

MEMORANDUM OF UNDERSTANDING

Proposed 51294-PHI: Integrated Flood Resilience and Adaptation Project Phase 2 and Proposed P59102-PHI: Central Luzon-Pampanga Floodway Project

**Consultation Mission
13 March – xxx October 2025**

I. INTRODUCTION

1. The Asian Development Bank (ADB) fielded a consultation mission for the proposed 51294-PHI: Integrated Flood Resilience and Adaptation Project, Phase 2 (InFRA2) and P59102-PHI: Central Luzon-Pampanga Floodway Project (CLPFRP).¹ The mission objectives were to discuss and confirm (i) project approach, scope, outputs, and activities; (ii) indicative cost and financing, financing modality, implementation arrangements; (iii) readiness including advance actions, especially related to availability of right of way (ROW)² and environment permits; (iv) requirements for due diligence covering fiduciary, social (involuntary resettlement and indigenous peoples) and environment safeguards aspects, and processing schedule; and (v) agreed actions to progress preparation and readiness.

2. The Mission met with the Department of Public Works and Highways (DPWH), the proposed executing agency; Department of Environment and Natural Resources (DENR); Department of the Interior and Local Government (DILG); Department of Finance (DOF); Department of Economy, Planning, and Development (DEPDev); Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA); Philippine Space Agency (PhilSA); DPWH Regional Offices (RO); and Local Government Units (LGU) of Malungon Municipality and Sarangani Province (Mindanao), and Pampanga Province (Luzon). The list of persons met is in Attachment 1 and the mission schedule is in Attachment 2.

3. The DPWH Senior Undersecretary chaired the kick-off and wrap-up meetings respectively held on 13 March and xxx September 2025. The Mission held technical discussions to review the scope of interventions in the Apayao-Abulug river basin in Northern Luzon, the Pampanga river basin in Central Luzon, the Jalaur river basin in Visayas, and the Buayan-Malungon river basin in Mindanao; and corresponding social and environment safeguards requirements; procurement; financing needs, and readiness. This Memorandum of Understanding (MOU) including the attachments, summarizes the discussions and agreements reached between the Mission and the project's executing agency. The agreements set out in this MOU and its attachments are subject to review and approval by higher authorities of the Government of the Philippines (the government) and ADB.

II. MISSION FINDINGS

A. Strategic directions

4. **Adaptive approach.** DPWH, DENR through the River Basin Control Office (RBCO) and Water Resources Management Office (WRMO), DEPDev and the mission agreed to promote an

¹ The Mission comprised Eric Quincieu, Principal Water Resources Specialist/Team Leader; Oscar Badiola, Senior Programs Officer; Talat Nasirov, Procurement Specialist; Desiree Eve Maano, Senior Safeguards Officer (Environment); Judy Vermudo, Senior Safeguards Officer (Social); Raffy Amos, Associate Financial Management Officer; Eileen Q. Battung, Project Officer; and Karen Palma, Senior Operations Assistant.

² Right of Way (ROW) means a part or the entirety of a property, site or location with defined physical boundaries, used or required by a national government project (Implementing Rules and Regulations of the Republic Act 10752, An Act Facilitating the Acquisition of Right of Way, Site or Location for National Infrastructure Projects).

Integrated Water Resources Management (IWRM) approach in delivering planned investments to target river basins under the Project. This approach is consistent with the (i) [Integrated Water Resources Management \(IWRM\) Plan](#), which calls for storage of excess floodwaters as part of flood risk management (FRM) infrastructure to be developed and for these storage facilities to also serve as potential sources of domestic water supply, irrigation, and/or hydropower generation; (ii) DEPDev policy on [convergence in programming](#), whereas FRM plans are to be integrated with IWRM plans; and (iii) [DPWH Department Order No. 97, Series of 2024](#) on the integration of comprehensive water management in flood control projects. As such, the proposed project will include in its scope:

- (i) reservoirs to store floodwater for multipurpose uses during the dry season;³
- (ii) wetlands restoration to increase water storage and maintain ecosystems services; and
- (iii) watershed management interventions, with the Forest Management Bureau (FMB) and the RBCO of DENR as proposed implementing agencies.

5. Capitalizing on the design of the [Integrated Flood Resilience and Adaptation Project Phase 1](#) (InFRA1), the project is proposed to support (i) improved flood forecasting and early warning system (FFEWS) to reduce vulnerability; and (ii) improved planning and land zoning at local government level to reduce exposure. The project will also promote (i) improved sediment management measures (i.e., sediment trap, river maintenance) to prevent siltation and maintain flow discharge capacity of rivers; and (ii) nature-based solutions (NBS) including "room for the river" and hybrid systems (i.e. involving a combination of NBS and engineered or gray infrastructures) to maximize the environmental and climate change co-benefits of the project.

6. **Combine the InFRA 2 and CLPFP into a single investment program.** Considering the proposed IWRM approach, varying levels of readiness, and to be responsive to the urgent need to act on the increasing risk posed by the higher frequency of extreme weather events experienced by communities across all of the 4 river basins, the mission and DPWH agreed to consolidate all subprojects into a single investment program for approval in 2027. This approach allows CLPFRMP to piggy-back on the processing timeline for InFRA 2 and facilitates urgent access to development financing—while prioritizing shovel ready subprojects—in all 4 river basins. Aligned with the agreed approach, the mission recommends to revise the project title to "Enhanced Integrated Flood Resilience and Improvement Investment Program".

7. **Financing will be aligned with readiness of infrastructure procurement packages.**⁴ The mission and DPWH agreed on a phased approach for ADB's financing of the entire investment program, through the [Multitranche Financing Facility \(MFF\) modality](#). Considering the varying level of readiness among subprojects [particularly in the varying right of way (ROW) acquisition requirements], and lessons learned from other infrastructure projects, DPWH and the mission agreed to stage program implementation in at least three tranches (as illustrated in **Figure 1**) with the following features:

- (i) The determination of tranches is based on implementation readiness and advance actions being taken to execute investment activities. Readiness of implementation activities include ROW acquisition considerations, e.g., tranche 1 will include subproject implementation that expects little to no ROW requirements (i.e., sections of the ROW where land is owned by the government and/or areas which

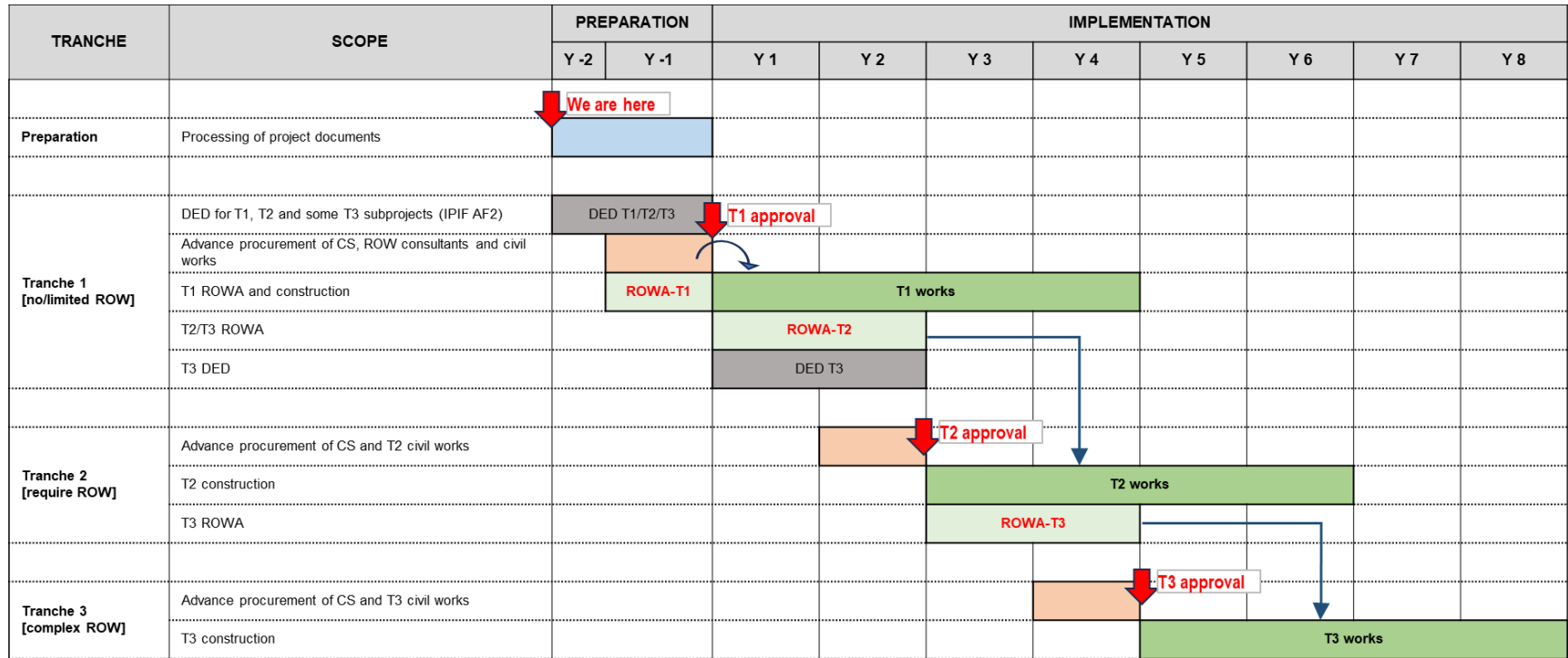
³ Based on (i) the Comprehensive Water Management Plan and Feasibility Studies being prepared under IPIF for the Apayao-Abulug, Jalaur, and Buayan-Malungon river basins, and (i) Master plan and feasibility study for the Pampanga river basin prepared under the Pampanga River Basin Flood Control Project –Phase I, Stage I

⁴ A civil works procurement package consists of one or several subprojects.

are free and clear of obstructions).⁵ Tranche 1 may also include subprojects where ROW has already been acquired. The indicative amounts for each tranche will be based on these considerations and readiness of those subprojects;

⁵ Tranche 1 subprojects with limited ROWA will be carefully determined during project processing in close consultation with DPWH.

Figure 1: Illustration of MFF tranching for increased readiness



- (ii) Each loan tranche will include budget provisions to help with ROW acquisition, relocation, and engineering for subprojects to be implemented by the following tranches. These budget provisions will allocate loan proceeds for (a) services (surveys, coordination etc) to support the ROW acquisition process and efficient coordination among related stakeholders, and funds for compensation (land and assets and relocation) if required; (b) detailed engineering design of the reservoirs as they are not covered by the [L4424: Infrastructure Preparation and Innovation Facility, Second Additional Financing](#) (IPIF AF2);
- (iii) The proposed MFF modality will allow the financing of multiple tranches in parallel with long-term implementation plans, such as the CWMP plans in the target river basins. The mission envisions 3 to 4 tranches over a period of 10 years to implement the subprojects in the 4 target river basins. Individual loan agreements will be executed for each tranche.
- (iv) Advance procurement actions including needed safeguard compliance requirements will be taken prior to approval of each tranche.

B. Approach

8. The following paragraphs present the investment program objectives, outputs and key features considering government directions and priorities, the needs for a comprehensive investment to address flood risk, readiness and efficient implementation, and the agreements reached during the mission.

9. **Strategic alignment.** The proposed investment program is aligned with (i) updated nationally determined contribution (NDC) commitments;⁶ (ii) the National Climate Change Action Plan, 2011–2028, which aims to reduce vulnerability to climate change and disasters;⁷ (iii) the Philippine Development Plan, 2023–2028 which calls for (a) upgrading and expanding flood control infrastructure combined with nature-based solutions, (b) enhancing institutional capacities and decision support systems, (c) fully implementing asset management, and (d) prioritizing support to highly vulnerable LGUs in reducing disaster risk and adapting to climate change;⁸ (iv) DPWH's Infragenda 2028 which calls for (a) mitigating flood damage in major river basins by constructing/rehabilitating flood mitigation structures along major river basins and principal rivers and (b) building climate-resilient structures in calamity-prone areas;⁹ (v) the Integrated Water Resources Master Plan (IWRMP) on mainstreaming climate change adaptation strategies to ensure climate-resilient infrastructure facilities;¹⁰ and (vi) river basins FRM master plans. The project is also aligned with ADB's country partnership strategy (CPS) for the Philippines for 2024–2029, which is centered on climate action.¹¹

10. **Objectives.** The proposed investment program will improve climate resilience in the Apayao-Abulug and Pampanga river basins in Luzon, the Jalaur river basin in Visayas, and the Buayan-Malungon river basin in Mindanao. The program will (i) introduce innovations to improve water resources data management, planning, and early flood warning to communities; (ii) develop

⁶ Government of the Philippines. 2021. [Updated National Determined Contributions](#).

⁷ Government of the Philippines, Climate Change Commission. 2011. [National Climate Change Action Plan, 2011–2028](#). Manila.

⁸ Government of the Philippines, NEDA. 2023. [Philippine Development Plan, 2023–2028](#)

¹⁰ Government of the Philippines, Department of Environment and Natural Resources. 2024. [Integrated Water Resources Management Plan: A Consolidated Action Plan for the Water Resources and Sanitation Sector](#).

¹¹ ADB. 2024. [Philippines: Validation of the Country Assistance Program Review, 2018-2023](#); ADB. 2024. [Country Partnership Strategy: Philippines 2024-2029: Building Strong Foundations for a Prosperous, Inclusive and Climate-Resilient Future](#).

flood protection and water storage infrastructure towards increased water resilience, strengthen processes for O&M for improving sustainability of water infrastructure, and facilitate timely acquisition of ROW; and (iii) introduce watershed management measures to restore ecosystems functions of the upper basins, including erosion control and improved water infiltration. By combining concepts such as “Room for the River” and nature-based solutions with water storage facilities, water management will be enhanced. The program will have the following impact: water security enhanced to support economic growth;¹² and its outcome will be resilience to climate change for selected river basins enhanced.¹³

11. **Outputs.** To achieve its expected outcome, the investment program will have the following outputs:

- (i) **Output 1: Flood risk management made operational.** This output will build the capacity of DPWH ROs, PAG-ASA, local government units, and communities to obtain enhanced information to better adapt to flood risks and potential impacts of climate change. The project will modernize the hydrometeorological systems to improve real-time data acquisition. The project is proposed to coordinate with PhilSa to Earth Observation Services (EOS) to better predict and monitor floods and river morphologies. The EOSs could support FRM planning in integrating climate change projections and damage assessments to inform relief support to communities affected by floods. The FFEWSs will provide alert to communities on potential flooding and inform planning of climate-resilient river systems. This output is also proposed to support local government units in adopting climate-risk-informed planning by aligning their development plans, comprehensive land use plans (CLUPs), zoning regulations, and building codes with the FRM plans and in preparing Climate and Disaster Risk Assessment (CDRA).
- (ii) **Output 2: Water infrastructure developed and O&M enhanced.** This output improves water resilience and reduces climate risk through construction and upgrading of flood protection and water storage facilities. Where technically, economically, and socially feasible, the project will introduce NBSs for river works (e.g., “room for the river”). To ensure timely construction, this output will strengthen processes and capacity of DPWH District Engineering Offices (DEOs) to acquire ROW and deliver associated programs. Towards infrastructure life cycle management and enhanced O&M, this output will also strengthen asset management including digitalization of river assets into the Asset Management Information System (AMIS) and in developing financial sustainability plans for O&M.¹⁴
- (iii) **Output 3: Watershed ecological functions restored.** To ensure that improved discharge flow capacity is sustained, this output will improve conditions of watershed by introducing forest and landscape restoration approaches. It will operationalize innovative financing mechanisms to ensure long term sustainability of ecosystems.

12. The components per output are presented below:

¹² Government of xxx

¹³ ADB. 20xx.xxx. Manila.

¹⁴ The [Integrated Flood Resilience and Adaptation Project - Phase 1](#) is financing the development of the AMIS.

