strategies to be applied in the project's construction activities. This provides the basis for the development of site/issue-specific Site Plans for managing social and environmental risks, which will be operational documents under this ESMP. The template to develop Site Plans can be found at Appendix 2. Site Plans will be progressively developed during project implementation as beneficiary and site selection and construction design activities are completed for different works and locations. The Site Plans are to be read in conjunction with the ESMP. All site plans will be reviewed and cleared by UNDP.

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To assist personnel involved in the project to identify potential site-specific impacts and apply appropriate measures, environmental strategies have been outlined in Section V (Table 14). These strategies have been detailed under appropriate headings depending on the nature of the impacts.

Construction contractors carrying out the activities in Table 3 need to prepare specific Construction Contractor Plans that demonstrate how they will meet the requirements of this ESMP and the associated Site Plan on the sites under their management. The site-level screening procedure and development of Site Plans by PPMU's Environmental and Social Staff (ESS) are described as below:

- Conducting site screening using SESP checklist at every commune and reporting to PPMU;
- Developing Site Plans;
- Ensuring PPMU incorporates the ESMP (and associated Site Plan) into the detailed technical designs and civil works bidding and contractual documents;
- Ensuring the PPMU incorporates responsibilities for ESMP and supervision into the TORs, bidding and contractual documents for the Construction Supervision Consultant (CSC) and Internal Environmental Management Consultant (IEMC);
- Providing relevant inputs to the consultant selection process;
- Reviewing reports submitted by the CSC and IEMC;
- Conducting periodic site checks;
- Helping the PPMU on solutions to handle social issues of the subproject; and
- Preparing environmental and social performance section on the progress and review reports to be submitted to the Department of Natural Resources and Environment (DONRE)/ Division of Natural Resources and Environment at the District level if relevant and CPO and UNDP.

Contractor requirements will be clearly specified in the bidding documents issued for selection of construction contractors, and bidders will be required to include a plan on compliance as part of their bid submission. These requirements will also be specified in all contracts signed with construction contractors. The Construction Contractor Plans will be reviewed, approved and checked off according to the protocol detailed in this ESMP, prior to work commencing.

The contractors will be responsible for implementing the ESMP during the works and having proper actions when needed, including:

- Dust, air emission, noise and vibration emission control plan
- Wastewater - solid waste - domestic waste of workers and waste at construction site management plan
- Ecological resources management plan
- Surface and groundwater pollutants, erosion, flooding management plan
- Traffic safety management plan
- Social management plan
- Health and Safety management plan
- Traffic management plan
- Stakeholder engagement (local community)

To assess the effectiveness of the environmental management process, it is necessary to overlay the operations with a systematic monitoring program. This ESMP also addresses how monitoring, reporting, review and updating will occur.

2 LEGAL AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL MATTERS

POLICIES AND LEGAL FRAMEWORK

The following key legislation is relevant to the project:

- Constitution of the Socialist Republic of Viet Nam (2013)
- Land Law (2014)
- Law on Hydro-Meteorology (2015)
- Law on Irrigation (2017)
- Law on Natural Disaster Prevention and Control (2013)
- Law on Water Resources (2013)
- Law on Environmental Protection (2020)
- Law on Compulsory Purchase and Requisition of Property (2008)
- Law on Forest Protection and Development (2017)
- Law on Urban Planning (2009)
- Law on Biodiversity (2008)
- Law on Cooperatives (2023)
- Law on Water Resources (2013)
- Law on Gender Equality (2007)

The following policies and strategies are relevant to the project:

- National Strategy on Environment Protection (NSEP) to 2020, with vision to 2030 (2012)
- National Strategy and Action Plan on Biodiversity by 2030, vision to 2050 (2022)
- National Strategy on Gender Equality by 2030 was approved in 2021
- Strategy on Science and Technology in Agriculture and Rural Development (2012)
- Strategy on green growth for the period 2021-2030
- Strategy to develop Viet Nam's rice export market with a vision to 2030
- National plan to adapt to climate change for the period of 2021 - 2030, with a vision to 2050
- Ten-year Socio-Economic Development Strategy (SEDS) and the Five-year Socio-Economic Development Plans (SEDPs)
- National Action Plan on the Implementation of the 2030 Agenda for Sustainable Development (2017)
- National Targeted Program on New Rural Development (NTP NRD) 2020 - 2025
- National Targeted Program on Sustainable Poverty Reduction (NTP SPR) 2020 - 2025
- Livestock Development Strategy by 2030 (2020)
- Master Plan on Economic Restructuring
- Master Plan for Aquaculture Development (2013)

- Plan of restructuring agricultural sector in a period of 2021 - 2025
- Agricultural cooperative development plan for a period of 2021-2025
- Action Plan for the Development of Advanced and Water Saving Irrigation for Upland Crops to Assist Water Resources Sector Restructuring 2015-2020, and orientation 2021-2025
- Circular No. 34/2017/TT-BTNMT on regulations of retrieval and treatment of discarded products
- Circular No. 19/2021/ TT-BNNPTNT List of protective foods allowed to use, List of protected plants used
- Decision No. 255/QD-TTg, dated February 25, 2021, of the Prime Minister approving the Plan on restructuring the agricultural sector for the period of 2021 – 2025
- Decree No.09/VBHN-BTNMT dated October 25, 2019, on the management of wastes and scraps
- Decree 08/2022/ND-CP on Providing Strategic Environmental Assessment, Environmental Impact Assessment and Environmental Protection Commitment
- Decree No.38/2015/ND-CP on the management of wastes and scraps

UNDP Social and Environmental Standards (SES)

UNDP's Social and Environmental Standards (SES) underpin the commitment to mainstream social and environmental sustainability in our programmes and projects to support sustainable development. The SES objectives are to:

- Strengthen the quality of programming by ensuring a principled approach
- Maximize social and environmental opportunities and benefits
- Avoid adverse impacts to people and the environment
- Minimize, mitigate, and manage adverse impacts where avoidance is not possible
- Strengthen UNDP and partner capacities for managing social and environmental risks
- Ensure full and effective stakeholder engagement, including through a mechanism to respond to complaints from project-affected people.

The SES are an integral component of UNDP's quality assurance and risk management approach to programming. This includes the project-level Social and Environmental Screening Procedure (SESP). Screening and categorization of projects is one of the key requirements of the Social and Environmental Standards (SES). The key elements of UNDP's Social and Environmental Standards (SES) are shown in the figure below.

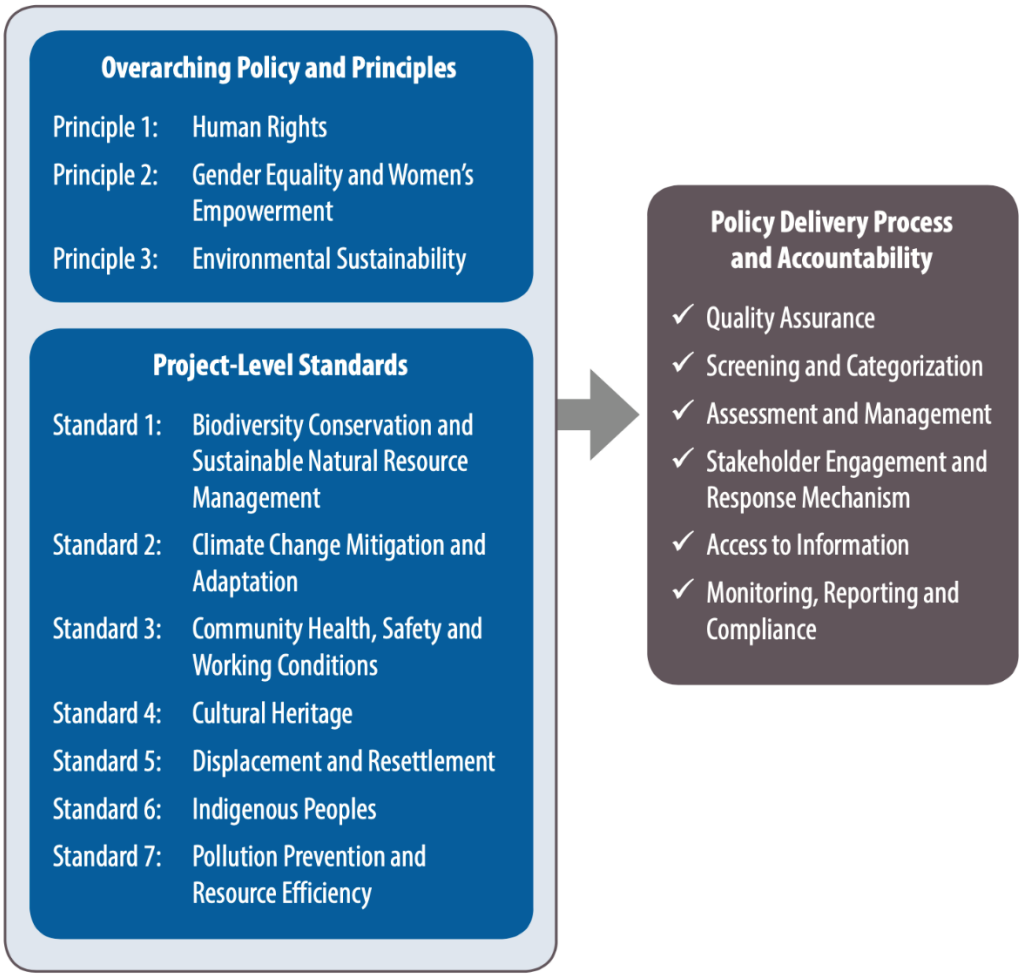


Figure 3 Key elements of UNDP's Social and Environmental Standards (SES), UNDP 2015[3]

The objectives of UNDP's Social and Environmental Screening Procedure (SESP) are to:

- Integrate the SES Programming Principles to maximize social and environmental opportunities and benefits and strengthen social and environmental sustainability.
- Identify potential social and environmental risks and their significance.
- Determine the project's risk category (Low, Moderate, Substantial, High); and,
- Determine the level of social and environmental assessment and management required to address potential risks and impacts.

The project has been screened against UNDP's Social and Environmental Standards Procedure. The impact risk assessment was undertaken using the UNDP Social and Environmental Screening Procedure to assess the probability (expected, highly likely, moderately likely, not likely) and the impact of the risk (critical, severe, moderate, minor, negligible). From this, the project deemed to be a moderate risk (Category B) project. Discussions on the impact assessment are provided in the Social and Environmental

[3] Note, UNDPs SES was updated in 2019, however the SACCR project was approved under the 2015 SES

Screening template and UNDP's SESP, which provided the rationale for the project being classified as a moderate risk.

3 IMPLEMENTATION AND OPERATION

GENERAL MANAGEMENT STRUCTURE AND RESPONSIBILITIES

The national executing entity for this project is the Ministry of Agriculture and Rural Development (MARD). Within MARD, the Central Project Office (CPO) is delegated to coordinate the project.

National implementation responsibility is assigned to a project Central Project Management Unit (CPMU) within the CPO of MARD, while in the provinces, implementation is assigned to the Provincial Project Management Units (PPMUs).

The project organization structure is as shown inFigure 4. This project is arranged as an umbrella project according to ODA management terminology of the Vietnamese government.

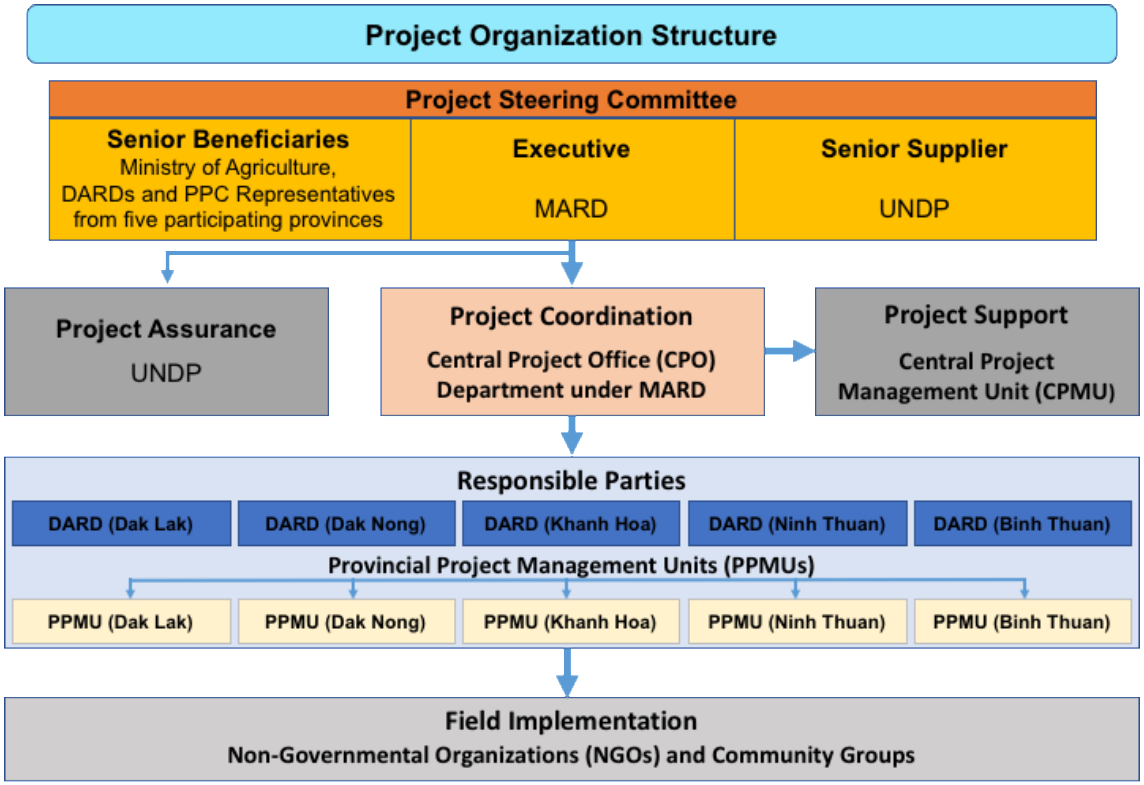


Figure 4 Project organisation structure

Corresponding to the Project management structure, the organizing the implementation diagram of the ESMP is shown as follows in Figure 4. The contacts of focal persons in charge of safeguards issues in each organization are stated in Table 2.

Figure 5 is applicable to construction components, showing the implementation arrangements for the ESMP, including the Site Plans and the Construction Contractor's Plans.

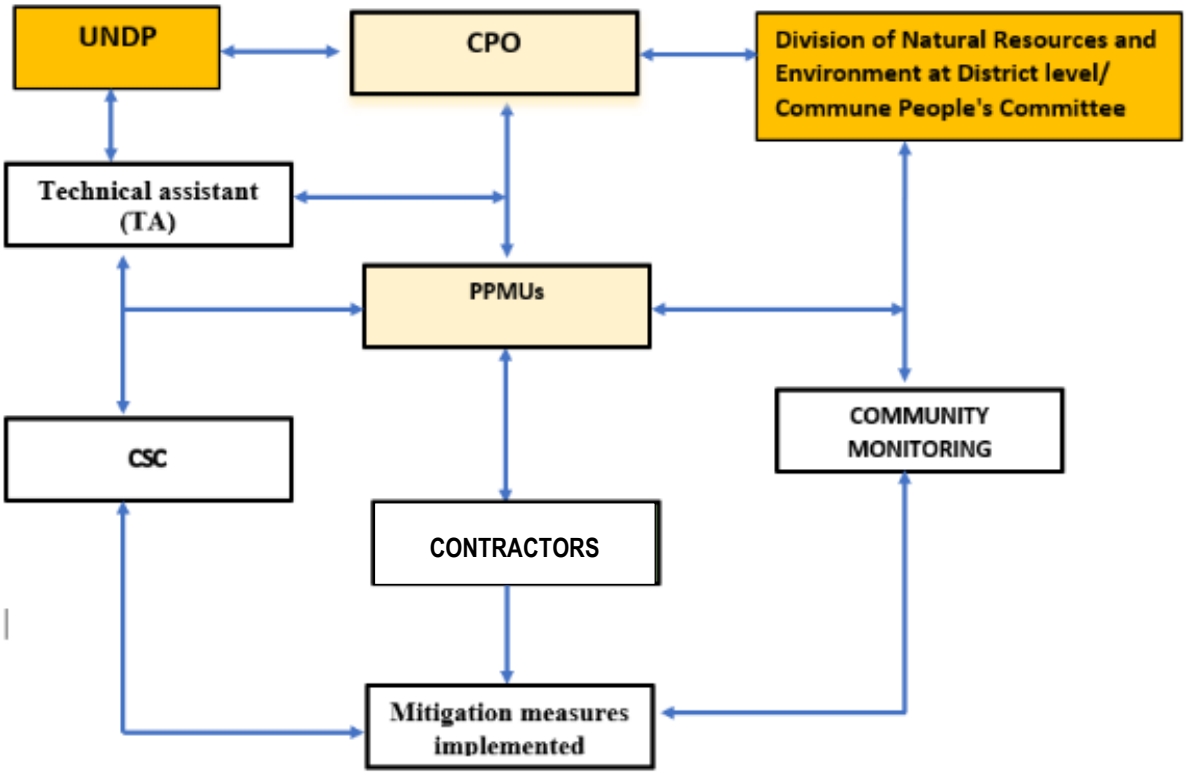


Figure 5: Organizing the implementation diagram of the ESMP

ADMINISTRATION OF THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

Figure 5 provides a structure of implementation of the ESMP. As the implementing agency, MARD is responsible for ensuring the implementation of the ESMF and ESMP via the delivery organisations.

To ensure effective implementation of the ESMP, the following actions will be carried out:

- During the detailed design and preparation of bidding/ contractual documents for each package under Activities 1.2.1 and 1.3.1, the detailed technical design consultant will incorporate the mitigation measures and monitoring responsibilities provided in the ESMP along with any other requirements into the detailed technical designs and standard procurement documents and contractual documents.
- PPMUs will inform the bidders/contractors about the project safeguard requirements and request them to commit to comply. Close monitoring will be ensured from PPMUs.

The responsibilities of relevant stakeholders will be presented as below in 3.2.1.

3.1.1 Responsibilities of Stakeholders

PPMUs will be responsible for monitoring the overall subproject implementation, including environmental compliance of the subproject. PPMUs will have the final responsibility for ESMP implementation and environmental performance of the subproject during the construction and operational phases. Specifically, the PPMU will:

- Closely coordinate with local authorities in the participation of the community during subproject preparation and implementation;
- Monitor and supervise ESMP implementation including incorporation of ESMP into the detailed technical designs and bidding and contractual documents;

- Ensure that an environmental management system is set up and functions properly;
- In charge of reporting on ESMP implementation to the DONRE/Division of Natural Resources and Environment at the District level if relevant and UNDP.

To ensure the effectiveness in the implementation process, PPMUs will assign Environmental and Social Staff (ESS) to help with the environmental aspects of the subproject – the contacts of these staff/officers can be found in Table 2. The ESS are responsible for monitoring the implementation of this ESMP and Site Plans. The necessity of Site Plans will be determined by the site screening. The procedure to develop Site Plans and ensure compliance of contractors is set out in Section 1.2.4.

From the **Contractor's** side, based on the approved environmental specifications (ECOP) in the bidding and contractual documents, the Contractor is responsible for establishing a Contractor's Plan for each construction site area, submitting the plan to PPMUs and CSC for review and approval before commencement of construction. In addition, it is required that the Contractor get all permissions for construction (traffic control and diversion, excavation, labour safety, etc. before civil works) following current regulations.

The Construction Supervision Consultant (CSC) and the ESS will be assigned by the contractors and responsible for routine supervising and monitoring all construction activities and for ensuring that Contractors comply with the requirements of the contracts and the ECOP. For more details, The CSC will engage sufficient 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 and additionally assist the PPMU in reporting and maintaining close coordination with the local community. The ESS will be responsible for carrying out Environmental and Social mitigation measures proposed in the ESMP.

The Contractor is also required to appoint a competent individual as the Contractor's on-site Safety and Environment Officer (SEO), who will be responsible for ensuring the contractor's compliance with health and safety requirements, the ESMP requirements, and the environmental specifications (ECOP). The SEO has these following responsibilities:

- Take actions to mitigate all potential negative impacts in line with the objective described in the ESMP.
- Actively communicate with local residents and take actions to prevent disturbance during construction.
- 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 communities: According to Vietnamese practices, 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 PPMUs.

Provincial People's Committees, DONRE, and **District People's Committees**: Oversee implementation of subproject under recommendations of DONRE/ Division of Natural Resources and Environment at the District level and PPMUs to ensure compliance of Government policy and regulations. The Division of Natural Resources and Environment at the District level is responsible for monitoring the compliance with the Government environmental requirements.

3.1.2 Site Plans

As operational documents, Site Plans will be developed by the ESS of the PPMU based on the requirements of this ESMP. The Site Plans will contain the necessary detail to be site or activity-

specific and are required to be followed for all construction works; this will be specified in the bidding documents and contractual documents for construction works.

Site/activity specific plans at commune level will be prepared containing information about outcomes of screening process, socio-economic information of the sites, the presence of ethnic minorities and associated risks, the presence of protected sites, outcomes of public consultation, locations of construction works and related risks and relevant mitigation measures. The site plan template is provided in Appendix 2, together with an example of a site plan.

