

Project Administration Manual

Project Number: 44328-013
Loan Number: XXXX
September 2015

Proposed Loan
Kingdom of Cambodia: Uplands Irrigation and Water
Resources Management Sector Project

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Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Ministry of Water Resources and Meteorology, which is both the executing and implementing agency is wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by the MOWRAM of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the Loan agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Loan Agreement, the provisions of the Loan Agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

Abbreviations

ADB	=	Asian Development Bank
AFS	=	audited financial statements
DMF	=	design and monitoring framework
EARF	=	environmental assessment and review framework
EIA	=	environmental impact assessment
EMP	=	environmental management plan
ESMS	=	environmental and social management system
GACAP	=	governance and anticorruption action plan
GDP	=	gross domestic product
ICB	=	international competitive bidding
IEE	=	initial environmental examination
LAR	=	land acquisition and resettlement
LIBOR	=	London interbank offered rate
NCB	=	national competitive bidding
NGOs	=	nongovernment organizations
PAI	=	project administration instructions
PAM	=	project administration manual
PIU	=	project implementation unit
PMU	=	project management unit
QBS	=	quality based selection
QCBS	=	quality- and cost based selection
RRP	=	report and recommendation of the President to the Board
SBD	=	standard bidding documents
SOE	=	statement of expenditure
SPS	=	Safeguard Policy Statement
SPRSS	=	summary poverty reduction and social strategy
TOR	=	terms of reference

I. PROJECT DESCRIPTION

A. Rationale

1. The project will help the Government of Cambodia increase agricultural production by rehabilitating, modernizing, and climate-proofing selected irrigation systems in Kampong Thom and Battambang provinces. Subprojects will be undertaken to (i) enhance the efficiency and climate resilience of irrigation systems, and (ii) improve water resource management by building the capacity of government agencies and of farmer water user communities (FWUCs) so that they can operate and manage the irrigation systems better. The project will contribute to achieving targets of the Government's Rectangular Strategy on Growth, Employment, Equity and Efficiency 2014–2018. The strategy aims to develop and expand the country's irrigated land and manage its water resources more effectively by improving existing irrigation systems, making water user communities more efficient, and reducing the vulnerability of the Cambodia's people to disasters caused by natural hazards.

B. Impact and Outcome

2. The impact will be inclusive economic growth through agriculture and irrigation, in line with phase 3 of the government's Rectangular Strategy on Growth, Employment, Equity, and Efficiency for 2014–2018. The outcome will be water and agriculture productivity enhanced in the project areas.

C. Outputs

3. **Output 1: Enhanced efficiency and climate resilience of irrigation systems in the project areas.** The project will support rehabilitation, modernization, and climate proofing of at least three irrigation systems to increase the cultivated area in the project areas in Kampong Thom and Battambang provinces to 29,500 ha.¹ It will (i) rehabilitate the undersluices and the spillway of the Taing Krasaing headworks, 22-kilometers (km) main Taing Krasaing canal, and 48.0 km of secondary and tertiary canals; (ii) install a pumping system and associated distribution channels to lift water by a maximum of 3 meters for 2,960 ha of developed rain-fed land in the Taing Krasaing system command area; (iii) rehabilitate the Prek Chik headworks (including raising the spillway by 1.5 meters), 28-km main Prek Chik canal, and 70.2 km of secondary and tertiary canals to cover 10,400 ha net irrigated area; (iv) install structures and gauges for water measurement, control, and distribution on the Taing Krasaing and Prek Chik system's main and distribution canals; (v) improve drainage facilities for 1,800 ha to climate proof the irrigation facilities against floods; (vi) carry out laser land leveling of 2,000 ha; (vii) improve 21,000 ha of land through irrigation, drainage, and/or flood protection; and (viii) conduct feasibility studies, design, and improvement works for the O Kra Nahk irrigation system serving about 1,500 ha in Kampong Thom province, and other noncore subprojects.²

4. **Output 2: Improved water resource management.** The project will organize FWUCs and provide gender-inclusive training to FWUC members on (i) O&M of canals, (ii) management of FWUCs, (iii) issues related to climate variability and change, and (iv) water management. It will also involve them in the design and implementation of subprojects. It will

¹ Feasibility studies have been completed for the Taing Kraisang and Prek Chik irrigation systems. The feasibility study for the O Kra Nahk irrigation system will be carried out during project implementation.

² If savings remain from the loan proceeds after awarding the contracts for the three identified subprojects, the project may finance more subprojects.

install hydrometeorological stations in the watersheds and establish canal flow measurement systems. The project will train staff of the Ministry of Water Resources and Meteorology (MOWRAM), MOWRAM's Department of Farmer Water User Communities (DFWUC), provincial departments of water resources and meteorology (PDWRAMs), the FWUCs, and the MAFF on (i) modern canal operation techniques, (ii) irrigation scheduling, (iii) watershed management, and (iv) water management. It will also strengthen their awareness of climate resilience in water resource management. The project will modernize canal operations, undertake irrigation scheduling, and integrate the scheduling with the canal flow gauging system to manage supplies, particularly during droughts. It will also design joint reservoir operations for (i) Stung Chinit and Taing Krasaing reservoirs in Kampong Thom, and (ii) Bassac and Dauntri reservoirs in Battambang. This will improve water-sharing arrangements between linked systems and ensure equitable distribution, particularly during droughts.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

5. Project readiness activities and their expected completion dates are shown in Table 1.

Table 1: Project Readiness Activities

Indicative Activities	2015							2016		Who is responsible
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	
Fact finding mission	X									ADB/RGC
Advance contracting actions ^a			X	X	X	X	X			MOWRAM
Establish project implementation arrangements ^b	X									MOWRAM
ADB Board approval				X						ADB
Loan signing						X				ADB/RGC
Government legal opinion provided							X			MEF
Government budget inclusion	X									MEF
Loan effectiveness								X		ADB/MEF

ADB = Asian Development Bank; MEF = Ministry of Economy and Finance; MOWRAM = Ministry of Water Resources and Meteorology; RGC = Royal Government of Cambodia

^a Bids for the core subproject works and goods have been invited and shall be evaluated before loan effectiveness. Expression of Interest for project implementation and management consultants has been invited. Proposals will be evaluated before the loan effectiveness.

^b PMU was established before PPTA and PPMS is developed.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