Table 1: Project Components per Output and Implementing Agencies

Component	
Output 1: Flood risk management made operational.	
1.A	Flood Forecasting and Early Warning operationalized (DPWH in collaboration with PAGASA)
1.B	Institutional capacity for Flood Risk Management enhanced (DILG, TBC)
Output 2: Water infrastructure developed and O&M enhanced	
2.A	Right of way acquisition, relocation and payment of other entitlements and associated livelihood restoration and improvement programs delivered (DPWH)
2.B	FRM infrastructure and water storage developed or upgraded (DPWH)
2.C	River O&M processes and capacity improved (DPWH)
2.D	Project Management Construction Supervision, and Engineering Design (DPWH) ^{a/}
Output 3: Watershed ecological functions restored	
3.A	Capacities and systems for watershed planning and management strengthened (DENR)
3.B	Agroecological landscape restoration interventions scaled up (DENR)
3.C	Rural livelihoods diversified and improved (DENR)
3.D	Sustainable and innovative finance mechanisms implemented (DENR)

DENR = Department of Environment and Natural Resources; DILG = Department of Interior and Local Government; DPWH = Department of Public Works and Highways; FRM = flood risk management; O&M = operations and maintenance; PAGASA = Philippine Atmospheric, Geophysical, and Astronomical Services Administration; PhilSA = Philippine Space Agency.

a/ this component will include provision for planning and engineering not covered under the IPIF.

13. The proposed implementation arrangements are summarized in Table 2 below and the proposed implementation arrangements chart is presented in Attachment 3.

Table 2: Proposed Implementation Arrangements

Aspects	Arrangements
Implementation period	10 years from effectiveness in 2027
Management	
(i) Oversight body	Project steering committee chaired by DPWH and composed of DOF, DEPD, DBM, DENR, DILG, MinDA, NIA, OCD, PAGASA, RBMCs, and other relevant agencies as members
(ii) Executing agency	DPWH
(iii) Key implementing agencies	DPWH UPMO-FCMC, ROs, DILG(TBC), DENR
(iv) Implementation unit	DPWH will establish a CPMU under FCMC, while DILG, DENR are proposed to establish CPIUs. ROs (DILG, DENR) and DEOs will establish PIUs

ADB = Asian Development Bank; CPMU = central project management unit,), CPIU = central project implementation unit, DBM = Department of Budget and Management; DENR = Department of Environment and Natural Resources; DILG = Department of the Interior and Local Government; DOF = Department of Finance; DPWH = Department of Public Works and Highways; MinDA = Mindanao Development Authority; Department of Economic, Planning, and Development (DEPD); NIA = National Irrigation Administration; OCD = Office of Civil Defense; PAGASA = Philippine Atmospheric, Geophysical and Astronomical Services Administration; RBMC = river basin management council; RO = Regional Office; PAM = project administration manual; UPMO-FCMC = Unified Project Management Office – Flood Control Management Cluster, PIU = project implementation unit.

Source: Asian Development Bank.

C. Readiness

14. This section presents for each proposed component, the rationale, key features, status of preparation, and follow up actions towards readiness. The detailed activities, detailed cost estimates, and procurement packages are respectively presented in the Project Implementation Plan (PIP) (Attachment 4), cost estimates table (Attachment 5), maps (Attachment 6) and initial procurement plan (Attachment 7).

Output 1: Flood risk management made operational

Component 1.A - Flood Forecasting and Early Warning operationalized

15. **Rationale.** This component includes the purchase of hydro meteorological sensors to improve accuracy of PAGASA FFEWS, increasing the lead time for alerting the communities. The component will strengthen the link between PAGASA's enhanced capabilities and existing alert and response mechanisms of project stakeholders (e.g., dam/flood gate operators, local DRRM teams, surrounding communities, etc.). This component is also proposed to finance consulting services to formulate the national Master Plan for Strengthening Marine Meteorological and Operational Oceanographic Services. The enhancement of the PAGASA hydrological monitoring network and FFEWS are consistent with the FRM approach to reduce vulnerability.¹⁵

Table 3: Component 1A – Indicative Features

Category	Item	Description	Indicative Cost (\$ million)
Equipment	X-Band Radar including supporting and VSAT Communication, testing and Acceptance	Procurement and installation of three radars for Apayao-Abulug, Buayan-Malungon, and Southern Pampanga	3.09
	Rainfall & Water Level Gauges	Additional gauges based on PAGASA assessments per basin.	0.04
	Vehicle for O&M	For maintenance and inspection of remote sites	0.10
Consulting Services	FFEWS Guidelines & Regulations	Review and update national FFEWS implementation protocols and standards.	TBD
	System Design & Development	Rationalization of monitoring network, model validation, and integration.	TBD
	Marine Meteorology Master Plan	Strategic framework for marine and oceanographic services.	1.62
	Developing Flood Forecasting Models	Development of customized flood forecasting models for the 4 river basins.	1.65
Operational Support	Training for O&M	Staff capacity-building on radar and gauge systems, software, and field operations.	0.12

16. **Preparation.** PAGASA has prepared the initial list of equipment to be purchased under the project to ensure that areas in the target RBs with low coverage in water level and rainfall stations are addressed. PAGASA also drafted the terms of reference (TOR) and cost estimates for consulting services packages. As for Infra 1, DPWH will purchase the equipment and recruit the consultant on PAGASA's behalf. Collaboration with PhilSa will be refined, covering monitoring of river morphology, river assets, and flood modelling validation.

¹⁵ The mission noted the collaborations (i) between PAGASA and Deltares in developing coastal model with forecasts every 6 hours. This type of model can help better managing coastal flooding. That would require training to LGUs to operate the system; and (ii) PAGASA and People in Needs organization for the development of community-based flood early warning systems in selected Visayas and Mindanao municipalities. The [systems](#) rely on affordable IOT systems that are scalable. This type of sensor can also provide data for use at national level by PAGASA.

Action	By	Due by
Finalize the detailed list of equipment to be purchased by the project	PAGASA	September 2025
Refine collaboration with PhilSa	DPWH	October 2025
Prepare and submit to ADB technical specifications for the equipment	PAGASA	October 2025
Approve TOR and ABC	DPWH / ADB	December 2025
Prepare the request for proposal for consulting services for submission to ADB	DPWH BAC	12 months prior to loan effectiveness
Approve the RFP	ADB / DPWH	11 months prior to loan effectiveness
Advertise consulting services	DPWH BAC	9 months prior to loan effectiveness assuming that the project is in the national expenditure program or has been approved by the DepDev ICC CabCom
Prepare bidding documents for submission to ADB	DPWH BAC	October 2025
Approve bidding documents	ADB / DPWH	November 2025
Issue the bidding documents for equipment	DPWH BAC	3 months prior to loan effectiveness
Award the consulting services	DPWH BAC	Within 3 months of loan effectiveness
Award the equipment package	DPWH BAC	Within 3 months of loan effectiveness
Establish the collaboration between DPWH and PAGASA through an MOU	DPWH/PAGASA	2025

Component 1.B - Institutional capacity for Flood Risk Management enhanced

17. **Rationale.** Under this component, DILG is expected to support LGUs in (i) coordinating with the Department of Human Settlements and Urban Development (DHSUD) for improving comprehensive land use plans and building codes for areas with residual floods after river improvements, based on the results from the hydrodynamic modelling; (ii) aligning LGUs development plans with FRMPs to reduce exposure and increase local government and community participation; (iii) providing assistance to households affected by land acquisition and resettlement under the livelihood restoration programs (LRP) through their Public Employment Service Office (PESO); (iv) ensuring coordination with LGUs and relevant agencies to synchronize investments in water supply with reservoir development; (v) supporting approval of proposed interventions by the Regional Development Councils; (vi) strengthening regional disaster reduction management councils. This component is proposed to be delivered in stages across tranches of the investment program, considering phasing of the civil works.

Table 4: Component 1B – Indicative Features

Item	Description	Indicative Cost (\$ million)
Planning and spatial plan synchronization	To align LGU plans with FRMPs, including consulting services	TBC
Regulation Strengthening	To update, integrate, synchronize provincial/district spatial plans by incorporating flood risk	TBC
Local Government Capacity Building (Working Group)	Training of trainers, trainings,	TBC
Consultation, participation and disclosure	Public awareness campaign, consultation and information disclosure, guideline preparation and implementation, updated regulation dissemination	TBC
LRP	Community based programs for livelihood restoration; coordination with government agencies, CSO, and NGOs offering livelihood programs/support; consultation with affected households; prepare LRP	TBC

18. **Preparation.** DILG has identified programs to be supported by the project. In coordination with DPWH, DILG is expected to identify LGUs affected by residual floods and potential dike breach, and LGUs and communities affected by civil works. DILG will then refine those programs in coordination with LGUs.

Action	By	Due by
Send a request to DILG to confirm their participation as implementing agency	DPWH	September 2025
Identify LGUs affected by residual floods, LGUs and communities affected by civil works to finalize the list of target LGUs	DPWH / DED Consultant	October 2025
Coordination with target LGUs to identify plans to be updated	DILG	November 2025
Prepare and submit to ADB TOR and cost estimates for consulting services	DILG	December 2025
Approve TOR and cost estimates for consulting services	ADB	January 2026
Prepare the request for proposal for consulting services for submission to ADB	DILG BAC	14 months prior to loan effectiveness
Approve the RFP	ADB	11 months prior to loan effectiveness
Advertise consulting services	DILG BAC	9 months prior to loan effectiveness assuming that the project is in the national expenditure program or has been approved by the DepDev ICC CabCom
Award the consulting services	DILG BAC	Within 3 months of loan effectiveness

Output 2: Water infrastructure developed and O&M enhanced

Component 2.A - Right of way acquisition and associated programs delivered

19. **Rationale.** Considering the significant delays experienced under infrastructure projects - mainly caused by the process to acquire ROW and payment of affected assets and other entitlements - this component will support DPWH in accelerating ROW acquisition (ROWA) for subprojects under the investment program. This component will provide consulting services to support the complex processes required for ROWA, including coordination with LGUs and other government agencies, and implementation of livelihood restoration programs in coordination with DILG; and development of relocation sites in coordination with the Department of Human Settlements and Urban Development (DHSUD).¹⁶ This component can also provide funding to finance compensation to affected households including land, assets and other compensations in compliance with project requirements/resettlement plan and construction of relocation sites. This component is proposed to be delivered in stages of the investment program considering phasing of the civil works.

Table 5: Component 2A – Indicative Features

Item	Description	Indicative Cost (\$ million)
Consulting services and operational costs to support the ROWA process	To process ROWA, including preparation of resettlement plan with its various activities such as consultation, coordination with LGUs, and livelihood restoration programs in coordination with DILG	39.05
NCIP clearance	To process the Certification pre-condition or certificate of no-overlap of the project site with ancestral land	TBC
Compensation/ Entitlements	To fund the compensation to affected households for land, assets and other compensations as per project requirements /resettlement plan. This will also include funds to secure documentary requirements of affected persons.	269.73
Relocation sites	To provide fund to the National Housing Authority for the land acquisition to construct the relocation site, including the construction of structures to relocate affected households; coordination with DHSUD	

20. **Preparation.** DPWH will finalize the scope of the consulting services to support the ROWA processes considering phasing of civil works packages.

Action	By	Due by
Prepare and submit to ADB TOR and cost estimates for consulting services	DPWH	November 2025
Approve TOR and cost estimates for consulting services	ADB	December 2025
Prepare the request for proposal for consulting services for submission to ADB	DPWH BAC	January 2026
Approve the RFP	ADB	February 2026
Advertise consulting services	DPWH BAC	9 months prior to effectiveness assuming that the project is in the national expenditure program or has been

¹⁶ For subprojects not prepared under the IPIF, this component can also finance parcellary surveys, socio-economic survey, inventory of losses, detailed measurement survey, valuation of affected land and assets and loss of livelihood and other impacts, and preparation of resettlement plan.

Action	By	Due by
		approved by the DepDev ICC CabCom
Award the consulting services	DPWH BAC	Within 3 months of effectiveness

Component 2.B – FRM infrastructure and water storage developed or upgraded

21. **Rationale.** Through this component, DPWH will construct FRM and water storage infrastructure, consistent with the priorities identified in the four river basins master plans. This component will build on the DED and social and environment safeguards being prepared for FRM under IPIF AF2, which promotes room for the river and nature-based solutions.¹⁷ The planning for those physical interventions is based on hydrodynamic modelling considering climate change variabilities, social and environment factors, and economic and financial viability. This component will also finance sediment management infrastructure to ensure that improved capacities of rivers will sustain.

22. As a particular area of focus it will be critical to examine potential flood detention basins along the Pampanga river, including identified locations within Candaba swamp and also to re-examine potential flood storage opportunities in the San Antonio Swamp.¹⁸ These natural wetlands have high potential to present an NbS solution for managing flooding while also providing opportunities for retaining irrigation water for the dry season along with delivering high biodiversity values. The DED should also look at other ongoing developments within North Manila Bay, particularly the San Miguel Aerocity where a significant 500 to 800 ha offset will be implemented.¹⁹ It is critical that the works under this project also consider and establish the flow of sediment, particularly with respect to how this enters into North Manila Bay, which will be essential to avoid subsidence and coastal retreat.

23. As mentioned in paragraph 7, infrastructure subprojects are clustered to be delivered in tranches based on implementation readiness (which includes acquisition of ROW). Subprojects with no or limited ROWA will be prioritized for inclusion in the first tranche. Availability of environmental permits and the approval of regional development councils of the proposed investments in their area will also be considered for inclusion. Consulting services to prepare DED and social and environment safeguards requirements for the water storage facilities will be financed by the investment program and will be included in Tranche 1. The proposed scope to be financed by each tranche is presented in Table 6.

¹⁷ The DED for planned water storage infrastructure will be part of the project's loan financing package and provided under Component 2.D.

¹⁸ As per the Pampanga River Basin Draft Final Master Plan Report 2024 which included a large Detention Basin for Candaba in the preferred scheme.

¹⁹ <https://sanmiguel.aerocity.com.ph/>

Table 6: Indicative Subprojects by Tranche

No.	RB	Measure	Description	Construction Cost (\$ million)*	Land Acquisition Cost (\$ million)
Tranche 1					
1	AARB	DS01	Road dike along right bank of Abulug River	12.63	0.07
2		DS03	Road dike along right bank of Abulug River and Allig Creek	25.13	0.08
3		DS04	Road dike along left and right bank of Allig Creek	74.98	0.27
4		DS05	Widening of tributary creek	8.72	0.14
5		DS06	Hydraulic gate for flood protection and river navigation	4.95	0.02
6		DS11	Construction of new bridge designed for higher return period	1.79	0.11
7		DS12	Road to Dike Connection (Right Bank)	0.89	0.18
			Total AARB CW01	129.10	0.86
8	BMRB	M-S-1	Channel deepening with dike and revetment, ground sill, bridge replacement	13.89	2.12
9		M-S-2	Dike, gabion mattress, ground sill	1.88	0.05
11		L-S-1c	Embankment	0.50	0.12
12		L-S-1d	Dikes	3.53	2.36
13		L-S-1e	Bridge	2.60	0.00
14		L-S-1g	Ground sill	0.92	0.00
15		L-S-6	Dredging	4.98	4.22
			Total BMRB CW01	28.30	8.88
			Total Tranche 1	157.40	9.75
Tranche 2					
16	AARB	DS02	Road dike along left bank of Abulug River	97.51	0.47
17		DS07	Hydraulic gate for flood protection and river navigation	0.33	0.21
18		DS08	Retention Basin and Pump station	6.29	0.04
19		DS09	Raising of road for evacuation	2.60	0.02
20		DS10	Raising of road for evacuation	5.30	0.08
21		DS12	Road to Dike Connection (Left Bank)	0.89	0.18
			Total AARB CW02	112.92	1.01
22	JRB	DC01	Creation of diversion channel and construction of dikes and maintenance roads along the channel	248.94	14.97
23		DC02	Creation of an intake structure	16.30	
24		DC03	Creation of control weir	1.25	
25		DC04a	Construction of a maintenance bridge for the intake intake structure	5.16	
26		DC04b	Road bridge to reconnect roads crossed by the diversion channel	4.14	
27		DC04d	Road bridge to reconnect roads crossed by the diversion channel	9.10	
28		DC04e	Maintenance bridge for the gated weir	5.31	
29		DC05	Construction of dikes along Jalaur river	22.72	
30		DC06	Elevated flume across the channel to reconnect irrigation canals	6.29	
31		DC07	Pumping station and a box culvert at the middle stream of the channel	0.81	
32		DC08a	Weir for water storage and velocity dissipation	2.17	
33		DC08b	Weir for water storage and velocity dissipation	2.44	
34		DC09	Weir with hydraulic gates for saltwater intrusion prevention	16.00	
35		DC10	Creation of reconstructions of creeks	0.29	
36		DC11	Creation of reconstructions of fishpond lines	2.03	
37		DC12	Dredging works at the outlet of the channel joining Tinorian river	26.27	
			Total JRB CW02	369.24	14.97
38	BMRB	M-S-3	Spur dikes and revetment	2.98	0.27
39		L-S-5	Spur dikes and revetment	5.10	1.86
40		L-S-2c	Spur dikes and dikes	11.76	2.09
41		L-S-2b	Coastal jetties	0.60	0.10
42		L-S-4	U-shaped concrete channel, access road, sluice gates	6.83	1.38
			Total BMRB CW02	27.27	5.69
43	PRB	SP-1	Sub Project 1 - Upstream	89.50	8.12
44		SS-1	San Antonio Swamp	292.11	26.49
			Total PRB CW02	381.61	34.60
			Total Tranche 2	891.05	56.27
Tranche 3					
45	BMRB	L-S-1a	Dikes and sluice gates	6.01	0.53
46		L-S-1h	Bypass channel, dikes, ground sills, sluice gates, bridges, and longitudinal spur head	15.16	1.40