3.1.3 Construction Contractor's Plans

As operational documents, Construction Contractor's Plans will be developed by the Construction Contractor based on the requirements of this ESMP and as directed by the ESS. The Contractor's Plans will contain the necessary details to be site or activity-specific and are required to be followed for all construction works; this will be specified in the bidding documents and contracts for construction works. The requirements for the Construction Contractor's Plan will be included in the bidding documents, bid evaluation process, and contracts signed with the Contractors.

3.1.4 Environmental incident reporting

Any incidents, including non-conformances to the procedures of the ESMP are to be recorded using an Incident Record and the details entered into a register. For any incident that causes or has the potential to cause material or serious environmental harm, the SEO shall notify the Project Manager as soon as possible. The delivery organisation/contractor must cease work until remediation has been completed as per the approval of PPMU.

3.1.5 Daily and weekly environmental inspection checklists

A daily environmental checklist is to be completed at each work site by the relevant SEO and maintained within a register. A weekly environmental checklist is to be completed and will include reference to any issues identified in the daily checklists completed by the SEOs. The completed checklist is to be forwarded to PPMU/DARD for review and follow-up if any issues are identified.

3.1.6 Corrective Actions

Any non-conformances to the ESMP are to be noted in weekly environmental inspections and logged into the register. Depending on the severity of the non- conformance, the SEO may specify a corrective action on the weekly site inspection report. The progress of all corrective actions will be tracked using the register. Any non-conformances and the issue of corrective actions are to be advised to PPMU/DARD.

3.1.7 Review and auditing

The ESMP is a living document and will be subject to regular review and update due to:

- Significant change of the project, such as a change to the organisational structure or local context;
- Changes to environmental conditions or generally accepted environmental practices;
- New or previously unidentified environmental risks are identified;
- Information from the project monitoring and surveillance methods indicate that current control measures require amendment to be effective;
- Changes to environmental legislation that are relevant to the project; or
- A request made by a relevant regulatory authority;

Any changes are to be developed and implemented in consultation with UNDP Staff and Division of Natural Resources and Environment at the District level.

When an update is made, all site personnel are to be made aware of the revision as soon as possible e.g. through a toolbox meeting or written notification.

Ongoing ESMP management for the duration of the programme will require environmental and social policy manager as well as environmental and social safety consultant to support integrated vertical management of ESMP activities and to ensure they continue to be aligned with programme goals and activities that may change as programme begins. ESMP documents will be reviewed on an annual basis or in the aforementioned events.

3.1.8 Monitoring, evaluation and reporting

3.1.8.1 Monitoring of compliance with mitigation measures

Daily monitoring will be carried out under the coordination of the environmental team formed by the Contractor.

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.

All the work method statements shall be submitted by the Contractor to the CSC and PPMUs for approval to confirm that sufficient environmental protection and pollution control measures have been included. The CSC and PPMUs 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. The SEO will complete this simultaneously with the safeguards checklist.

Monitoring activities includes:

- Compliance monitoring
    - Where all safeguard requirements are met according to safeguard policy statements;
    - Develop and update checklist of lead information and data to acquire during implementation;
- Quality monitoring is required
    - To assess the adequacy, suitability, effectiveness and efficiency of ESMP implementation;
    - Include monitoring variables;

Compliance monitoring will be done regularly by PPMU and its construction supervision consultant (CSC). PPMU and its CSC will be responsible for daily monitoring contractor's compliance with agreed mitigation measures. Results will be reflected in the monthly progress reports.

Local authority and community will be undertaking the monitoring task in accordance with the GoV's regulations, i.e. Decree No. 84/2015 / ND-CP - Regulation on community's investment monitoring. In addition, contractors' SEO will be responsible for daily monitoring labour safety and environmental hygiene on site and reporting to PPMU and CSC.

Detailed monitoring plans will be prepared during design phase.

Any incident detected during these inspections will be recorded and reported monthly. The CPO and UNDP will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc. Sufficient detail will be provided regarding the incident or accident, indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the GCF/UNDP policies. All events and nonconformities will be reported according to the project standards as described in the ESMP.

The monitoring plans during construction works are presented as below:

Table 5 Environmental Monitoring Plan during construction phase

Environment	Location	Frequency	Parameters to be monitored	Applicable National technical regulations
Monitoring of erosion, subsidence, cracking	All construction sites	During construction	Monitoring excavation and backfilling locations	Decree No. 15/2013/ND-CP on quality management of construction works
Monitoring of an environmental incident/risk	All construction sites	During construction	The event of an environmental incident (i.e. should there be accidental discharge of sewage to a water course to an aquifer)	Circular No. 04/2017/TT-BXD dated March 30, 2017 of the Ministry of Construction providing regulations on occupational safety management in construction work. Circular 08/2017/TT-BXD on construction waste management

Table 6: Social monitoring plan during construction

No	Form	Site	Frequency	Basis
Health monitoring				
1	Environmental hygiene	Construction site • Worker camping area • Material mobilization areas	Daily	• Quantity and conditions of cleaning tools • First aid box • Medical works • Number of infectious and contamination cases • Communication plan on community health
2	Labour safety	Construction site - Worker camping area	Daily	• PPEs • Safety signs • Number of accidents

The supply of data on environmental monitoring at the construction site by contractors is considered a quantitative assessment tool for environmental quality around the construction site. Since then, construction supervision consultants have requested to add or change the construction methods and mitigation measures to minimize the social and environmental impacts.

3.1.8.2 Reporting arrangements

ESMP reporting requirements are summarized in Table 7.

Table 7 Regular reporting requirements

No	Report Prepared by	Submitted to	Frequency of Reporting
1	Contractor to the Employer	PPMUs	The Contractor is obliged to report (immediately of certain aspects and monthly with respect to a wider range of aspects) to the CSC

No	Report Prepared by	Submitted to	Frequency of Reporting
2	Construction Supervision consultant (CSC)	PPMU	The CSC is required to report (immediately or monthly) to the employer weekly and monthly
3	Community Monitoring	PPMU	When the community has any complaint about the subproject safeguards implementation
4	PPMUs	CPO	PPMU is required to report to CPO every six-month in accordance with Gov's regulations
5	CPO	UNDP	CPO is required to report to UNDP every six-month in accordance with the PIM.

PPMU reports on environmental performance/compliance of the subproject should be included in the progress report submitted to the CPO and UNDP before each subproject implementation support mission and must include sufficient information on:

- Preparation and disclosures of environmental safeguards instruments for sub-projects;
- Incorporation of new subproject ESMPs in the bidding and contractual documents; Monitoring and supervision of ESMP implementation by the contractor, the construction supervision engineer, and the PCs;
- Any challenges in safeguard implementation, solutions, and lessons learned.

TRAINING

Delivery organisations have the responsibility for ensuring systems are in place so that relevant employees, contractors and other workers are aware of the environmental and social requirements for construction, including the ESMP.

All project personnel will attend an induction that covers health, safety, environmental and cultural requirements.

All workers engaged in any activity with the potential to cause serious environmental harm (e.g. handling of hazardous materials) will receive task specific environmental training.

3.1.9 Training programs proposed

Table 8: Training programs for capacity building on environmental supervision and management

I. Type 1	**Provincial Subproject Management Unit (PPMU)**
Training course	Environmental supervision, monitoring and reporting
Participants	Environmental staffs and technical staffs
Training Frequency	Soon after subproject effectiveness but at least 1 month before the construction of the first contract. The follow-up training will be scheduled as needed.
Timing	Four days of training twice a year to be repeated on a yearly basis
Content	General environmental management relating to subproject including requirements of GCF/UNDP, cooperating with relevant enterprises Requirements on environmental supervision; Supervision and implementation of mitigation measures; Community participation in environmental supervision

I. Type 1	**Provincial Subproject Management Unit (PPMU)**
	Guide and supervise contractor, CSC, and community representatives in implementation of environmental supervision. Forms used in environmental supervision; Risk response and control; Other areas to be determined; Receiving approach and submit forms.
Responsibilities	CPO, with support of the Technical Assistance team for the implementation of safeguards
II. Type 2	**CSC, contractor, commune/wards authorities, community representatives**
Training course	Implementation of mitigation measures
Participants	CSC; on-site construction management staffs; environmental staffs of contractor; commune/ward/group authorities
Training frequency	After bidding, update based on requirements
Timing	Three days of training for CSC and contractors and two days of training for other also to be repeated twice a year on an annual basis depending on needs
Content	Overview of environmental monitoring; Requirements of environmental monitoring; Role and responsibilities of contractors and CSC Content and methods of environmental monitoring; Response and risk control; Propagate monitoring forms and guide how to fill in the forms and risk report; Other areas to be determined; Preparation and submission of report
Responsibilities	CPO with support of the Technical Assistance team for the implementation of safeguards
III. Type 3	**Communities and workers**
Training course	OHS
Participants	Representatives of community and/or worker leaders (as appropriate)
Training frequency	As appropriate
Timing	One day presentation and one day on the job training one after working day a year to be repeated on a per needs basis
Content	Preliminary presentation on environmental protection and environmental overview Key issues that require community and workers attention to minimize safety risks (roads, equipment, machines, etc.) as well as reduce pollution (dust, fume gases, oil/grease spill, waste management, etc.) Management of environmental safety and sanitation in work sites and worker camps; Mitigation measures at construction site and work camps; Safety measures on electricity, mechanical, transportation, air pollution; Other areas to be determined; Procedures to deal with emergency situation
Responsibilities	Contractor, PPMU

IMPLEMENTATION ACTION PLAN

The safeguard requirements of this ESMP must be prepared by the contractor and inspected by PPMUs and CPO as a part of bid submission. All documents submitted by the contractor are

appraised in accordance with the subproject requirements are submitted CPO, PPMUs and CSC to ensure that no works are undertaken unless the supervising engineer/supervision consultant is satisfied that the contractor has suitable proposals for managing the E&S risks of the activity in accordance with the project's requirements. Any changes in documents must be accepted by the environmental officer and CSC. Such documents will be regularly reviewed and updated.

Detailed monitoring plans will be prepared during detailed design phase. The cost estimates for monitoring shall be included in the ESMP implementation cost.

A broad schedule for implementation of ESMP activities is shown inTable 9

Table 9 Schedule for implementation of ESMP activities

No	Description	2022		2023				2024				2025			
		III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
I	**1.2.1 activity: Design and construct 3,733 connection and distribution systems including installation and maintenance of irrigation equipment to cope with climate variability (*Construction of connections from WEIDAP infrastructure to farmers fields*)**[4]														
1	Stakeholder engagement														
2	Training														
3	Dust, air emission, noise and vibration control plan														
4	Waste management plan														
5	Traffic management plan														
6	Health and Safety management plan														
7	Monthly report														
8	Semi-annual report														
II	**1.3.1. activity: Construct or upgrade 1,507 climate-resilient ponds (based on site-specific designs construct 849 new ponds and upgrade 658 existing ponds)**[5]														
1	Stakeholder engagement														
2	Training														
3	Dust, air emission, noise and vibration control plan														
4	Waste management plan														
5	Traffic management plan														
6	Health and Safety management plan														
7	Monthly report														
8	Semi-annual report														

COST ESTIMATION

The funding for the ESMP implementation includes:

- salary of the PPMU's safeguard officers and consultants,
- the costs for the Environmental Management Consultant (TA) including environmental quality monitoring,
- the technical assistance cost for training safeguard policy and technical services.
- the costs consulting related stakeholders
- CSC's supervision cost

All costs will be included in the subproject costs. The cost estimate for the ESMP implementation is provided in the following table.

[4] Activity 1.2 will not be applicable to Khanh Hoa in accordance with the approved changes in response to RP FP125-UNDP-13092023-RP
[5] This activity is applicable to all five project provinces, including the two new districts of Khanh Son and Khanh Vinh in Khanh Hoa province.

Table 10: Estimated cost of EMP implementation for the entire subproject

Activities	Funding sources	Estimated costs
a). Mitigation measures by the contractor during construction	Part of a construction contracts	Included in the financial proposal of the contractor
(b). Safeguard monitoring by the contractor during construction	Included in the scope of work and contract value of construction supervision consultants	Included in the financial proposal of the contractor
(c). Safeguard Officer of PPMU during construction and overall project implementation	Part of the project management cost of the subproject	USD 50,000 total costs over the project timeframe per PPMU x 5 PPMUs = USD 250,000
(d). Environmental monitoring for the entire subproject during construction and overall project implementation	Part of the project management cost of the subproject	USD 10,000 total costs over the project timeframe per PPMU x 5 PPMUs = USD 50,000
(e). Technical assistance cost for safeguard policy training and technical services to minimize negative impacts during construction and operations. Training contents include capacity training on environmental protection, training on environmental monitoring, training on occupational safety and environmental safeguard measures and the costs consulting related stakeholders	Included in the scope of work and contract value of TA	USD 70,000
(f) Contingency budget for investigating / resolving issues	Government co-financing for SACCR project	USD 60,000

4 COMMUNICATION

STAKEHOLDER ENGAGEMENT PLAN

The Stakeholder Engagement Plan (SEP) is a separate document that has been prepared to guide communications with the various stakeholders of the project.

Although a separate plan, the SEP is integral to the effective management of environmental and social issues and is therefore referred to regularly throughout this ESMP.

Consultation on the ESMF was conducted in five provinces during August 2017-September 2018 (refer to ESMF). The objective was to inform the local communities, public, key agencies, and local civil society organizations about the objectives and scope of the Project along with safeguards required.

Consultative meetings held during the preparation of this ESMP: the project safeguards team conducted consultation at the commune and community levels on July 2022 and carried out additional consultations in Khanh Son and Khanh Vinh in August 2022 and February 2023 with the aim to consult the local communities on potential environmental and social potential impacts (both positive and adverse) as well as the proposed mitigation measures to be incorporated into the ESMPs. Results suggest that most of the local agencies and local people located at 8 selected communities for consultation fully support the project. The concerns of local communities and mitigation measures if any were well-noted and integrated into this ESMP. There were 125 participants d (70 female) in the consultation at 8 communities (Table 12).

Table 11: Consultative meetings at project communes during the preparation of this ESMP

Province	Time	Communes	Participants	Gender	
				Female	Male
Ninh Thuan	7/7/2022	Xuan Hai	16	14	2
	7/7/2022	Phuoc Thanh	16	8	8
Binh Thuan	8/7/2022	My Thanh	14	7	7
	9/7/2022	Tra Tan	16	7	9
Dak Nong	11/7/2022	Tam Thang	16	9	7
	11/7/2022	Duc Minh	16	8	8
Dak Lak	12/7/2022	Ea Sar	17	7	10
	13/7/2022	Krong Buk	14	10	4
Khanh Hoa	17/8/2022	Khanh Nam	17	10	7
	18/8/2022	Khanh Binh	16	9	7
	15/2/2023	To Hap	17	9	8
	16/2/2023	Ba Cum Nam	15	8	7

Following consultation meeting at communities, a consultative workshop was held with 48 participants at Buon Me Thuot, Dak Lak provinces from 5 provinces Khanh Hoa (including representatives of communities and authorities from Khanh Son and Khanh Vinh), Ninh Thuan, Binh Thuan, Dak Nong, and Dak Lak. The participants comprised eligible beneficiaries, households, representatives of local communities, local authorities, PPMUs and consultants. Following this, further meetings were conducted by PPMU staff in 68 communes during August 2022 – February 2023.

The team presented the environmental and social potential risks of the project, overall draft ESMP, including mitigation measures and implementation plans. The local historical environmental and socialissues were discussed as well to better understand the local context.

The main focus of the public consultation and information disclosure was to provide necessary information for local authorities and communities to understand more about the subproject, potential negative impacts of the subproject implementation and measures to minimize these negative impacts and to ensure the participation of local authorities and people in the project area in the preparation and implementation of the ESMP.

The outcome of the consultation process was that local communities and authorities in all project locations expressed their appreciation for the proposed project, confirmed the relevance and expected benefits of the project interventions, and confirmed their consensus to participate in the project's activities. Community members and authorities in each of the project locations confirmed their understanding of the potential impacts arising from implementation of the project and their consensus to support project implementation. The community consultations also confirmed that no resettlement or compensation are expected to be required as the communities confirmed their full support and voluntary contribution towards the implementation of the project.

Upcoming consultations: The consultation with the affected communities and other stakeholders shall be undertaken continuously during the construction phase. A report of each consultation shall be prepared with attendance records and the signatures of all participants. The future consultations are listed in Table 12.

Table 12: Future consultations

Consultation	Methods	Implementing Responsibilities	Timeline
Consultations with affected communities on project activities, impacts, mitigation measures, GRM, construction schedule and work plan	Open meeting	Contractor, CSC, PPMU, CPO	Design and construction phase
Dissemination of community health and safety precautions and measures with affected communities	Open meeting	Contractor, CSC, PPMU, CPO	Construction phase
Ad hoc meetings on a need basis where substantial changes have been made or conflict has arisen due to accident, misunderstanding or other causes.	Meeting, Focused Group Discussion and In-depth Interview	Contractor, CSC, PPMU, CPO	Construction phase

Grievance Redress Mechanism

The Grievance Redress Mechanism (GRM) established by the project as described in Section 4.2.2 of the ESMF will apply to this ESMP.

5 Environmental and Social Risks

As this project is supported by UNDP in its role as a GCF Accredited Entity, the project has been screened using UNDP's Social and Environmental Standards Procedure. The screening considered both the proposed activities to be undertaken as part of the GCF project and the associated WEIDAP project elements. The project was deemed to have an overall risk rating of "Moderate".

Based on the outcomes of the SESP, an ESMF was prepared, and then updated to reflect changes approved by GCF in response to RP FP125-UNDP-13092023-RP. The updated (ESMF Rev1)[6] identifies a range of risks considered likely. This ESMP builds on the ESMF (Rev1) and includes further assessment of the proposed activities to generate that has been undertaken, and an expanded set of risks and potential mitigations.

[6] Submitted along with the updated ESMP

RISKS AND MITIGATION MEASURES

Table 13 lists the risks identified for the whole project. This table can be used as a reference to assist project team members determine risks that may apply to specific sites. Please note that Activity 1.2.1 will be implemented in four provinces, namely Dak Lak, Dak Nong, Ninh Thuan, and Binh Thuan. It will not be implemented in Khanh Hoa, in accordance with the changes approved by GCF in response to RP FP125-UNDP-13092023-RP.

Activity 1.3.1 will be implemented in all five project provinces, including in the two new districts of Khanh Son and Khanh Vinh in Khanh Hoa province.

Table 13: Potential environmental risks and mitigation measures

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
Output 1: Enhanced water security for agricultural production for vulnerable smallholder farmers in the face of climate-induced rainfall variability and droughts ***1.2.1. Design and construct 3,733 connection and distribution systems including installation and maintenance of irrigation equipment to cope with climate variability***						
Displacement	Disruption to farming during construction Reduced income due to disruption of farming activities during construction	Early engagement with farmers to optimise opportunities for planting and harvest planning to minimise disruptions. Undertake construction in one area before moving to the next. Seek to minimise land required.	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer
Construction impacts – air pollution, noise, waste, community safety	Construction may impact air quality and generate noise. This results mainly from excavation, site grading, vehicle loading and unloading, and other construction-related activities. Potential impacts on ambient air quality would result from odours and gaseous emissions	No burning of waste on site. Construction to be limited to hours of 7am-6pm Machinery to be fitted with required air and noise protection equipment and to be in good working order. Equipment to be sited to minimise impacts on sensitive receptor Earthworks to be confined to times of year when soil moisture is high to minimise dust, wet dirt roads down if necessary. Work force to be issued with appropriate PPE and training. High risk work sites to be fenced to minimise public access.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Groundwater	Potential contamination of groundwater due to construction activities	There should be knowledge dissemination and training programs on appropriate fertilizer and irrigation practices	Operational phase	Moderately likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
	Potential contamination by fertilisers during operation of irrigation areas	Minimize the use of chemical fertilizers				
OHS (Related to WEIDAP project)	Pumping equipment operation – requires high voltage power supply to operate pumps, which has associated safety/health risks.	Pumping stations to be secured from public access. Private operators to be trained in high voltage pumping operations. Operators should be trained in high pressure pump operation.	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
Unexploded ordnance	Unexploded ordnance – poses risk of human injury	Mine clearance to be carried out prior to site handover	Pre-construction	Moderately likely	PPMU	PPMUs, environmental safety policy officer
Erosion / water quality	Erosion and sedimentation – excavation and removal of vegetation will leave ground exposed to erosion and potential deterioration of surface water quality.	Work areas to be limited in extent where possible. Ex. complete small areas before moving to next area. Avoid earthworks when heavy rainfall is expected. Catchment management plan to be developed and implemented	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Ecology	Impacts to ecology by labourers and construction workers Removal or disturbance of natural vegetation, A loss or disturbance to a unique, rare or threatened plant community	Labourers and construction workers will be prohibited from collecting native species at all times during the construction contract.	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
	Lack of O&M can result in failure of schemes	Irrigation management committees (IMCs) to be formed. Build capacity of IMCs. O&M funds to be set up.	Pre-construction	Not Likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
		Designs to consider O&M and seek to minimise cost/requirement.				
Improper design	SCADA facilities may impose incorrect release patterns from reservoirs	Review detailed engineering design work	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
Waste	Construction waste – solid waste will increase during construction e.g. bulk transport and packing waste, waste from construction camps, offcuts and scrap materials,	Undertake construction in one area before moving to the next.	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer
Community OHS risk	Pumping equipment operation – requires high voltage power supply to operate pumps, which has associated safety/heath risks.	Pumping stations to be secured from public access. Private operators to be trained in high voltage pumping operations. Operators should be trained in high pressure pump operation.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Climate change	Drought and flood risk: The most frequent disaster events have been heavy rainfall-induced floods, storms, landslides, heat waves, strong winds and drought Droughts are becoming more severe and are impacting a larger area than before	Apply measures to adapt to climate change	Pre-Construction phase Construction phase Operation phase	Slight	Constructors and beneficiary households	PPMUs, environmental safety policy officer
Social potential risk	Women and ethnic minorities do not have access to information about the project, so they do not know the criteria to register to participate.	Information about the project and the criteria for participating in the project should be disseminated more widely on the loudspeaker	After WEIDAP completed the design of irrigation	Moderate likely	PPMUs, Social Policy Officers carry out the selection of beneficiaries	PPMUs social policy and gender officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
	Percentage of Women and ethnic minorities participating in consultation activities on the design of last mile connectivity do not reach the required gender representation (50% women) because female are not invited for consultation, as localities often only invited men to meetings, and stereotype that men know better than women. A part of women-headed households (the mainstay of the household) of poor and near-poor households with dependents and eligible for last mile connection (with a distance not too far from water supply channels) are not included in the list of beneficiaries. Women-headed households of poor and near-poo and ethnic minority households may lack finance to make a contribution to be able to receive support from connection.	systems of the commune and the villages. Information about the project should also be disseminated in meetings at the village level, include integration in meetings of the villages' women's unions so that more women and EM communities can access the project's information. Select a list of beneficiary households with both husband and wife's names. Then change the way of invitation to the consultation meetings. It should be written, including the full names of the women in the invitation for design consultation. Inform the community on the highest priority of benefits in last mile connectivity for all women-headed households/pillars of poor and near-poor households, and Ethnic Minority households if they qualified connection. Publicize the list of beneficiaries at public places at the Commune People's Committee, (commune cultural house, village cultural house) for 10 days for people in the village to know about these lists. Beneficiary groups can establish principles of mutual support when women's households face difficulties or they may ask the help from	canals in the region.		with the support of commune and village authorities. Technical staff responsible for the design of the last mile connection.	