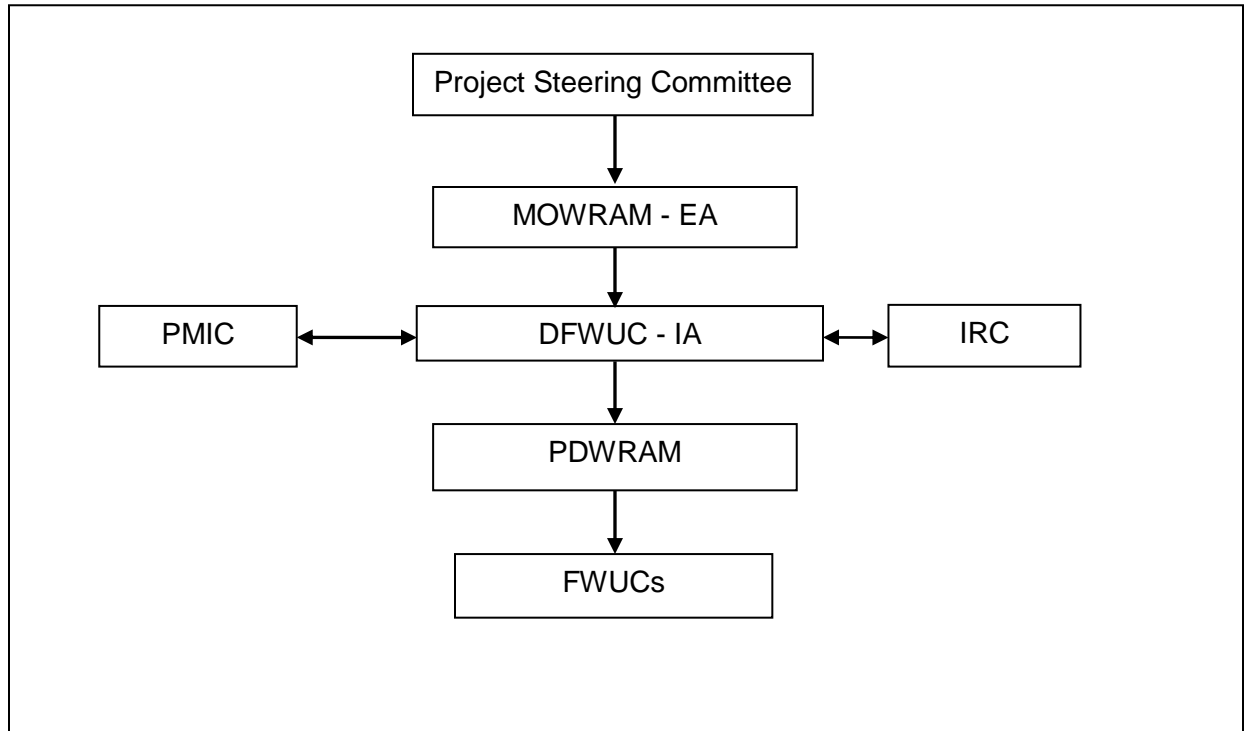
6. Ministry of Water Resources and Meteorology (MOWRAM) will be the executing agency and its Department of Farmer Water User Communities (DFWUC) will be the implementing agency. A PMU has been established in DFWUC before commencement of the project preparatory technical assistance (PPTA). The PMU is headed by a Project Director who is the Deputy Director General for Technical Affairs in DFWUC and a Project Manager who is the Director of the DFWUC. The PMU was fully involved in the preparation of the project. For implementation of the project, the PMU will be composed of 24 designated personnel from MOWRAM, MAFF, DHRW, and PDWRAMs of Kampong Thom and Battambang provinces. MAFF staff will coordinate the land levelling and other supporting activities to be provided from the Climate-Resilient Rice Commercialization Sector Development Program including access to quality seed and agriculture value chain facilities and services. PDWRAMs will be responsible for coordinating all field activities with FWUCs and DFWUC. DHRW will coordinate installation, operation, and data collection of hydro-meteorological stations. A steering committee, chaired by H.E. Minister MOWRAM and comprising senior officials from MOWRAM, MAFF, MEF and Provincial Governor's Office of Kampong Thom and Battambang, will oversee the project implementation and management and provide policy guidance except in the land acquisition and resettlement, which shall be the responsibility of the Inter-Ministerial Resettlement Committee (IRC). Resettlement and land acquisition will be implemented by and under the management of the IRC chaired by MEF with membership from the representatives of relevant line ministries in close cooperation with the Kampong Thom and Battambang Provincial Resettlement Sub-committees. The PMU will be responsible for planning, implementation, organization, monitoring and reporting of the project. The PMU will be supported by the PMIC. The PMIC will comprise 58 person-months of international and 610 person-months of national experts to provide technical support to the PMU to efficiently manage and implement the project. ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) will be used for recruiting the consulting firms. The anticipated procurements include small and large works contracts, which will be procured by using ADB's national and international competitive bidding methods for ADB's financed subprojects. An imprest account will be maintained at the PMU level for ADB's loan and government funds.

Project Implementation Organizations	Management Roles and Responsibilities
Project Steering Committee	<p>Oversee project and provide policy guidance. Chair: Minister, MOWRAM Secretary: Deputy Director General, DFWUC/Project Director</p> <p>Members: Secretary of State, MOWRAM Under Secretary of State, MEF Under Secretary State, MAFF Provincial Governor's Offices (Battambang and Kampong Thom)</p>
Ministry of Water Resources and Meteorology (MOWRAM)	<p>Executing Agency Overall supervision and guidance on implementation of the project.</p>

Project Implementation Organizations	Management Roles and Responsibilities
DFWUC in MOWRAM (PMU)	Implementing Agency <ul style="list-style-type: none"> • Procure civil works and goods • Supervise execution of works. • Payments to contractors/consultants/suppliers • Operate imprest account • Recruit and supervise PMIC • Maintain project accounts and accurate records of both financial and physical progress • Provide to ADB and MEF quarterly progress reports and six-monthly PPMS reports • Provide to ADB and MEF audited financial statements duly audited as per the loan agreement • Ensure compliance with social and environmental safeguards as per ADB's SPS 2009 • Implement gender action plan • Submit internal safeguards monitoring reports • Prepare resettlement plans
Project Management and Implementation Consultants (PMIC)	<ul style="list-style-type: none"> • Carry out field surveys, engineering studies, detailed design, preparation of engineering drawings • Assist PMU in preparing bid documents including design, review of design/specification • Assist PMU in bids evaluation/contracts award/ Support preparation, implementation and monitoring of safeguards activities. • Support PMU in complying with LARF and EARF • Assist PMU in execution and supervision of works • Assist PDWRAM in mobilizing FWUCs • Provide trainings to FWUCs • Certify payments of works • Ensure quality of construction and adherence to design specifications • Help PMU in maintaining project accounts • Prepare quarterly progress reports and PPMS • Assist PMU in implementing GAP • Provide on-job capacity building to MOWRAM, PDWRAM and MAFF • Carry out hydrological studies and design joint reservoir operation of Stung Chinit and Taing Krasaing reservoirs, and Bassac and Dauntri reservoirs • Design and implement modern canal operations system
Provincial Departments of Water Resources and Meteorology (PDWRAMs)	Under the supervision of DFWUC, MOWRAM, respective PDWRAM supervise the establishment and strengthening of the FWUCs at the irrigation system level and provide support in project implementation

C. Project Organization Structure

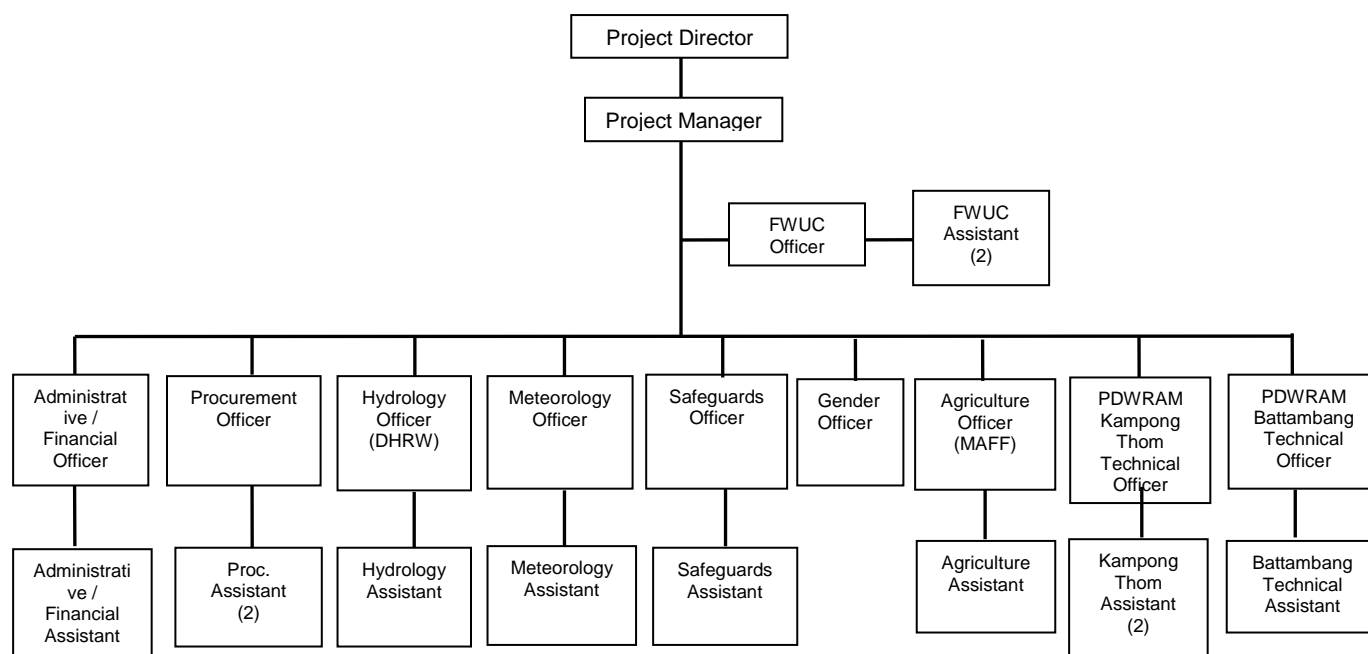
Figure 1: Project Organization Structure