No.	RB	Measure	Description	Construction Cost (\$ million)*	Land Acquisition Cost (\$ million)
47		BMRB-MAL-05	Dam Length: 191m; Dam Height: 15.6m; Reservoir Area: 191.1 ha; Reservoir Volume: 10.09 mcm	83.88	24.25
			Total BMRB CW03	105.05	26.18
48	AARB	AARB-ABU-01	Dam Length: 283m; Dam Height: 10.5m; Reservoir Area: 351 ha; Reservoir Volume: 12.934 mcm	245.00	70.50
			Total AARB CW03	245.00	70.50
49	JRB	JRB-MAG-01	Dam Length: 207m; Dam Height: 30m; Reservoir Area: 121.1 ha; Reservoir Volume: 16.671 mcm	112.56	7.99
			Total JRB CW03	112.56	7.99
50	PRB	SP-2	Sub Project 2 - Midstream	688.11	62.39
51		SP-3	Sub Project 1 - Downstream	39.06	3.54
52		CS-1	Candaba Swamp, Capacity	365.14	33.11
			Total PRB CW03	1,092.31	99.04
			Total Tranche 3	1,554.92	203.71
			Grand Total	2,603.36	269.73

Sources: Feasibility Study – Apayao-Abulug River Basin (JV Egis-Inclam-KECC, November 2022), Pre-Right Of Way Aquisition Plan – Apayao-Abulug River Basin (JV Egis-Inclam-KECC, December 2022), Feasibility Studies – Apayao – Abulug River Basin Pre-Resettlement Plan (JV Egis-Inclam-KECC, November 2022), Jalaur River Basin Rapid Feasibility Study Revised Technical Report: Diversion Channel New Alignment (JV Egis-Inclam-KECC, September 2024), Jalaur River Basin Feasibility Study Revised Rapid Pre-Resettlement Plan Report Diversion Channel New Alignment (JV Egis-Inclam-KECC, July 2024), Feasibility Study – Buayan-Malungon River Basin (JV Egis-Inclam-KECC, May 2023), Preliminary Right Of Way Acquisition Plan Buayan-Malungon River Basin (JV Egis-Inclam-KECC, January 2023), Pampanga River Basin Flood Control Project – Phase I (Kyong-Ho Engineering, July 2024), Stage I Draft Final Feasibility Study Report (Kyong-Ho Engineering, July 2024), Feasibility Study of the Proposed Retarding Basin at San Antonio Swamp and incorporating the Proposed Central Luzon-Pampanga River Floodway (WCI, June 2023)

24. **Preparation.** The consultant engaged under IPIF is completing the upgrading of the FRM plans for the Apayao-Abulug, Jalaur, and the Buayan-Malungon river basins by expanding their coverage with IWRM features. The consultant will complete the comprehensive water management plans and feasibility studies for the most viable reservoirs by October 2025. In April and May 2025, DPWH mobilized the consultants under IPIF AF2 to prepare the DED, social and environment safeguards and bidding documents respectively for the Apayao-Abulug, Jalaur, and Buayan-Malungon river basins for a duration of 16 months, and the Pampanga river basin for a duration of 30 months. Given the phased approach (via MFF) and proposed sequence (based on timing of ROWA and implementation readiness) of subproject implementation, the mission recommends for DPWH to prioritize finalizing the DED and to advance the ROWA (if any) and environment processes for prospective Tranche 1 subprojects. To this end, in accordance with the DPWH ROW Acquisition Manual (DRAM), DPWH may secure the required budget to execute ROWA and conduct advance procurement actions prior to the ADB loan approval of Tranche 1.²⁰

25. From the site visit in the Buayan-Malungon river basin, the mission observed that adjustments are needed in the type and alignment of dykes and protection proposed under the feasibility study. For some subprojects, river bank protection would be prone to scouring during high flows, which increases the likelihood that the asset's lifespan will be significantly reduced. Considering morphological movements of rivers, the mission also recommends maximizing the room for the river approach for locations where only agriculture land is prone to flood and where

²⁰ DPWH Right of Way (ROW) Acquisition Manual (DRAM), Department order 152, 2017

a surrounding road can be elevated as a dyke.²¹ For the Pampanga river basin, the mission recommends that the DED consultant prioritize wetlands, ensuring that the design will provide continuity or improvement of ecosystem services including water storage and biodiversity of the river basin, especially sites of international importance.²² ADB is also working with DENR in restoring some of those wetlands under the Flyway initiative.

Action	By	Due by
Review and expand the feasibility studies for the 4 river basins and adjust subprojects for more room for river and NBS, water storage, particularly in Candaba, San Antonio swamps, and sediment management infrastructure in coordination with DENR	IPIF AF2 DED consultants/TRTA	6 months after mobilization for Apayao-Abulug, Jalaur, and the Buayan-Malungon RBs and 12 months for Panpanga RB
Submit the updated master plans for Infracom approval	DPWH	Once completed
Organize a workshop to present modeling results to DENR, NIA and other agencies	DPWH	December 2025
Recalibrate the proposed Pampanga interventions considering upstream storage, to optimize investment and minimize ROW acquisition.	DED consultant	May 2026
Share technical reports to ROs, RDCs and other key stakeholders on a regular basis	DPWH	Continuous
Closely coordinate with DENR on design of storage facilities including lakes, development around wetlands and of key wetland sites, biodiversity corridor along river streams, and fish passage, and other project developments	DPWH	During the design phase for Pampanga RB, and during implementation for all RBs
Submit request for ROW budget for tranche 1 civil works	DPWH	Once all requirements as per DRAM are fulfilled
Prepare tranche 1 bidding documents for submission to ADB	DPWH BAC	6 months before project effectiveness
Approve bidding documents	ADB	5 months before project effectiveness
Issue invitation for bids for tranche 1 civil works packages	DPWH BAC	3 months before project effectiveness
Award the civil works package	DPWH BAC	Within 3 months of effectiveness

Component 2.C – River O&M processes and capacity improved

26. **Rationale.** Maintenance of river assets is central for sustaining flood protection levels and for reducing the needs for costly rehabilitation or deferred maintenance. Budgeting for regular O&M requires having updated asset inventory and conducting regular walkthrough to update asset conditions. Considering the high level of sedimentation in the target river basins, there should be regular O&M.²³ The DPWH ROs will ensure that all river assets under their responsibility would be registered in the AMIS, that is being developed under InFRA1. This component will also strengthen capacity of ROs in handling O&M.

²¹ This was observed on the LS1-c location, where the road on the right side could be elevated and serve as flood protection.

²² The Pampanga master plan is being reviewed by Infracom for approval by October 2025.

²³ During the site visit, the RO informed the mission that their O&M budget allocation is around 50% of their needs.

Table 7: Component 2C – Indicative Features

Item	Description	Indicative Cost (\$ million)
Consulting services and operational costs to support inventory and digitalization of river assets	To collect data, survey, and digitalize river assets with updated information on their conditions to inform O&M needs	1.5
Equipment for regular monitoring	LIDAR drone, and ADCPs for regular surveys	TBD

27. **Preparation.** Once the AMIS is developed, DPWH will conduct training to ROs to update river asset information in the AMIS. DPWH office in charge of O&M in consultation with ROs will assess the existing digital information on river assets and the needs for data collection and surveys in the four river basins.

Action	By	Due by
Finalize the detailed list of equipment to be purchased by the project	DPWH in consultation with ROs	November 2025
Prepare and submit to ADB technical specifications for the equipment and TOR and cost estimates for consulting services	DPWH	November 2025
Approve technical specifications for the equipment and TOR and cost estimates for consulting services	ADB	December 2025
Prepare the request for proposal for consulting services for submission to ADB	DPWH BAC	January 2026
Approve the RFP	ADB	December 2025
Advertise consulting services	DPWH BAC	9 months prior to loan effectiveness assuming that the project is in the national expenditure program or has been approved by the DepDev ICC CabCom
Prepare bidding documents for submission to ADB	DPWH BAC	6 months prior to loan effectiveness
Approve bidding documents	ADB	5 months prior to loan effectiveness
Issue the bidding documents for equipment	DPWH BAC	3 months prior to loan effectiveness
Award the consulting services	DPWH BAC	Within 3 months of loan effectiveness
Award the equipment package	DPWH BAC	Within 3 months of loan effectiveness

Component 2.D – Project Management Construction Supervision, and Engineering Design

28. **Rationale.** This component will support DPWH in managing and supervising construction and in completing DED, social and environment safeguards, and bidding documents for reservoirs proposed for financing under Tranche 3 of the investment program. DPWH will capitalize on the master plans and feasibility studies prepared for the 4 river basins that have identified locations for reservoirs.

Table 7: Component 2D – Indicative Features

Item	Description	Indicative Cost (\$ million)
Consulting services and operational costs for project management, construction supervision and detailed engineering design	That would include surveys, consultations, and DED	100.17

Assumptions: project management and construction supervision is estimated at 3.5% of the CAPEX; and detailed engineering design of reservoirs is estimated at 1.5% of CAPEX.

29. **Preparation.** The scope of the consulting services will be calibrated based on the volume of works to supervise construction works and the volume of DED for reservoirs.

Action	By	Due by
Prepare and submit to ADB, TOR and cost estimates for consulting services	DPWH / DED Consultant	January 2026
Approve TOR and cost estimates for consulting services	ADB	11 months prior to loan effectiveness
Prepare the request for proposal for consulting services for submission to ADB	DPWH BAC	10 months prior to loan effectiveness
Approve the RFP	ADB / DPWH	10 months prior to loan effectiveness
Advertise consulting services	DPWH BAC	9 months prior to loan effectiveness assuming that the project is in the national expenditure program or has been approved by the DepDev ICC CabCom
Award the consulting services	DPWH BAC	Within 3 months of loan effectiveness

Output 3: Watershed ecological functions restored

30. **Rationale.** This component is proposed to support DENR in upscaling sustainable and climate-resilient watershed management to reduce erosion of upper watershed, hence helping maintaining flow capacity of dredged rivers. DENR will establish forest and landscape restoration and protection as the core element of river basin planning, because preserved forests represent the most economical defence for the capital-intensive flood risk management infrastructure. It will adopt an integrated approach to river basin planning and management, consistent with the [National Adaptation Plan](#), to improve the sustainability of flood risk management infrastructure, promote IWRM, and strengthen climate and disaster resilience of the local communities within the targeted river basins using NbS approach. The component will also provide co-benefits such as enhance biodiversity conservation supporting the [Philippines commitments to the Kunming-Montreal Global Biodiversity Framework](#) and increase carbon sequestration in line with the updated Nationally Determined Contributions. It will also establish mechanisms to work with Indigenous People and Local Communities (IPLCs) to undertake restoration activities, which will create an equitable benefit sharing arrangement in utilizing project investment funds. This aims to build strong local buy-in, which in turn will make the project more sustainable in the long-term.

Table 8: Component 3 – Indicative Features

Item	Description	Indicative Cost (\$ million)
Investment planning	Using the river basin master plans and watershed management plans, each target river basin will undertake community-based investment planning. This will involve climate and disaster risk assessment/ diagnostic analysis; developing investment packages prioritizing NbS solutions, community infrastructure, community-based ecotourism, water management, climate -smart agriculture; and identifying funding and financing options. The investment planning will also include market and value chain analysis to identify key market opportunities and demand from private sector.	10
Capacity building activities	A capacity development plan will be developed and implemented targeting national and local government agencies, river basin management councils, community/farmers on suitable approaches and technologies for nature-based solutions for watersheds restoration and livelihoods improvement, such as integrated land use planning, integrated watershed management, water and soil conservation, climate-smart agriculture, and monitoring and evaluation.	10
Updating of the river basin management information system	DENR RBMIS will be updated to enhance its features and mainstream climate risk in planning and decision-making.	2
Forest and landscape restoration	Based on investment planning, priority areas for forest and landscape restoration within the target river basins will be implemented with interventions such as reforestation, agroforestry, water management, etc. Where possible involvement of IPLCs for these activities will be supported.	40
Rural livelihoods diversified and improved	Based on investment planning, priority livelihood activities (agriculture, forestry, and ecotourism) in selected areas will be implemented with a particular focus on IPLCs.	48

31. **Preparation.** ADB mobilized TA resources to support DENR in preparing a concept note for this component, ADB will further mobilize consultants to conduct field surveys, consultations and to develop the full concept for inclusion in the ICC document.

Action	By	Due by
Send a request to DENR to confirm their participation as implementing agency	DPWH	September 2025
Engage technical consultants for the feasibility study	ADB	September 2025
Prepare feasibility study and consultations for ICC submission	ADB	October 2025-January 2026
Advertise consulting services	DENR BAC	9 months prior to loan effectiveness 11 months prior to loan effectiveness
Award the consulting services	DENR BAC	Within 3 months of loan effectiveness

32. **Social safeguards.** As per the ADB safeguard policy, the investment program is expected to be category A for involuntary resettlement (IR) and Category B for Indigenous People (IP) safeguards based on the feasibility studies. The mission will reconfirm categorization once the DED consultant would update the design. The DED consultants will prepare the resettlement plans and indigenous people plans for all river improvement works already identified. Since the financing modality is MFF, a resettlement framework (RF) and IP Framework will be prepared in accordance with ADB's policy.²⁴ These safeguards frameworks will clarify safeguard principles and requirements governing screening and categorization, social assessment and preparation and implementation safeguard plans of components/ subprojects to be prepared after MFF approval.

Action	By	Due by
Screening and Categorization for IR and IP	ADB	October 2025
Preparation and Submission to ADB of Resettlement Framework and Indigenous Peoples Framework	DPWH with TRTA support	December 2025
Preparation and Submission to ADB of Resettlement Plan and Indigenous Peoples Plan/RIPP	DPWH with DED consultant support	Q1 2026
Review of Resettlement Framework/RP and Review IPF/IPP	ADB	Within 2 weeks following submission
Finalize and submit to ADB final frameworks and plans	DPWH	within 2 weeks following ADB review
Submit application for CNO/CP with NCIP	DPWH	January 2026
Issuance of CP/CNO	NCIP	April 2026

33. **Grievance Redress Mechanism (GRM)** – A project-level GRM should be set up during the preparation of social safeguards documents since this will be included in the RP/RIPP.

Action	By	Due by
Establish a project-level GRM	DPWH	3 months before loan effectiveness

34. **Social safeguards – Sexual Exploitation, Abuse, and Harassment (SEAH).** Through TA 10004-REG,²⁵ ADB will support DPWH to develop and enhance systems, policies, and protocols to prevent, mitigate and respond to risks of Sexual Exploitation, Abuse and Harassment (SEAH) in civil works and pilot Good Practice Note on SEAH.²⁶

Action	By	Due by
Due Diligence	ADB/Consultant/DPWH	September 2025

35. **Gender and social inclusion.** ADB will provide guidance to DPWH to ensure that the project fully integrates gender and social inclusion features to address identified gender gaps and promote women's empowerment. It is expected that women, children, people with disabilities and the elderly and Indigenous Peoples and Local Communities (IPLCs) can participate and fully benefit from the project, especially for: (i) identification, prioritization and design of flood risk

²⁴ With the project concept note for approval in 2026, the Environment and Social Framework (ESF) will apply.

²⁵ ADB. 2022. [TA-10004-REG: Addressing Sexual Exploitation, Abuse, and Harassment in ADB Operations](#). The TA will contribute to the collection of evidence and data, and preparation of qualitative assessment of gaps and issues to be filled and addressed to effectively support ADB operations in addressing SEAH risks and raising awareness and strengthening the capacities of government agencies as well as non-government organizations and service providers in SEAH prevention, risk mitigation, and response following good practices and principles of a survivor-centered approach.