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
		community associations in their villages.				
Output 1: Enhanced water security for agricultural production for vulnerable smallholder farmers in the face of climate-induced rainfall variability and droughts ***1.3.1. Construct or upgrade 1,507 climate-resilient ponds (based on site-specific designs construct 849 new ponds and upgrade 658 existing ponds)***						
Impact due to waste	Waste generated during construction	Implement dust control measures to ensure that dust generation is minimized and local residents are not inconvenienced, maintaining a safe working environment: Spraying water to wash the dirt roads caused by transportation and travel to construction sites; Covering material storage warehouses (where embankments can be built) Sandy soil and outdoor material gathering locations must be shielded from wind.	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer
Impact due to noise and vibration	Noise and vibration generated during construction	The contractor must be responsible for complying with the provisions of Vietnamese law on the level of noise and vibration generation All vehicles and machinery operating on the construction site must have "Certificate of quality inspection, technical safety and environmental protection" in accordance with Circular 55/2014/ TT-BGTVT; to avoid excessive noise caused by inadequate maintenance of machinery. Minimize transportation or handling of construction materials in	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
		residential areas (e.g. concrete mixing in residential areas) Limit construction activities at night. When necessary, the construction work at night must be planned in detail and the people around must be fully informed so that they can take the necessary measures.				
Impact due to emission of pollutant gases	Vehicles and machinery operating on the construction site must comply with Viet Nam's regulations on emission limits.	The means of transport and machinery and equipment operating on the construction site must have a full registration certificate of quality, technical safety and environmental protection according to Circular 55/2014/TT-BGTVT; Do not burn construction waste and hazardous waste on the construction site	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer
Waste	Construction waste generated during pond excavation	Reuse as embankment material Used as material to fill the field to raise up The Contractor needs to develop a Waste Management Plan during the excavation process	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer
Impact due to water pollution	Uncontrolled domestic wastewater of workers will cause pollution of water sources	The contractor must be responsible for complying with the provisions of Vietnamese law on the discharge of wastewater into the receiving source There must be temporary hygienic toilets at the construction site for construction workers. Waste water from toilets as well as from kitchens,	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
		bathrooms, sinks, etc. must be stored in tanks to be taken out of the construction site; not allowed to discharge directly to any source. Waste water must be treated to the permissible threshold according to relevant technical regulations/regulations of Viet Nam before being discharged into the environment. When completing construction items, water tanks and septic tanks will be carefully filled and sealed to return the site.				
OHS risks to the community	Increased traffic in the project area and around the project area High-risk construction area should be fenced to minimize the number of people accessing	Drivers in the project area should be trained in safety as well as the project terrain.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Ecology	Removal or disturbance of natural vegetation, Loss or disturbance of a unique, rare or threatened plant community, Ecological impact due to worker's and worker's activities Barriers or dams can prevent upstream fish migration	It is necessary to ensure not to harm rare species during construction Workers and construction workers are not allowed to collect native species during implementation/construction of activities. It is necessary to have specific studies and reasonable measures to prevent this phenomenon from happening	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
Impact due to drainage system	Uncontrolled construction waste will clog drainage pipes.	Contractor must ensure that solid waste and hazardous chemicals (if any) do not spill, causing blockages	During construction	Moderately likely	Constructors	PPMUs, environmental

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
		and pollution to the surrounding environment, ensuring the system drainage is always clear				safety policy officer
Impacts caused by domestic waste	Domestic waste of workers who are disposed of indiscriminately outside will cause negative impacts on people's lives	At the workplace, the contractor will arrange containers for small garbage, trash cans and garbage collection facilities. Solid waste can be temporarily gathered on the construction site to a separate area approved by the Construction Supervision Consultant and local authorities before being collected and destroyed. Garbage containers must be covered, covered, protected from rain and sun and not infringed by birds and animals. Do not burn, bury or dump solid waste in the construction site. Under no circumstances should construction contractors dispose of any materials in environmentally sensitive areas such as natural habitat areas or in rivers. The contractor must have a plan to collect construction and domestic waste during construction.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Disruption of utility services	Disruption of agricultural activities during construction Reduced income due to disruption of agricultural activities during construction	Early notification to farmers to optimize planting opportunities and harvest planning to minimize disruption	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
Traffic Safety	Affecting the safety of people participating in traffic	Before construction, it is necessary to consult with local authorities and communities. Significant increase in vehicular traffic must be mentioned in the previously approved construction plan. The routing, especially for heavy vehicles, needs to be calculated to avoid sensitive locations such as schools. The installation of lighting at night must be carried out if necessary to ensure safe circulation. Put up signs around the construction area to help traffic and travel smoothly, with signposts to different parts of the construction and with safety warning signs. Use safe traffic control measures including road/river/river signs and having a flag bearer warn of hazardous conditions. Avoid transporting raw materials and construction materials during peak hours. Place appropriate signs for road routes when necessary.	During construction	Highly Likely	Constructors	PPMUs, environmental safety policy officer
Safety and prevention of fire and explosion	The vehicles and machines used can cause fire and explosion incidents Pulling electricity for living and construction is also the cause of the	Prepare an emergency response plan for fire control. Equip enough fire extinguishers in the construction area.	During construction	Not likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
	incident - In accordance with the law on fire prevention and fighting	Regularly check electrical equipment that is at risk of fire.				
Impact on vegetation cover and ecological resources	Restoration of affected areas after construction	Areas for gathering raw materials and materials, temporarily occupied areas during construction of project works will have to be restored to landscape. and complete infrastructure system It is necessary to agree with the monitoring consultant to determine the location of these temporary areas	Post-construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Safety for workers and community	Traffic volume is higher There is no sign to warn of the depth of the pond, as well as a safety measure of the possibility of life-threatening drowning. Failure to comply with requirements on labour protection, labour safety,	Train employees on labour safety regulations and provide them with full protective clothing according to current regulations of Vietnamese law. Set up protective fences, signages on fences around ponds. Warning people/children of drowning hazards, stop points, put up warning signs/prohibited areas around the construction area to warn the community about potential dangers. Put signs of safety regulations in construction areas. The construction contractor will take measures to ensure safety such as erecting protective barriers, blocking hazard warning, providing lighting system to avoid traffic accidents as well as other dangers to people and sensitive areas.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
Relations with local communities	The bad/sociable relationship between the construction contractor and the local people will lead to unnecessary misunderstandings.	Contractor is responsible for: Informing local authorities and people about the construction progress and implementation plan…. Environmental Code of Practice (Vietnamese version) and other relevant environmental sponsorship documents will be made available to local communities and site workers. Dissemination of project information to affected parties (e.g. local authorities, businesses, affected households, etc.) through meetings with the community before starting the project labour. Provide a point of contact with the community so that stakeholders can receive information from him/her about site activities, project progress and project implementation results. Notice boards will be erected at all construction sites to provide information about the project as well as contact information of site managers, environmental officers, safety officers and health, phone numbers and other information so that affected people can have channels to express their concerns and suggestions.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Procedures for the accidental	During excavation or construction, archaeological sites, sites of historical value, ruins and objects, including	If the Construction Contractor, during excavation or construction, discovers archaeological sites, sites	During construction	Moderately likely	Constructors	PPMUs, environmental

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
discovery of cultural property	grave sites and/or single tombs, have been discovered.	of historical value, ruins and objects, including grave sites and/or single tombs retail, the Contractor will: Stop construction activities at locations with unexpected findings; Zoning the detected place or area; Guard the site to avoid any damage or loss of movable items. In the case of movable antiquities or perishable ruins, a night watchman should be arranged until the local authorities or the Department of Culture and Information arrive to take over. ; Notify the Construction Supervision Consultant for the consultant to notify the local authorities or the central management agency about Viet Nam's Cultural Property (within 24 hours or less); The local or central authorities will be responsible for the protection and preservation of the site before a decision is made on further appropriate procedures. This procedure requires a preliminary assessment of the discovered sites. The significance and significance of these findings should be assessed against different criteria on cultural heritage; These criteria include criteria of aesthetic value, historical value, scientific or research value, economic and social value.				safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
		Decisions on how to handle these findings will be made by the responsible authorities. This decision may include changes to the layout (such as when an immovable but culturally or architecturally important site is discovered), conservation, maintenance, restoration and restore; If cultural sites and/or monuments are of high value and are recommended by experts to be preserved and required by cultural heritage management authorities, the Project Owner will have to make changes to designed to meet those requirements and preserve the site; Decisions on the management of the discovery site shall be made in writing by the relevant authorities; Construction works can only be resumed after permission is given by the local authorities responsible for the protection of the site.				
Procedures for the detection of landmines and explosives left over from the war	Unexploded ordnance that can endanger human life (Example: Unexploded ordnance left in war)	For the ground to carry out the construction of work items that need to be cleared of bombs, mines and explosives, there is a report on the clearance of bombs and mines and explosives at the scene, ensuring that the ground is clean enough for construction.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Prevention of COVID-19	The COVID-19 epidemic in particular and other diseases in general can	The Contractor is responsible for arranging hand washing points at important and convenient locations	During construction	Not likely	Constructors	PPMUs, environmental

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
	cause disadvantages during the construction process	throughout the construction site, including the entrance/exit gates of the construction site, where there are toilets, eating places, or sleeping places, garbage dumps, at shops and commune facilities. Each construction site should have a supply of clean water, soap and paper towels (to dry hands), and trash cans (for used tissues) that are regularly emptied and taken to the disposal facility approved waste (should not just go to landfill). Where hand-washing points cannot be arranged (for example, at construction sites in remote areas), alcohol should be provided to disinfect hands. Contractors should develop specific actions in case workers are at risk of contracting COVID-19 at the construction site, including: Indicate arrangements to bring the worker into a room/area to isolate from others at the site, limit the number of people who come into contact with that person, and contact local health authorities; Identify those at high risk (for example, due to pre-existing medical conditions such as diabetes, heart and lung disease, or advanced age), and measures to support them, but avoiding stigma and discrimination on the job site.				safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
Groundwater	Increased nutrient inflow as well as groundwater pollution due to uncontrolled fertilizer use Irrigation that is not managed properly can lead to over-exploitation of water resources	Apply effective agricultural techniques to use the right amount of fertilizer to avoid the excess impact of fertilizer on surface water and groundwater. Improve and enhance the meteorological monitoring system to forecast and effectively manage water resources Perform a hydrological assessment to determine the flow and flow variations of the water source Enhance existing programs for more climate and water resources information	Post-construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Sustainability	Rainfall is not enough for the water compared to the capacity of the pond The pond size is not suitable for the water demand Operation and Maintenance (O&M) Practices are not adopted or maintained	The detailed design is suitable Implement O&M, train, establish sustainable funding mechanisms	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
	Irrigation can lead to over-abstraction of water if water resource not appropriately managed.	Improve climate monitoring system to enable better forecasting and management of water resources Undertake hydrological assessments to determine flow and intra/inter-annual variations of water resources Upgrade existing schemes to make more water efficient/climate proof	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
OHS (Occupational safety and health)	Community OHS risk - Increased vehicular movement around and within the sites	High risk work sites to be fenced during their operation to minimise public access Training to be given to drivers to ensure understanding of site requirements. Non-conforming drivers to be automatically replaced	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
Erosion / water quality	Erosion and sedimentation – excavation and removal of vegetation will leave ground exposed to erosion and potential deterioration of surface water quality	Sediment and erosion controls to be employed (apply strategies in Section 6) Avoid earthworks when heavy rainfall is expected.	During construction	Moderately likely	Constructors	PPMUs, environmental safety policy officer
Design /sustainability	Rainfall insufficient to adequately fill ponds Pond size inappropriate for water needs	Detailed engineering analysis and design	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
OHS	Construction OHS risks	Training and adoption of OHS practices, implementation of strategies in Section 6	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
	Health and safety risks e.g.: drowning hazard (water storages)	Fence water storages where appropriate				
Sustainability	O&M practices not adopted or sustained	Operationalize O&M, provide training, set up sustainable funding mechanisms	During construction	Not Likely	Constructors	PPMUs, environmental safety policy officer
Climate change	Drought and flood risk: The most frequent disaster events have been heavy rainfall-induced floods, storms, landslides, heat waves, strong winds and drought	Apply measures to adapt to climate change	Pre-Construction phase Construction phase	Slight	Constructors and beneficiary households	PPMUs, environmental safety policy officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
	Droughts are becoming more severe and are impacting a larger area than before		Operation phase			
Social potential risk	The poor and near-poor households are led by women and the number of EM households who do not have access to information to register to participate in the group benefiting the public and private pond support packages. The number of poor and near-poor households headed by women and the number of EM households receiving essential support to access climate change-resistant ponds and lakes is lower than the representation rate specified in the GAP (30% of poor and close poor women who are the breadwinners and 20% of EM households receive essential support). Women invited to consult on pond location and pond design did not meet the required rate of consultation (50% of respondents were women) because they are often considered as not as knowledgeable as men. Conflicts among some households in the community may occur during pond construction, which may affect surrounding/adjacent households. Poor and near-poor women's households are often weak in negotiating with adjacent households if there is a conflict.	Publicize transparent information about the criteria for selecting households to benefit from pond packages at public places (village cultural houses/community houses) so that everyone knows the criteria and registers to participate. Organize public voting, give priority to female breadwinners of poor and near-poor households, and ethnic minority households if the number of eligible people to register is more than the pond quota granted by the project. Contractors strictly adhere to gender norms in organizing consultation activities to identify ponds. For beneficiary households, encourage both husband and wife of beneficiaries to participate in consultation on pond location selection and pond design. if there are problems/conflicts when preparing for pond construction with adjacent households, the breadwinners/EM households can ask the mediator in the community, including village heads. , village heads and CSAT staff of PPMUs to assist in the resolution According to UNDP policy, each province PPMU can coordinate and transfer the criteria for common	Before and during the selection of beneficiaries of the pond support package and during pond construction.	Low	PPMUs Social officers supervise the activities of the CPO-01 contractor on consultation with beneficiaries on pond location selection and pond design.	PPMUs social policy and gender officer

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
	Some communes may not be able to find enough numbers of communal ponds to register as the given indicators because some households are concerned about the status of using common ponds and the amount of money contributed as reciprocal capital when joining the communal pond group. This may affect the proportion of women and ethnic minorities participating in the beneficiaries of the common pond group and the activities associated with the pond groups in the future.	ponds from communes with few groups registered for communal ponds to communes with many groups with high demand in communal pond registration. And the required gender norms are still applied in the communes that receive the supplementary criteria for communal ponds. In case the number of common pond indicators in the provinces is still there and the communes in the province no longer have registered common pond groups, PPMUs should report this information to CPMU and UNDP to take timely corrective measures.				
Health	Risk of vector borne diseases. Open bodies of water, such as ponds, may provide breeding areas for insects such as mosquitos. Vector-borne diseases such as malaria and dengue pose an existing public health risk in these two districts. While the resilient ponds constructed through the project support under Activity 1.3 are not expected to increase the total surface water area of each district to a degree that would change the overall risk profile of the district for vector-borne diseases, they may increase the risk to individual households residing close to a resilient pond.	Provincial Department of Health (DOH) together with district and commune health services are undertaking ongoing control programmes for vector-borne diseases in these two districts, particularly during high-risk periods of the year, including public health risk communications, promoting use of treated bed nets and other preventive methods, and strengthening early detection, response and treatment. The project will coordinate with provincial, district and commune health authorities to inform them about the construction of resilient ponds, for integration into	Pre-Construction phase Construction phase Operation phase	Moderate	Contractors PPMU	PPMU officers

Environmental / Social Aspect	Risk/Impact	Mitigation Strategy	Action timing	Rating of Probability of risk	Responsibility	Monitoring and reporting
		the ongoing prevention and control programmes for vector-borne diseases in the project locations. Information on vector management strategies will be included in the pre-construction training course for pond beneficiaries, and into the Farmer Field School (FFS) training courses for farmers as part of the training on integrated pest management (IPM).				

INDIGENOUS PEOPLES

5.1.1 Application of UNDP SES on indigenous people in the project

As set out in Section 1.3.5 of the ESMF, for the purpose of this ESMP and in all related safeguards documents of the project, the term 'ethnic minority' (EM) is used and can be interpreted to mean 'indigenous people' in reference to project-related items and the Vietnamese context.

5.1.2 Results of consultations in the project locations with EM people and communities

A preliminary assessment survey of 8 selected communes and the workshop on the social safeguard measures in July 2022 and in an additional 4 communes in two new districts of Khanh Son (15-16 February 2023) and Khanh Vinh (17-18 August 2022). These consultations confirmed the significant presence of EM people in the project locations, and that EM are also expected to be direct and indirect beneficiaries alongside other beneficiaries of the project. Many positive anticipated benefits for EM people were identified through the project activities in accordance with the project design and objectives, including increased access to irrigation water resources, benefits from the adoption of advance water efficient irrigation techniques and technologies, and better market linkages and access, and increased capacity for better livelihoods.

Some potential negative impacts in relation to the project activities covered in this ESMP were also identified by EM people during this consultation process. These related to transient impacts during construction, related to dust, noise, waste generation and potential temporary disruption to farming activities.

The results of these preliminary consultations confirmed the need to develop an IPP for the project, based on the significant presence of EM people in the project locations, including as both direct and indirect beneficiaries, and the anticipated positive and negative impacts of the project on EM people.

Following the initial twelve consultation workshops in selected communes, the PPMUs followed up to conduct consultation workshops in all project communes, applying the same approach. The results of the consultation workshops were included in the evidence on FPIC to be documented by the project in conjunction with the IPP. Both the IPP and the evidence of FPIC were furnished to GCF as specified in point 10.02(j) of the FAA.

5.1.3 Control mechanism for ensuring contractor compliance with the IPP

Each PPMU is responsible to ensure that the IPP requirements are incorporated into the civil works bidding and contractual documents for all construction works under Activity 1.2.1 and Activity 1.3.1, ensuring that no contractor commences any construction activity prior to the approval of the IPP, and conducting monitoring of compliance with the IPP during the implementation of construction activities.

6 ENVIRONMENTAL AND SOCIAL MITIGATION STRATEGIES

This section identifies the environmental and social strategies identified for the project and outlines respective management objectives, potential impacts, control activities and the environmental performance criteria against which these indicators will be judged (i.e. audited).

CLIMATE

Both the Central Highlands and South-Central Coast are located in the tropical savanna climate zone but have several local sub-climate zones due to the varied topography: upland or mountainous areas are on average wetter, lowland and coastal areas are drier, and the plateau regions of the Highlands are in between.

The annual rainfall in the Central Highlands ranges from 1400mm to 2000mm. Monthly rainfall is highest from May to October, accounting for about 80 percent of the annual amount. The average monthly rainfall during the rainy season exceeds 200mm and reaches its peak in August and September.

The annual rainfall in the South-Central Coast ranges from 700 to 800mm in the lowlands to 1,300mm in the upland areas, with 90 percent of it provided during the wet season. The northern-most part of the region is one of the wettest in Viet Nam, while the southern part – with Khanh Hoa, Ninh Thuan and Binh Thuan – the driest. Monthly rainfall in the three provinces is highest from May to November. The average monthly rainfall during the rainy season is around 200-350mm and reaches its peak in September-October. Some of the driest areas have six to nine dry months a year, with less than 500mm annual rainfall.