D. Project Management Unit Staff at MOWRAM

SN	Name	Designation	Role
1	H.E. Chann Sinath	Deputy Director General, Technical Affair, DFWUC	Project Director
2	Mr. Huy Vantha	Director, DFWUC	Project Manager
3	Mr. Mao Hak	Deputy Director General for Technical Affair, DHRW	Hydrology Officer
4	Mr. Sreng Sotha	Officer, DHRW	Hydrology Assistant
5	Mr. Um Rina	Director of Department of Meteorology	Meteorology Officer
6	Mr. Phan Sophy	Chief, Instrument & Equipment Management Office	Meteorology Assistant
7	Mrs. Bun Sida	Vice Chief, Training and Research, DFWUC	Administrative / Financial Officer
8	Mr. Kim Vann	Officer, Training and Research, DFWUC	Administrative / Financial Assistant
9	Mr. Keo Sovathapheap	Deputy Director, DFWUC	Technical / Safeguards Officer
10	Mr. Im Soursdey	Vice Chief, DFWUC	Technical Assistant
11	Mr. Srun Sokhom	Deputy Director General, MAFF	Agriculture Officer
12	Mr. Chea Hong	Chief Office of Agricultural Irrigation, MAFF	Agriculture Assistant
13	Mrs. Im Chinda	Vice Chief, DFWUC	Gender Officer
14	Mrs. Laing Sokim	Vice Chief, Training and Research, DFWUC	Procurement Officer
15	Mr. Sran Chheav	Chief, Administrative Office	Procurement Assistant
16	Mr. Sok Boren	Officer, Administrative Office	Procurement Assistant
17	Mr. Tan Naren	Chief, DFWUC	FWUC Officer
18	Mrs. Kheth Chivy	Officer, Training and Research, DFWUC	FWUC Assistant
19	Mrs. Nhim Sophea	Officer, Training and Research, DFWUC	FWUC Assistant
20	Mr. Long Phalkun	Director, PDWRAM Battambang Province	Battambang Technical Officer
21	Mr. Peng Sophy	Irrigation Officer, PDWRAM Battambang Province	Battambang Technical Assistant
22	Mr. You La	Director, PDWRAM Kampong Thom Province	Kampong Thom Technical Officer
23	Mr. Hak Puthy	Deputy Director, PDWRAM Kampong Thom Province	Kampong Thom Technical Assistant
24	Mr. He Keun	Irrigation Officer, PDWRAM Kampong Thom Province	Kampong Thom Technical Assistant

Figure 2: Project Management Unit Organizational Chart



Source: MOWRAM, 2015.

E. Implementation Procedures

7. The core subproject Taing Krasaing main canal is designed and ready for bidding. The feasibility studies of Taing Krasaing in Kampong Thom province and Prek Chik in Battambang province have been done. Detailed designs of both main canals are ready for bidding. Bidding of Taing Krasaing main canal will be started before loan effectiveness but Prek Chik main canal bids will be invited after water availability study of Bassac reservoir is completed. Detailed engineering design of distribution system of both irrigation systems will be done by the PMIC canal systems in phases. After completion of design of each phase, the contract for construction will be awarded by the PMU. FWUCs will be formed and trained and involved in the design process. Feasibility study of O Kra Nahk irrigation system in Kampong Thom province and other non-core subprojects will be carried out by the PMIC. The subprojects will be assessed on the following selection criteria before making final decision for investments.

- (i) Category B or less in terms of environmental impact as defined in the SPS [do not have any significant environmental impact];
- (ii) Category B or less in terms of involuntary resettlement impact as defined in the SPS [do not cause involuntary resettlement and land, if required, will be within the permissible limits for Category B];
- (iii) Category C in terms of indigenous peoples impact as defined in the SPS [do not have any impact on indigenous peoples];
- (iv) Irrigation system has low irrigation efficiency and water productivity, and would have scope for substantial enhancement of both irrigation efficiency and water productivity;
- (v) Subproject should involve only rehabilitation of existing systems or related schemes and should not involve construction of new systems;
- (vi) Subproject should be located outside the Tonle Sap basin;
- (vi) Subproject should involve rehabilitation of both primary and secondary canals to ensure that water reached the farm;
- (vii) Subproject should not be covered by other ongoing or proposed projects financed by ADB or any other Development Partner;
- (viii) Beneficiaries should include sharecroppers, poor farmers, and women farmers; and
- (ix) Subproject should be economically viable; and technically, socially and environmentally feasible. The economic internal rate of return (EIRR) of each subproject should be greater than 12%

8. In case a subproject is not considered eligible as per above criteria, PDWRAM and MOWRAM will propose other subprojects, that will also undergo same assessment.

9. After a subproject is assessed eligible and feasible as per the selection criteria, the feasibility study will be submitted for ADB's concurrence prior to start of bidding process.

10. After the detailed design, bidding documents will be prepared by the PMU with support from PMIC and bidding will be done according to the methods and procedures defined in the procurement plan. PMU will award the contracts and PDWRAMs and PMIC will be responsible for on-site supervision of works.

IV. COSTS AND FINANCING

11. The total project cost is estimated at \$66.12 million. The Government has requested a loan of SDR43,121,000 [\$60.0 million equivalent] in various currencies from ADB's Special Funds Resources (ADF) to help finance the project. The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft loan agreement.

12. The ADB loan represents 90.7% of total project costs. It will be utilized for civil works, hydrometeorology equipment, vehicles, office equipment, furniture, consulting services, and incremental operating cost. The government will also borrow for financing charges during implementation. ADB will finance taxes and duties on ADB financed expenditures except civil works.

13. The Government will finance the equivalent of \$6.12 million (9.3% of total project costs), from the central government budget allocations. The Government counterpart funds will be for (i) salaries of government staff working for the project, (ii) land acquisition and resettlement, and (iii) taxes and duties on civil works through exemption.

A. Detailed Cost Estimates by Expenditure Category

		Amount (\$ millions)	% of Total Base Cost
A.	Base Costs		
1	Civil Works	45.14	84.7%
2	Hydrometeorology Equipment	1.20	2.3%
3	Office Equipment, Furniture and Vehicles	1.00	1.9%
4	Consulting Services	4.85	9.1%
5	Incremental Operating Cost	0.50	0.9%
6	Land acquisition and resettlement	0.58	1.1%
	Subtotal (A)	53.26	100.0%
B.	Contingencies		
1	Physical Contingencies	4.94	9.3%
2	Price Contingencies	6.30	11.8%
	Subtotal (B)	11.24	21.1%
C.	Financing Charges During Implementation		
1	Interests During Implementation	1.62	3.0%
	Subtotal (C)	1.62	3.0%
	Total Cost (A+B+C)	66.12	124.1%

Note: Some total may not sum up due to rounding off of decimals.

Source: ADB staff estimates.

B. Allocation and Withdrawal of Loan Proceeds

No.	Category	Amount (\$ million)	Percentage and Basis for Withdrawal from the Loan Account
1	Civil Works	41.02	100% of total expenditure claimed [*]
2	Hydrometeorology Equipment	1.20	100% of total expenditure claimed
3	Office Equipment, Furniture and Vehicle	1.00	100% of total expenditure claimed
4	Consulting Services	4.85	100% of total expenditure claimed
5	Incremental Operating Cost	0.25	100% of total expenditure claimed
6	Interests During Implementation	1.62	100% of amount due
7	Unallocated	10.06	
	Total	60.00	

^{*} Exclusive of local taxes and duties imposed within the territory of the Borrower.
Source: ADB staff estimates.