²⁶ ADB. 2023. [Good Practice Note on Addressing Sexual Exploitation, Abuse, and Harassment in ADB-Financed Projects with Civil Works](#). Manila.

reduction measures; (ii) watershed management measures. The dissemination of information to the communities should consider formats that are friendly for women, children, people with disabilities and the elderly.

Action	By	Due by
Prepare the Poverty, Social Inclusion, and Gender Assessment and Action plan	TRTA	2025

36. **Environment safeguards.** The mission reviewed the environmental safeguards requirements in accordance with both Philippine government regulations and ADB's safeguards policy. An **Environmental Assessment and Review Framework (EARF)** will be prepared to comply with MFF requirements. The EARF will outline the safeguard principles and requirements for screening and categorization, environmental assessment, and the preparation and implementation of safeguard plans for components, projects, and subprojects to be developed following MFF approval.

37. Results from the initial assessments conducted during the preparation of the FS suggest that certain project components may pose significant environmental impacts associated with large-scale infrastructure development. These include the Jalaur River Basin subproject—which involves constructing a new diversion channel—and the Central Luzon–Pampanga subproject, which could potentially affect internationally recognized critical habitats. While ADB will undertake further internal review and confirmation of the proposed environmental categorization, the DED consultants will initiate preparations for the Environmental Impact Assessment (EIA) process in close coordination with the relevant government agencies and stakeholders.

Action	By	Due by
Screening and Categorization	ADB	October 2025
Leveling-off with EA and TRTA/DED consultants with the requirements (EARF, EIA, special environment (for dams) assessment studies- E-flows, Biodiversity Offset Plan etc)	ADB	December 2025
Review of available environment assessment reports prepared during the FS stage.	DED Consultant / TRTA	November 2025
Consultations 1. With DENR on affected mangroves (clearances on earthballing) 2. With CSOs/ relevant stakeholders – Biodiversity Offset Plan	DPWH / DENR/ DED	December 2025
Preparation of EARF	TRTA	January 2026
Domestic requirements: ECC applications (including acquiring prerequisite env permits/clearances from other entities)	DPWH/ DED	Prior to ICC submission:
ADB Env Due diligence requirement for Tranche 1 (Integrated EIA/IEE) <i>Note: Disclosure is 120 days prior to Project approval if confirmed Category A</i>	DPWH DED Consultants / TRTA	February 2026

38. **Costing.** Considering the volume of civil works and other components across the four river basins, the investment program is estimated to cost \$3.1 billion over a period of 10 years, to be delivered in tranches. Table 9 below present the base costs per tranche and components. The mission will closely coordinate with DPWH and proposed implementing agencies in refining those costs.

Table 9: Estimated investment program base costs per tranches and components (\$)

Component		Tranche 1	Tranche 2	Tranche 3	Total
Output 1: Flood risk management made operational.		11,501,000.00	1,000,000.00		16,501,000.00
1.A	Flood Forecasting and Early Warning operationalized	6,501,000.00			6,501,000.00
1.B	Institutional capacity for Flood Risk Management enhanced	5,000,000.00	5,000,000.00		10,000,000.00
Output 2: Water infrastructure developed and O&M enhanced		289,898,486.06	1,108,123,103.73	1,578,241,586.06	2,976,263,175.85
2.A	Right of way acquisition and associated programs delivered	66,017,172.56	203,710,072.24		269,727,244.80
2.B	FRM infrastructure and water storage developed or upgraded	157,398,228.10	891,047,321.66	1,554,917,818.78	2,603,363,368.54
2.C	River O&M processes and capacity improved	3,000,000.00			3,000,000.00
2.D	Project Management Construction Supervision, and Engineering Design	63,483,085.40	13,365,709.82	23,323,767.28	100,172,562.51
Output 3: Watershed ecological functions restored		20,000,000.00	30,000,000.00	50,000,000.00	100,000,000.00
3.A	Agroecological landscape restoration interventions scaled-up	10,000,000.00	30,000,000.00		40,000,000.00
3.B	Rural livelihoods diversified and improved			48,000,000.00	48,000,000.00
3.C	Capacities and systems for watershed planning and management strengthened	10,000,000.00			10,000,000.00
3.D	Sustainable and innovative finance mechanisms implemented			2,000,000.00	2,000,000.00
TOTAL		321,399,486.06	1,143,123,103.73	1,628,241,586.06	3,092,764,175.85

Source: ADB estimates

39. **Financing.** Through its letter dated 10 February 2025, DOF provided clearance to the Agence Française de Développement (AFD) to coordinate with the ADB on structuring cofinancing for investment requirements of the three river basins under InFRA 2. Subject to the final total program cost, project design, and resulting discussions with the government and ADB, AFD will be able to co-finance an indicative amount of EUR 200 to 250 million.²⁷ The mission will gradually involve AFD in preparation to structure the investment, advise on ecological engineering, and explore grant financing to support implementation of the investment program. Other development partners, including the European Investment Bank, the Asian Infrastructure Investment Bank, and KfW, have also expressed interest in co-financing the program considering the financial needs. DOF will advise on additional cofinancers that can proactively contribute to project preparation and implementation. With the strong climate elements of the program, the project team will proactively explore potential for concessional climate financing, including from the ASEAN Catalytic Green Finance Facility and other fund sources.

Action	By	Due by
Confirm additional co-financer(s)	DOF	End of 2025

40. **Technical assistance.** ADB has mobilized an international water resources specialist and a national water resources specialist to support review of technical reports and processing of the project towards enhanced climate resilience. Under Technical Assistance 10240-REG: Promoting Climate-Resilient Rural Development and Food Security in Southeast Asia, ADB is recruiting financial management specialist, economist, environment and social safeguards specialists, and communication specialist to support processing, including guidance to the DED consultants, and initial implementation of the investment program. The consultant will support DPWH in preparing the documents for the Investment Coordination Committee (ICC).

Action	By	Due by
Mobilize TRTA consultants	ADB	August 2025
Take stock and prepare a knowledge management plan to introduce innovations in the sector	TRTA communication specialist	November 2025
Update project activities, costing and EFA	TRTA consultants	December 2025
Prepare the Strategic Procurement Planning (SPP) document and Financial Management Assessment in consultations with implementing agencies	TRTA consultants	December 2025
Document the IWRM process adopted for the investment program	TRTA communication specialist	Continuous

41. The ADB also mobilized resources under TA10229-PHI: Promoting Climate-Smart Infrastructure in the Philippines to support DPWH in upgrading of various standards including the Design Guidelines, Criteria, and Standards (DGCS) Manual. The upgraded standards will promote greater climate resilience, from planning to design and operation; and NBS for river works. The TA will also identify FRM infrastructure projects critical to the country's climate change adaptation response and review planning of FRM projects to embed climate-resilient designs.²⁸

42. **Approval process.** The ADB project team will closely work with DPWH and proposed implementing agencies in preparing the project, including technical support to the DED consultant

²⁷ AFD also contributes to the Nature Solutions Finance Hub (NSFH) for Asia and the Pacific, a concessional fund resource managed by ADB, to support project pipeline development, capacity building and nature-based solutions (NbS) financing instruments. InFRA2 is one of the identified projects to be supported by the NSFH.

²⁸ ADB. 2023. [Promoting Climate-Smart Infrastructure: Technical Assistance Report](#). Manila.

to ensure that their deliverables comply with ADB and government requirements. With TRTA support, DPWH, with TRTA support, will update the ICC document consistent with the enhancement of the design, and delivery per tranches for the four river basins. Detailed steps for processing of the investment program are shown below.

Action	By	Due by
Establish a technical working group (DPWH, DepDev, DENR, DILG) to supervise preparation	DPWH	November 2025
Finalize FS for Component 3	DENR	Jan 2026
Complete due diligence of ROWA requirements for the entire program		
Finalize the ICC document	DPWH	Feb 2026
Submit ICC documents to DepDev	DPWH	Mar 2026
Preparation of Project Evaluation Report (PER)	ICC Secretariat	Apr-26
ICC Technical Board endorsement	DepDev-ICC	Apr-26
ICC Cabinet Committee approval	DepDev-ICC	May-26
Request for Forward Obligational Authority (FOA)	DepDev ICC	Q1-27
Monetary Board Approval in Principle	DOF	Q1-27
Loan Technical Discussion	DOF	Q1-27
Issuance of the President's Special Authority	DOF/OPR	Q1-27
ADB Board Approval	ADB	Q1-27
ADB Loan Signing	DOF	Q1-27

III. CONCLUSION AND RECOMMENDATIONS

43. The Mission would like to express its sincere appreciation for the Government's support during the mission. The Mission agreed to assess preparation on a regular basis with the next review mission tentatively scheduled in February 2026.

Signed in Manila, xxx 2025

For the Government of the Philippines

Emil K. Sadain, CESO I

Senior Undersecretary

Department of Public Works and Highways

For the Asian Development Bank

Eric Quincieu

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Southeast Asia Regional Department

Attachments

1. List of Persons Met
2. Mission Schedule
3. Implementation Arrangement Chart
4. Project Implementation Plan (PIP)
5. Cost Estimates Table
6. Maps
7. Initial Procurement Plan

Attachment 1. List of Persons Met

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Vince Balahan, Project Development Officer, RBCO
Angelica Jacel, Project Coordinator, RBCO
Jea Louise Robelo, Project Coordinator, RBCO

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Allan Marcilla, City ENRO,
Ronald Nuneza, CEO
Manuel A. Torres Jr., City Environment Natural Resources Officer
Dominador S. Lagare Jr., City Councilor
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Richard Alendido, City Councilor
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Renan A. Pagdor, Sup. Engineer A
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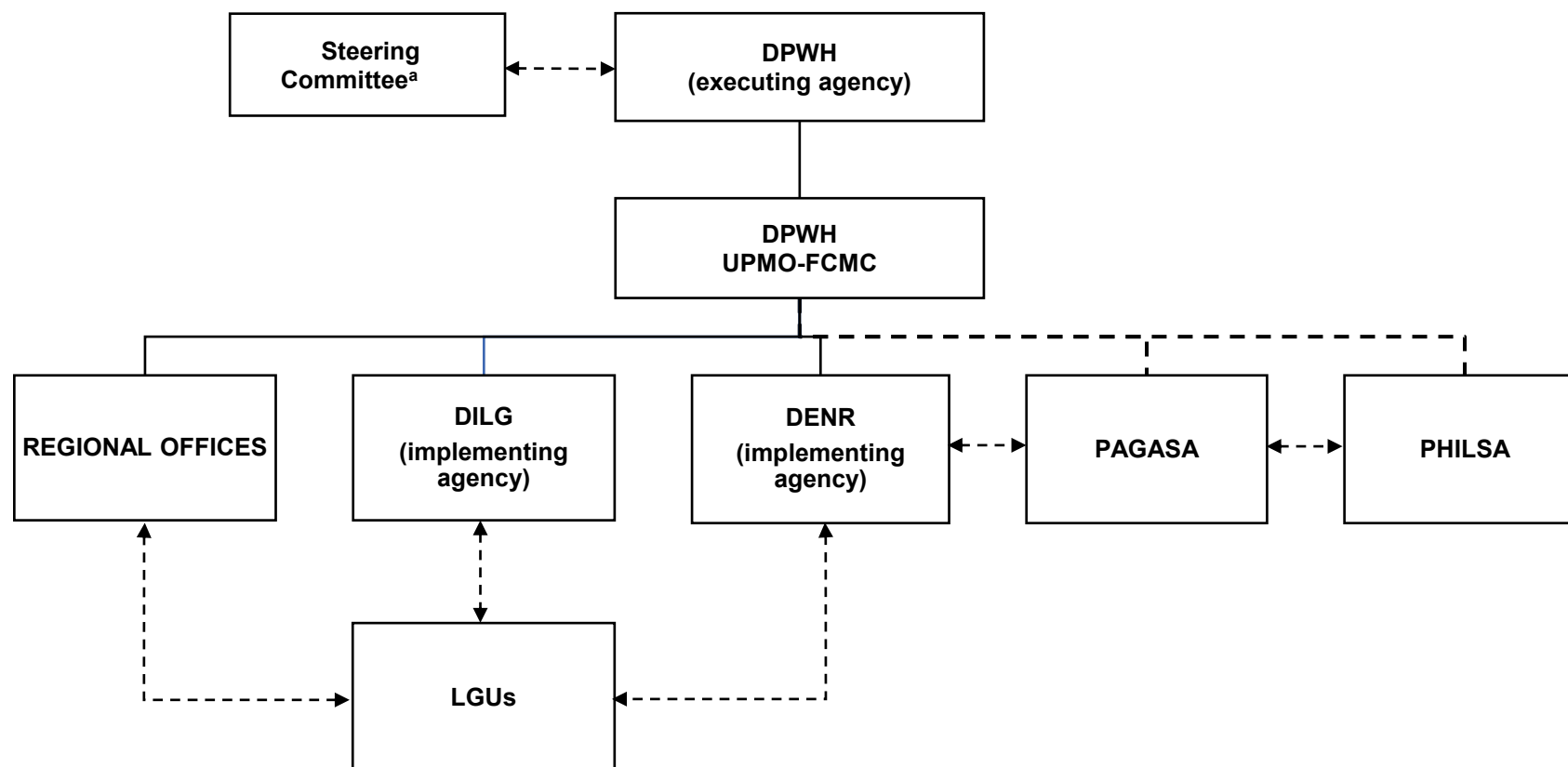
Consultants (IPIF-2)

Younghoon Joung, Team Leader

Attachment 2. Mission Schedule

Date	Time	Proposed Agenda
13 March	AM	Kick-off meeting at DPWH with relevant agencies (NEDA, DOF, DENR, NIA, DILG, RBOs, LGUs, etc.) - Mission objective - Project features and financing
	PM	Status update on project preparation activities with DPWH: Infra 2 and Pampanga
17 March	AM	Technical meeting with DPWH, PAGASA, and PhilSA (Infra 2) - Presentation and discussion on project scope for the FFEWS component - Opportunities to integrate Earth Observation Services with PhilSA - Confirmation of scope
	PM	Technical meeting with DPWH, DILG (Infra 2) - Presentation and discussion on project scope for the LGU support component - Confirmation of scope
18-21 March		Site visit at Buayan-Malungon River basin in Mindanao
6 May		Workshop on water convergence program and watershed management with DPWH, DENR, and NEDA - DENR and NEDA water convergence program and directions - ADB case studies on IWRM - DPWH presentation of the Infra 2 and Pampanga projects - WRMO/NWRB proposal on integration and IWRM for the Infra 2 and Pampanga projects - FMB/RBCO proposal on watershed management for the Infra 2 and Pampanga projects
13 May	PM	Technical meeting with DPWH and DENR (Infra 2, Pampanga) - Presentation and discussion on project scope - Opportunities to integrate IWRM, watershed management and NBS measures - Detailed engineering design workplan
16 May	PM	Technical meeting with DPWH, DILG (Infra 2, Pampanga) - Presentation and discussion on project scope for the LGU support component - Confirmation of scope
22 May	AM	Technical meeting with DPWH and NEDA (Infra 2 and Pampanga) - Timeline and readiness (land acquisition and resettlement, indigenous people, and environment permits) - Financing modality
29 May	PM	Technical meeting with PAGASA - Coordination of the list of equipment to be purchased in the 4 river basins
26 Aug	PM	Technical meeting with PhilSA - To be updated

Attachment 3. Proposed Implementation Arrangement



————— Command Authority
 <-.-.-.-> Coordination Function

DENR = Department of Environment and Natural Resources, DILG = Department of Interior and Local Government, DPWH = Department of Public Works and Highways, FCMC = Flood Control Management Cluster, LGU = Local Government Unit, PAGASA = Philippine Atmospheric, Geophysical and Astronomical Services Administration, RFO = regional field office, UPMO = Unified Project Management Office.

^a The Steering Committee comprises: Department of Finance (Chair), Department of Budget and Management; DENR; DILG; National Economic and Development Authority; National Irrigation and Administration; PAGASA of the Department of Science and Technology; River Basin Management Councils of the target river basins (members).