Viet Nam is characterized by a humid subtropical climate with four separate seasons – spring, summer, autumn and winter – in the north, and a tropical savanna climate with only two seasons – dry and wet – in the south. The climate is strongly affected by two monsoons, the North-East ‘winter’ monsoon (December-March) and the South-West ‘summer’ monsoon (June-September), bringing strong winds, enhanced precipitation, and heavy rainfall events.

Climate change impacts brought by the project are slight to occur. However, to ensure adaptation to climate change requires contractors to apply measures that do not emit greenhouse gases.

ECOLOGY

6.1.1 Background

From the results of consultation rounds and desk review, the project's activities will not take place in any protected areas, e.g. national park, natural reserves. The construction works will be implemented mainly on farming land. The degree of disturbance is not significant.

Table 14 List of nearby protected areas in 5 project target areas to project target communes

Khanh Hoa province	**Protected areas nearby**
Khanh Vinh district	
Khanh Vinh town	None
Khanh Binh	None
Khanh Dong	None
Khanh Hiep	None
Khanh Nam	None
Khanh Phu	Hon Ba Nature Reserve
Khanh Thanh	None
Khanh Trung	None
Song Cau	None
Khanh Son district	
To Hap	None
Ba Cum Bac	None
Ba Cum Nam	None
Son Binh	None
Son Hiep	None
Son Lam	None
Son Trung	None
Thanh Son	None
Ninh Thuan province	
Ninh Hai district	
Phuong Hai	None
Xuan Hai	None
Tri Hai	None
Nhon Hai	Nui Chua national park
Ninh Son district	
My Son	None
Nhon Son	None
Thuan Bac district	
Phuoc Chien	None
Phuoc Khang	None
Loi Hai	None
Bac Son	None
Bac Phong	None

Bac Ai district	
Phuoc Tan	None
Phuoc Thang	None
Phuoc Thanh	None
Phuoc Trung	None
Binh Thuan province	
Ham Thuan Nam district	
Thuan Nam town	Ta Kou natural reserve
My Thanh	Nui Ong natural reserve
Ham Can	None
Tan Lap	None
Tan Thanh	Ta Kou natural reserve
Tan Thuan	Ta Kou natural reserve
Duc Linh district	
Tan Ha	None
Dong Ha	None
Tra Tan	None
Dak Lak province	
Ea Hleo district	
Ea DRang	None
Ea Sol	None
Dlie Yang	None
Cu M'Gar district	
Quang Tien	None
Ea Kar district	
Ea So	Ea So natural reserve
Ea Sar	None
Xuan Phu	None
Krong Pac district	
Krong Buk	None
Ea Phe	None
Ea Yong	None
Ea Kenh	None
Dak Nong province	
Cu Jut district	
Ea T'Ling	None
Nam Dong	None
Dak DRong	None
Tam Thang	None
Cu Knia	None
Truc Son	None
Dak Mil district	

Dak Lao	None
Dac Manh	None
Long Son	None
Dak Sak	None
Thuan An	None
Duc Minh	None
Krong No district	
Dak Sor	None
Nam Xuan	None
Dak Dro	None
Nam Nung	None

The project has informed PPMUs and relevant partners that project construction works will not be allowed to be located in protected areas. This will be confirmed during the pond location identification process, beneficiary selection and public consultations with local people and local authorities.

The first set of identified 465 ponds was confirmed by local authorities and PPMUs that these pond locations are not under protected areas.

6.1.1.1 Threatened Species in Viet Nam

The following species appear on the IUCN Red List of Threatened Species[7]:

- Vietnamese Greenfinch (*Chloris monguilloti*) – Least Concern - Carduelis monguilloti is endemic to the Da Lat plateau of south Annam, Viet Nam, where it is locally common.
- Viet Nam Rice Frog (*Microhyla annamensis*) – Vulnerable - This species is known with certainty only between 1,000–2,000 m Asl on the Langbian Plateau in the southern reaches of the Vietnamese Central Highlands (Smith 1923, Poyarkov et al. 2014).
- Viet Nam Sucker Frog (Odorrana chapaensis) – Near Threatened - This species is known from Hekou and Luchun Counties in south Yunnan Province, China (where Zhao and Adler (1993) referred to it under its *Amolops macrorhynchus* synonym), from Sa Pa in extreme northern Viet Nam (Bourret 1942), and from the extreme northern Annamite Mountains (S. Swan pers. comm.) of Viet Nam.
- Viet Nam Fals Bloodsucker (*Psuedocalotes brevipes*) – Least Concern - This species is known from the Tonkin region of northern Viet Nam and from Guangxi, China.
- Vietnamese Flying frog (*Rhacophorus calcaneus*) – near Threatened - This species is known from the Kon Tum Plateau of southern and central Viet Nam, the limestone region of central Lao People's Democratic Republic, and the Annamite Mountain region and Tam Dao (from referred juveniles), northern Viet Nam (Inger et al. 1999, Stuart 1999). It is restricted to undisturbed evergreen rainforest and is generally observed on streamside vegetation.
- Vietnamese Mousedeer (*Tragulus versicolor*) – Data Deficient - There is no information on the current range or population status of T. versicolor because of a lack of appropriate survey work for the species in appropriate areas of Viet Nam.

These endangered species habitats are not located nearby project target area.

6.1.2 Performance Criteria

The following performance criteria are set for the construction of the projects:

[7] The IUCN Red List of Threatened Species. Version 2017-3. http://www.iucnredlist.org accessed 15 May 2018

- No clearance of vegetation outside of the designated clearing boundaries;
- No death to native fauna as a result of clearing activities;
- No deleterious impacts on aquatic environments and terrestrial habitats;
- No introduction of new weed species as a result of construction activities; and
- No increase in existing weed proliferation within or outside of any project footprint because of construction activities.

Monitoring and reporting procedures will ensure early detection of conditions that necessitate particular mitigation measures and will furnish information on the progress and results of mitigation.

Table 15: Flora and Fauna Management Measures

Issue	Control Activity (and Source)	Construction activity	Apply for	Responsibility	Monitoring and Reporting[8]
FF1. Habitat loss and disturbance of fauna	FF1.1 Limit vegetation clearing and minimise habitat disturbance through adequate protection and management of retained vegetation.	pipelines/ponds	1.2.1 and 1.3.1 activities	SEO	Maintain records
	FF1.2: Minimise noise levels and lighting intrusion throughout construction and operation in the vicinity of any sensitive locations.	pipelines/ponds	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	FF1.3: Ensure that all site personnel are made aware of sensitive fauna/habitat areas and the requirements for the protection of these areas.	pipelines/ponds	1.2.1 and 1.3.1 activities	Contractor	Maintain records
	FF1.4 Minimise disturbance to on-site fauna and recover and rescue any injured or orphaned fauna during construction and operation.	pipelines/ponds	1.2.1 and 1.3.1 activities	Contractor	Daily and maintain records, report
	FF1.5. Where threatened species may occur, a threatened species management plan should be prepared (this could be part of a site plan)	pipelines/ponds	1.2.1 and 1.3.1 activities	Contractor	Daily and maintain records, report
FF2. Introduced flora and weed species	FF2.1: Implement an ESCP to reduce the spread of weeds through erosion and sediment entering any waterways and therefore spreading.	Pre and during construction	1.3.1 activity	Contractor	Maintain records
	FF2.2: Revegetate disturbed areas using native and locally endemic species that have high habitat value.	pipelines/ponds	1.2.1 and 1.3.1 activities	SEO	As required and maintain records
	FF2.3: Minimise disturbance to mature remnant vegetation, particularly canopy trees.	pipelines/ponds	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	FF2.4: Seed is to be weed free	Operation	1.2.1 and 1.3.1 activities	SEO	Maintain records
	FF2.5: Monitoring of weeds within the construction footprint		1.2.1 and 1.3.1 activities		
	FF2.6: Environmental weeds and noxious weeds within the project footprints shall be controlled.	pipelines/ponds	1.2.1 and 1.3.1 activities	SEO	Weekly and maintain records

[8] Note: The DARD must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded

GROUNDWATER

6.1.3 Background

The groundwater resources in Viet Nam are abundant – with the total potential exploitable reserves of the country's aquifers estimated at nearly 60 billion m^3 per year. The availability varies from abundant resources in the Mekong River Delta to somewhat limited resources in the North Central Region. In the Central Highlands groundwater is exploited heavily for irrigation of cash crops resulting in shortages of water in parts of this region[9].

The project will utilize surface water, harvested, and stored in dams and reservoirs, to then be distributed via the project pipelines. Groundwater will not be used as part of the project; in fact, the project aims to reduce reliance by farmers on groundwater.

Potential impacts to groundwater are from contamination as a result of construction activities e.g. spills or sedimentation, or contamination during operation e.g. fuel/oil spills or excessive fertilizer application.

6.1.4 Performance Criteria

The following performance criteria are set for the project:

- No significant decrease in the quality and quantity of groundwater as a result of construction and operational activities in proximity to the projects;
- Effective implementation of site-specific Erosion, Drainage and Sediment Control Plan (EDSCP) and other measures to protect groundwater.

By following the management measures set out in the ESMP the project will not have a significant impact on water quality across the broader area.

[9] http://www.wepa-db.net/policies/state/vietnam/groundwater.htm

Table 16: Groundwater management measures

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting[10]
GW 1: Increase of gross pollutants, hydrocarbons, metals and other chemical pollutants into the groundwater and/or surface water environment.	GW1.1: Conduct regular surface and groundwater quality monitoring in location where the groundwater is likely to be impacted, including assessing the changes to groundwater quality.	Construction and operation phase	1.2.1 and 1.3.1 activities	SEO	Weekly and as required with reporting to DARD and UNDP
	GW1.2: Prevent contaminated surface water from entering aquifers via boreholes and wells - protect from runoff and flooding and keep surrounds clean.	All phases	1.2.1 and 1.3.1 activities	All Personnel	Weekly
	GW1.3: Designated areas for storage of fuels, oils, chemicals, or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	Entire construction and operation phase	1.2.1 and 1.3.1 activities	All Personnel	Weekly with reporting to DARD and UNDP
	GW1.4: Check all vehicles, equipment, and material storage areas daily for possible fuel, oil and chemical leaks. Undertake refuelling at designated places away from water systems.	All phases	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	GW 1.5: Minimise the use of herbicides, pesticides and other chemicals and use only biodegradable herbicides that have minimal impact on water quality and fauna. Use only as per directions	All phases	training	All Personnel	Weekly reporting to DARD and UNDP

[10] Note: The DARD must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded

SURFACE WATER

6.1.5 Background

The project involves the harvesting and storage of water in reservoirs, which is then transferred via canals and pipes to smaller tanks and ponds for distribution to individual farms. The Feasibility Study contains maps of surface water networks, both natural and artificial.

As discussed in Section 5.1, the annual rainfall in the Central Highlands ranges from 1400mm to 2000mm. Monthly rainfall is highest from May to October, accounting for about 80% of the annual amount. The average monthly rainfall during the rainy season exceeds 200mm and reaches its peak in August and September.

The annual rainfall in the South-Central Coast ranges from 700 to 800mm in the lowlands to 1,300mm in the upland areas, with 90% of it provided during the wet season. The northern-most part of the region is one of the wettest in Viet Nam, while the southern part – with Khanh Hoa, Ninh Thuan and Binh Thuan – the driest. Monthly rainfall in the three provinces is highest from May to November. The average monthly rainfall during the rainy season is around 200-350mm and reaches its peak in September-October. Some of the driest areas have six to nine dry months a year, with less than 500mm annual rainfall.

The rainfall patterns vary from area to area. Maps and graphs for rainfall are contained within the Feasibility Study. The severity of rainfall can affect the risk of flooding and erosion, so must therefore be considered in any construction and operation plans.

Having water of a quality that is fit for purpose is important. Water quality can affect plant growth, livestock health, soil quality, farm equipment and domestic use. The quality of a water source is also variable depending upon weather and external inputs.

Evaporation increases the concentrations of salts while a flush of water dilutes salts but may increase sediment and fertilisers, and manure or nutrient runoff.

6.1.6 Performance Criteria

The following performance criteria are set for project:

- No significant decrease in water quality as a result of construction and operational activities;
- Water quality shall conform to any approval conditions stipulated by UNDP, DARD and/or other government departments, or in the absence of such conditions follow ‘no worsening’ methodology; and
- Effective implementation of site-specific EDSCPs.

Table 17: Water Quality Management Measures

Issue	Control activity (and source)	Action timing	Responsibility	Apply for	Monitoring & reporting[11]
W1: Elevated suspended solids and other contaminants in surface water systems.	W1.1: Develop and implement a site-specific Erosion, Drainage and Sediment Control Plan (EDSCP) to address drainage control, sediment and erosion controls and stockpiling of materials including soil during construction of all components of the projects. EDSCP measures to be inspected regularly to ensure all devices are functioning effectively.	Pre Earthworks	SEO	1.2.1 and 1.3.1 activities	Initial set up and then as required with reporting to DARD and UNDP
	W1.2: Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	Entire construction and operation phase	All Personnel	1.2.1 and 1.3.1 activities	Weekly with reporting to DARD and UNDP
	W1.3: Conduct regular surface and groundwater quality monitoring in location where the groundwater is likely to be impacted including assessing the changes to groundwater quality.	Entire construction and operation phase	SEO	1.2.1 and 1.3.1 activities	Weekly and as required with reporting to DARD and UNDP
	W1.4: Schedule works in stages to ensure that disturbed areas are revegetated and stabilised progressively and as soon as practicable after completion of works.	Avoid undertaking bulk earthworks during wet season	SEO and DARD	1.2.1 and 1.3.1 activities	Maintain records
	W1.5: Construction materials will not be stockpiled in proximity to aquatic environment that may allow for release into the environment. Construction equipment will be removed from in proximity to the aquatic environment at the end of each working day or if heavy rainfall is predicted	Entire construction and operation phase	SEO	1.2.1 and 1.3.1 activities	Maintain records

[11] Note: The DARD must be notified immediately in the event of any suspected instances of material or serious environmental harm, or if a determined level with respect to water quality is exceeded

AIR QUALITY

6.1.7 Background

The project areas are predominantly village or rural in character. Existing air quality reflects those environments, with dust being the main air quality nuisance, but smoke and engine emissions can also cause nuisance.

All construction activities have the potential to cause air quality nuisance. Workers involved in construction and operation activities should be familiar with methods minimising the impacts of deleterious air quality and alternative construction procedures as contained in Viet Nam legislation or good international industry practice.

6.1.8 6.5.2 Performance Criteria

The following performance criteria are set for the construction of the projects:

- Release of dust/particle matter must not cause an environmental nuisance;
- Undertake measures at all times to assist in minimizing the air quality impacts associated with construction and operation activities; and
- Corrective action to respond to complaints and/or grievances is to occur within 48 hours.

Table 18: Air Quality Management Measures

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
A.1 Increase in dust levels at sensitive receptors	A1.1: Implement effective dust management measures in all areas during design, construction and operation.	Pre and during construction	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	A1.2: Restrict speeds on roads and access tracks.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A1.3: Manage dust/particulate matter generating activities to ensure that emissions do not cause an environmental nuisance at any sensitive locations	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A1.4: Construction activities should minimise risks associated with climatic events (check forecasts).	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A1.5: Implement scheduling/staging of proposed works to ensure major vegetation disturbance and earthworks are minimised.	Entire construction	1.2.1 and 1.3.1 activities	Contractor	Daily and maintain records
	A1.6: Locate material stockpile areas as far as practicable from sensitive receptors. Cover if appropriate.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A1.7: Source sufficient water of a suitable quality for dust suppression activities complying with any water restrictions.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A1.8: Schedule revegetation activities to ensure optimum survival of vegetation species.	During construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	A1.9: Rubbish receptacles should be covered and located as far as practicable from sensitive locations	During construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
A2. Increase in vehicle / machinery emissions	A2.1 Ensure vehicles/machines are switched off when not in use.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A2.2 Ensure only vehicles required to undertake works are operated onsite.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
	A2.3 Ensure all construction vehicles, plant and machinery are maintained and operated in accordance with design standards and specifications.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A2.4 Develop and implement an induction program for all site personnel, which includes as a minimum an outline of the minimum requirements for environmental management relating to the site.	Pre and during construction	1.2.1 and 1.3.1 activities	Contractor	Daily and maintain records
	A2.5 Locate construction vehicle/plant/equipment storage areas as far as practicable from sensitive locations.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	A2.6 Direct exhaust emissions of mobile plant away from the ground.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records

NOISE AND VIBRATION

6.1.9 6.6.1 Background

All construction and operation activities have the potential to cause noise nuisance. Vibration disturbance to nearby residents and sensitive habitats is likely to be caused through the use of vibrating equipment. Blasting is not required to be undertaken as part of this project.

The use of machinery or introduction of noise generating facilities could have an adverse effect on the environment and residents if not appropriately managed.

Contractors involved in construction activities should be familiar with methods of controlling noisy machines and alternative construction procedures as contained within specific Viet Nam legislation or in its absence, good international industry practice may be used if the legislation has not been enacted.

Potential noise sources during construction and operation may include:

- heavy construction machinery
- power tools and compressors
- delivery vehicles
- pumps
- farm machinery.

6.1.10 6.6.2 Performance Criteria

The following performance criteria are set for the construction of the projects:

- Noise from construction and operational activities must not cause an environmental nuisance at any noise sensitive place;
- Undertake measures at all times to assist in minimising the noise associated with construction activities;
- No damage to off-site property caused by vibration from construction and operation activities; and
- Corrective action to respond to complaints and/or grievances is to occur within 48 hours.

Table 19: Noise and Vibration Management Measures

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
N1: Increased noise levels	N1.1: Select plant and equipment and specific design work practices to ensure that noise emissions are minimised during construction and operation including all pumping equipment.	All phases	1.2.1 and 1.3.1 activities	Contractor	Maintain records
	N1.2: Specific noise reduction devices such as silencers and mufflers shall be installed as appropriate to site plant and equipment.	Pre and during construction	1.2.1 and 1.3.1 activities	Contractor	Maintain records
	N1.3 Minimise the need for and limit the emissions as far as practicable if noise generating construction works are to be carried out outside of the hours: 7am-6pm	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	N1.4: Consultation with nearby residents in advance of construction activities particularly if noise generating construction activities are to be carried out outside of 'daytime' hours: 7am-6pm.	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	N1.5 The use of substitution control strategies shall be implemented, whereby excessive noise generating equipment items onsite are replaced with other alternatives.	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	N1.6 Provide temporary construction noise barriers in the form of solid hoardings where there may be an impact on specific residents.	Construction phase	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	N1.7 All incidents, complaints and non-compliances related to noise shall be reported in accordance with the site incident reporting procedures and summarised in the register.	Construction phase	1.2.1 and 1.3.1 activities	SEO	Maintain records
Issue	**Control activity (and source)**	**Action timing**	**Apply for**	**Responsibility**	**Monitoring & reporting**

N1: Increased noise levels	N1.8 The contractor should conduct employee and operator training to improve awareness of the need to minimise excessive noise in work practices through implementation of measures.	Pre and during construction	1.2.1 and 1.3.1 activities	Contractor	Maintain records
N2. Vibration due to construction	N2.1: Identify properties, structures and habitat locations that will be sensitive to vibration impacts resulting from construction and operation of the project.	Pre and during construction	1.2.1 and 1.3.1 activities	Contractor	Maintain records
	N2.2: Design to give due regard to temporary and permanent mitigation measures for noise and vibration from construction and operational vibration impacts.	Pre-construction	1.2.1 and 1.3.1 activities	Contractor	Maintain records
	N2.3: All incidents, complaints and non-compliances related to vibration shall be reported in accordance with the site incident reporting procedures and summarised in the register.	Construction phase	1.2.1 and 1.3.1 activities	SEO	Maintain records
	N2.4: During construction, standard measure shall be taken to locate and protect underground services from construction and operational vibration impacts.	Construction phase	1.2.1 and 1.3.1 activities	SEO	Maintain records

EROSION, DRAINAGE AND SEDIMENT CONTROL

6.1.11 Background

The sites vary topographically and in soil types. The project is focused on climate resilient farming, including better use of water and soil resource, therefore management of drainage and erosion is important. Interventions need to consider both short and long-term impacts, as well as natural events such as flooding that are beyond the project control.

Risks of erosion exist both during the construction phase and the operation phase.

6.1.12 Topography

The Central Highlands, in terms of topography, forms the eastern part of a series of contiguous plateaus located 500m up to 1,500m above sea level. The plateaus are surrounded by the South Annamite mountain range.

The South-Central Coast region has a complex topography with meandering upland and lowland areas, forests, dunes, and sandy and rocky soils. The highest mountains in the southern part of this region, bordering the Central Highlands, can reach up to 1000m.

The project target areas are generally on the flatter valley floors, with some rained farming occurring along the sloping margins. Steep or excessively rocky areas do not form part of the project.

6.1.13 Soils

Soil erosion depends on several parameters such as type of soil, slope, vegetation, the nature of topography and rainfall intensity. The loss of soil stability and soil erosion can take place due to the removal of vegetation cover, and numerous construction activities. It can cause the loss of soil fertility and induce slope instability. Land preparation for the project could result in blockage or alteration of natural flow paths causing changes in the drainage patterns in the area. Effective and efficient mitigation measures can not only reduce but could improve the conditions over the existing conditions.

Rainfall can have a significant impact on the ability to manage environmental impacts, particularly in terms of managing drainage, erosion and sedimentation. Therefore, activities which involve significant disturbance of soil or operating with drainage lines and waterways should be planned to be undertaken during the driest months. It is also important to ensure that all required erosion and sediment control mechanisms are in place before the onset of the wet season.