C. Detailed Cost Estimates by Financier (in \$ million)

	Items	ADB		Government			%	TOTAL
		Amount	%	Amount	Taxes and Duties	Total		
A.	Base Costs							
1	Civil Works	41.02	90.9	-	4.12	4.12	9.1	45.14
2	Hydrometeorology Equipment	1.20	100.0	-	-	-	-	1.20
3	Office Equipment, Furniture and Vehicles	1.00	100.0	-	-	-	-	1.00
4	Consulting Services	4.85	100.0	-	-	-	-	4.85
5	Incremental Operating Cost ^a	0.25	50.0	0.24	0.01	0.25	50.0	0.50
6	Land acquisition and resettlement	-	0.0	0.58	-	0.58	100	0.58
	Subtotal (A)	48.32	90.7	0.82	4.13	4.94	9.3	53.26
B.	Contingencies							
1	Physical Contingencies	4.38	88.8	0.55	-	0.55	11.2	4.94
2	Price Contingencies	5.67	90.0	0.63	-	0.63	10.0	6.30
	Subtotal (B)	10.06	89.5	1.18	-	1.18	10.5	11.24
C.								
1	Interests During Implementation	1.62	100.0	-	-	-	-	1.62
	Subtotal (C)	1.62	100.0	-	-	-	-	1.62
	Total Cost (A+B+C)	60.00	90.7	2.0	4.13	6.12	9.3	66.12

Some total may not sum up due to rounding off of decimals.

Source: ADB staff estimates.

^a ADB will finance the office operations cost while the government will finance supplementary salary of PMU staff. The audit cost will be shouldered by the government as part of the total audit cost for a pool of ADB projects. The cost cannot be determined on a per project basis.

D. Detailed Cost Estimates by Outputs/Components (in \$ million)

Item	TOTAL	OUTPUT 1		OUTPUT 2		Project Management	
		Amount	%	Amount	%	Amount	%
A. Base Costs							
1 Civil Works	45.14	45.14	100.0	-	0.0	-	0.0
2 Hydrometeorology Equipment	1.20	-	0.0	1.20	100.0	-	0.0
3 Office Equipment, Furniture and Vehicles	1.00	1.00	100.0	-	0.0	-	0.0
4 Consulting Services	4.85	4.09	84.3	0.11	2.3	0.64	13.2
5 Incremental Operating Cost	0.50	-	0.0	-	0.0	0.50	100.0
6 Land Acquisition and Resettlement	0.58	0.58	100.0	-	0.0	-	0.0
Subtotal (A)	53.26	50.80	95.4	1.31	2.5	1.14	2.1
B. Contingencies							
1 Physical Contingencies	4.94	4.87	98.7	-	0.0	0.06	1.3
2 Price Contingencies	6.30	6.18	98.1	0.01	0.2	0.12	1.9
Subtotal (B)	11.24	11.05	98.3	0.01	0.1	0.18	1.6
C. Financing Charges During Implementation							
1 Interests During Implementation	1.62	1.57	96.9	0.05	3.1	0.00	0.0
Subtotal (C)	1.62	1.57	96.9	0.05	3.1	0.00	0.0
Total Cost (A+B+C)	66.12	63.42	95.9	1.38	2.1	1.32	2.0

Note: Some total may not sum up due to rounding off of decimals.

Source: ADB staff estimates.

E. Detailed Cost Estimates by Year (in \$ million)

Items		Total Cost	2016	2017	2018	2019	2020	2021
A. Base Costs								
1	Civil Works	45.14	4.51	4.51	6.77	9.03	11.28	9.03
2	Hydrometeorology Equipment	1.2	1.20	-	-	-	-	-
3	Office Equipment, Furniture and Vehicle	1.00	1.00	-	-	-	-	-
4	Consulting Services	4.85	0.50	0.48	0.72	0.96	1.21	0.96
5	Incremental Operating Cost	0.50	0.08	0.08	0.08	0.08	0.08	0.08
6	Land acquisition and resettlement	0.58	0.58	-	-	-	-	-
Subtotal (A)		53.26	7.88	5.08	7.58	10.08	12.57	10.08
B. Contingencies								
1	Physical Contingencies	4.94	0.74	0.47	0.70	0.93	1.16	0.93
2	Price Contingencies	6.30	0.21	0.27	0.65	1.22	1.98	1.97
Subtotal (B)		11.24	0.95	0.74	1.35	2.15	3.14	2.90
C. Financing Charges During Implementation								
1	Interests During Implementation	1.62	0.04	0.11	0.18	0.29	0.43	0.57
Subtotal (C)		1.62	0.04	0.11	0.18	0.29	0.43	0.57
Total Cost (A+B+C)		66.12	8.87	5.93	9.12	12.52	16.15	13.54

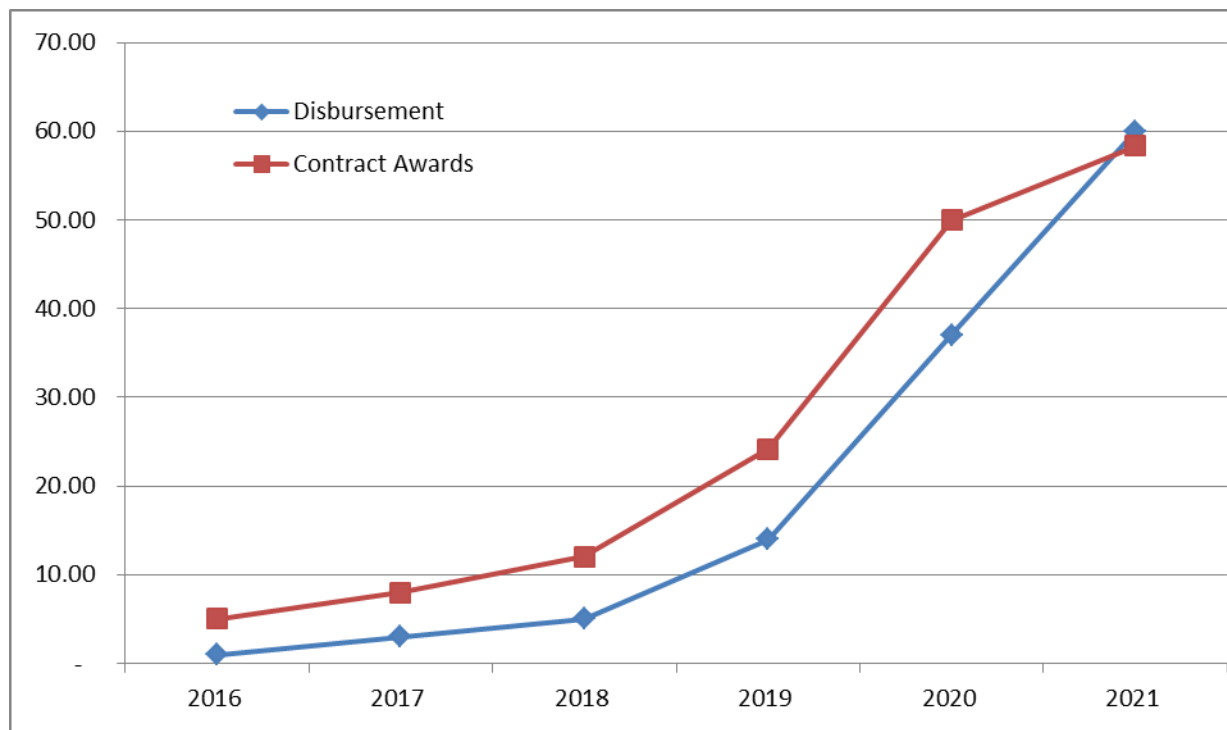
Note: Some total may not sum up due to rounding off of decimals.

Source: ADB staff estimates.

F. Contract and Disbursement S-curve

14. The graph below shows contract awards and disbursement over the life of the project, and annually based on the contract awards and disbursement projections.