Attachment 5. Indicative Tranche Cost

Output/Main Activities/Sub Activities	In charge
Output 1: Flood risk management made operational.	
1.A. Flood Forecasting and Early Warning operationalized	
<u>Preparatory Activities</u>	
Identification of Agencies and Stakeholders involved	DPWH / ADB
Preparation and Approval of FFEWS Project Inception Report:	DPWH
A. Planning and Design	
1. Site surveys and validation for equipment installation	PAGASA
2. Finalization of locations for radar and discharge monitoring	PAGASA
3. Preparation of detailed engineering designs and O&M plans	PAGASA / DPWH
4. Preparation of tender documents requirements	PAGASA / DPWH
B. Procurement and Installation	
1. Procurement and Installation of Hydrometeorological Systems	DPWH / PAGASA
2. Procurement of Consultancy Services	DPWH / PAGASA
a. Marine Meteorology Master Plan	Contractor
b. Developing Flood Forecasting Models	Contractor
C. Capacity Building and Community Engagement for FFEWS	
1. Training for DPWH and PAGASA regional staff on:	
a. Equipment operation and maintenance	Contractor
b. Field data collection and validation	Contractor
c. Hydrological data analysis and flood modeling	
2. Community awareness sessions in LGUs	Contractor / DPWH / LGU
D. Data Integration and Sharing	
1. Establish protocols for real-time data sharing between PAGASA, DPWH, FMB, and LGUs	Contractor
2. Integrate new data streams into national flood forecasting systems	DPWH / LGU
3. Develop dashboards or portals for data access and visualization	PAGASA
1.B. Institutional capacity for Flood Risk Management enhanced	

Output/Main Activities/Sub Activities	In charge
<u>Preparatory Activities</u>	
Establishment of Project Management Office	DPWH / DILG
Preparation and approval of Project Inception Report	DPWH / DILG / ADB
Signing of Memorandum of Agreement among parties	DPWH / DILG
A. Mainstreaming of Flood Risk	
Management in local development plans	
1 Selection of Final List of Partner LGUs and Communities (Barangays)	DILG / ADB
2 Preparation and signing of Memorandum with partner cities, municipalities and barangays	DILG / ADB
3 Mainstreaming (FRM) in the CLUP and LDRRMPs	DILG / DHSUD
a. Creation of Technical Working Group	DILG / LGU
b. Engagement of Experts/Resource Persons	DILG / DHSUD
c. Conduct of CDRA Training	DILG / DHSUD
d. Preparation of CDRA Report	DILG / DHSUD
e. Updating/Mainstreaming of FRM to CLUP	DHSUD
f. Updating/mainstreaming of FRM in LDRRMPs	DILG / DHSUD / LGU
g. Adoption and approval of Local Councils	DILG / DHSUD
B. Capacity Building on FRM 1	
1. Policy Review an evaluation studies	
a. Policy review of quarrying	DPWH / LGU
b. Evaluation studies on structures along river banks and possible resettlement of communities	DPWH / Consultant
c. Assessment of the Implementation of Solid Waste Management in Flood Prone Barangays	DPWH / Consultant / LGU
d. Assessment of Drainage Management System	DPWH / Consultant / LGU
2. Capacity Building for the adoption of Climate Smart Agriculture for FRM	
a. Engagement of Experts/Resource persons	DPWH / ADB
b. Final Selection of covered LGUs and barangays	DPWH / LGU
c. Orientation, Needs Assessment and Preparation of Hands On training plan	DPWH / DILG / LGU
d. Capacity building Implementation	DPWH / DILG / LGU

Output/Main Activities/Sub Activities	In charge
e. Reporting and Evaluation	DPWH / DILG
3. Enhancing Public Awareness and Participation	
a. Engagement of IEC Specialist	ADB / DPWH
b. Scoping of Available Communication Platforms for FRM in the River Basin	Consultant
c. Planning Workshops with Information Officers	Consultant / LGU
d. Training of Information Officers on various aspects of communication platforms and utilization	Consultant / LGU
e. Setting-up of Project's Social Media Platform, management and updating	Consultant / LGU
f. Development, production and distribution of Project's IEC Materials	Consultant / LGU
C. Monitoring and Evaluation	
1 Baseline Survey	DPWH / DILG / LGU
2 Annual Review	DPWH / DILG / LGU
3 Mid Term Review	DPWH / DILG / LGU
4 Immediate Impact Assessment	DPWH / DILG / LGU
Output 2: Water infrastructure developed and O&M enhanced	
2.A. Right of way acquisition and associated programs delivered (DPWH)	
A. Right-Of-Way (ROW) Acquisition	
1. Procurement of ROW and IP/IR Consultants	DPWH
a. Conduct Public Consultations	DED Consultant
b. Conduct SES / IOL / RCS / Parcellary Survey	DED Consultant
c. Conduct Land Appraisal and Valuation and LRP	DED Consultant
2. Coordinate with LGUs and NHA/DHSUD for relation sites and LRP	DPWH
3. Coordination with agencies concerned with LRP and GRM	DPWH
4. Consultation with NCIP and presentation of project documents	DPWH
5. Evaluation period of NCIP of areas for CP and CNO	DPWH
a. For Certificate of Non-Overlap (CNO):	DPWH
i. Conduct a Field Based Investigation (FBI)	DPWH
ii. Apply for CNO	DPWH
iii. Secure CNO	DPWH

Output/Main Activities/Sub Activities	In charge
iv. For Certificate of Pre-Condition (CP):	DPWH
i. Conduct a Field Based Investigation (FBI)	DPWH
ii. Apply for CP	DPWH
iii. Conduct FPIC process	DPWH
iv. Secure CP	DPWH
6. Preparation of DED RAP Report (ROW Budget, Legal Framework, Implementation Arrangements, etc)	Consultant
7. Review and approval of RAP Report	DPWH / ADB
8. Public Consultation and Disclosure to PAPs	Consultant / DPWH
9. Implementation of RAP	DPWH
10. Procurement of PIC (Social Safeguards)	DPWH
11. Implementation Monitoring and Evaluation	DPWH / ADB
B. Environmental Safeguards Compliance	
1.PHI-Government Permits/Clearances	DPWH
1a. Certificate of Non-Coverage (CNC) and Environmental Compliance Certificate (ECC)	DPWH
(i) Preparation and Submission of Project Description for Scoping (PDS) report	DPWH
(ii) Public and Technical Scoping	DPWH
(iii) EIA Proper: Primary Data gathering/ assessments / EIS Report or IEE checklist preparation	DPWH/ Consultant
(iv) Submission of EIA/ IEE checklist	DPWH
(v) EIS review by EMB review committee	DPWH
(vi) Public Hearing	DPWH
(vii) ECC decision/ ECC issuance	DENR
1b.Other Clearances	DPWH
(i) Pre-Requisite for ECC issuances (as applicable): PAMB Clearance/ SAPA (if within the bounds of Protected Area); Certificate of Precondition (if within Ancestral domain); Forestry-Related clearances [mangrove earth balling permit, Sustainable Forest Land Management Agreement (SLFMA)	DPWH
(ii) Before construction of works: Tree cutting permit, hazardous waste generator ID, PTO, CSHP, Water permit, discharge permit, quarry permits, including permit to transport; Dredging clearances	DPWH
2. ADB Environment safeguards requirements [SPS 2009 Track]	

Output/Main Activities/Sub Activities	In charge
2a. Screening/ Categorization	ADB
2b. Due Diligence Requirements	DPWH
(i) Environmental Assessment and Review Framework (EARF) (MFF project)	DPWH
(ii) Default MFF: IEE/EIA covers Tranche 1;	DPWH
(iii) MFF for Large-Stand-Alone Project (modified approach): IEE/ EIA cover the whole MFF scope	DPWH
2c. If Project is Category A, Peer review session with OSFG; 120 days disclosure before board approval	DPWH
2d. SPCM Issuance	ADB
2e. Project Implementation	
(i) Procurement of PIC (Environment safeguards); External Monitoring Agent if Category A	DPWH
(ii) Site-Specific Environmental Management Plan (SSEMP) / Obtaining prerequisite clearances before starting Civil works	Contractors
(iii) Monitoring and Evaluation	ADB, PIC, DPWH
2.B. FRM infrastructure and water storage developed or upgraded (DPWH)	
A. Detailed Engineering Design (DED) Phase	
1. Infrastructure under Tranche 1	Consultant
2. Infrastructure under Tranche 2 and 3	Consultant
B. Finalization and submission of reports and drawings	Consultant
C. Preparation of Bid Documents	DPWH
D. Procurement of Civil Works Contractor	DPWH / ADB
E. Contract Award and Mobilization of Contractor	DPWH
F. Construction	
1. Tranche 1	Contractor
2. Tranche 2	Contractor
3. Tranche 3	Contractor
G. Testing, Commissioning, & Turnover	DPWH / Contractor
2.C. River O&M processes and capacity improved	
A. Planning and Preparation	
1. Procurement of Consulting Services	DPWH

Output/Main Activities/Sub Activities	In charge
2. Procurement of Equipment	DPWH
B. Capacity Building, Data Collection and System Integration	
1. Establish Field Survey and Data Collection Teams	Consultant
2. Conduct training for ROs on AMIS usage and asset updating	Consultant / DPWH
3. Assess existing digital asset data and identify gaps	Consultant
4. Conduct Field Surveys	Consultant
5. Digitalize River Asset Data	Consultant
6. Process and Analyze Data	Consultant
7. Update AMIS with new asset data and condition assessments	Consultant / DPWH
D. Operationalization and Monitoring	
1. Deploy equipment for regular monitoring	DPWH
2. Conduct regular walkthroughs and asset condition updates	DPWH
3. Monitor O&M performance and asset condition trends via AMIS	DPWH
2.D. Project Management and Construction Supervision (PIC)	
<u>Tranche 1</u>	
A. Mobilization and Inception	
1. Establishment of PIC and kick-off meeting with DPWH	DPWH / PIC / DED Consultant
2. Review existing project documents and plans	PIC / DED Consultant
3. Conduct site visits and prepare the inception report	PIC / DED Consultant
B. Pre-Construction	
1. Final check of detailed engineering design (DED)	PIC / DED Consultant
2. Assist with bidding and contractor selection	DPWH / PIC
3. Coordinate permits and clearances	DPWH / PIC / DED Consultant
4. Conduct pre-construction meeting with contractor and stakeholders	DPWH / PIC / DED Contractor
C. Construction Supervision	
1. Monitor construction progress and quality	PIC / DPWH

Output/Main Activities/Sub Activities	In charge
2. Review contractor submissions (materials, plans, etc.)	PIC / DPWH
3. Submit monthly progress reports	PIC
4. Conduct regular coordination meetings	PIC
D. Testing, Commissioning, and Turnover	
1. Inspect completed works and prepare punch list	PIC
2. Supervise testing of structures and equipment	PIC
3. Assist in final project acceptance and turnover	PIC / DPWH
4. Prepare final report and documentation	PIC
E. Defects Liability Period	
1. Conduct periodic site inspections	PIC / DPWH
2. Monitor and report defects	PIC
3. Confirm corrective actions are done by the contractor	PIC
4. Issue final completion certification	PIC
<u>Tranche 2</u>	
A. Mobilization and Inception	
1. Establishment of PIC and kick-off meeting with DPWH	DPWH / PIC / DED Consultant
2. Review existing project documents and plans	PIC / DED Consultant
3. Conduct site visits and prepare the inception report	PIC / DED Consultant
B. Pre-Construction	
1. Final check of detailed engineering design (DED)	PIC / DED Consultant
2. Assist with bidding and contractor selection	DPWH / PIC
3. Coordinate permits and clearances	DPWH / PIC / DED Consultant
4. Conduct pre-construction meeting with contractor and stakeholders	DPWH / PIC / DED Contractor
C. Construction Supervision	
1. Monitor construction progress and quality	PIC / DPWH
2. Review contractor submissions (materials, plans, etc.)	PIC / DPWH

Output/Main Activities/Sub Activities	In charge
3. Submit monthly progress reports	PIC
4. Conduct regular coordination meetings	PIC
D. Testing, Commissioning, and Turnover	
1. Inspect completed works and prepare punch list	PIC
2. Supervise testing of structures and equipment	PIC
3. Assist in final project acceptance and turnover	PIC / DPWH
4. Prepare final report and documentation	PIC
E. Defects Liability Period	
1. Conduct periodic site inspections	PIC / DPWH
2. Monitor and report defects	PIC
3. Confirm corrective actions are done by the contractor	PIC
<u>Tranche 3</u>	
A. Mobilization and Inception	
1. Establishment of PIC and kick-off meeting with DPWH	DPWH / PIC / DED Consultant
2. Review existing project documents and plans	PIC / DED Consultant
3. Conduct site visits and prepare the inception report	PIC / DED Consultant
B. Pre-Construction	
1. Final check of detailed engineering design (DED)	PIC / DED Consultant
2. Assist with bidding and contractor selection	DPWH / PIC
3. Coordinate permits and clearances	DPWH / PIC / DED Consultant
4. Conduct pre-construction meeting with contractor and stakeholders	DPWH / PIC / DED Contractor
C. Construction Supervision	
1. Monitor construction progress and quality	PIC / DPWH
2. Review contractor submissions (materials, plans, etc.)	PIC / DPWH
3. Submit monthly progress reports	PIC
4. Conduct regular coordination meetings	PIC

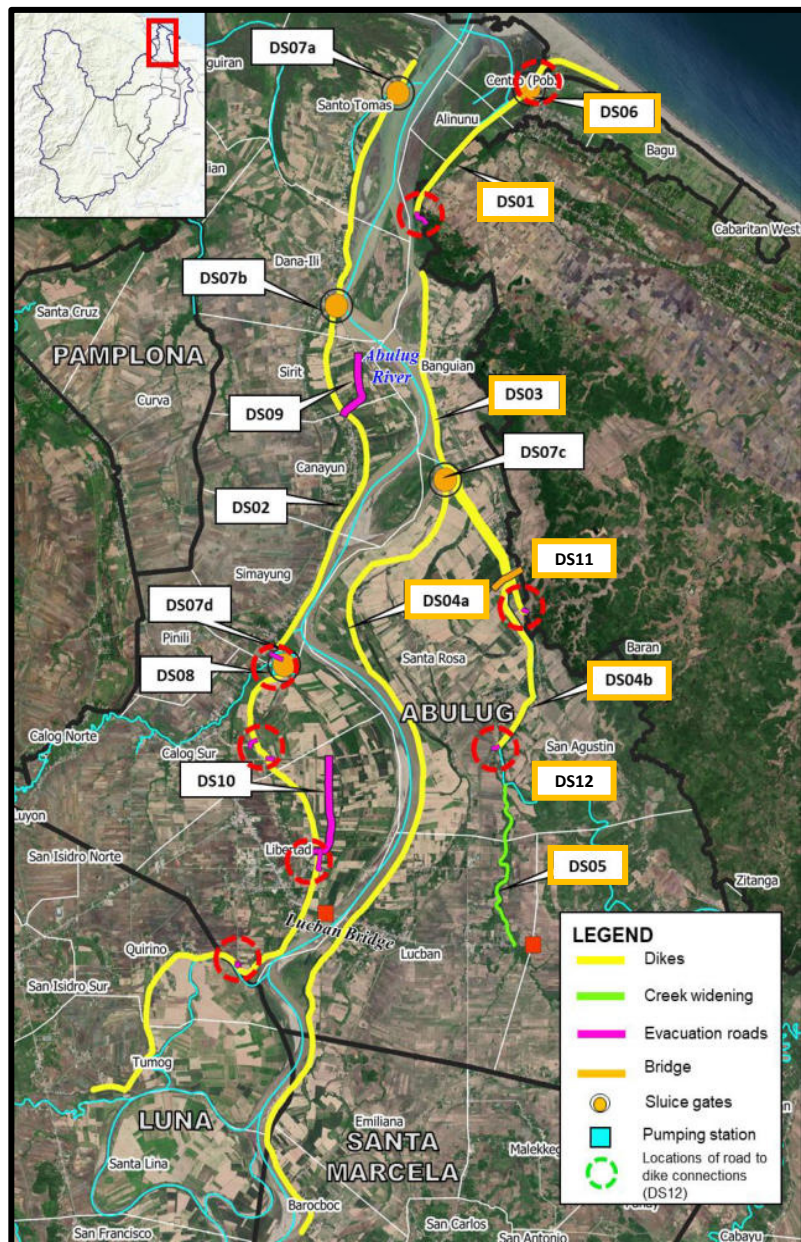
Output/Main Activities/Sub Activities	In charge
D. Testing, Commissioning, and Turnover	
1. Inspect completed works and prepare punch list	PIC
2. Supervise testing of structures and equipment	PIC
3. Assist in final project acceptance and turnover	PIC / DPWH
4. Prepare final report and documentation	PIC
E. Defects Liability Period	
1. Conduct periodic site inspections	PIC / DPWH
2. Monitor and report defects	PIC
3. Confirm corrective actions are done by the contractor	PIC
4. Issue final completion certification	PIC
Output 3: Watershed ecological functions restored	
3.A. Agroecological landscape restoration interventions scaled-up	DENR
3.B. Rural livelihoods diversified and improved	DENR
3.C. Capacities and systems for watershed planning and management strengthened	DENR
3.D. Sustainable and innovative finance mechanisms implemented	DENR
ICC process	
Finalize the ICC document	TA Consultants
Submit to NEDA	DPWH
Preparation of project evaluation report	DEPDev
Technical board endorsement	DEPDev
Cabinet committee approval	DEPDev
NEDA Board confirmation	DEPDev
Update the ICC document based on DED costing	DEPDev
Submit to NEDA	DPWH
Preparation of project evaluation report	DEPDev
Technical board endorsement	DEPDev
Cabinet committee approval	DEPDev