Activities that have the potential to cause erosion should be undertaken with the likely weather conditions in mind.

6.1.14 Performance Criteria

The following performance criteria are set for the projects:

- No build-up of sediment in the aquatic environments and/or surface and/or groundwater as a result of construction and operation activities;
- No degradation of water quality on or off site of all projects;
- All water exiting the project site and/or into groundwater systems is to have passed through best practice erosion, drainage and sediment controls; and
- Effective implementation of site-specific EDSCP.

Table 20: Erosion, Drainage and Sediment Control Measures

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities	E1.1: Develop and implement an EDSCP for any surface works, embankments and excavation work, water crossings and stormwater pathways.	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Maintain records
	E1.2: Ensure that erosion and sediment control devices are installed, inspected and maintained as required.	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Maintain records
	E1.3: Schedule/stage works to minimise cleared areas and exposed soils at all times.	Pre and during construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	E1.4: Incorporate the design and location of temporary and permanent EDSC measures for all exposed areas and drainage lines. These shall be implemented prior to pre-construction activities and shall remain onsite during work	Pre and during construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	E1.5: Schedule/stage proposed works to ensure that major vegetation disturbance and earthworks are carried out during periods of lower rainfall and wind speeds.	Pre and during construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	E1.6: Strip and stockpile topsoil for use during revegetation and/or place removed soils back on to agricultural lands.	Pre and during construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	E1.7: Schedule/stage works to minimise the duration of stockpiling topsoil material. Vegetate stockpiles if storage required for long periods.	During construction	1.2.1 and 1.3.1 activities	All Personnel	Maintain records
	E1.8: Locate stockpile areas away from drainage pathways, waterways and sensitive locations.	Pre and during construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
E1: Loss of soil material and sedimentation to the surface and/or groundwater systems from site due to earthwork activities	E1.9: Design stormwater management measures to reduce flow velocities and avoid concentrating runoff.	Pre and during construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	E1.10: Include check dams in drainage lines where necessary to reduce flow velocities and provide some filtration of sediment. Regularly inspect and maintain check dams.	Pre and during construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	E1.11: Mulching shall be used as a form of erosion and sediment control and where used on any slopes (dependent	During construction	1.2.1 and 1.3.1 activities	All Personnel	Maintain records

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
	on-site selection), include extra sediment fencing during high rainfall.				
	E1.12: Bunding shall be used either within watercourses or around sensitive/dangerous goods as necessary.	During construction	1.2.1 and 1.3.1 activities	All Personnel	Maintain records
	E1.13: Grassed buffer strips shall be incorporated where necessary during construction to reduce water velocity.	During construction	1.2.1 and 1.3.1 activities	SEO	Maintain records
	E1.14: Silt fences or similar structures to be installed to protect from increased sediment loads.	During construction	1.2.1 and 1.3.1 activities	Contractors	Maintain records
	E1.15: Excess sediment in all erosion and sediment control structures (e.g. sediment basins, check dams) shall be removed when necessary to allow for adequate holding capacity.	During construction	1.2.1 and 1.3.1 activities	Contractors	Maintain records
E2: Soil Contamination	E2.1: If contamination is uncovered or suspected (outside of the project footprints), undertake a Stage 1 preliminary site contamination investigation. The contractor should cease work if previously unidentified contamination is encountered and activate management procedures and obtain advice/permits/approval (as required).	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	E2.2: Adherence to best practice for the removal and disposal of contaminated soil/ material from site (if required), including contaminated soil within the project footprints.	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	E2.3: Drainage control measures to ensure runoff does not contact contaminated areas (including contaminated material within the project footprints) and is directed/diverted to stable areas for release.	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records
	E2.4: Avoid importing fill that may result in site contamination and lacks accompanying certification/documentation. Where fill is not available through on-site cut, it must be tested in accordance with geotechnical specifications.	Construction phase	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
E3: Disposal of excess soil/silt	E3.4: Spoil should be beneficially reused, e.g. composted, returned to farmland.	Construction and operation phases	1.2.1 and 1.3.1 activities	Contractor / Operator	Maintain records

WASTE MANAGEMENT

6.1.15 Background

As the implementing agency, the DARD advocates good waste management practice. The preferred waste management hierarchy and principles for achieving good waste management is as follows:

1. waste avoidance (avoid using unnecessary material on the projects);
2. waste re-use (re-use material and reduce disposing);
3. waste recycling (recycle material such as cans, bottles, etc.); and
4. waste disposal (all putrescible and/or contaminated waste to be dumped at approved landfills).

The key waste streams generated during construction are likely to include residual sediment and construction wastes such as:

- the excavation wastes unsuitable for reuse during earthworks;
- wastes from construction and drilling equipment maintenance. Various heavy vehicles and construction equipment will be utilised for the duration of the construction phase. Liquid hazardous wastes from cleaning, repairing and maintenance of this equipment may be generated. Likewise, leakage or spillage of fuels/oils within the site needs to be managed and disposed of appropriately;
- non-hazardous liquid wastes will be generated through the use of workers' facilities such as toilets; and
- general wastes including scrap materials and biodegradable wastes.

Key waste streams generated during operations are likely to include:

- excavated sediment (primarily sand silt, which can be used for spreading on suitable areas);
- fertiliser runoff
- animal and plant wastes
- packaging; and
- used oil and machinery parts.

Workers involved in construction and operational activities should be familiar with methods minimizing the impacts of clearing vegetation to minimize the footprint to that essential for the works and rehabilitate disturbed areas. By doing these activities, the projects should minimize the impact of waste generated by the project.

6.1.16 Performance Criteria

The following performance criteria are set for the construction of the projects:

- Waste generation is minimized through the implementation of the waste hierarchy (avoidance, reduce, reuse, recycle);
- No litter will be observed within the project area or surrounds as a result of activities by site personnel;
- No complaints received regarding waste generation and management;
- Any waste from on-site portable sanitary facilities will be sent off site for disposal by a waste licensed contractor; and
- Waste oils will be collected and disposed or recycled off-site.

Table 21: Waste Management Measures

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
WT1: Production of wastes and excessive use of resources	WT1.1: Preference shall be given to materials that can be used to construct the project that would reduce the direct and indirect waste generated.	Pre and during construction	1.2.1 and 1.3.1 activities	Contractor	Maintain records
	WT1.2: Daily waste practices shall be carried out unless these are delegated to the activities of external waste management bodies.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	WT1.3: The use of construction materials shall be optimised and where possible a recycling policy adopted.	During construction	1.2.1 and 1.3.1 activities	SEO	Weekly and maintain records
	WT1.4: Separate waste streams shall be maintained at all times i.e. general domestic waste, construction and contaminated waste. Specific areas on site shall be designated for the temporary management of the various waste streams.	During construction	1.2.1 and 1.3.1 activities	SEO	Weekly and maintain records
	WT1.5: Any contaminated waste shall be disposed of at an approved facility.	During construction	1.2.1 and 1.3.1 activities	SEO	Weekly and maintain records
	WT1.6: Recyclable waste (including oil and some construction waste) shall be collected separately and disposed of correctly.	During construction	1.2.1 and 1.3.1 activities	SEO	Weekly and maintain records
	WT1.7: Waste sites shall be sufficiently covered to ensure that wildlife does not have access.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily
	WT1.8: Disposal of waste shall be carried out in accordance with the Government of Viet Nam requirements.	During construction	1.2.1 and 1.3.1 activities	SEO	Weekly and maintain records
	WT1.9: Fuel and lubricant leakages from vehicles and plant shall be immediately rectified.	During construction	1.2.1 and 1.3.1 activities	Contractor / SEO	Daily and maintain records
WT1: Production of wastes and excessive use of resources	WT1.10: Major maintenance and repairs shall be carried out off-site whenever practicable.	During construction	1.2.1 and 1.3.1 activities	SEO	Weekly and maintain records
	WT1.11: Where possible, fuel and chemical storage and handling shall be undertaken at central fuel and chemical storage facilities, such as petrol stations.	During Construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
	WT1.12: On-site storage of fuel and chemicals shall be kept to a minimum.	During Construction	1.2.1 and 1.3.1 activities	Contractor	Daily, maintain records and report any incidents
	WT1.13: Any waste oils and lubricants are to be collected and transported to recyclers or designated disposal sites as soon as possible.	During Construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	WT1.14: Any dangerous goods stored on site shall be stored in accordance with Vietnamese regulations.	During Construction	1.2.1 and 1.3.1 activities	Contractor	Daily and maintain records

SOCIAL MANAGEMENT

6.1.17 Background

Viet Nam has 54 officially recognized ethnic groups, in which the Kinh ethnicity (the ethnic majority) takes up to 85.3% of the population (TCTK, 2010). The other 53 ethnic groups account for approximately 14.7% of the population. The most populous ethnic groups apart from the Kinh, then the Tay, Thai, Muong, Hmong and Khmer, each account for less than 2% of Viet Nam's population, reflecting the substantial disparity in population sizes between the Kinh ethnic majority and ethnic minority (EM) groups.

In rural areas in Viet Nam, more women (63% of working women) are engaged in agricultural production than men (57% of working men), however women are mainly employed in informal jobs or subsistence agriculture putting them at greater risk from climate and disaster impacts affecting agriculture. A significant proportion of women farmers (45%) are self-employed, and therefore are not eligible to receive social security benefits and lack access to insurance. Women are particularly disproportionally affected by climate change impacts and climate-related disasters which result in scarcity of resources, because they spend additional time collecting water, food and fuel, which are primarily considered to be responsibilities of women.

Unequal access to and control over land and productive assets, training, information, technology, extension services and access to finance can limit women's opportunities and capacity for resilience. Fewer rural women in Viet Nam can access vocational training, extension services, finance, technology, markets, and trader networks (29%) compared to men (40%) and training available to women is often short-term and concentrates on 'traditional' women's skills such as less technical production and processing techniques. Heads of households, who are generally male members, are invited to community meetings where disaster and climate information is shared but information shared in meetings is usually not passed on to women and other family members.

The roles of women may also differ between different ethnic groups. In Kinh households, as well as in EM groups typically residing in northern Viet Nam, the head the household is typically male. In contrast, some EM groups in Viet Nam retain matriarchal social systems, particularly EM groups in the Central Highlands and South-Central Coast regions of Viet Nam, including Austronesian ethnic groups, such as the Cham, Jarai, Ede, Raglai and Chu Ru and Mon-Khmer ethnic groups such as the Banar, K'Ho and Mnong. As a result, decisions that are typically considered to be the responsibility of male household head in Kinh, Tay, Nung, Thai, Muong and Hmong households may be the responsibility of the female household head in other aforementioned EM groups.

Men are mainly responsible for heavier production work, while women spend more time on un-paid domestic work such as taking care children, cooking, cleaning etc. In agricultural production, the intra-household tasks and responsibilities tend to be husbands having responsibility for soil preparation, watering and operating motorized equipment while the wife is responsibility for harvesting. Among younger couples, there is an increasing tendency for sharing housework. However, due to the pervasive influence of conservative traditional culture, many young women continue to be responsible for housework.

The main challenges faced by female farmers relate to their limited ownership of productive assets as well as their restricted access to knowledge, technology, services, and markets. While these constraints are also faced by the male small-scale farmers, they are exacerbated for female farmers.

In focus group discussions, married women report that they only attend agricultural extension training when their husbands are temporarily absent. They also often mention conflicting housework and caring responsibilities as a reason for non-participation.

The project has been designed with the assistance of stakeholders, including women and EM groups, and aims to provide benefits to the broader community. Notwithstanding, as with any project that involves construction, some dissatisfaction can occur, and conflicts may arise. It is

important that potential areas of tension are recognized early, and appropriate actions taken to avoid or minimize conflict.

As noted above, all five target provinces have indigenous ethnic minority populations such as the Cham, Raglai and Chau Ro in the South-Central Coast and the Ede, Jarai (or Giarai), Mnong (or M'Nong), K'Ho and Chu Ru in the Central Highlands. The indigenous ethnic groups live under a matriarchal social system and culture. Other EM groups present in the Central Highlands include the Tay, Nung, Thai, Muong, Hmong and other EM groups who have migrated from northern Viet Nam since the 1980s, either as part of Government-supported internal labour migration or through spontaneous internal migration. These latter groups as well as the Kinh are patriarchal.

While all five target provinces have different ethnic minority groups, their share of the total population is highest in Dak Nong (29%), Ninh Thuan (23.1%) and Dak Lak (19.6%). Ethnic minority poverty is particularly high in remote upland areas and in communes with higher rates of ethnic minority population.

The needs, barriers, priorities, and challenges faced by poor and near-poor smallholder farmers are often exacerbated in ethnic minority groups. The mitigation measures below apply to all stakeholders, but some are more specific to ethnic minorities (as indicated).

6.1.18 Performance Criteria

The following performance criteria are set for the project:

- The community has been provided its free prior informed consent and project elements have been designed with their informed consultation and participation throughout the project;
- All stakeholders are appropriately represented;
- Avoid adverse impacts to local community during construction and operations and where not possible, minimize, restore or compensate for these impacts;
- Cultural heritage is not adversely impacted;
- Community health and safety is protected, and overall well-being benefits derived from the project;
- Complaint and grievance mechanisms are put in place and proactively managed; and
- Long-term social benefits are achieved.

Local stakeholders and community members have a key role to play in the implementation and monitoring of the project.

Consultation with stakeholders will continue. This will help ensure that stakeholders continue to be aware of the project, its progress and any changes in the project. It will also assist in identifying any issues as they arise.

Provincial DARDs will be responsible for advisory support and extensions services to local beneficiaries along with being responsible for distributing material inputs and providing technical training and backstopping in the implementation of programme activities.

Table 22: Social Management Measures

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
SM1: Use of Community Land	SM 1.1: Carry out community consultation on the purpose and benefits of making changes to land use	Pre-construction	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM 1.2: Get community buy-in on any change of land use.	Pre-construction	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM 1.3: Ensure compliance with the Grievance Redress Mechanism process	All phases	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM 1.4: If indigenous rights, lands, territories, or resources might be affected, ensure that FPIC is achieved (implement an IPP)	Pre-construction	1.2.1 and 1.3.1 activities	DARD	Maintain records
SM2: Public nuisance caused by construction/operation activities (e.g. noise, dust etc)	SM 2.1: Carry out community consultation prior to undertaking activities	Pre-construction	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM 2.2: Implement appropriate management plans (refer to Noise, Air, ESCP, and Waste sections of the ESMF)	Construction and operation	1.2.1 and 1.3.1 activities	Site supervisor and DARD	Daily and maintain records
	SM 2.3: Ensure compliance with the Grievance Redress Mechanism process	All phases	1.2.1 and 1.3.1 activities	DARD	Maintain records
SM3: Social Equity	SM3.1 Equitable representation - ensure the representation of EMs in project activities, including empowering them as key resources for project implementation, from designing water system to assessing climate service needs for the EM groups, or facilitating livelihood schemes for targeted beneficiaries.	All phases	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM3.2: Women's groups and the Women's Union actively participate during the detailed design phase to identify routing of pipe alignments and locations of hydrant off takes from the buried pipes.	Pre-construction	1.2.1 and 1.3.1 activities	DARD	Maintain records
SM3: Social Equity	SM3.3: Ensure women account for at least 50% of participants in consultation meetings and sharing information on water allocation/planning framework to prioritize water allocation (particularly where irrigation water is used for domestic/household purposes).	Pre-Construction / Construction	1.2.1 and 1.3.1 activities	DARD	Maintain records / annual reporting

Table 22: Social Management Measures

	SM3.4: Water allocation and planning - Water allocation/planning framework must ensure that male and female headed households in command areas have equal access to water/irrigation scheme whilst recognizing that priority allocation to high valued crops (over rice).	Operation	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM3.5: Community facilitators (being residents of local command area communities) will be involved in disseminating information on water allocation/ planning framework and associated priorities for crops and other activities. Where appropriate, at least 30% of community facilitators shall be ethnic minority people and 30% shall be women.	All phases	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM3.5: Communications, training, and gender materials used for dissemination of information must be suitable with local cultures and languages, particularly for EMs.	All phases	1.2.1 and 1.3.1 activities	DARD / Contractor	Maintain records
	SM3.6: Implement Gender Action Plan and Indigenous Peoples Plan Framework and if triggered, develop IPP and obtain FPIC prior to commencing activities having potential application of UNDP SES on EM.	All phases	1.2.1 and 1.3.1 activities	All personnel	Maintain records
	SM3.7: EMs often have own ways of learning, information sharing and application of knowledge. Provide support and ToT training to the respected people in ethnic groups (elders, nominated heads etc) to enhance learning opportunities for EMs. Establish and facilitate peer-learning groups through exchange and learning visits among EMs, villages and communes.	Design and implementation phase	1.2.1 and 1.3.1 activities	DARD	Training records
SM3: Social Equity	SM3.8: Provide training to extension workers, giving priorities to the workers from the EM groups, then these workers will transfer knowledge and techniques and experiences to larger communities.	Implementation	1.2.1 and 1.3.1 activities	DARD	Maintain records
SM5: Physical and Economic Connectivity	SM5.1: Ensure Women and EM groups as project targeted beneficiaries and highly prioritized in the beneficiaries' selection process.	Design and implementation	1.2.1 and 1.3.1 activities	All personnel	Maintain records / annual review

Table 22: Social Management Measures

	SM5.2: Support establishment of shared interest groups to promote planting of the same crops and share experiences and learning to improve quality and yields, and collectively negotiate prices	Implementation	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM5.3: Introduce collective buying or selling practices, poor, near poor and EM groups to increase purchasing/selling power.	Implementation	1.2.1 and 1.3.1 activities	DARD	Annual review
	SM5.4: Improve access of EMs to affordable credit through coordination with on-going micro-credit schemes established by the National Poverty Reduction Programme, Women's Union, and Farmer Union (#135).	Design and Implementation	1.2.1 and 1.3.1 activities	DARD	Maintain records
SM5: Physical and Economic Connectivity	SM5.5: As part of the livelihood assessment and planning in the project, explore options to promoting for new economic and income generation opportunities.	Design phase	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM5.6: Encourage mainstreaming of green natural based solutions for new livelihood opportunities for youth and women EM generation in combination with the vocational training for EM groups, using their own languages	All phases	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM5.7: Livelihood programme should be designed with focus on high-value and indigenous agriculture commodities. Promote EM knowledge on how to improve post-harvest processing, packaging, and branding of such products.	Design and implementation	1.2.1 and 1.3.1 activities	DARD	Maintain records
	SM5.8: Introduce incentive for private sector partnership to improve market access for EM products.	Implementation	1.2.1 and 1.3.1 activities	DARD	Maintain records

ARCHAEOLOGICAL AND CULTURAL HERITAGE

6.1.19 Background

No archaeological or cultural heritage sites have been reported as part of the feasibility/initial design phase. The project has identified some historical sites considered as officially recognized monuments, as set out in the table below:

Table 23: Historical sites and officially recognized monuments

Province	District	Commune	Historical sites
Khanh Hoa	Khanh Son	To Hap	To Hap revolutionary base
	Khanh Vinh	Khanh Dong	Hon Du revolutionary base
Ninh Thuan	Ninh Hai	Tri Hai	Tri Thuy temple (19th century temple/communal house); Khanh Hoi temple
	Ninh Son	Nhon Son	Dak Nhon temple (18th century temple/communal house)
	Thuan Bac	Bac Phong	Hoa Lai remains (Cham site constructed in the 9th Century AD)
	Bac Ai	Phuoc Thanh	Da Ba Cai ("Three Stones") - a sacred site for the genesis of Raglai people

6.1.19.1 Chance Find procedure:

If any person discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

1. Stop all works in the vicinity of the find, until a solution is found for the preservation of these artefacts, or advice from the relevant authorities is obtained;
2. Immediately notify a foreman. The foreman will then notify the Construction Manager and the Environment Officer (EO)/Environmental Manager (EM);
3. Record details in Incident Report and take photos of the find;
4. 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 take over;
5. Preliminary evaluation of the findings by archaeologists. The archaeologist must make a rapid assessment of the site or find to determine its importance. Based on this assessment the appropriate strategy can be implemented. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage such as aesthetic, historic, scientific or research, social and economic values of the find;

6. Sites of minor significance (such as isolated or unclear features, and isolated finds) should be recorded immediately by the archaeologist, thus causing a minimum disruption to the work schedule of the Contractor. The results of all archaeological work must be reported to the Ministry/Agency, once completed.
7. In case of significant find the responsible Agency/Ministry (Agency for Protection of National Heritage or Archaeological Research Centre, hereinafter referred to as the Heritage team) should be informed immediately and in writing within 7 days from the find (reference: law on heritage protection).
8. The onsite archaeologist provides the Heritage team with photos and other information as relevant for identification and assessment of the significance of heritage items.
9. The Ministry is required to investigate the fact within 2 weeks from the date of notification and provide a response in writing.
10. 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 archaeological importance) conservation, preservation, restoration and salvage;
11. Construction works could resume only after permission is granted from the responsible authorities.
12. In case no response received within the 2 weeks period mentioned above, this is considered as authorization to proceed with suspended construction works. One of the main requirements of the procedure is record keeping. All finds must be registered. Photolog, copies of communication with decision making authorities, conclusions and recommendations/ guidance, and implementation reports are required to be kept.