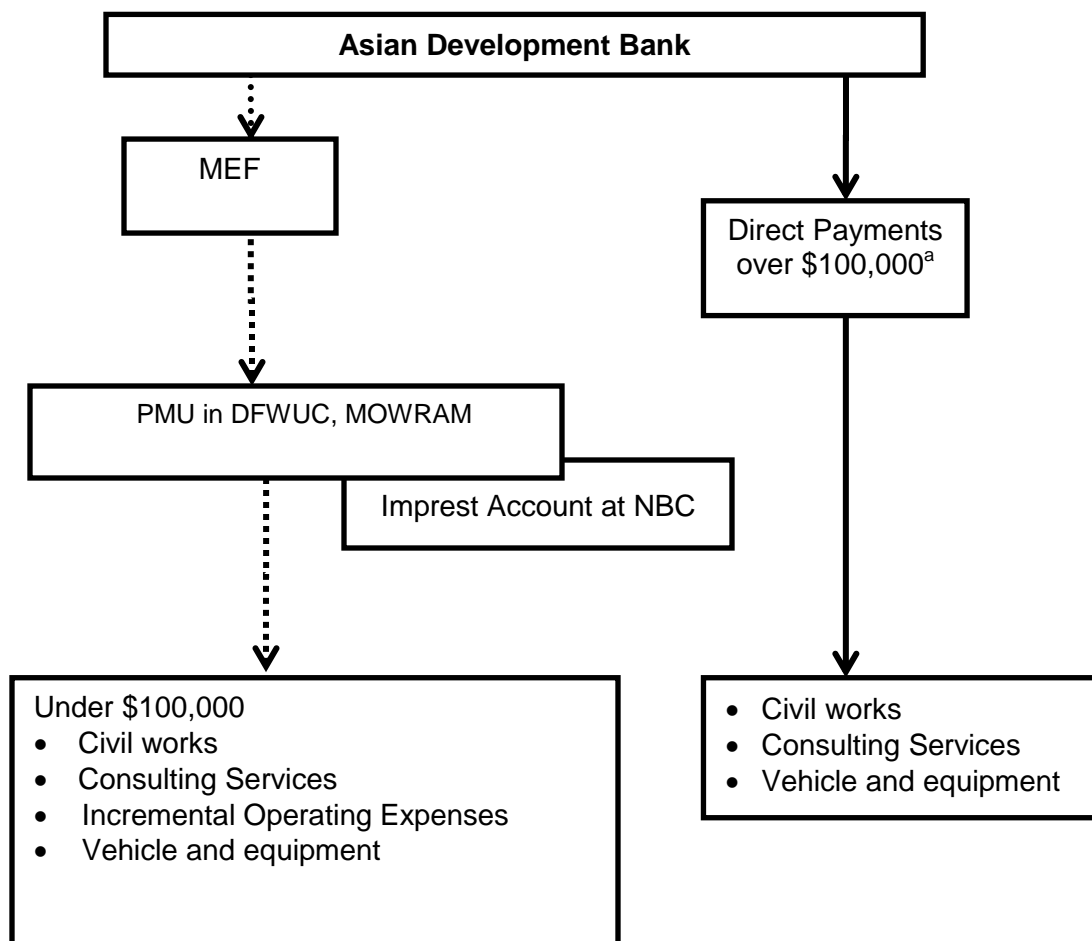
Figure 3: Contract and Disbursement S-curve



G. Fund Flow Diagram

15. The figure below shows how the funds will flow from ADB and the Borrower to implement project activities.

Figure 4: Fund Flow Diagram



Legend:

-→ Imprest Fund
- Direct Payment

DFWUC = Department of Farmer Water User Communities; MEF = Ministry of Economy and Finance, MOWRAM = Ministry of Water Resources and Meteorology; NBC = National Bank of Cambodia
Source: Asian Development Bank and the Government of Cambodia.

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

16. The financial management assessment (FMA) report (Supplementary Document 17) was prepared in accordance with the FMA technical guidance note (ADB, 2015). It was initially updated by a consultant, from the FMA done by the MOWRAM in 2014 and finalized by the ADB's Senior Financial Management Specialist, during a fact-finding mission, from 22 to 26 June 2015. This FMA incorporates the financial management internal control and other risk assessment required by the guidance. It may need to be amended further to reflect subsequent developments and agreements during the project implementation. The FMA preparatory activities included reviewing documents, interviewing staff of government agencies, consultants, beneficiaries and other stakeholders, and completed with inputs from other references through desk studies.

17. The purpose of this assessment was to determine the robustness of the accounting, financial controls and internal audit arrangements, and the capability of the executing and implementing agencies to meet all the fiduciary requirements which are set out in the loan agreement, and other project documents. The FMA has assessed the executing and implementing agencies and financial arrangements, financial responsibilities and perceived financial risks and risk management. This FMA also provides guidance to the executing and implementing agencies for mitigation measures to ensure the effective project performance, following country laws and regulations as well as ADB's requirements. The executing and implementing agencies have worked in the past with ADB and are currently implementing several ADB funded projects. MOWRAM is also part of the government's comprehensive Public Financial Management Reform Program (PFMRP) which is being supported by an ADB Grant.³ The executing agency has the experience and capacity to administer the imprest fund and SOE procedures.

18. Summary of the assessment: The FMA overall is rated as "Moderate" and is expected to become "Low" with mitigating measures. General environment for public financial management (PFM) in Cambodia is generally satisfactory due to large extent to the standardized policies and guidelines which are implemented for all externally financed projects and programs. The following tables present the risk summary for both inherent- and project risks.

Table 2: Inherent and Project Risks

Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
I. Inherent Risks		
A. Country Specific: PFM: (i) low accountability for public expenditure and service delivery; (ii) inadequate delegation and build-up of capacity in SNAs; (iii) weak Internal audit and internal controls; (iv) External audit capacity is improving, but remains weak.	Moderate	(i) expand technical assistance under the CPS to additional priority ministries including MOWRAM; (ii) continue to support decentralization and PFM reforms for SNAs; (iii) provide capacity building for internal audit; and (iv) support the NAA in addressing audit findings and follow up on recommendations.
Procurement: risks of inefficiencies and		Improve the government's standard operating

³ Grant No. 0222-CAM(SF): Public Financial Management for Rural Development Program, Subprogram 2.

Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
<p>irregularities in procurement for line ministries and SNAs, including e-procurement, complaint handling mechanisms, and stronger institutions and human capacity.</p> <p><u>Corruption:</u> (i) The ACU faces significant challenges to effectively implement the Anti-Corruption Law and systemically address corruption.</p>		<p>procedures, procurement manual, and FM manual; deliver training on ADB's guidelines and procurement procedures; and continue to identify procurement risks and implement mitigation measures.</p> <p>In coordination with other DPs and NGOs, ADB will continue to support the ACU in fulfilling its mandate.</p>
<p>B. Entity Specific: Lack of control in budget execution; accounting and reporting, and budget credibility.</p>	Moderate	<p>CARM/ MEF/ MOWRAM to continue to monitor the progress and results of ADB Grant No. 0222-CAM(SF)⁴: Strengthening Public Financial Management for Rural Development Program (PFMRDP) covering 3 ministries including MOWRAM. These rural development ministries are being supported in budget preparation and execution, financial management and accounting, procurement, internal audit development, and in monitoring and evaluation.</p>
Overall Inherent Risk	Moderate	
II. Project/Control Risks		
<p><u>Executing/Implementing entity:</u> Potential corruption due to weakness in internal control and external control of the Project</p>	Moderate	<p>MOWRAM will require all contractors /bidders, suppliers and consultants to sign declarations of ethical conduct; strengthen transparency through posting project information on the executing agency websites; develop complaint handling mechanisms; strict monitoring and enforcement of procurement procedures and contracts; and joint investigation by the NAA and the ADB's Office of Anticorruption and Integrity on irregularities.</p>
<p><u>Fund Flows:</u> - The PMU Finance Officer is familiar with FMM, but she has not yet received training on ADB's LDH.</p>	Moderate	<p>Provide training on ADB's LDH for the Finance Officer and her staff as part of the PMU consultancy package within six months of loan effectiveness; Most funds will flow through ADB direct payments</p>
<p><u>Staffing:</u> Lack of capacity (number and skills) of staff for finance unit</p>	Moderate	<p>Start the selection process for the PMU Project Accountant, who is experienced in ADB disbursement procedures, to be appointed before loan effectiveness, preferably from Department of Finance of MOWRAM, Loan consultants will be engaged within three months of loan effectiveness to assist with project management, including project financial management.</p>
<p><u>Accounting policies and Procedures:</u> The duties of finance officer are not segregated between preparing orders</p>	Moderate	<p>Once assigned to the PMU, the Project Accountant can handle preparing orders leaving the Finance Officer to be responsible</p>

⁴ Grant agreement was signed on 22 October 2010.

Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
and making payments.		only for making payments.
Internal Audit: Limited capacity in internal audit	Moderate	MOWRAM will include the project to be subject to internal audit to ensure that the organization's Internal Audit Unit carries out regular reviews of the internal control processes.
<u>External Audit</u> Lack of analysis in reviewing transactions and interpreting the project financial statements.	Moderate	PMU will work with MEF to update the TOR and to engage external auditors who can provide qualified staff to audit the project accounts
<u>Reporting and Monitoring:</u> Finance Officer has limited capacity to prepare Financial Management Reports (FMRs) and The current project reporting does not have the capacity to link the financial information with the project's physical progress.	Moderate	The PMU Finance Office's capacity to prepare FMRs can be improved by on the job training conducted by the finance consultant to be provided by the Loan consultancy package.
Information System: (i) PMU has no accounting software to record accounting transactions and generates FMRS) automatically: (ii) There have been major improvements in the information system as a result of the PFMRD. This includes a new Chart of Accounts and implementation of a computerized system.	Moderate	PMU to coordinate with the Finance Department for installation of this software at the PMU and operated using double entry accounting procedures will allow transactions to be traced and followed during audit
Overall Project/ Control Risk	Moderate	
Overall (Combined) Risk	Moderate	The implementation of mitigation actions as proposed will reduce to risk to low.

ADB = Asian Development Bank, DP = development partners, FM = financial management, FMIS = FM information system, MEF = Ministry of Economy and Finance, NAA = national audit authority, NGOs = non-governmental organizations, OECD = Organization for Economic Co-operation and Development PFM = public financial management, SNAs = sub-national authorities.

Source: Asian Development Bank.

19. As details in FMA report, risk management actions include measures to support fund flow arrangement including procurement oversight and strengthen financial management skills have been prepared to avoid potential problems. These include (i) strengthen sector governance and FM through comprehensive reforms to develop sector-wide national programs and support for FM and accountability - based bottom up planning and good governance at all levels; (ii) will develop accounting and monitoring systems to a standard format; Reform of the assets registration and management; and (iii) will introduce a computerized accounting at all levels; Financial records will be coupled with physical records for management and preparation of annual performance assessments of the delivery of health services. Support will be provided to facilitate the secure storage and retrieval system for records. The implementation of the risk management measures identified above will ensure that FM arrangements are adequate for the overall program, especially for the investments funded by the project.

B. Disbursement

20. The Loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement*

Handbook (2015, as amended from time to time),⁵ and detailed arrangements agreed upon between the Government and ADB. The Loan Disbursement Handbook describes the procedures and provides standard forms for withdrawal of funds. Online training for project staff on disbursement policies and procedures is available at: <http://wpqr4.adb.org/disbursement> e-learning. Project staffs are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

21. The following are different financing and disbursement arrangements,⁶ of ADB Loan i.e. through direct payment by ADB, reimbursement, imprest fund procedures, liquidation and replenishment, and the statement of expenditures (SOEs). DFWUC in MOWRAM will be responsible for (i) preparing contract awards and disbursement projections, (ii) requesting budgetary allocations for counterpart funds, (iii) collecting supporting documents, and (iv) preparing and sending withdrawal applications to ADB.

22. Immediately after loan effectiveness, the Government, through MEF, will open a US dollar (\$) imprest account at the National Bank of Cambodia or a commercial bank exclusive for the project loan. The imprest account will be opened and managed by MOWRAM, as follows: imprest account for ADB – MEF will be the account holder, and delegates the authority to DFWUC in MOWRAM, the authorized party. The imprest account is to be used exclusively for ADB's share of eligible expenditures. The executing agency is accountable and responsible for proper use of advances to the imprest account. The executing agency will request initial and additional advances from ADB based on its estimate of ADB's share of eligible project expenditures for the forthcoming six months which are to be paid through the imprest account. The total outstanding advance to the imprest accounts will not at any time exceed the estimated ADB expenditures to be paid from the imprest account for the next six months.

23. The request for initial advance to the imprest account should be accompanied by an Estimate of Expenditure Sheet⁷ setting out the estimated expenditures for the first six (6) months of project implementation, and submission of evidence satisfactory to ADB that the imprest account has been duly opened. For every liquidation and replenishment request of the imprest account, the borrower will furnish to ADB (a) Statement of Account (Bank Statement) where the imprest account is maintained, and (b) the Imprest Account Reconciliation Statement (IARS) reconciling the above mentioned bank statement against the executing agency's records.⁸

24. **Statement of Expenditure (SOE) Procedure.** The SOE procedure may be used for reimbursement and to liquidate and replenish the imprest account for eligible expenditures. Any individual payment to be reimbursed or liquidated under this procedure shall not exceed the equivalent of \$50,000 for the implementing agency. Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application to ADB. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.⁹ The project team should revisit the appropriateness of the SOE ceiling, in consultation with ADB,

⁵ Available at: http://www.adb.org/Documents/Handbooks/Loan_Disbursement/loan-disbursement-final.pdf

⁶ Available at: http://www.adb.org/documents/handbooks/loan_disbursement/chap-06.pdf

⁷ Available in Appendix 10B of the *Loan Disbursement Handbook*.

⁸ Follow the format provided in Appendix 10C of the *Loan Disbursement Handbook*.

⁹ SOE form available in Appendix 9B of the *Loan Disbursement Handbook*
http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Operating-Costs.xls
http://www.adb.org/documents/handbooks/loan_disbursement/SOE-Free-Format.xls

after the annual audit of the project.

25. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000 equivalent. Individual payments below this amount should be paid by the executing/implementing agency and subsequently claimed from ADB (i) through reimbursement; or (ii) from the imprest account, unless otherwise accepted by ADB.

26. **Disbursement and Liquidation Procedures for Government Funds.** Withdrawal of government counterpart funds must be carried out in accordance with the government policies and procedures (Government's Financial Management Manual). MOWRAM will be responsible for submitting withdrawal applications to MEF. Counterpart funds withdrawal applications should be made in accordance with the budget plan agreed between MOWRAM and MEF. Counterpart funds may only be withdrawn for expenditures of the project which are specified in the project loan agreements.

27. Key Internal Controls. Withdrawal applications must be signed by an authorized signatory or signatories. Withdrawal applications must be sequentially numbered starting with the number one.

28. Counterpart Funds Initial Advance/Liquidation/Replenishment. The PMU completes the government withdrawal application form for the initial advance/liquidation/replenishment of counterpart funds and submits to the MEF–Department of Cooperation and Debt Management (DCDM). The maximum amount of the advance of counterpart funds will be the estimated expenditures for the first six (6) months of project implementation. The government withdrawal application form must be signed by the authorized signatories of MOWRAM/PMU and submitted to the MEF-DCDM. The government withdrawal application must be recorded in the project counterpart funds withdrawal application register.

29. The DCDM reviews the completed forms and in conjunction with the General Department of National Treasury (GDNT) transfers the funds to the project's Counterpart Funds Imprest Account and advises MOWRAM of the transfer. On receipt of advice from the NBC that the funds have been deposited into the Counterpart Funds Imprest Account, the receipt of the funds should be recorded in the general ledger and the government WA register must be updated.

C. Accounting

30. MOWRAM will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project. The executing agency will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

D. Auditing and Public Disclosure

31. MOWRAM will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing and with the Government's audit regulations, by an independent auditor acceptable to ADB. The audited project financial statements will be submitted in the English language to ADB within six months from the end of

the fiscal year by the executing agency.

32. The annual audit report for the project accounts will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the proper use of SOE procedure, certifying to the eligibility of those expenditures claimed under SOE procedures and imprest procedures in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time) and the project documents.

33. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

34. The Government, MOWRAM and DFWUC have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.¹⁰ ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

35. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011)¹¹. After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter will not be disclosed.

¹⁰ ADB Policy on delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

¹¹ Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting

36. All advance contracting will be undertaken in conformity with ADB's *Procurement Guidelines* (April 2015, as amended from time to time)¹² and ADB's *Guidelines on the Use of Consultants* (March 2013, as amended from time to time).¹³ The issuance of invitations to bids under advance contracting will be subject to ADB approval. The borrower, MOWRAM and DFWUC have been advised that approval of advance contracting does not commit ADB to finance the project.

37. For advance contracting (i) the bidding document for the core subproject, Taing Krasaing main canal has been prepared, bids will be invited after SRM and bid evaluation will be completed before loan effectiveness; (ii) the bidding documents for procurement of office equipment, furniture and vehicles have been prepared, bids will be invited after SRM and evaluation will be completed by loan effectiveness; (iii) EOI, TOR and RFP for recruitment of the project management and implementation consultants (PMIC) package have been prepared, EOI will be invited after SRM and evaluation of technical and financial proposals will be completed by loan effectiveness.