Output/Main Activities/Sub Activities	In charge
NEDA Board confirmation	DEPDev

Attachment 5. Indicative Tranche Cost

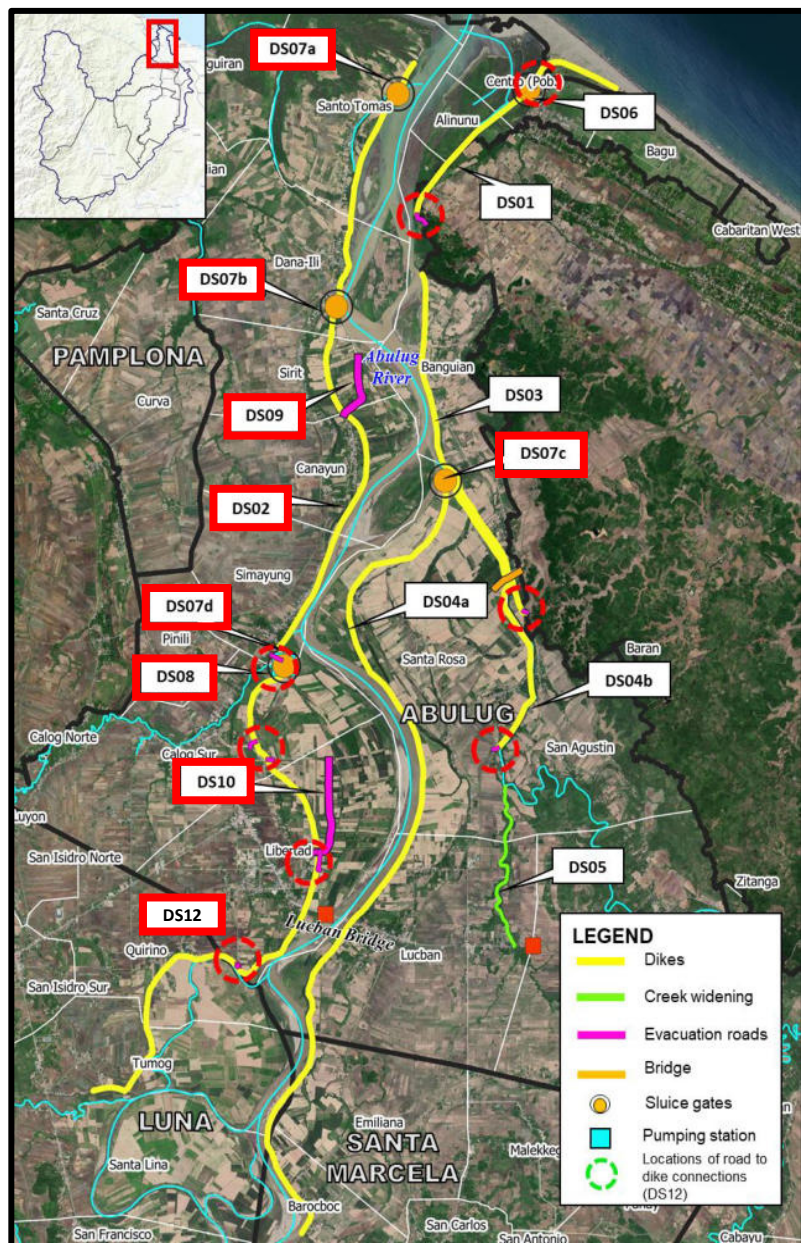
Component		Tranche 1	Tranche 2	Tranche 3	TOTAL (USD)
	Output 1: Flood risk management made operational.	11,501,000.00	5,000,000.00		16,501,000.00
1.A	Flood Forecasting and Early Warning operationalized	6,501,000.00			6,501,000.00
1.B	Institutional capacity for Flood Risk Management enhanced	5,000,000.00	5,000,000.00		10,000,000.00
	Output 2: Water infrastructure developed and O&M enhanced	289,898,486.06	1,108,123,103.73	1,578,241,586.06	2,976,263,175.85
2.A	Right of way acquisition and associated programs delivered	66,017,172.56	203,710,072.24		269,727,244.80
	<i>Apayao-Abulug River Basin</i>	<i>1,873,160.26</i>	<i>70,502,489.03</i>		<i>72,375,649.29</i>
	<i>Jalaur River Basin</i>	<i>14,968,776.06</i>	<i>7,985,400.00</i>		<i>22,954,176.06</i>
	<i>Buayan Malungon River Basin</i>	<i>14,573,994.26</i>	<i>26,181,374.43</i>		<i>40,755,368.68</i>
	<i>Pampanga River Basin</i>	<i>34,601,241.98</i>	<i>99,040,808.78</i>		<i>133,642,050.76</i>
2.B	FRM infrastructure and water storage developed or upgraded	157,398,228.10	891,047,321.66	1,554,917,818.78	2,603,363,368.54
	<i>Apayao-Abulug River Basin</i>	<i>129,096,700.75</i>	<i>112,920,917.67</i>	<i>245,000,646.44</i>	<i>487,018,264.85</i>
	<i>Jalaur River Basin</i>		<i>369,238,200.71</i>	<i>112,556,156.16</i>	<i>481,794,356.87</i>
	<i>Buayan Malungon River Basin</i>	<i>28,301,527.35</i>	<i>27,273,231.56</i>	<i>105,046,021.81</i>	<i>160,620,780.71</i>
	<i>Pampanga River Basin</i>		<i>381,614,971.72</i>	<i>1,092,314,994.38</i>	<i>1,473,929,966.10</i>
2.C	River O&M processes and capacity improved	3,000,000.00			3,000,000.00
2.D	Project Management, Construction Supervision, and Engineering Design	63,483,085.40	13,365,709.82	23,323,767.28	100,172,562.51

Attachment 6. Subproject Maps



Tranche 1: Apayao – Abulug River Basin

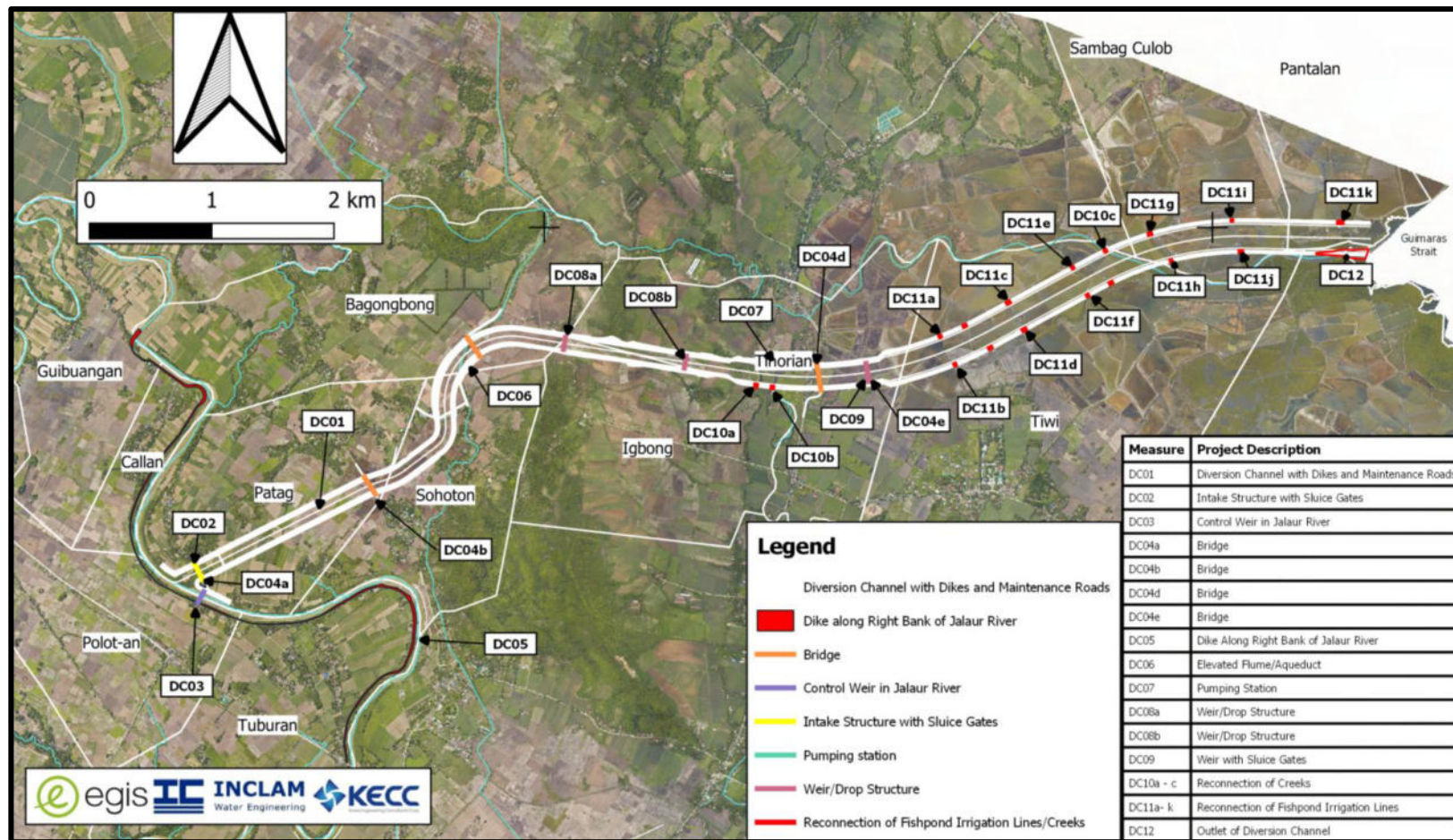
No.	Measure	Description	Location
Tranche 1			
1	DS01	Road dike along right bank of Abulug River	Abulug
2	DS03	Road dike along right bank of Abulug River and Allig Creek	Abulug
3	DS04	Road dike along left and right bank of Allig Cree	Santa Marcela, Abulug
4	DS05	Widening of tributary creek	Abulug
5	DS06	Hydraulic gate for flood protection and river navigation	Abulug
6	DS11	Construction of new bridge designed for higher return period	Abulug
7	DS12	Road to Dike Connection (Right Bank)	Abulug, Luna



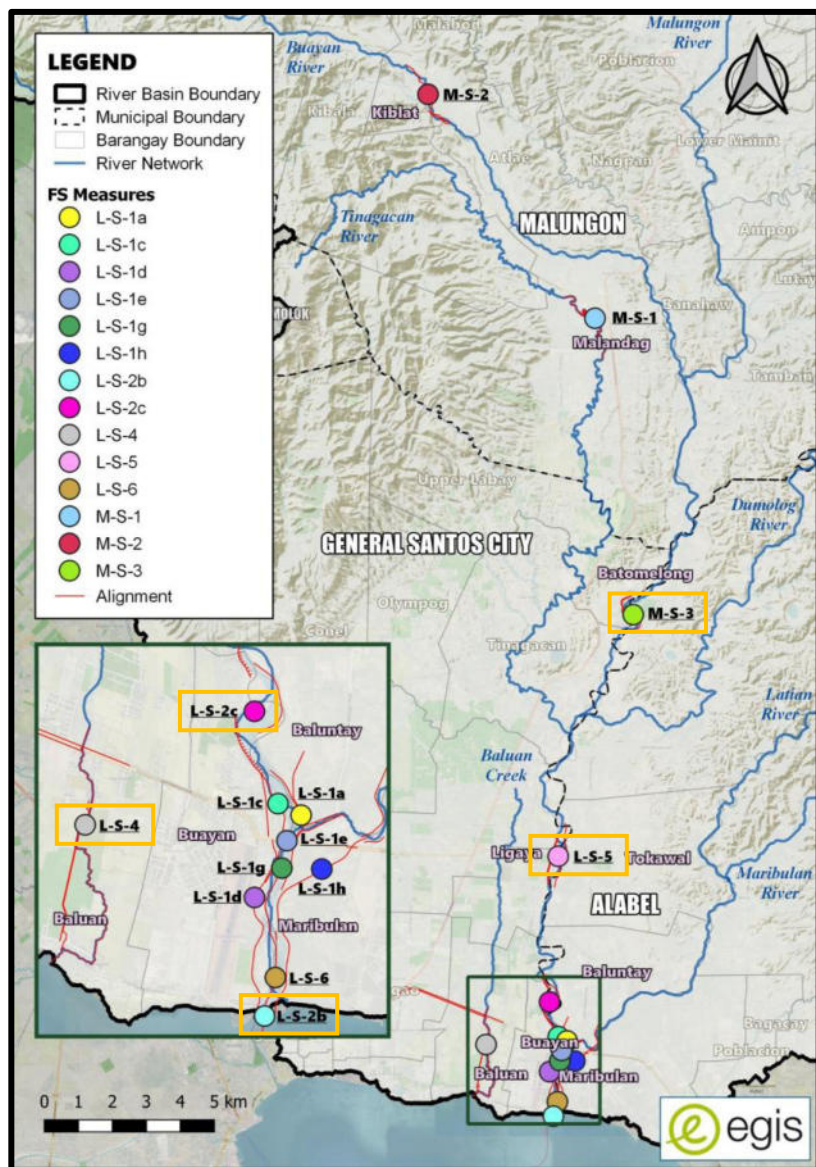
Tranche 2: Apayao – Abulug River Basin

No.	Measure	Description	Location
Tranche 2			
1	DS02	Road dike along left bank of Abulug River	Abulug, Luna
2	DS07	Hydraulic gate for flood protection and river navigation	Abulug
3	DS08	Retention Basin and Pump station	Abulug
4	DS09	Raising of road for evacuation	Abulug
5	DS10	Raising of road for evacuation	Abulug
6	DS12	Road to Dike Connection (Left Bank)	Abulug, Luna

Tranche 2: Jalaur River Basin

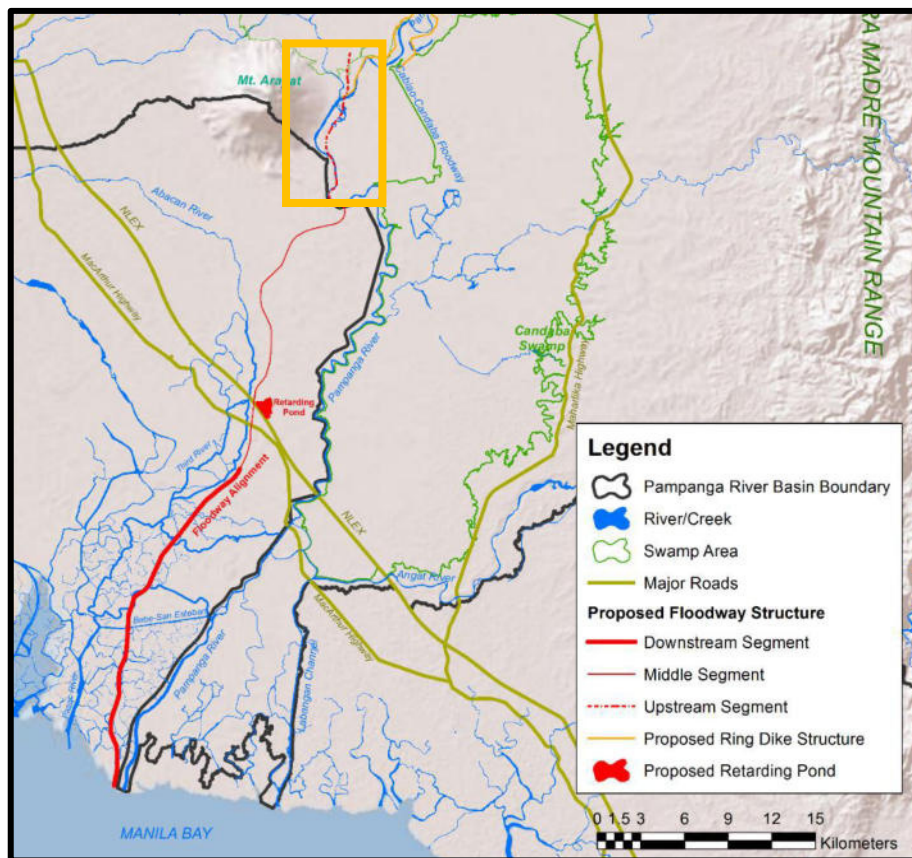


No.	Measure	Description	Location
Tranche 2			
1	DS01-12	Diversion Channel	Baroctac Nuevo, Pototan, Anilao