The project has identified several recognized intangible cultural heritages in the project localities, as follows:

- The Vidhi Atou (Bo Ma) reburial ceremony of the Raglai people in Khanh Hoa province
- The Ceramic Art of the M'nong (Dak Mil District, Dak Nong Province)
- The Mpu Toh Kong coming-of-age ceremony of E De people (Dak Lak and Dak Nong) organized when young people reach 15 years of age
- The Traditional Pottery Making of the Cham people (Ninh Thuan and Binh Thuan).
- Epic song cycles of Ede and Banar peoples

The following measures on intangible cultural heritage will be followed and monitored by the SACCR project:

- Consult and identify intangible cultural heritage in project localities during project inception as well as traditional experience and knowledge particularly on farming activities
- Consult with communities on their traditional experience, knowledge and intangible cultural heritage and measures/actions for ensuring the respect and consideration of cultural heritage in project interventions
- Reach consents with communities on the protocol of respect and consideration of cultural heritageContractors to set up working protocols related to the respect and consideration of cultural values
- Inform the list of these intangible cultural heritage to service providers and contractors
- Organize trainings before commencement of field works on actions required for respect and consideration of cultural values

- Field consultations/event/activities would not be organized during days of local ritual practices/ceremony/festivals
- Use project's GRM to receive feedback on issues related to intangible cultural heritage if any
- Identify farming experience and knowledge of local communities
- Agricultural experts to consult if new CRA model aligned with values and local practices based on consensus

6.1.20 Performance Criteria

The following performance criteria are set for cultural heritage issues related to the project:

- There will be no impact on any important Archaeological, Indigenous and/or Cultural Heritage sites;
- Manage any specific sites of important Archaeological, Indigenous and/or Cultural significance (significant sites);

Table 24: Archaeological and Cultural Heritage

Issue	Control activity (and source)	Action timing	Appy for	Responsibility	Monitoring & reporting
CH1: Damage or disturbance to significant important Archaeological, Indigenous and/or Cultural Heritage during the earth disturbances and land clearing activities	CH1.1: Should any important Archaeological, Indigenous and/or Cultural Heritage sites, immediately cease work within the area that the site has been observed and consult with the relevant Museum/traditional owner groups, UNDP, DARD and archaeologist available for implementation during construction.	Pre and during construction	1.2.1 and 1.3.1 activities	Contractor	Daily, maintain records and immediately notify UNDP and DARD of any find
	Chance Find procedure (see 6.10.1)	Design and Implementation	1.2.1 and 1.3.1 activities	Contractor	Immediately notify UNDP and DARD of any find
Presence of cultural heritage	Confirm that no known Cultural Heritage exists within the project footprint	Design phase	1.2.1 and 1.3.1 activities	Contractor	Immediately notify UNDP and DARD of any find

EMERGENCY MANAGEMENT MEASURES

In the event of actions occurring, which may result in serious health, safety and environmental (catastrophic) damage, emergency response or contingency actions will be implemented as soon as possible to limit the extent of environmental damage.

The delivery organisation will need to incorporate emergency responses into the project complying with the requirements under the Occupational, Health and Safety Policy of the delivery organisation and the relevant Vietnamese legislation, i.e. Circular No. 01/2011/TTLT-BLDTBXH-BYT. Article 121 of the Law on Environmental Protection 2020, and Decree 06/2021/ND-CP on quality management, construction and maintenance of construction works.

6.1.21 Performance Criteria

The following performance criteria are set for the construction of the projects:

- No incident of fire outbreak;
- No failure of water retaining structures;
- No major chemical or fuel spills;
- No preventable industrial or work-related accidents;
- Provide an immediate and effective response to incidents that represent a risk to public health, safety or the environment; and
- Minimise environmental harm due to unforeseen incidents.

Table 25: Emergency Management Measures

Issue	Control activity (and source)	Action timing	Apply for	Responsibility	Monitoring & reporting
E1. Fire and Emergency management and prevention strategies implemented	E1.1: Flammable and combustible liquids bunding/storage areas to be designed in accordance with appropriate international standards	Pre and during construction	1.2.1 and 1.3.1 activities	Contractor	Daily and maintain records
	E1.2: Fire extinguishers are to be available on site	During construction	1.2.1 and 1.3.1 activities	Contractor	Daily and maintain records
	E1.3: No open fires are permitted within the project area	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	E1.4: Communication equipment and emergency protocols to be established prior to commencement of construction activities.	Pre and during construction	1.2.1 and 1.3.1 activities	SEO / Contractor	Maintain records
	E1.5: Train all staff in emergency preparedness and response (cover health and safety at the work site). Coordinate with NDMO.	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	E1.6: Check and replenish First Aid Kits	During construction	1.2.1 and 1.3.1 activities	SEO	Daily and maintain records
	E1.7: Use of Personal Protection Equipment	During construction	1.2.1 and 1.3.1 activities	All Personnel	Daily and maintain records

Appendices

APPENDIX 1. SCREENING CHECKLIST – SESP[12]

The completed Social and Environmental Screening Procedure (SESP) for the overall project is available at: https://pims.undp.org/attachments/6117/215904/1719432/1752789/FP-UNDP-070220-6117-Annex%20VI_a_%20-%20SESP%20_CLEAN_.docx

The SESP also provides a key reference for completion of the Site Plans according to the template provided in Appendix 2 below.

[12] Any additional detailed project specific checklists

APPENDIX 2. SITE / ACTIVITY PLAN TEMPLATE

Site Plan Name:

Date:

Name of Site / Activity:

Location:

1. Details of Proponent

Details of proponent/commune: name, address and contact details

2. Location and scale of project

Province/Commune/Village:

GPS coordinate:

Maps or plans of the location:

3. Land

Legal ownership of land to be used for project, including any title, deed or documentation, or lease or other authorisation described

Any land rights or water rights that may be affected by the proposed project

4. Details of Project

4.1. Nature of project

Brief description of what project is (e.g. pond, pipeline, weir…)

4.2. Components and activities that are needed to complete project

(e.g., construction activities (excavation, building, revegetation, etc.)

4.3. Technical Drawings

Plans, technical drawings or sketches of the project

5. Public Consultation

As per the SEP

6. Environmental and Social Risks Identified

Based on final categories identified in the ESMP, aim is to have a series of check boxes of the different key risk areas that can be rapidly identified and selected to create a sub-set of the risks identified in the ESMP for the whole project.

	Risk Type		**Risk Type**
	Climate/Weather		Spoil
	Habitat loss/disturbance		Waste
	Pest species		Community land
	Groundwater contamination		
	Surface water contamination		
	Dust		
	Machinery Emissions		
	Noise		

	Vibration		
	Erosion		
	Soil Contamination		

Example of a Site Plan

Date: 28 November 2022

Name of Site / Activity: Pond Construction - Phase 1

Location: Phuoc Khang commune, Thuan Bac district, Ninh Thuan Province

1. Details of Proponent

Ninh Thuan Provincial Project Management Unit (PPMUs) was established by the Ninh Thuan Department of Agricultural and Rural Development (DARD) according to Decision No. 376/QD-SNNPTNT dated 27 August 2021 . Ninh Thuan PPMU is designated to be in charge of and manage the SACCR activities in Ninh Thuan province. The PPMU consists of a director, vice-director, accountant, M&E officer, irrigation consultant, agricultural specialist, safeguards officer and procurement officer.

Address: Ninh Thuan SACCR PPMU office, Ninh Thuan DARD, No, 134, 21/8 street, Phan Rang – Thap Cham city, Ninh Thuan province

Contact details: Mr. Nguyen Van Binh – PPMU Director, email nvbinhsonn@gmail.com; Tel 0913197982

The SACCR project in Ninh Thuan is implemented in 15 communes of 4 districts, as follows:

	Ninh Hai district	**Ninh Son district**	**Thuan Bac district**	**Bac Ai district**
Communes	Phuong Hai Xuan Hai Tri Hai Nhon Hai	My Son Nhon Son	Phuoc Chien Phuoc Khang Loi Hai Bac Son Bac Phong	Phuoc Tan Phuoc Thang Phuoc Thanh Phuoc Trung

This Site Plan will focus on pond construction activities in Phuoc Khang commune, Thuan Bac district.

2. Location and scale of the project activities covered in this Site/Activity Plan

Province/Commune/Village: Phuoc Khang commune, Thuan Bac district, Ninh Thuan province

Based on government records and baseline data of the SACCR project, as of 2020, Phuoc Khang commune had 9,020 households, of which 99.3% are ethnic minority people of the Raglai ethnic group. The remainder are from the Kinh ethnic group (the majority group in Viet Nam). The ratio of poor and near poor households is 44.3%. Households in Phuoc Khang primarily rely on agricultural production as their main livelihood activity. The key crops are mango, cashews, grapes, maize, rice and cassava. The total area of Phuoc Khang is 4,686 ha with 0.8% of rice field, 6% of annual crops, 0.7% of perennial crops and the rests are residential area and production forestry land.

The average temperature in this area is 26-28 degrees Celsius. The rainy season typically runs from September until November, with an average annual rainfall of 700 – 800mm. Water scarcity is a big concern for agricultural production. Currently, the irrigation infrastructure in Phuoc Khang is not sufficient to meet the irrigation demand.

Figure 6: Location of Phuoc Khang commune (in green)

Brief information about Raglai people: The Raglai ethnic minority group has a population of more than 146,000 people who have lived mainly in areas above 500 metres in altitude in southern Khanh Hoa province and Ninh Thuan province for many generations. Some Raglai people also live in Binh Thuan and Lam Dong provinces. They are also called Raglay, Krai, Orang Glai, Noa Na and La Vang. Their language belongs to the Malayo-Polynesian Group. Raglai people traditionally follow a matriarchal and matrilocal system, with husbands living with the wife's family and children adopting the mother's family name. For community works, the Po Pa-palay (village elders) often take an important role in community decision making. They have close ties with Cham group in terms of language and customs.

The Raglai live in separated pa-lay (villages) in a high and flat terrain, near the source of water. The traditional stilt houses of the Raglai have no more than one meter between the ground and the house floor. They used to practice shifting cultivation and a nomadic life; however, recently they have moved to permanent settlements with intensive farming practices.

(See further details the description on Raglai people in Section 5.1.1 of the ESMP)

3. Land

Commune authorities prepared the list of beneficiaries according to the criteria set by the project. The total number of direct beneficiaries in Phuoc Khang is 358 households. All of them are Raglai people. 272/358 are poor/near poor households and 7/358 are economically women-headed households. The average size of farmland is 0.6 ha per household. No conflicts in terms of land ownership have been identified. All of the farming land is registered with the commune cadastral office. There are several cases of farming land leases with written agreement between lessor and lessee. In other cases, people have inherited land, but the demarcation has not yet been registered. The list of land holdings was prepared based on information provided by the beneficiaries and was reviewed by the cadastral office of the commune. The list of beneficiaries was posted in Commune People's Committee (CPC) Office and Community Halls for 14 days to receive feedbacks or complaints if any. No feedback or complaints were submitted regarding this publicly posted list of beneficiaries during that period and the final list of beneficiaries was confirmed by Phuoc Khang CPC in Document No. 98/GM-UBND by Phuoc Khang CPC dated 13 September 2022.

In the first phase of pond construction, 4 ponds are planned, with 6 beneficiaries (3 individual ponds and 1 shared pond serving 3 households). The PPMU and the design company conducted a consultation with beneficiaries and obtained written agreements confirming that the beneficiaries agree with the pond designs and no land compensation is required. The locations of the 4 ponds in the first phase have clear land ownership with Land Use Rights Certificates (i.e., Red Books). The commune cadastral office has confirmed that there is no known conflict regarding land ownership in relation to these locations. These ponds locations are not under or adjacent to protected natural area and cultural/historical sites.

The result of public consultation also indicated that the land and water rights of local people will not be affected by the project.

There are no protected areas nearby Phuoc Khang commune (as stated in Table 14 of the ESMP).

4. Details of the project activities covered in this Site/Activity Plan

4.1. Nature of the project activities

The SACCR project will provide a number of interventions in Phuoc Khang commune, including the construction of last mile connection systems and ponds; and training courses for farmers on water use management, soil and biomass management and climate-resilient agricultural (CRA) packages through the establishment and operation of Farmer Field School.

Under the scope of this ESMP (which focuses on construction works), the construction components comprise of:

- SACCR Activity 1.2.1 Last mile connection systems: these items will be constructed in 2024 as it is needed to have precise location and designs of WEIDAP's infrastructure
- SACCR Activity 1.3.1 Ponds: In total 14 ponds are planned to be constructed in Phuoc Khang. As the pond designs should be linked with crops water demands and project's CRA packages, the works are split into two phases: Phase 1 with 4 ponds and Phase 2 with 10 ponds.

The project has confirmed the locations and beneficiaries of the first set of 4 ponds. The designs were made and construction is intended to start in January 2023. The same procedures will be followed for the second phase (10 ponds). The assessment of risks and proposed mitigation measures are made in consideration of social and environmental factors in Phuoc Khang commune and will be applied to all 14 ponds.

List of pond construction beneficiaries in the first phase is presented as below:

#	Household name	Farm land (ha)	# of beneficiaries	Pond type	Pond number	Parameters				F (m2)	Coordinates
						L (m)	B (m)	H (m)	V (m3)		
B	**THUAN BAC district**										
II	**Phuoc Khang commune**										
	Suoi Le hamlet										
1	Chamaléa Sieng	0.5	1	New individual pond	AO-07: (ADR-XM)	18.63	10.53	3.00	1032.75	1143.80	X = 1296710.21 Y = 580753.58
2	Kator Cao	0.5	1	New individual pond	AO-13: (ADR-XM)	14.94	14.94	3.00	1120.50	1028.79	X = 1297416.41 Y = 579907.62
3	Chamalea Quang	0.6	1	New individual pond	AO-14: (ADR-XM)	13.32	13.32	3.00	999.00	977.11	X = 1297390.99 Y = 579850.45
4	**Chamalea Thi Benh**	0.7	3	Upgraded shared pond	AO-03: (ADC-NC)	33.00	33.00	3.00	3,915.00	2,139.82	
	Chamalea Be	0.5									X = 1297353.397
	Chamalea Huan	0.5									Y = 580624.986

All beneficiaries are Raglai people. The ponds are located on lands with clear land ownership. Written agreements with beneficiaries have been completed. There is no case of land acquisition and compensation.

The locations of the 4 ponds are presented below:

Figure 7. Locations of the first set of 4 pond constructions in Phuoc Khang commune

4.2. Components and activities that are needed to complete project

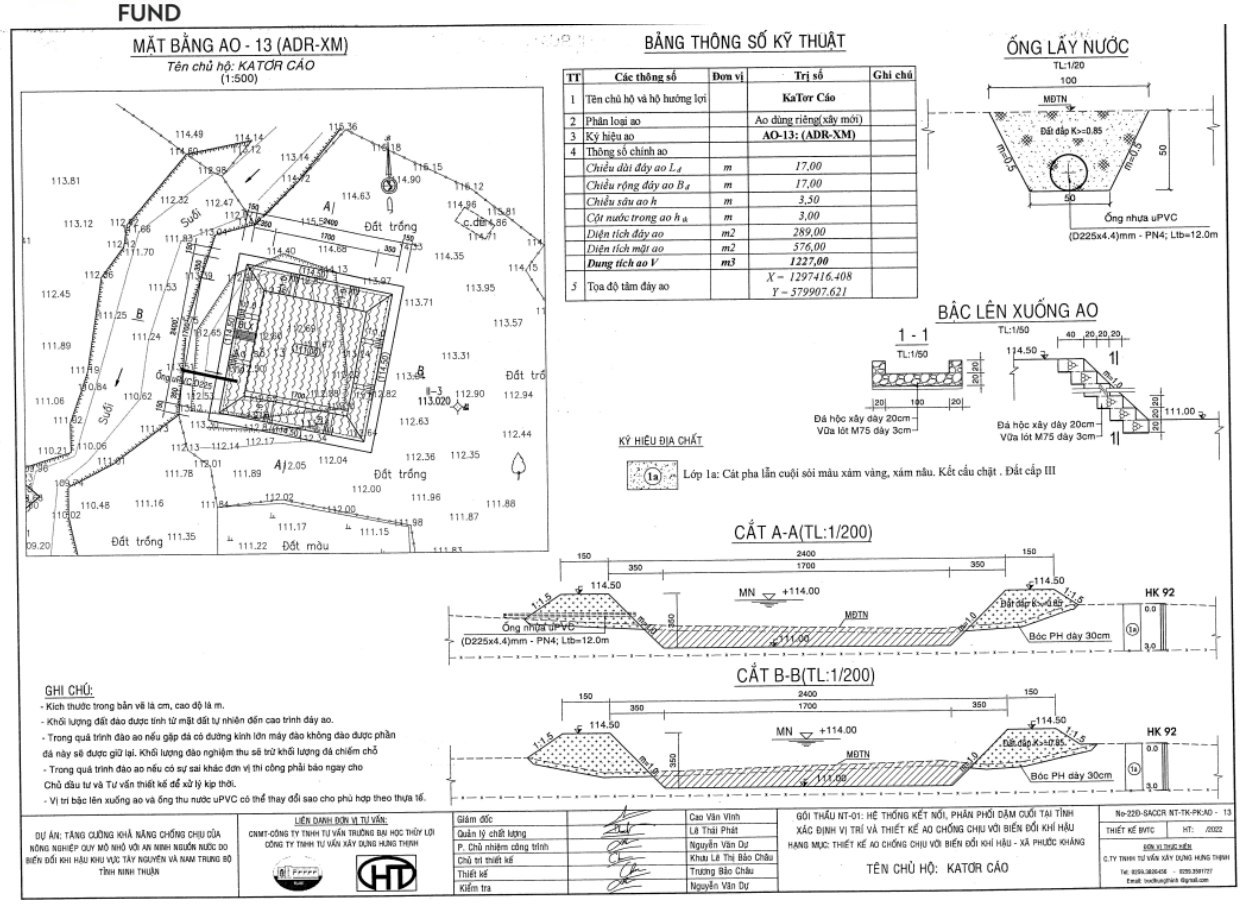
Pond constructions comprises of:

- Land clearing
- Excavation: the excavator will be used where appropriate; in some locations manual excavation will be done if needed.
- Site cleaning

The detailed steps and requirements are provided in the technical design document.

4.3. Technical Drawings

Sample drawing of the pond of Mr. Kator Cao in Phuoc Khang commune, showing the plan drawing of the pond (mặt bằng), cross-sections (cắt A-A, cắt B-B), technical data table (bảng thông số kỹ thuật), water intake pipe (ống lấy nước), and stairs (bậc lên xuống ao).



5. Public Consultation

A consultation meeting was organized in Phuoc Khang commune on 26 Oct 2022 at the Phuoc Khang CPC office with the participation of representatives of the commune authorities including the Chair of the Commune People's Committee, the Chair of the Commune Women's Union, members of the project board, village representatives, and beneficiaries.

Contents of the consultation meeting

A copy of the meeting minutes in Vietnamese is attached, with a full translation to be provided. The following key points summarize the key contents and conclusions of the meeting.

A Raglai-Vietnamese interpreter was arranged for the public consultation meeting to ensure all participants understood the meeting contents and could express their views.

The PPMUs has conducted these following activities:

- Recall and disseminate project's information and activities
- Inform about Grievance Redress Mechanism
- Follow procedures set out in IPPF and relevant UNDP's guidance note on Standard 6 to identify EM risks and propose mitigation measures, assess the needs of IPP development and whether FPIC should be triggered. PPMU staff further consulted on whether project would affect lands, rights, territories and traditional livelihoods of EM groups in place and went through FPIC checklist questions to determine if FPIC needs to be triggered.
- Consult on climate-proof pond designs
- Consult about upcoming project construction phase and requirements to construction contractors
- Consult on whether project activities and construction works operate in protected area and sacred sites

Meeting outcomes:

- Local authorities and beneficiaries fully committed to supporting the project and the activities to be implemented locally, especially the activities to upgrade, renovate and build new ponds in the local area, enabling farmers to develop their agricultural activities and be more productive due to the provision of additional sources of irrigation water, ensuring their ability to harvest high-yield crops.
- The meeting had followed procedures as set out in IPPF by screening the risks to ethnic minorities, assessing whether the risks have substantial impacts on their lands, rights and territories. Participants stated that the project activities in general and the activities of digging, renovating and upgrading ponds have no significant negative social impacts on the ethnic minority communities in the area and their lands, rights and territories. Land holdings in Phuoc Khang are well-demarcated and registered with the commune cadastral office. The ponds are located within individual farming lands. In the case of the shared pond, written agreements were obtained from all members on their commitment, land use and operating mechanism. Three participants stated that they expect the project to accelerate activities and provide trainings on agricultural techniques to farmers to supplement the water use.
- PPMU's staff also went through FPIC checklist questions. As the answers for FPIC checklist questions are No, FPIC process would not be triggered in this case. However, PPMU staff already informed local communities that they have the rights to probe more information about the project and have the rights of withdrawal. The relevant contacts are provided as part of the Grievance Redress Mechanism.
- Participants all agreed that the activities to support pond digging will not generate activities that significantly affect people's houses and land, so there will be absolutely no relocation or resettlement activities. Some participants emphasized that the contractors should ensure that have a plan so that the operation of their vehicles and excavators does not cause any damage to the vegetables and crops of the neighbours' farmlands. Dust should be minimized. The PPMU recorded this and will work with the contractors to integrate these issues into the construction plan. No land compensation/acquisition is required. The PPMU also went through the FPIC checklist. The conclusion is that FPIC will not be triggered. Project activities such as support for digging ponds will have no negative impacts on the commune's religious sites. In addition, the project does not have negative impacts on the cultural traditions of the Raglai ethnic minority community in the commune. On the contrary, the shared ponds and the establishment of water user groups might increase community solidarity.
- Some beneficiaries and local people are not fluent in Vietnamese language. Therefore, all project activities should be accompanied by a local interpreter (as in this public consultation).
- The PPMU and the CPC will work with project staff to try to encourage and involve women in the project's consultation activities, especially the upcoming consultations on pond design as well as other activities as training on water conservation in the future.