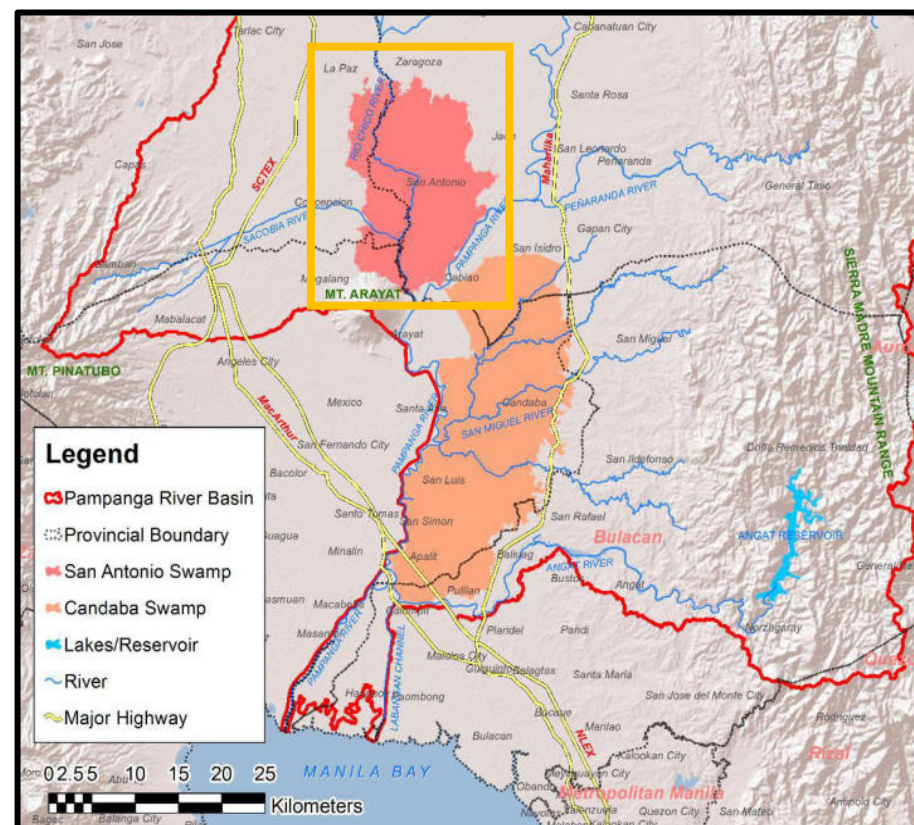
Tranche 2: Buayan – Malungon River Basin

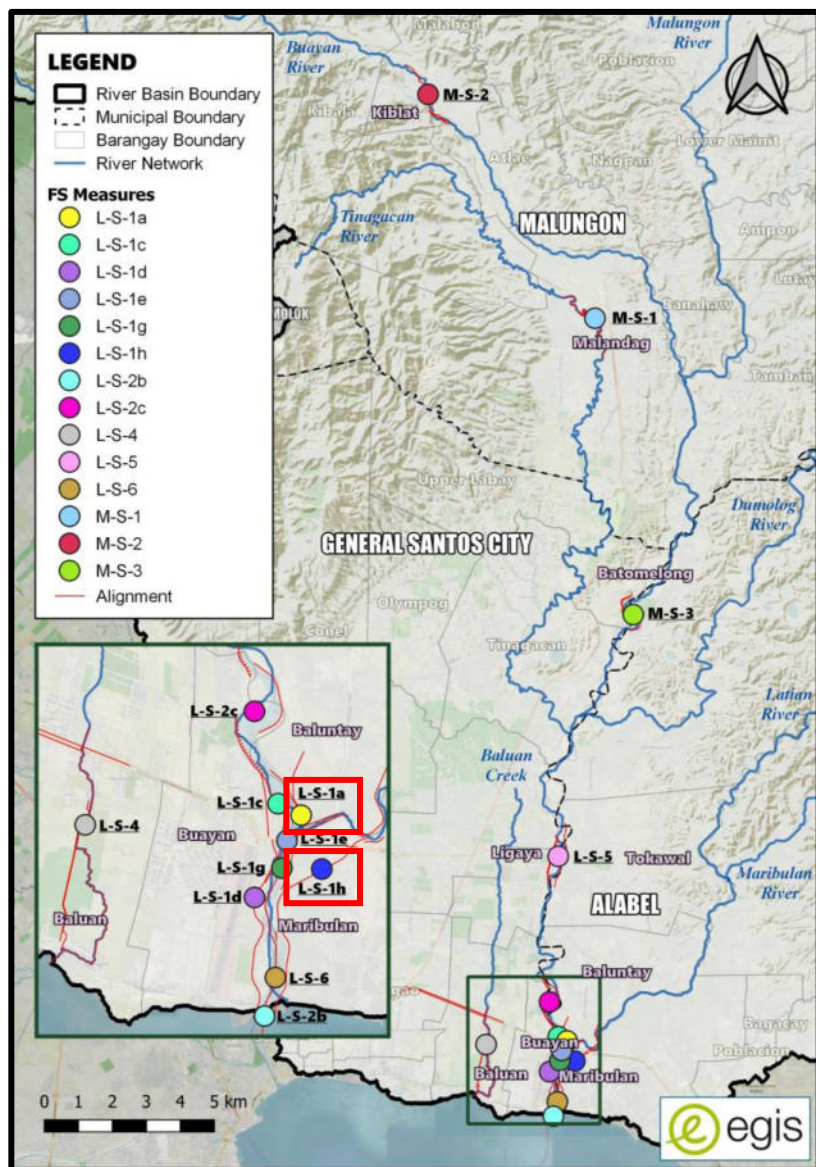
No.	Measure	Description	Location
Tranche 2			
1	M-S-3	Spu dikes and revetment	General Santos City
2	L-S-5	Spu dikes and revetment	General Santos, Alabel
3	L-S-2c	Spur dikes and dikes	General Santos, Alabel
4	L-S-2b	Coastal jetties	General Santos, Alabel
5	L-S-4	U-shaped concrete channel, access road, sluice gates	General Santos City



Tranche 2: Pampanga River Basin

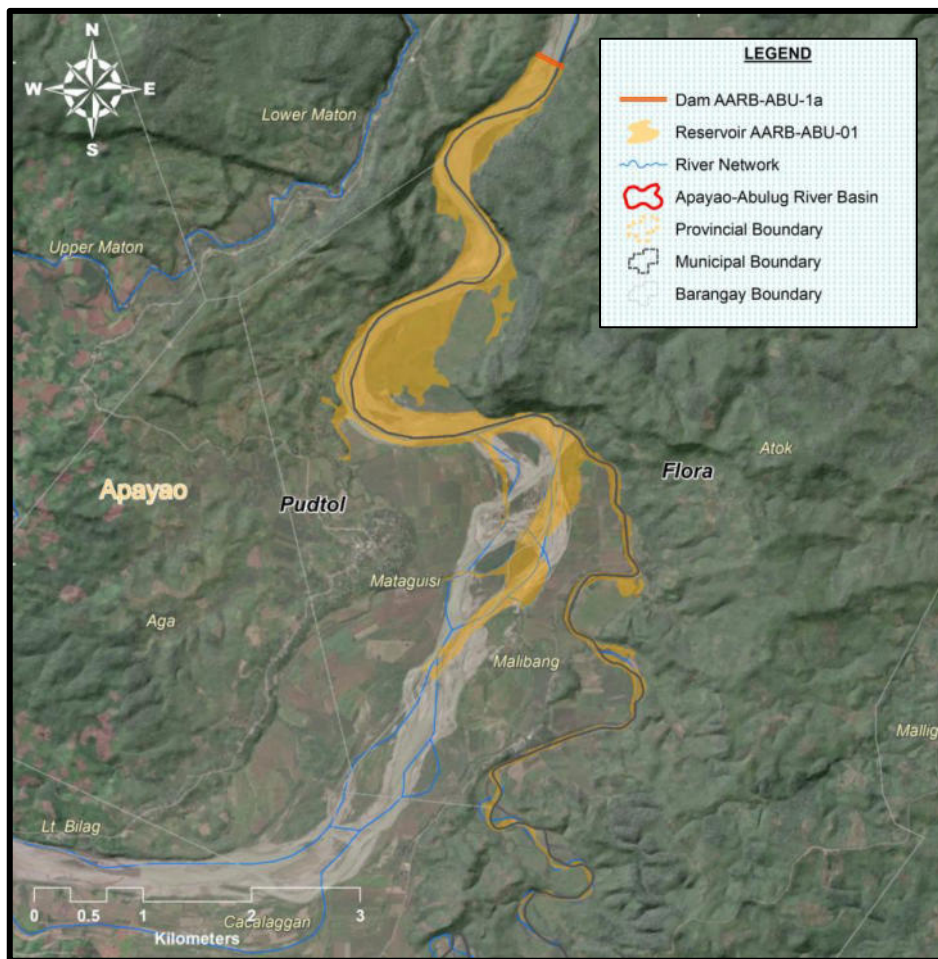
No.	Measure	Description
Tranche 2		
1	SP-1	Subproject - Upstream
2	SS-1	San Antonio Swamp, Capacity





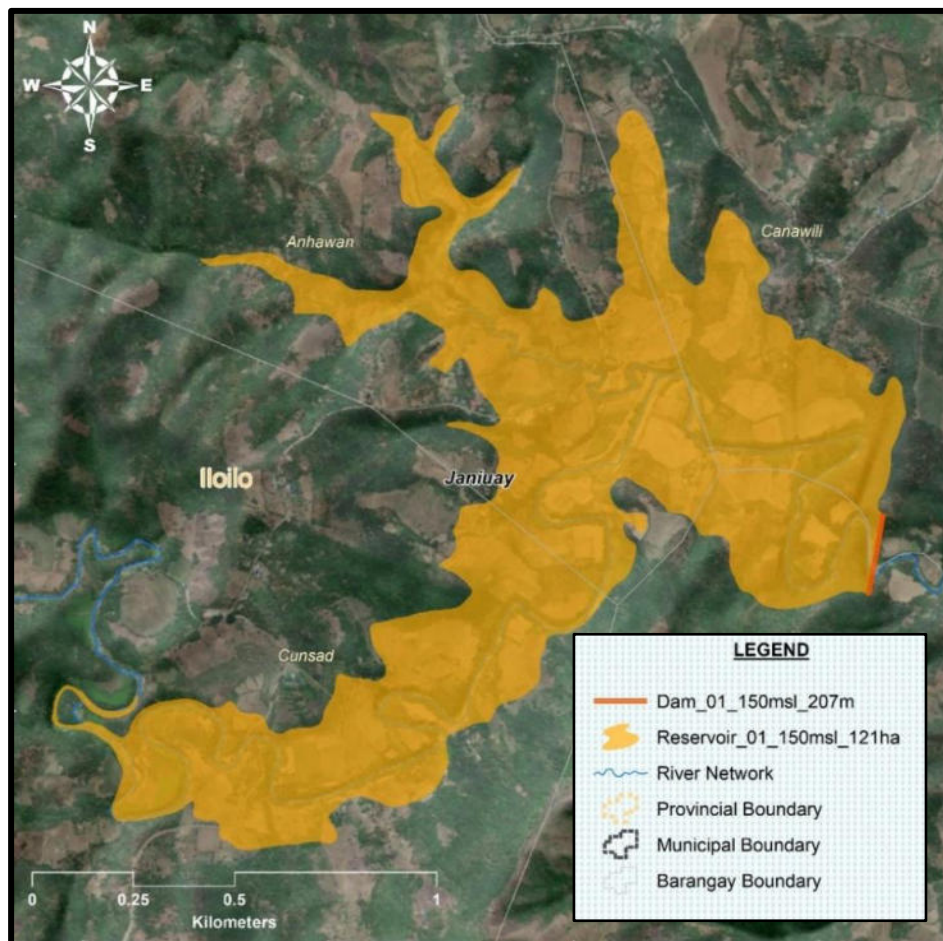
Tranche 3: Buayan – Malungon River Basin

No.	Measure	Description	Location
Tranche 3			
1	L-S-1a	Dikes and sluice gates	Alabel
2	L-S-1h	Bypass channel, dikes, groundsills, sluice gates, bridges, and longitudinal spur head	Alabel



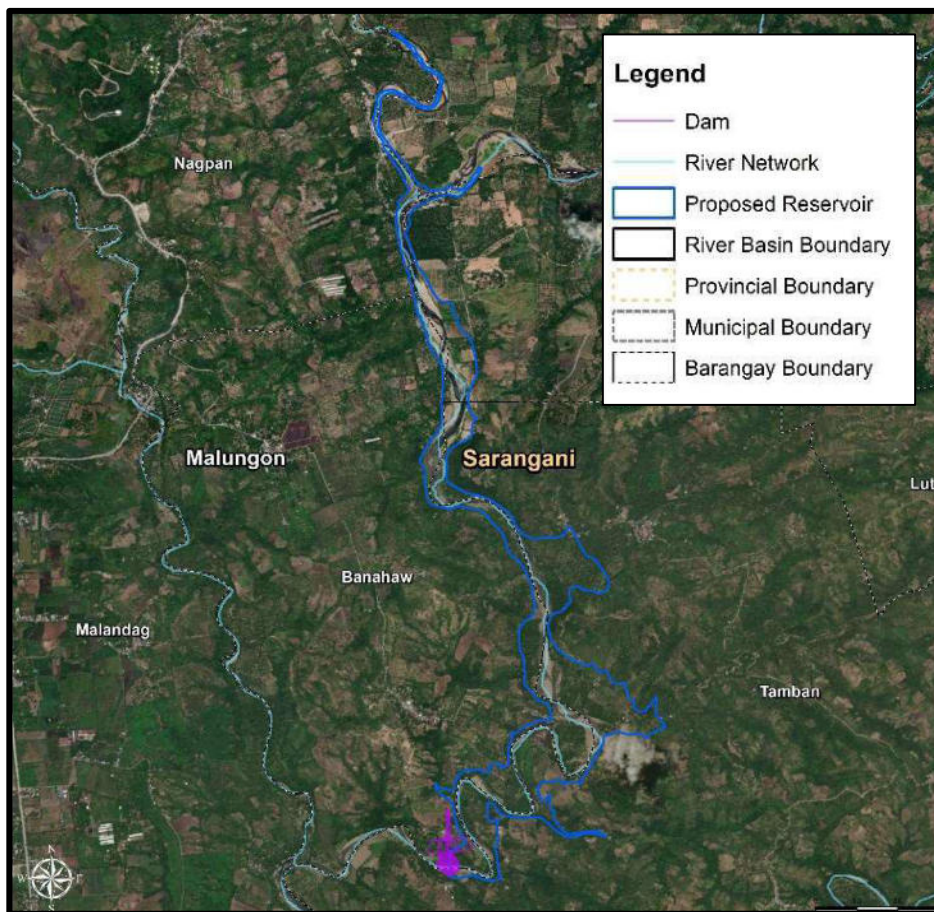
Tranche 3: Apayao – Abulug River Basin

No.	Measure	Description	Location
Tranche 3			
1	AARB-ABU-01	Dam Length: 283m;	Abulug River
		Dam Height: 10.5m;	Pudtol, Flora
		Reservoir Area: 351 ha;	
		Reservoir Volume: 12.934 mcm	