Phuoc Khang will receive support for 14 ponds in total. In phase 1, 4 ponds in Suoi Le village will be supported, with 6 beneficiary households. Among these 4 ponds, there are 3 ponds for individual household use and 1 shared pond for 3 households. Local officials and people hope that phase 2 of the pond construction will also be implemented soon so that further households can also benefit.

Beneficiaries are very supportive of the project. Written commitments were made by the beneficiaries (files attached) with commitment that the ponds are constructed in "clean" land with no disputes, the owners will be responsible for operation and maintenance of the ponds. In case of shared ponds, the owners commit to prepare an operation plan and regulations. The instruction on the development of regulations is provided from UNDP to PPMUs with follow-up trainings to ensure that PPMUs are capable to support beneficiaries on operation and maintenance of the shared ponds.

- The size of each ponds is fairly small, and each of the ponds is located at a distance from residential areas and they are not located in or near any sensitive areas. Therefore, any negative impacts on the environment and the local communities from the construction and

upgrading of the ponds will only be temporary and insignificant and can be minimized if managed properly on the basis of an environmental and social protection plan as set out in the SACCR Environmental and Social Management Plan (ESMP).

- All participants in the meeting agreed with the proposed ESMP contents and agreed with the impact reduction measures introduced to minimize the environmental impacts of the project as set out in the draft ESMP mentioned above. In particular, contractors should be required to develop a Waste Management Plan to manage waste generated by digging/dredging ponds.
- Beneficiaries committed to comply with the construction of fences/nets and adding signages to prevent drowning.
- Communities and local authorities are aware of GRM in place.

The contents and agreements on the meeting conclusions were confirmed by the participants.

6. Identified Environmental and Social Risks

Based on the ESMP and technical design document, the identified risks in this location are described below. The detailed actions and management responses to be applied by the contractors will be developed by contractors as part of the bidding process for pond construction:

Risk type	**Specific risks**	**Mitigation measures/Control activities**	**Detailed actions (to be completed by contractors)**
Weather	Occurrence of heavy rain can affect the constructions Increase the number of petrol and oils used for vehicles and excavators	The construction will be planned in dry time and consider weather forecast	
Groundwater		Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	
		Check all vehicles, equipment and material storage areas daily for possible fuel, oil and chemical leaks. Undertake refuelling at designated places away from water systems.	
Surface water	Elevated suspended solids and other contaminants in surface water systems	Designated areas for storage of fuels, oils, chemicals or other hazardous liquids should have compacted impermeable bases and be surrounded by a bund to contain any spillage. Refuelling to be undertaken in areas away from water systems.	
		Schedule works in stages to ensure that disturbed areas are revegetated and stabilised progressively and as soon as practicable after completion of works.	
		Construction materials will not be stockpiled in proximity to aquatic environment that may allow for release into the environment. Construction equipment will be removed from in proximity to the aquatic environment at the end of each working day or if heavy rainfall is predicted	
Air quality	Increase in dust levels at sensitive receptors	Implement scheduling/staging of proposed works to ensure major vegetation disturbance and earthworks are minimised.	
		Locate material stockpile areas as far as practicable from sensitive receptors. Cover if appropriate.	
		Source sufficient water of a suitable quality for dust suppression activities complying with any water restrictions.	
	Increase in vehicle / machinery emissions	Locate construction vehicle/plant/equipment storage areas as far as practicable from	

		sensitive locations.	
		Ensure only vehicles required to undertake works are operated onsite.	
		Ensure all construction vehicles, plant and machinery are maintained and operated in accordance with design standards and specifications.	
Waste	Waste and earth from constructions	Waste Management Plan to indicate the schedules and plans to manage waste and earth excavated	

APPENDIX 3. TEMPLATE OF GRIEVANCE REGISTRATION FORM

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
	Technical / operational coordination		Process delays
	Financial		Noise
	Water quality		Sanitation
	Other (specify)		

Brief description of the grievance:

Does complaint relate to Activity 1.1

What is the perceived cause?

Suggested action (by complainant) to address grievance:

APPENDIX 4. FORM OF PROGRESS REPORT AND MONITORING REPORT

A4.1 Sample monthly progress report of subprojects

Instructions: This form is completed and sent to the Project Manager on a monthly basis. In case this form does not have space, attach additional information as needed.

Monthly progress report:

Sub-project Name:

Code sub-project:

Community:

District:

Progress: (List all components of the subproject/activity and progress up to the reporting date)

Sub-project Name	Description of performance results up to the reporting date	Note
1.		
2.		
3.		

Comments on safety policy issues of the subproject/operations:

(Report only if there is any safety policy issue that requires the support of the Project Manager or safeguard policy officer/consultant).

Problem	Request

A4.2 Project safety policy report template

The form below will be used for the project's six-monthly and yearly safeguard implementation reports. Attach additional information as needed when the following forms are not available.

Progress reports for the period: ……

Owner of subproject/activity: ……

Contents of the report on progress of implementing environmental and social safety policies

No	Contents of the Project (subproject/ activities)	Key environmental and social issues	Implement mitigation measures	Implement and monitor ESMP	Implement training & capacity building program	Lesson learn	Note

APPENDIX 5. KEY CONTACTS

No.	Name	Title	Email	Tel
UNDP				
1	Vũ Thái Trường	SACCR Project Manager	Vu.thai.truong@undp.org	0913082727
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CPO - MARD				
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ADB/WEIDAP				
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2	Mr. Lê Ngọc Thuyết	DARD Expert (Technical)	thuyet44c@gmail.com	0937959729
3	Ms. Nguyễn Thị Kim Dung	Provincial Agricultural Extension Officer (Social and Environmental Safeguards Officer)	skynguyencv@gmail.com	0943763803

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Ninh Thuan Province				
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1	Mr. Đặng Kim Cương	DARD Director	kimcuong171@gmail.com	0913198048
2	Mr. Nguyễn Văn Bính	Head of the Specialized Management Division, DARD and PPMU Director	nvbinhsonn@gmail.com	0913197982
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1	Mr. Phạm Hùng Vỹ	DARD Head of Offfice/PPMU Director		0946387468
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3	Ms. Pham Thị Hồng Tuyến	Planning and Operations Division, DARD (Social Safeguards and Gender Officer)	tuyenapm@gmail.com	0916083337
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3	Mr. Nguyễn Dức Anh	Can bo GSDG, CSAT BQL Dự an	ducanhnguyen.pm@gmail.com	0904466664
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APPENDIX 6. POOR, NEAR POOR AND ETHNIC MINORITY HOUSEHOLDS

TT	PROVINCE, District, Commune	Project formulation phase (2017)			Project implementation phase (2020 - onwards)				
		Total of HHs in 2017	% of poor and near poor HHs in 2017	% Ethnic minority in 2017	Total of HHs in 2020	% of poor and near HHs in 2020	% of Ethnic minorities in 2020	No. of EM HHs	Notes
	TOTAL OF 4 PROVINCES [13]	**117,262 100%**		**37,996 32.4%**	**124,030**		**28.64%**	**35,523**	
II	**NINH THUAN**	**30,980**	**31.30%**	**12,423 40.10%**	**28,930**		**46%**	**13,308**	**Cham, Nung, Raglai**
	Ninh Hai District	**12,909**	**11.20%**	**16.10%**	**11,080**	**8.90%**	**20%**	**2,216**	**Cham, Raglai**
10	Phương Hai	1,783	16.00%	0.00%	1,606	12.10%	0 %	0	No EM
11	Xuan Hai	4,245	8.50%	49.00%	3,539	3.20%	50%	1,770	Cham, Raglai
12	Tri Hai	3,130	11.80%	0.00%	2,442	10.70%	0%	0%	No EM
13	Nhon Hai	3,751	11.60%	0.00%	3,459	29.60%	0%	0%	No EM
	Ninh Son District	**6,534**	**29.70%**	**28.00%**	**6,393**		**30,3%**	**1,940**	**Cham, Nung, Raglai**
14	My Son	2,815	50.10%	30.00%	1,065	N/A	32%	341	Raglai, Nung.
15	Nhon Son	3,719	14.30%	28.00%	5,328	29.60%	30 %	1599	Raglai, Cham
	Thuan Bac District	8,427	50.10%	64.30%	7,955	46.00%	41%	5,920	**Raglai, Cham**
16	Phuoc Chien	1,155	82.30%	96.80%		13.10%	98%		Raglai, Cham
17	Phuoc Khang	614	88.10%	100.00%		44.30%	99.3%		Raglai, Cham
18	Loi Hai	2,974	44.10%	75.50%		71.70%	82%		Raglai. Cham
19	Bac Son	1,983	58.70%	72.50%		70.60%	70%		Raglai, Cham
20	Bac Phong	1,701	15.20%	0.00%		23.60%	0%		No EM
	Bac Ai District	**3,110**	**66.80%**	**99.40%**	**3,502**	**47.10%**	**92%**	**3,223**	**Raglai, Cham**
21	Phuoc Tan	743	72.70%	100.00%	772	9.00%	94%	728	Raglai, Cham
22	Phuoc Thang	944	63.60%	99.10%	1,090	N/A	95%	1,017	Raglai, Cham
23	Phuoc Thanh	853	77.00%	99.60%	964	47.30%	92%	848	Raglai, Cham
24	Phuoc Trung	570	49.00%	99.10%	676	27.80%	94%	630	Raglai, Cham
III	**BINH THUAN**	**17,125**	**9%**	**2,158 12.60%**	**18,907**		**9.71%**	**1,836**	**Cham, Hre, Khmer, Muong, Raglai, Thai**

[13] Data for Khanh Hoa province will be added following completion and acceptance of the Project Restructuring Paper.

TT	PROVINCE, District, Commune	Project formulation phase (2017)			Project implementation phase (2020 - onwards)				
		Total of HHs in 2017	% of poor and near poor HHs in 2017	% Ethnic minority in 2017	Total of HHs in 2020	% of poor and near HHs in 2020	% of Ethnic minorities in 2020	No. of EM HHs	Notes
	Ham Thuan Nam Distr.	**11,627**	**8.20%**	**14.90%**				**1,459**	**Cham, Hre, Khmer, Muong, Raglai, Thai**
25	TT Thuan Nam	3,329	5.20%	99.60%				20	Cham, Muong, Thai
26	My Thanh	227	68.70%	95.00%				255	Raglai
27	Ham Can	891	31.50%	90.00%				801	Raglai
28	Tan Lap	2,187	6.20%	13.00%			8.00%	70	Hre, Muong, Khmer
29	Tan Thuan	3,593	3.50%	7.30%				289	Cham
30	Tan Thanh	1.4	5.90%	14.90%			8.00%	24	
	Duc Linh Distr.	**5,498**	**10.00%**	**95.00%**	**5,621**	**63.60%**	**6.1%**	**377**	K'Ho, Chau Ro
31	Tan Ha	1,402	11.80%	90.00%	1,585	16.30%	**0.32%**	5	Chau Ro
32	Đong Ha	2,029	9.10%	20.00%	2,176	4.50%	**0.82 %**	18	Chau Ro
33	Tra Tan	2,067	9.60%	7.30%	1,860	2.10%	**19.03%**	354	Chau Ro, K'Ho
IV	**DAK LAK**	**29,980**	**21.30%**	**11,740 39.16%**	**33,855**		**21.74 %**	**7,359**	
	Ea Hleo District	**9,405**	**14.00%**	**35.10%**	**11,476**		**33.5 %**	**3,844**	**Dao, Ede, Jarai, Nung, Tay, Thai**
34	EaDRang township	4,372	11.00%	13.00%	5491	9.12%	10.64%	577	Ede, Jarai, Tay, Nung
35	EaSol	2,838	18.60%	57.80%	3530	15.58%	58.30%	2,058	Ede, Jarai, Tay, Thai
36	Dlie Yang	2,195	14.20%	49.60%	2455	9.78%	49.25%	1,209	Ede, Jarai, Dao
	Cu M'Gar District	**1,601**	**12.50%**	**9.40%**	**1,902**		0.26 %	5	Ede
37	Quang Tien	1,601	12.50%	9.40%	1902	7.90%	0.26%	5	Ede. Some out-migration of EM households since 2020.
	Ea Kar District	**4,280**	**39.50%**	**37.60%**	**4,561**		**38.01 %**	**1,735**	Dao, Ede, Hmong, Muong
38	Ea So	889	60.50%	47.20%	906	39.40%	52.10%	472	Tay, Muong, Ede, Hmong, Dao
39	Ea Sar	1,928	48.00%	49.80%	2110	31.56%	49.48%	1,044	Ede, Thai, Tay, Hmong, Nung, Xo Dang
40	Xuan Phu	1,463	15.50%	15.70%	1,545	7.18%	14.17%	219	Tay, Nung, E de, Thai

TT	PROVINCE, District, Commune	Project formulation phase (2017)			Project implementation phase (2020 - onwards)				
		Total of HHs in 2017	% of poor and near poor HHs in 2017	% Ethnic minority in 2017	Total of HHs in 2020	% of poor and near HHs in 2020	% of Ethnic minorities in 2020	No. of EM HHs	Notes
	Krong Pac District	**14,694**	**21.70%**	**45.50%**	**15,916**		**45.1 %**	**7,138**	
41	Krong Buk	3,023	40.80%	51.50%	3274	9.04%	53.21%	1,742	Ede, Tay, Nung
42	Ea Phe	5,152	13.90%	41.40%	5735	7.44%	40.48%	2,322	Ede, Tay, Nung
43	Ea Yong	3,744	17.00%	48.20%	3930	7.44%	47.46%	1,865	Ede, Tay, Nung
44	Ea Kenh	2,775	21.70%	42.80%	2977	12.43%	42.09%	1,253	Ede, Tay, Nung
V	**DAK NONG**	**39,177**	**14.10%**	**11,675 HHs 29.80%**	**42,340**		**30.75%**	**13,020**	**3 Districts and 16 communes**
	Cu Jut District	**16,715**	**17.00%**	**41.60%**	**17,784**		**40.6%**	**7,225**	
45	Ea T'Ling	3,858	19.70%	16.60%	4561	5.20%	17.6%	803	Mnong, Nung, Tay, Thai
46	Nam Dong	4,026	14.50%	29.40%	3909	6.20%	28.1%	1,098	Nung and Tay
47	Dak DRong	3,316	14.90%	84.10%	3541	3.10%	84.4%	2,987	Nung Tay and Hmong
48	Tam Thang	2,928	17.90%	27.70%	3097	6.30%	27.1%	839	Ede
49	Cu Knia	1,835	19.90%	74.50%	1852	5.10%	72.2%	1,337	Nung, Tay, Thai Hmong
50	Truc Son	752	16.10%	21.00%	824	7.30%	19.5%	161	Tay and Nung
	Dak Mil District	**15,925**	**6.40%**	**11.40%**	**1,7687**	**7.70%**	**11.3 %**	**1,992**	
51	Dak Lao	1,981	4.60%	5.70%	2198	7.40%	7.0%	155	Tay and Nung
52	Duc Manh	3,653	3.80%	1.90%	3872	6.50%	2.00%	77	Thai, Dao
53	Long Son	373	26.30%	91.20%	392	7.20%	89.00%	349	Tay, Nung
54	Dak Sak	3,559	9.90%	8.60%	3896	11%	8.00%	312	Mnong
55	Thuan An	2,629	2.90%	26.70%	2939	7.50%	25.50%	750	Mnong
56	Duc Minh	3730	7.10%	7.50%	4390	6.50%	7.50%	329	Mnong
	Krong No District	**6.537**	**25.60%**	**44.50%**	**7,469**	**13.60%**	**44.2%**	**3,303**	
57	Dak Sor	1,124	28.80%	35.30%	1,274	15.10%	34%	433	Tay, Nung
58	Nam Xuan	1,558	27.40%	74.40%	1,822	9.10%	73.9%	1,346	Tay, Nung and Thai
59	Dak Dro	2,186	19.70%	30.80%	2,382	12.20%	29.0%	690	Tay, Mnong
60	Nam Nung	1,669	29.70%	40.70%	1,991	17.80%	41.9%	834	Thai, Hmong

Sources: The ethnic HHs data of Dak Lak and Khanh Hoa are the statistical data in the year 2021

The Ethnic Data of 4 provinces in 2017 are taken from the Feasibility Study report. The Binh Thuan data in 2020 provided by Binh Thuan DARD and Base Line Survey.

TT	PROVINCE, District, Commune	Project formulation phase (2017)			Project implementation phase (2020 - onwards)				
		Total of HHs in 2017	% of poor and near poor HHs in 2017	% Ethnic minority in 2017	Total of HHs in 2020	% of poor and near HHs in 2020	% of Ethnic minorities in 2020	No. of EM HHs	Notes
The Ethnic Data of Khanh Hoa, Ninh Thuan and Dak Lak were 2020 statistics data and updated by the Social Safeguards staff of PPMUs in July 2022									
The Ethnic Data of Dak Nong in 2020 was provided by the Police departments of Krong No, Dal Mil and Cu Jut Districts									

The following table provides updated information in the new districts in Khanh Hoa:

No.	Commune	Total household (2021)	Percentage of poor and near poor households (%)	Percentage of ethnic households (%)	Main ethnic groups
	Khanh Hoa province	**16,152**	**45**	**75**	
I	***Khanh Vinh district***	***9,332***	***51***	***75***	
1	Khanh Vinh town	2,301	25	71	Kinh, Raglai, Hoa
2	Khanh Binh	1,564	46	87	Kinh, Raglai, Khmer, Hoa
3	Khanh Dong	912	31	81	Kinh, Raglai, Khmer, Hoa
4	Khanh Hiep	1,391	69	74	Kinh, Raglai, Khmer, Hoa, Tay
5	Khanh Nam	616	57	79	Kinh, Raglai, Khmer, Chau Ro
6	Khanh Phu	861	73	66	Kinh, Raglai, Khmer, Chau Ro
7	Khanh Thanh	502	79	82	Kinh, Raglai, Khmer, Chau Ro
8	Khanh Trung	811	70	67	Kinh, Raglai, Khmer, Chau Ro
9	Song Cau	374	11	61	Kinh, Raglai, Khmer, Hoa
II	***Khanh Son district***	***6,820***	***75***	***75***	
1	To Hap town	1,398	63	68	Kinh, Raglai, Hoa
2	Thanh Son	1401	79	76	Kinh, Raglai, Khmer, Chau Ro
3	Son Lam	387	64	78	Kinh, Raglai, Khmer, Hoa
4	Son Binh	851	77	81	Kinh, Raglai, Khmer, Hoa, Nung
5	Son Hiep	475	85	66	Kinh, Raglai, Khmer, Chau Ro
6	Son Trung	847	84	75	Kinh, Raglai, Khmer, Hoa
7	Ba Cum Bac	632	75	72	Kinh, Raglai, Khmer, Chau Ro
8	Ba Cum Nam	829	98	85	Kinh, Raglai, Khmer, Hoa, Tay

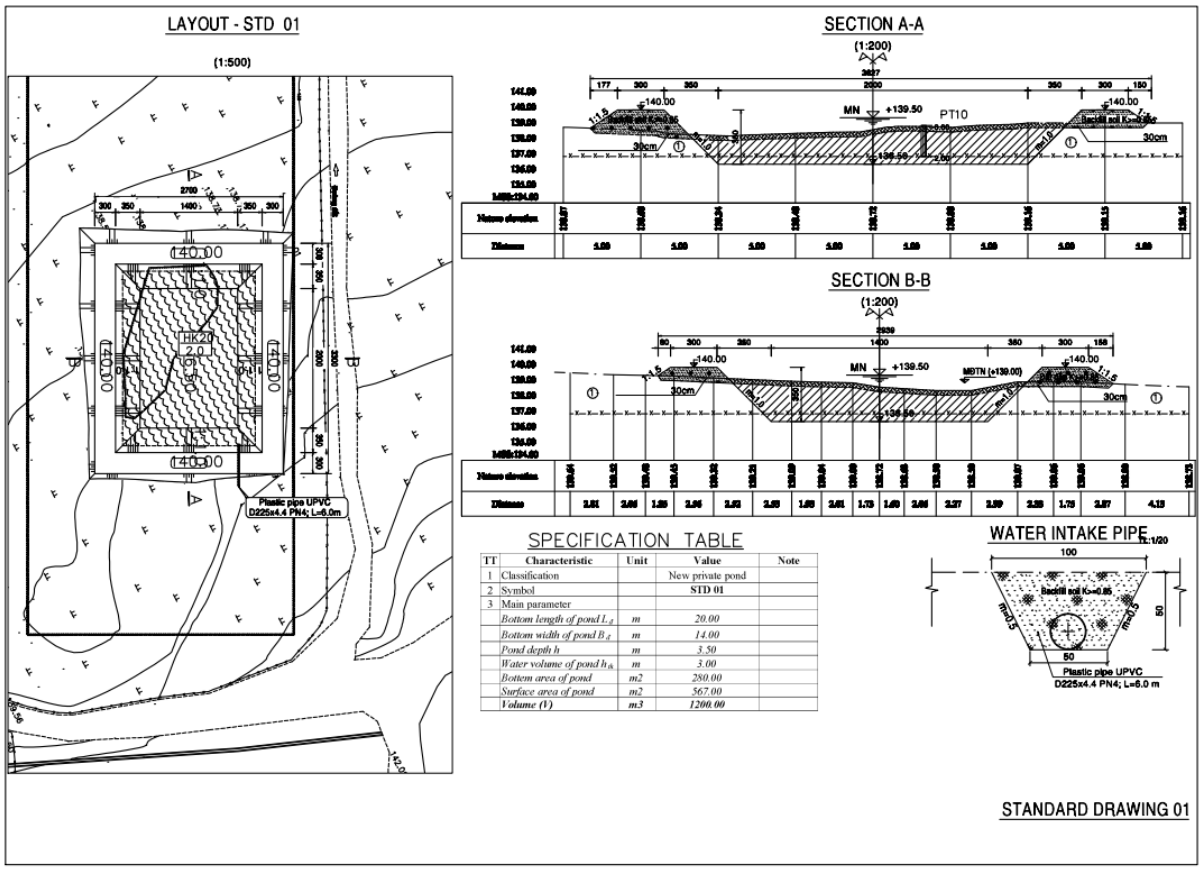
APPENDIX 7. STANDARD TECHNICAL DRAWINGS

This Appendix provides standard technical drawings for construction activities of the SACCR project. These standard technical drawings provide a reference for the detailed designs of individual ponds, including risk identification and mitigation as specified in this ESMP.

Further technical drawings will be added as they are completed in subsequent iterations of the ESMP.

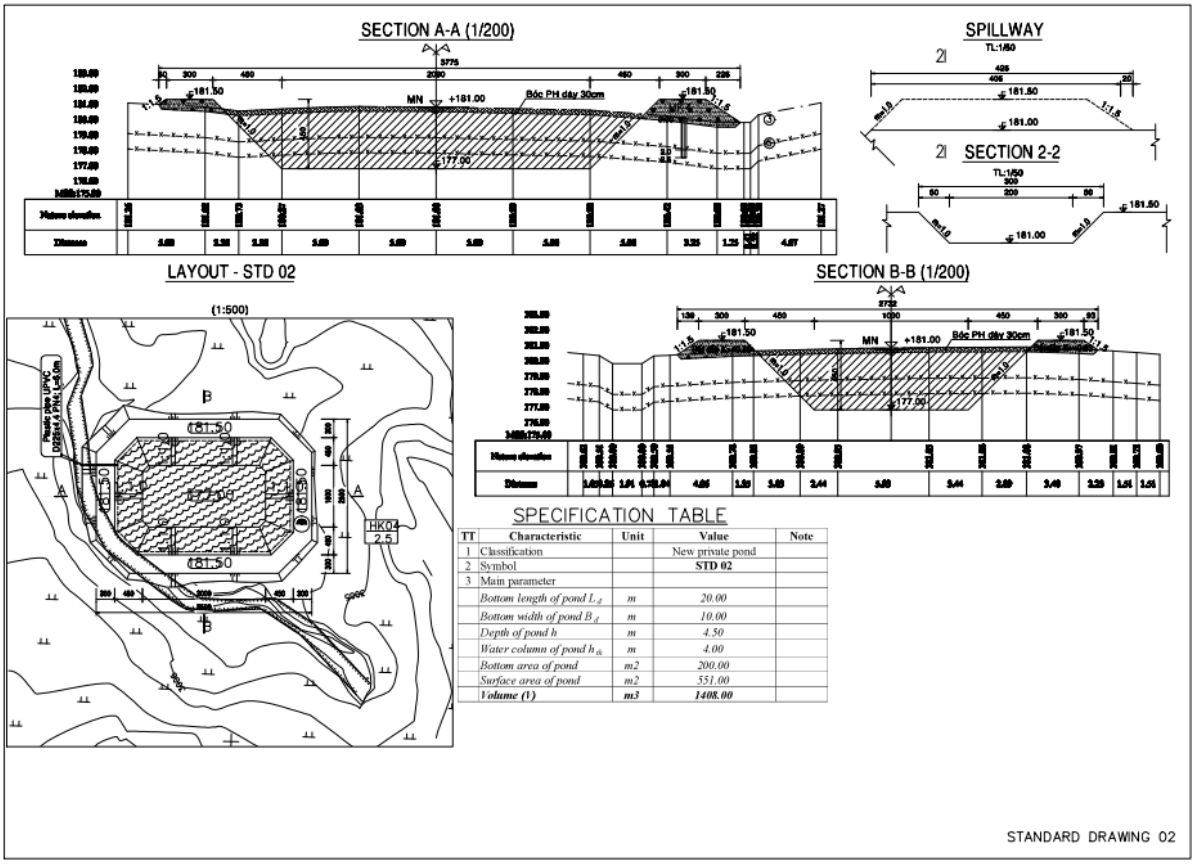
Activity 1.3: Standard technical drawings of ponds

Household pond in flatland location – Standard drawing No. 1



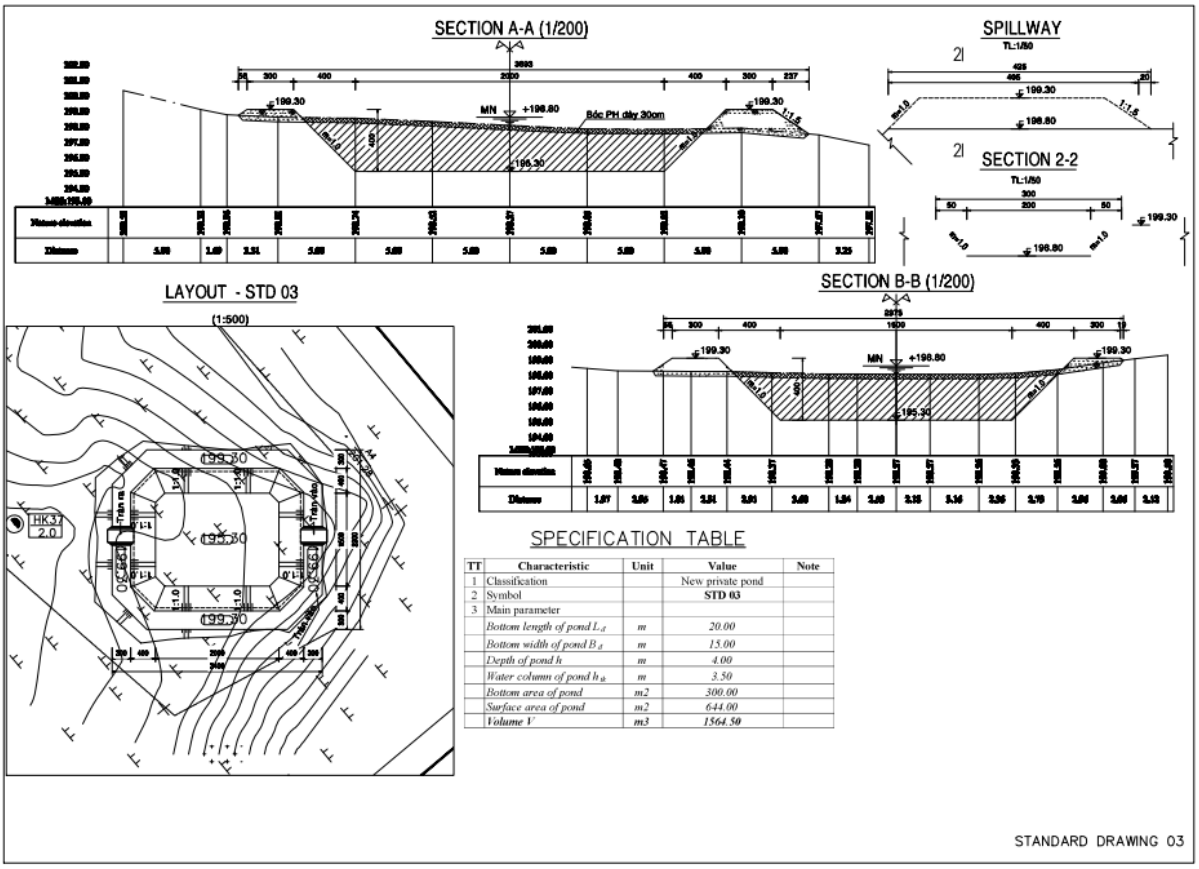
TT	Characteristic	Unit	Value	Note
1	Classification		New private pond	
2	Symbol		STD 01	
3	Main parameter			
	Bottom length of pond L_d	m	20.00	
	Bottom width of pond B_d	m	14.00	
	Pond depth h	m	3.50	
	Water volume of pond h_{tk}	m	3.00	
	Bottom area of pond	m2	280.00	
	Surface area of pond	m2	567.00	
	Volume (V)	m3	1200.00	

Household pond in midland location - Standard drawing No. 2



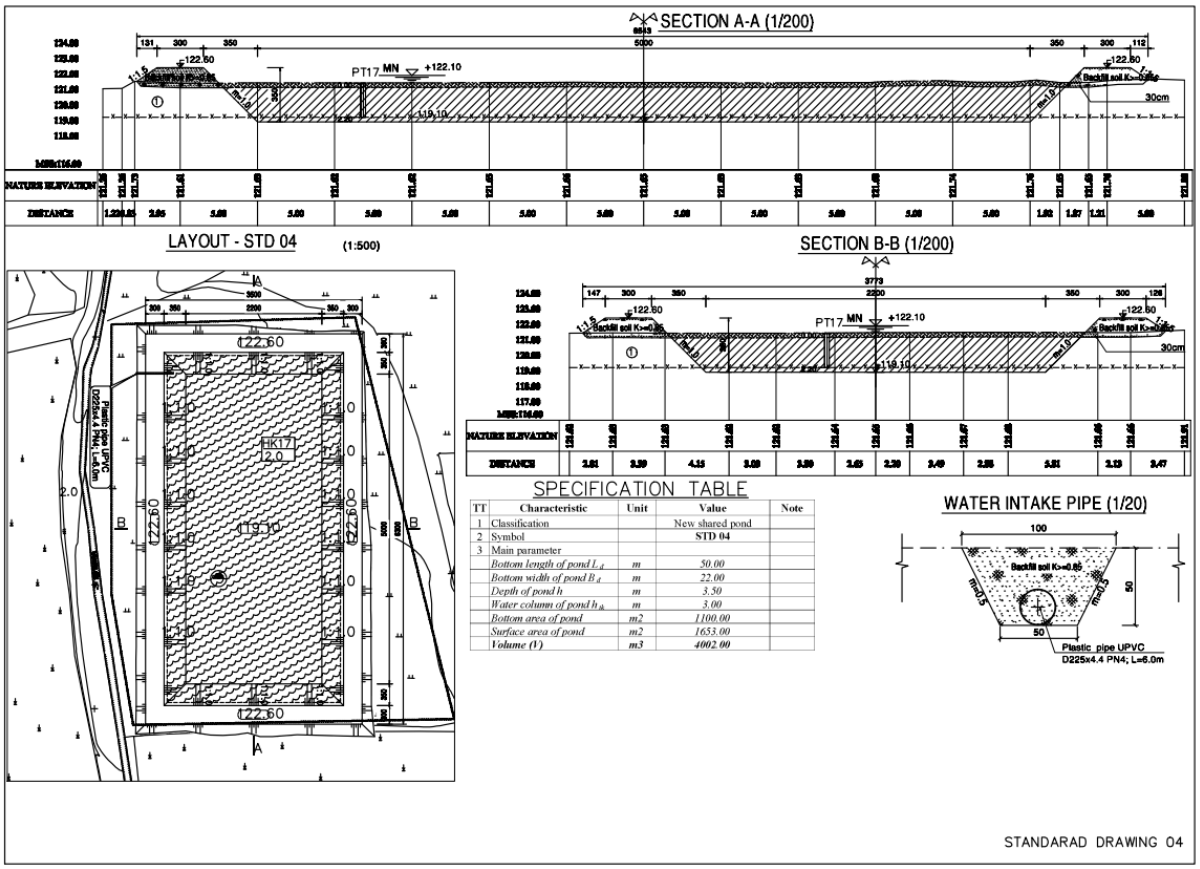
TT	Characteristic	Unit	Value	Note
1	Classification		New private pond	
2	Symbol		**STD 02**	
3	Main parameter			
	Bottom length of pond L_d	*m*	*20.00*	
	Bottom width of pond B_d	*m*	*10.00*	
	Depth of pond h	*m*	*4.50*	
	Water column of pond h_{tk}	*m*	*4.00*	
	Bottom area of pond	*m2*	*200.00*	
	Surface area of pond	*m2*	*551.00*	
	Volume (V)	***m3***	***1408.00***	

Household pond in upland location - Standard drawing No. 3



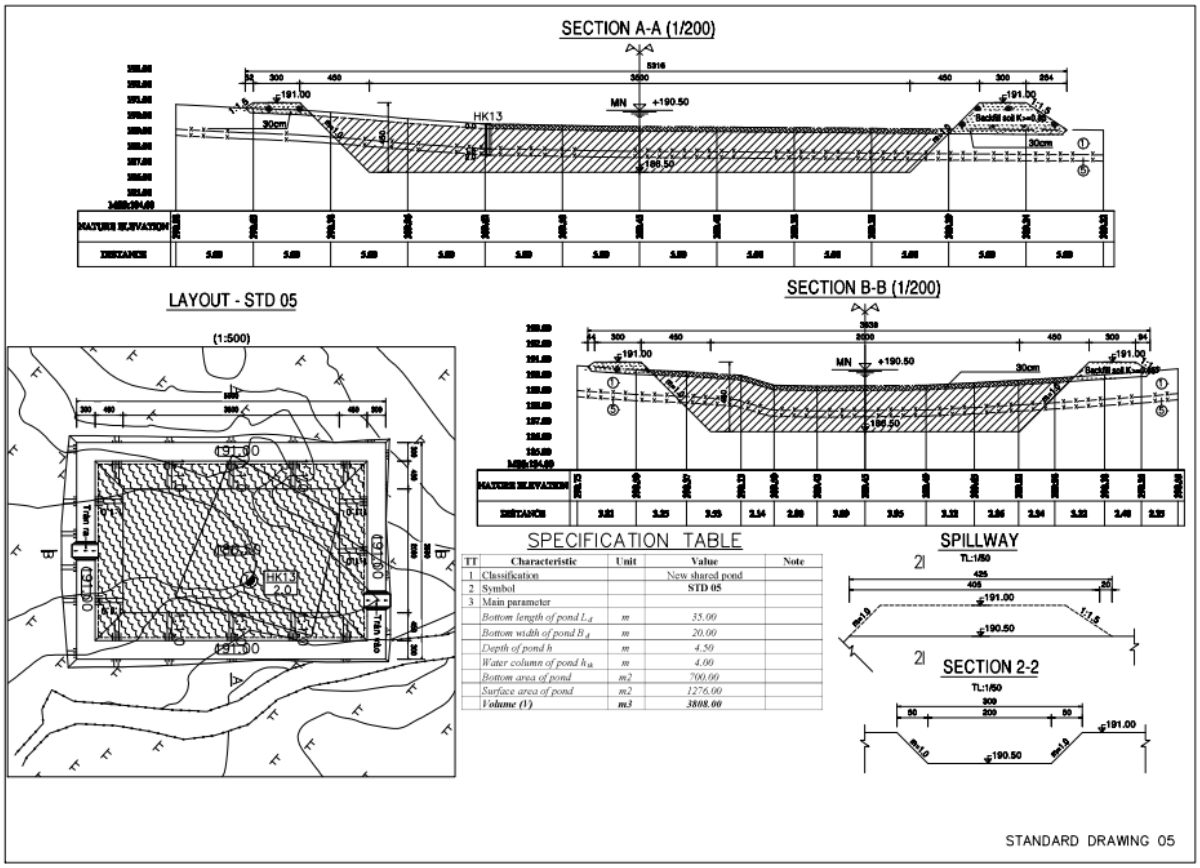
TT	Characteristic	Unit	Value	Note
1	Classification		New private pond	
2	Symbol		STD 03	
3	Main parameter			
	Bottom length of pond L_d	*m*	*20.00*	
	Bottom width of pond B_d	*m*	*15.00*	
	Depth of pond h	*m*	*4.00*	
	Water column of pond h_{tb}	*m*	*3.50*	
	Bottom area of pond	*m2*	*300.00*	
	Surface area of pond	*m2*	*644.00*	
	Volume V	*m3*	*1564.50*	

Shared pond in flatland location - Standard drawing No. 4



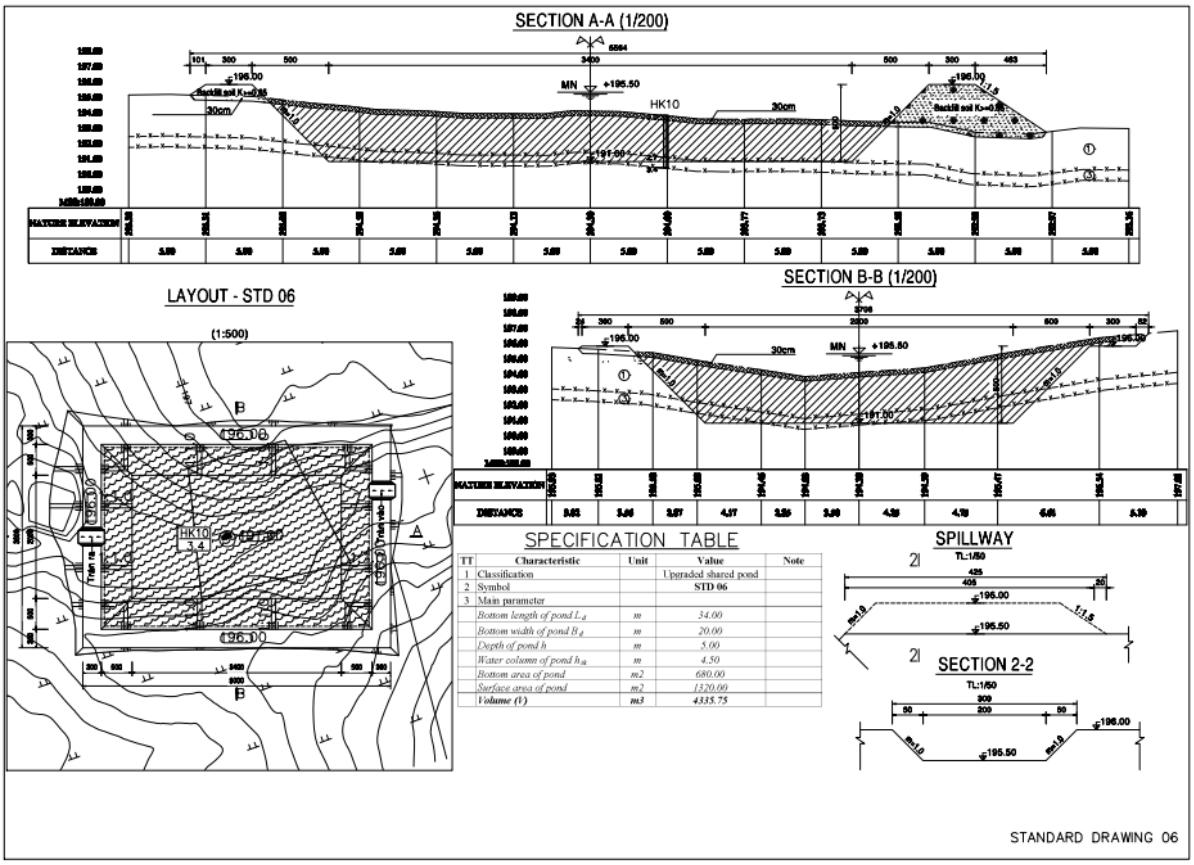
TT	Characteristic	Unit	Value	Note
1	Classification		New shared pond	
2	Symbol		STD 04	
3	Main parameter			
	Bottom length of pond L_d	m	50.00	
	Bottom width of pond B_d	m	22.00	
	Depth of pond h	m	3.50	
	Water column of pond h_{tk}	m	3.00	
	Bottom area of pond	m2	1100.00	
	Surface area of pond	m2	1655.00	
	Volume (V)	m3	4002.00	

Shared pond in midland location - Standard drawing No. 5



TT	Characteristic	Unit	Value	Note
1	Classification		New shared pond	
2	Symbol		STD 05	
3	Main parameter			
	Bottom length of pond L_d	m	35.00	
	Bottom width of pond B_d	m	20.00	
	Depth of pond h	m	4.50	
	Water column of pond h_{tk}	m	4.00	
	Bottom area of pond	m2	700.00	
	Surface area of pond	m2	1276.00	
	Volume (V)	m3	3808.00	

Shared pond in upland location - Standard drawing No. 6



TT	Characteristic	Unit	Value	Note
1	Classification		Upgraded shared pond	
2	Symbol		STD 06	
3	Main parameter			
	Bottom length of pond L_d	m	34.00	
	Bottom width of pond B_d	m	20.00	
	Depth of pond h	m	5.00	
	Water column of pond h_{da}	m	4.50	
	Bottom area of pond	m2	680.00	
	Surface area of pond	m2	1320.00	
	Volume (V)	m3	4335.75	