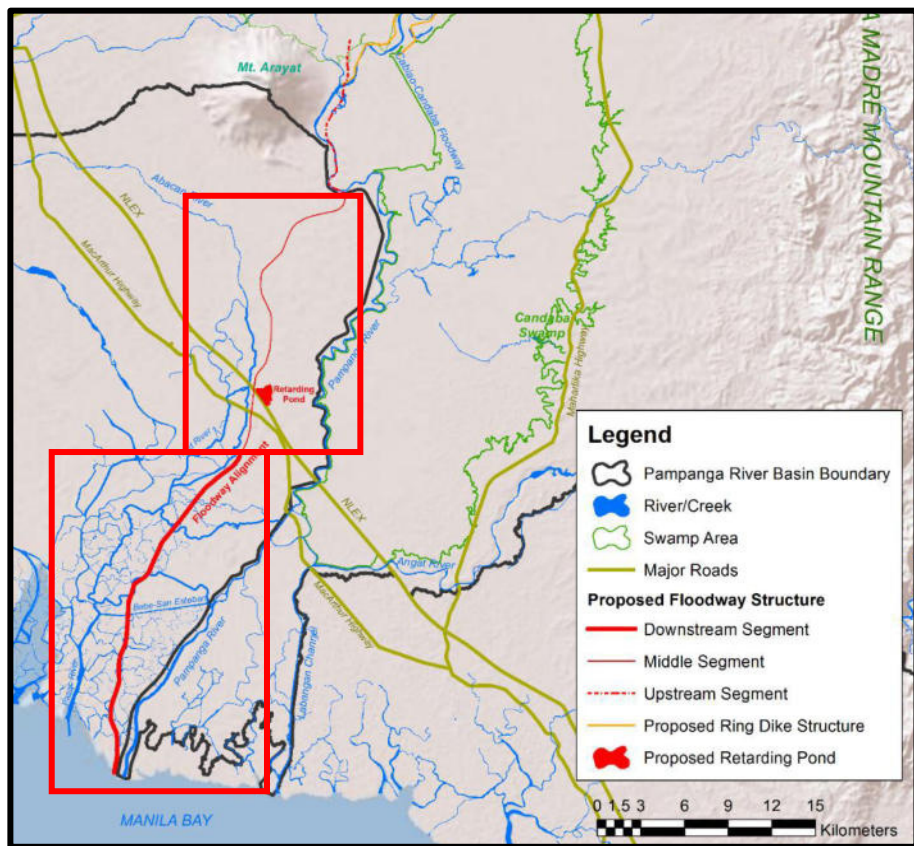
Tranche 3: Jalaur River Basin

No.	Measure	Description	Location
Tranche 3			
1	JRB-MAG-01	Dam Length: 207m;	Suage-Magapa River
		Dam Height: 30m;	Janiuay
		Reservoir Area: 121.1 ha;	
		Reservoir Volume: 14.671 mcm	



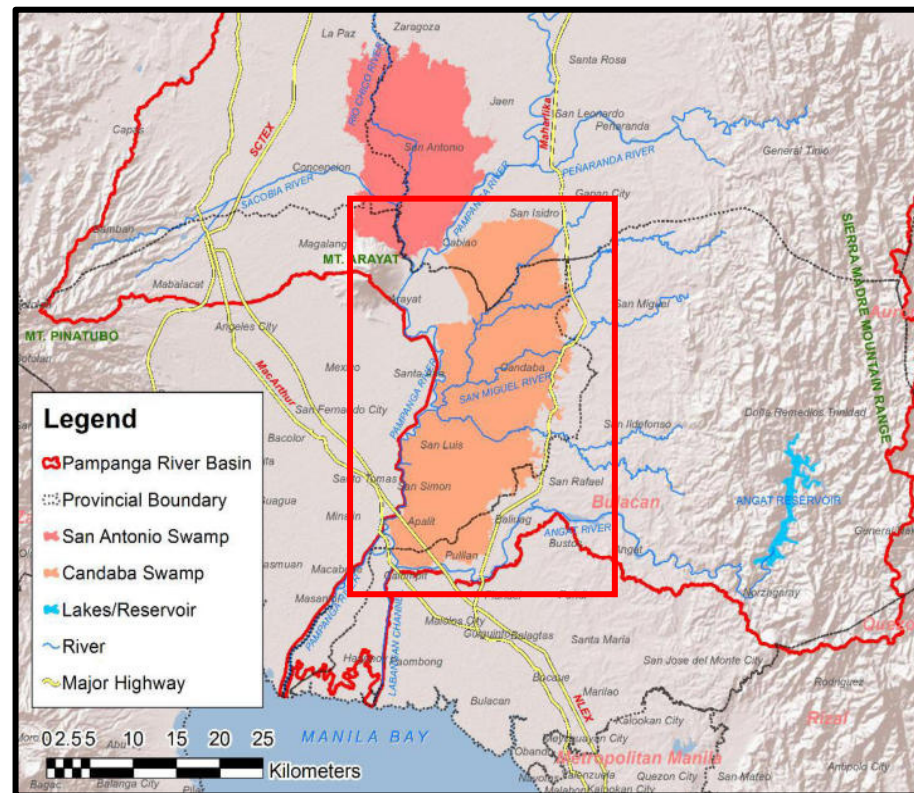
Tranche 3: Buayan – Malungon River Basin

No.	Measure	Description	Location
Tranche 3			
1	BMRB-MAL-05	Dam Length: 191m;	Malungon River
		Dam Height: 10.5m;	Sarangani
		Reservoir Area: 351 ha;	
		Reservoir Volume: 12.934 mcm	



Tranche 3: Pampanga River Basin

No.	Measure	Description
Tranche 2		
1	SP-2	Subproject - Midstream
2	SP-3	Subproject - Downstream
3	CS-1	Candaba Swamp



Component		Tranche 1	Tranche 2	Tranche 3	TOTAL (USD)
	<i>Apayao-Abulug River Basin</i>	<i>21,491,756.81</i>	<i>1,693,813.77</i>	<i>3,675,009.70</i>	<i>26,860,580.27</i>
	<i>Jalaur River Basin</i>	<i>12,854,723.16</i>	<i>5,538,573.01</i>	<i>1,688,342.34</i>	<i>20,081,638.51</i>
	<i>Buayan Malungon River Basin</i>	<i>7,027,655.95</i>	<i>409,098.47</i>	<i>1,575,690.33</i>	<i>9,012,444.75</i>
	<i>Pampanga River Basin</i>	<i>22,108,949.49</i>	<i>5,724,224.58</i>	<i>16,384,724.92</i>	<i>44,217,898.98</i>
	Output 3: Watershed ecological functions restored	20,000,000.00	30,000,000.00	50,000,000.00	100,000,000.00
3.A	Agroecological landscape restoration interventions scaled-up	10,000,000.00	30,000,000.00		40,000,000.00
3.B	Rural livelihoods diversified and improved			48,000,000.00	48,000,000.00
3.C	Capacities and systems for watershed planning and management strengthened	10,000,000.00			10,000,000.00
3.D	Sustainable and innovative finance mechanisms implemented			2,000,000.00	2,000,000.00
	Total	321,399,486.06	1,143,123,103.73	1,628,241,586.06	3,092,764,175.85

Attachment 7. Procurement Plan

Basic Data

Project Name: Integrated Flood Resilience and Adaptation Project - Phase 2 (InFRA2)	
Project Number: 51294-003	Approval Number: Loan xxxx and Grant -xxxx
Country: Republic of the Philippines	Executing Agency: Department of Public Works and Highways (DPWH)
Procurement Risk: Medium	Implementing Agency: DPWH through Unified Project Management Office – Flood Control Management Cluster (UPMO-FCMC)
Project Financing Amount: \$xxx,xxx,xxx ADB Financing: \$560,000,000 Co-financing (ADB Administered): \$240,000,000 Government Financing: \$xxx,xxx,xxx	Project Closing Date:
Date of First Procurement Plan: DD MM YYYY	Date of this Procurement Plan: DD MM YYYY
Procurement Plan Duration: 18 months	Related to COVID-19 response efforts: No
Advance contracting: Yes	Use of e-procurement (e-GP): No

Methods, Review and Procurement Plan

1. Except as the Asian Development Bank (ADB) may otherwise agree, the following methods shall apply to procurement of goods, works, non-consulting services, and consulting services.

Procurement of Goods, Works and Non-consulting Services	
Method	Comments
Open Competitive Bidding (OCB) for Works	International and national contractors will be encouraged to participate in the bidding
Open Competitive Bidding (OCB) for Goods	International and national contractors will be encouraged to participate in the bidding

Consulting Services	
Method	Comments
Quality-and Cost-Based Selection for Consulting Firm	International consulting firm for project implementation consultants and right-of-way acquisition consultants: Subject to prior review
Consultants Qualification Selection for Consulting Firm	The external monitoring agent for social safeguards: Subject to prior review

List of Active Procurement Packages (Contracts)

2. The following table lists goods, works, non-consulting, and consulting services contracts for which the procurement activity is either ongoing or expected to commence within the procurement plan's duration.

Goods, Works, and Nonconsulting Services							
Package Number ¹	General Description	Estimated Value (\$ million)	Procurement Method	Review	Bidding Procedure	Advertisement Date	Comments
BUAYAN-MALUNGON RIVER BASIN							
CW01-BMRB: Proposed measures with little LAR	Channel deepening, dredging, construction of dikes, gabion mattress, ground sill, embankment, and bridges	28.3	OCB	Prior	1S2E	4 months before tranche approval	Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines M-S-1, M-S-2, L-S-1c, L-S-1d, L-S-1e, L-S-1g, and L-S-6
APAYAO-ABULUG RIVER BASIN							
CW01-AARB: Proposed measures with little LAR	Construction of road dikes, hydraulic gates, bridges, and widening of tributary creeks	129.1	OCB	Prior	1S2E		Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines DS01, DS03, DS04, DS05, DS06, DS11, and DS12
GENERAL							
Hydromet equipment	X-Band Radar in Apayao and Buayan-Malungon, Water and Rain Gauges, and Maintenance Vehicles	3.24	OCB	Prior	1S2E		Advertising: International Advance Contracting: No Prequalification of Bidders: No Bidding Documents: Goods High Risk Contract: No e-GP: No COVID-19 Response? No

Consulting Services							
Package Number	General Description	Estimated Value (\$ million)	Selection Method	Review	Type of Proposal	Advertisement Date	Comments
CS-01	Project Implementation Consultants (PICs)	39.05	QCBS	Prior	FTP		Type: Firm Assignment: International Quality-Cost Ratio: 80:20 Advance Contracting: Yes e-GP: No Covid-19 Response? No
CS-02	Consultancy Services for Right-Of-Way Acquisition (ROWA)	39.05	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: National Advance Contracting: Yes e-GP: No Covid-19 Response? No
CS-03	Output 1A - Technical Assistance for Master Plan Study on Strengthening Marine Meteorological and Operational Oceanographic Services in the Philippines (MMS)	1.62	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: International Advance Contracting: No e-GP: No Covid-19 Response? No
CS-04	Output 1A - Project of Flood Forecasting Models Development (FFMs) for the Abra, Apayao-Abulug and Mindanao RBs in the Philippines	1.65	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: International Advance Contracting: No e-GP: No Covid-19 Response? No
CS-05	Output 1C - Consultancy Services for Institutional Capacity for Flood Risk Management	3.0	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: International Advance Contracting: No e-GP: No Covid-19 Response? No

CS-06	Output 2A - Consultancy Services for Support Inventory and Digitalization of River Assets	1.5	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: International Advance Contracting: No e-GP: No Covid-19 Response? No
CS-06a	Output 3 - Consultancy Services for (1) Restoration Interventions for Agroecological Landscape and (2) Capacities and Systems for Watershed Planning and Management	10.0	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: International Advance Contracting: No e-GP: No Covid-19 Response? No
CS-06b	Output 3 - Consultancy Services for (1) Improved and Diversified Rural Livelihoods; and (2) Implementation of Sustainable and Innovative Finance Mechanisms	5.0	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: International Advance Contracting: No e-GP: No Covid-19 Response? No
CS-07	Consultancy Services for Detailed Engineering Design of Reservoirs for Apayao-Abulug, Jalaur, and Buayan-Malungon River Basin	22.071	QCBS	Prior	FTP		Services: No Type: Firm Quality-Cost Ratio: 90:10 Assignment: International Advance Contracting: No e-GP: No Covid-19 Response? No

List of Indicative Packages (Contracts) Required under the Project

3. The following table lists goods, works, non-consulting, and consulting services contracts for which the procurement activity is expected to commence beyond the procurement plan duration and over the life of the project (i.e. those expected beyond the current procurement plan's duration).

Goods, Works and Non-consulting Services						
Package Number	General Description	Estimated Value (\$)	Procurement Method	Review	Bidding Procedure	Comments
BUAYAN-MALUNGON RIVER BASIN						
CW02 -BMRB: Proposed measures with moderate LAR	Construction of spur dikes, revetment, coastal jetties, concrete channels, access roads, and sluice gates	27.7	OCB	Prior	1S2E	Advertising: National Prequalification of Bidders: No Advance Contracting: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines M-S-3, L-S-5, L-S-2c, L-S-2b, and L-S-4
CW03 -BMRB: Proposed measures with complex LAR	Construction of dikes, sluice gates, bypass channel, ground sill, sluice gates, bridges, and reservoir	105.05	OCB	Prior	1S2E	Advertising: National Prequalification of Bidders: No Advance Contracting: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines L-S-1a, L-S-1h, and BMRB-MAL-05
JALAU RIVER BASIN						
CW02-JRB: Proposed measures with complex LAR	Creation of a diversion channel including necessary components, (intake structures, control weir, bridges, dikes, pumping station) reconnection of fishpond lines, and dredging	369.24	OCB	Prior	1S2E	Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines DC01, DC02, DC03, DC04, DC05, DC06, DC07, DC08a, DC08b, DC09, DC10, DC11, and DC12

Goods, Works and Non-consulting Services						
Package Number	General Description	Estimated Value (\$)	Procurement Method	Review	Bidding Procedure	Comments
CW03-JRB: Proposed measures with complex LAR	Construction of a reservoir	112.56	OCB	Prior	1S2E	Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This consists of JRB-MAG-01
APAYAO-ABULUG RIVER BASIN						
CW02-AARB: Proposed measures with complex LAR	Construction of road dikes, hydraulic gates, retention basin, and raising of roads	112.92	OCB	Prior	1S2E	Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines DS02, DS07, DS08, DS09, DS10, and DS12
CW03-AARB: Proposed measures with complex LAR	Construction of a reservoir	245.00	OCB	Prior	1S2E	Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This consists of AARB-ABU-01
PAMPANGA RIVER BASIN						
CW02-PRB: Proposed measures with complex LAR	Construction of subprojects (upstream) and a retention basin (San Antonio Swamp)	381.61	OCB	Prior	1S2E	Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines FW-1, SS-1

Goods, Works and Non-consulting Services						
Package Number	General Description	Estimated Value (\$)	Procurement Method	Review	Bidding Procedure	Comments
CW03-PRB: Proposed measures with complex LAR	Construction of a subprojects (midstream and downstream) and a retention basin (Candaba Swamp)	1092.31	OCB	Prior	1S2E	Advertising: International Advance Contracting: Yes Prequalification of Bidders: No Bidding Documents: Large Works/ PBD High Risk Contract: No e-GP: No COVID-19 Response? No This combines FW-2, FW-3, and CS-1

Consulting Services						
Package Number	General Description	Estimated Value (\$)	Selection Method	Review	Type of Proposal	Comments

List of Awarded and Completed Contracts

4. The following table lists the awarded contracts and completed contracts for goods, works, non-consulting, and consulting services.

Goods, Works and Non-consulting Services					
Package Number	General Description	Contract Value	Date of ADB Approval of Contract Award	Date of Completion	Comments

Consulting Services					
Package Number	General Description	Contract Value	Date of ADB Approval of Contract Award	Date of Completion	Comments

Non-ADB Financing

5. The following table lists goods, works, non-consulting, and consulting services contracts over the life of the project, financed by non-ADB sources.

Goods, Works and Non-consulting Services				
General Description	Estimated Value (cumulative, \$)	Estimated Number of Contracts	Procurement Method	Comments
None				

Consulting Services				
General Description	Estimated Value (cumulative, \$)	Estimated Number of Contracts	Recruitment Method	Comments
None				