B. Procurement of Goods, Works and Consulting Services

38. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines* (April 2015, as amended from time to time).

39. International competitive bidding (ICB) procedures will be used for civil works contracts estimated to cost \$3.0 million or more, and supply contracts valued at \$1.0 million or higher. Shopping will be used for contracts for procurement of works and equipment worth less than \$100,000. National competitive bidding (NCB) procedures will be used for civil works estimated to cost \$100,000 or higher but less than \$3.0 million, goods and equipment worth \$100,000 and higher but less than \$1.0 million.

40. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Section C.

41. All consultants will be recruited according to ADB's *Guidelines on the Use of Consultants* (March 2013, as amended from time to time).¹⁴ The terms of reference for all consulting services are detailed in Section D.

42. An estimated 668 person-months (58 international, 610 national) of consulting services are required to (i) facilitate project management and implementation, (ii) design and construction supervision of civil works, (iii) compliance with safeguards, (iv) implement of GAP, (v) progress and performance monitoring and reporting, and (v) strengthen the capacity of the PMU to ensure effective project implementation. The consulting firm will be engaged using the quality- and cost-based selection (QCBS) method with a ratio of 80:20.

¹² Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

¹³ Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

¹⁴ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

C. Procurement Plan

Basic Data

Project Name: Uplands Irrigation and Water Resources Management Sector Project	
Project Number: 44328-013	Approval Number:
Country: Cambodia	Executing Agency: Ministry of Water Resources and Meteorology
Project Financing Amount: \$ 66.12 million ADB Financing: \$60.0 million Non-ADB Financing: \$6.12 million	Implementing Agency: Department of Farmer Water User Communities
Date of First Procurement Plan: 24 September 2015	Date of this Procurement Plan: 12 August 2015

1. Methods, Thresholds, Review and 18-Month Procurement Plan

a. Procurement and Consulting Methods and Thresholds

43. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding (ICB) for Works	\$3,000,000	
International Competitive Bidding for Goods	\$1,000,000	
National Competitive Bidding (NCB) for Works	Beneath that stated for ICB, Works	First NCB document subject to prior review after which post review.
National Competitive Bidding for Goods	Beneath that stated for ICB, Goods	
Shopping for Works	Below \$100,000	
Shopping for Goods	Below \$100,000	

Consulting Services	
Method	Comments
Quality and Cost Based Selection (QCBS)	80:20
Consultants Quality Selection (CQS)	

b. Goods and Works Contracts Estimated to Cost \$1 Million or More

44. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value (USD)	Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
Works								
MOWRAM-CW01	Taing Krasaing Main canal and Headwork	10,800,000	01	ICB	Prior	IS2E	Q4-2015	Large Works (prequalification of bidders and domestic preference not

Package Number	General Description	Estimated Value (USD)	Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
								applicable)

Package Number	General Description	Estimated Value (USD)	Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
Goods								
PMU-HME-01	Hydro-meteorological Equipment	1,200,000	01	ICB	Prior	1S1E	Q1 2016	To be procured by PMU

c. Consulting Services Contracts Estimated to Cost \$100,000 or More

45. The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

Package Number	General Description	Estimated Value (USD)	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS-01-PMIC	Project management and implementation consultants	4,650,000	QCBS 80:20	Prior	Q4 2015	FTP	International/ National
CS-02-EMA	External Monitoring Agency for Environment Safeguards	200,000	CQS	Prior	Q4 2016	-	National. To be recruited by the PMU.

d. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

46. The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works								
Package Number	General Description	Estimated Value (USD)	Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
PMU-OF-01	Office Furniture	50,000	01	Shopping	Post		Q4 2015	To be procured by PMU
PMU-OE-01	Office Equipment	300,000	01	NCB	Post	1S1E	Q4 2015	To be procured by PMU
PMU-VEH-01	Vehicle	650,000	01	NCB	Prior	1S1E	Q4 2015	To be procured by PMU
PMU-OW-1	Office Repairs	90,000	01	Shopping	Post		Q42015	To be procured by PMU

e. Indicative List of Packages Required Under the Project

47. The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods and Works							
Package Number	General Description	Estimated Value (USD) (cumulative)	Estimated Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Comments
MOWRAM-CW02	Tipou Distribution System	5,000,000	01	ICB	Prior	1S2E	Large Works (prequalification of bidders and domestic preference not applicable)
MOWRAM-CW03	Chroab Distribution System	1,400,000	01	NCB	Prior	1S2E	Small Works (prequalification of bidders and domestic preference not applicable)
MOWRAM-CW04	Korkoah Distribution System	8,800,000	01	ICB	Prior	1S2E	Large Works (prequalification of bidders and domestic preference not applicable)
MOWRAM-CW 05	O Kro Nak Irrigation System	2,000,000	01	NCB	Prior	1S2E	Small Works (prequalification of bidders and domestic preference not applicable)
MOWRAM-CW 06	Prek Chik Main Canal and Headworks	4,000,000	01	ICB	Prior	1S2E	Large Works (prequalification of bidders and domestic preference not applicable)
MOWRAM-CW 07	Prek Chik Distribution System-1	7,000,000	01	ICB	Prior	1S2E	Large Works (prequalification of bidders and domestic preference not applicable)
MOWRAM-CW 08	Prek Chik Distribution System-2	6,000,000	01	ICB	Prior	1S2E	Large Works (prequalification of bidders and domestic preference not applicable)

2. National Competitive Bidding

a. Regulation and Reference Documents

48. The procedures to be followed for national competitive bidding shall be those set forth for the “National Competitive Bidding” method in the Government’s Procurement Manual issued under Sub-Decree Number 74 ANKR.BK, updated version dated 22 May 2012 with the clarifications and modifications described in the following paragraphs. These clarifications and modifications are required for compliance with the provisions of the Procurement Guidelines.

49. For the procurement of ADB financed contracts under National Competitive Bidding (NCB) procedures, the use of harmonized national bidding documents (NCB and National Shopping) developed in consultation with development partners including ADB, is mandatory except where the Government and ADB have agreed to amendments to any part of the documents. The Procurement Manual also advises users to check the ADB website from time to time for any update on ADB documents, which form the basis, among others, of the existing harmonized national bidding documents.

b. Procurement Procedures

i. Application

50. Contract packages subject to National Competitive Bidding procedures will be those identified as such in the project Procurement Plan. Any change to the mode of procurement of any procurement package in the Procurement Plan shall be made through updating of the Procurement Plan, and only with prior approval of ADB.

ii. Sanctioning

51. Bidders shall not be declared ineligible or prohibited from bidding on the basis of barring procedures or sanction lists, except individuals and firms sanctioned by ADB, without prior approval of ADB.

iii. Rejection of all Bids and Rebidding

52. The Borrower shall not reject all bids and solicit new bids without ADB's prior concurrence. Even when only one or a few bids is/are submitted, the bidding process may still be considered valid if the bid was satisfactorily advertised and prices are reasonable in comparison to market values.

iv. Advertising

53. Bidding of NCB contracts shall be advertised on the ADB website via the posting of the Procurement Plan. Borrowers have the option of requesting ADB to post specific notices in the ADB website.

3. Bidding Documents

a. Use of Bidding Documents

54. The Standard National Competitive Bidding Documents provided with the Government's Procurement Manual shall be used to the extent possible both for the master bidding documents and the contract-specific bidding documents. The English language version of the procurement documents shall be submitted for ADB review and approval in accordance with agreed review procedures (post and prior review) as indicated in the Procurement Plan. The ADB-approved procurement documents will then be used as a model for all procurement financed by ADB for the project.

b. Bid Evaluation

55. Bidders shall not be eliminated from detailed evaluation on the basis of minor, non-

substantial deviations.

56. A bidder shall not be required, as a condition for award of contract, to undertake obligations not specified in the bidding documents or otherwise to modify the bid as originally submitted.

c. Employer's Right to Accept or Reject Any or All Bids

57. The decision of the Employer to accept or reject any or all bids shall be made in a transparent manner and involve an obligation to inform of the grounds for the decision through the bid evaluation report.

d. ADB Policy Clauses

58. A provision shall be included in all NCB works and goods contracts financed by ADB requiring suppliers and contractors to permit ADB to inspect their accounts and records and other documents relating to the bid submission and the performance of the contract, and to have them audited by auditors appointed by ADB.

59. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the contract in question.

60. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB-financed contract.

4. Consultant's Terms of Reference

a. Scope and Objective of the Services

61. The objective of the consulting services is to provide management and technical assistance to the executing agency and implementing agency in the implementation of the project and strengthen technical and management capacities of the participating government agencies and FWUCs.

62. The scope of work will include but not be limited to the following:

- (i) Carry out detailed engineering design of the secondary and tertiary canals in the Taing Krasaing and Prek Chik irrigation systems;
- (ii) Carry out feasibility study of the O Kra Nahk Irrigation system in Kampong Thom and any other system if O Kra Nahk is not found feasible;
- (iii) Carry out detailed engineering design of the O Kra Nahk or other subproject that is considered feasible for financing;
- (iv) Detailed planning of yearly activities in all aspects of the agreed and foreseen construction schedule;
- (v) Prepare bidding documents of subprojects;
- (vi) Provide assistance to PMU in procurement of works, goods, services;

- (vii) Supervise construction of civil works;
- (viii) Ensure timely completion, adherence to specifications, and quality of construction works;
- (ix) Coordinate installation of hydro-met stations by ADB's GMS Flood and Drought Risk Management and Mitigation Project and ADB's Flood Damage Emergency Reconstruction Project–Additional Financing;
- (x) Establish modern canal operations systems;
- (xi) Form FWUCs in the subprojects' areas, and provide them trainings. Following FWUC sub-decree approved by the Government in 2015, facilitate involvement of FWUCs in the subproject implementation, and operation & maintenance;
- (xii) Estimate operation and maintenance (O&M) cost of each subproject and assist FWUCs in establishing O&M system;
- (xiii) Prepare irrigation scheduling of each system and train FWUCs and PDWRAMs;
- (xiv) Coordinate with ADB's Climate-Resilient Rice Commercialization Sector Development Program (CRRCDP) and link farmers with that for introducing use of improved seeds, fertilizers, and benefiting from agriculture value chain established under CRRCDP;
- (xv) Coordinate with CRRCDP for laser levelling of 2,000 hectare;
- (xvi) Prepare quarterly progress reports (QPRs);
- (xvii) Establish project performance monitoring system (PPMS), update on six monthly basis;
- (xviii) Assist the PMU in the financial management of the project such as the management of imprest account, preparation of withdrawal applications, accounting, and internal audit, coordination with finance department of the MOWRAM on project finance/accounting system;
- (xix) Design joint reservoir operation of Stung Chinit and Taing Krasaing reservoirs in Kampong Thom province, and Bassac and Dauntri reservoirs in Battambang province to improve water sharing arrangements between linked systems and assist MOWRAM in adopting those;
- (xx) Estimate irrigation service fee (ISF) for each irrigation system based on the estimate of annual O&M requirements of the secondary and tertiary canals and prepare O&M plans;
- (xxi) Estimate annual O&M cost of the main canals and prepare O&M plans to be adopted by PDWRAM/MOWRAM;
- (xxii) Facilitate tripartite agreement between PDWRAM/MOWRAM, FWUCs and Private Land Owners. Estimate the amount of water to be provided to the private owners and service fee to be paid by them;
- (xxiii) Carry out environmental and social due diligence of each subproject;
- (xxiv) Prepare IEE of each subproject;
- (xxv) Prepare Resettlement Plan of category B subprojects;
- (xxvi) Ensure compliance with ADB's Safeguards Policy Statement (SPS-2009);
- (xxvii) Provide trainings to PDWRAM, PMU, MOWRAM and Ministry of Agriculture, Forestry and Fisheries (MAFF) staff in irrigation and water management, watershed management, operations of canals, gender, financial management and accounting.
- (xxviii) Ensure technology and know-how transfer from the PIMC to their counterparts in the PMU;
- (xxix) Establish canals flow measurement systems;
- (xxx) Establish modern canal operation systems;
- (xxxi) Develop and conduct Focused Information and Awareness program for the FWUCs and other stakeholders;

- (xxxii) Conduct a study for assessing the gap between O&M budget allocations and requirements for irrigation systems in Cambodia; and
- (xxxiii) Any other activities for delivering the envisage outputs of the project and achieving desired outcome.

63. Consultancy services will comprise the following teams for providing assistance to the executing agency and the implementing agency in the implementation and management of the project:

- (i) **The Project Management Team will be** located within PMU at Phnom Penh. The team will provide support in overall coordination and management of the project including procurement, progress and performance monitoring and reporting, financial management, safeguards compliance, organizing and training FWUCs, and training the PMU and other government staff to ensure effective project implementation.
- (ii) **Feasibility and Design Team** will also be located in the PMU. This team will carry out feasibility studies of the subprojects and prepare detailed engineering design, drawings, bill of quantities, construction schedules and tender documents.
- (iii) **Construction Supervision Teams** will be located at PDWRAM Kampong Thom and PDWRAM Battambang. The teams will be responsible for supervising the construction works, progress reporting, and quality assurance.

b. Duration of Assignment and Inputs Required

64. The project implementation period of the consultant services is 60 months (1 April 2016 to 31 March 2021). A total of 668 person months including 58 person-months of the international experts and 610 person-months for the national experts will be required. The estimated staffing and expertise person-months requirements are summarized below. Detailed Terms of Reference for experts are presented in **Appendix 1**.

Table 3: Summary of Consulting Services Requirements

Positions	Peron-Months Required	
	International	National
Team Leader/Water Resources Specialist	24	-
Institutional/Training Specialist for FWUCs	4	12
Procurement Specialist & Contract Specialist	12	24
Financial and Accounting Specialist	-	54
Hydrologist	12	24
Deputy Team Leader/ Irrigation Management Specialist	-	54
Hydraulic Structural Engineer	-	24
Monitoring and Evaluation Specialist	6	24
Construction Management Engineer	-	108
Agricultural Specialist/Agronomist	-	10
Materials/Quality Control Engineer	-	24
Gender Specialist	-	18
Social Safeguards/ Resettlement Specialist	-	24
Environment Specialist	-	18
Assistant Engineers	-	192
Total	58	610

VII. SAFEGUARDS

A. Environment

65. The project is categorized as environment category B in accordance with ADB's Safeguard Policy Statement (SPS) (2009). Details about the procedures to ensure that potential environmental impacts are avoided, reduced and mitigated in accordance with ADB SPS (2009) and regulations from the Government of Cambodia can be found in the Environmental Assessment and Review Framework (EARF) (Linked Document 11). An initial environmental examination (IEE) (Linked Document 10) report including an Environmental Management Plan (EMP) was prepared for the core subprojects in Taing Krasaing and Prek Chik. The EMP outlines the anticipated environmental adverse impacts of the subproject, proposed mitigation and monitoring measures, and roles and responsibilities of the executing and implementing agencies, consultants, and contractors for each measure.

66. Based on the screening for potential environmental impacts and risks, the IEE concluded that the proposed core subprojects can be implemented in an environmentally acceptable manner with the corresponding EMP. For other subprojects to be prepared during the project's implementation, the EARF will be followed for environmental assessment and an IEE of each subproject will be prepared to ensure consistency with ADB's SPS (2009), and respective EMPs will be included in the IEEs and civil works contracts. No category B subproject for environment will be selected.

67. The supervision and monitoring of environmental activities during the pre-construction, construction and operation phases are the functions of the PMU. In line with this, it is appropriate that the position of an Environmental Management Officer (EMO) be appointed in the PMU, responsible for supervision of environmental management and for environmental monitoring. Terms of reference for the EMO positions are at Annex C of the EARF.

B. Involuntary Resettlement

68. A resettlement framework (Linked Document 12) has been prepared to guide subproject screening and resettlement planning and implementation. Subprojects screened to involve significant involuntary resettlement impacts (Category A) are not eligible under the project. Should a subproject involve insignificant involuntary resettlement impacts (Category B), the Government will prepare draft resettlement plan(s) in accordance with the Resettlement Framework. The Government will submit the draft resettlement plan(s) to ADB for approval during project implementation. After approval, the Government will implement the RP. Construction can be started only in areas where compensation has been paid and an income restoration program has been put in place.

C. Indigenous Peoples

69. The project is Category C for Indigenous Peoples safeguards. To ensure that the project remains in that Category, subprojects will be screened using the form in Appendix 2. As per the subproject eligibility criteria, only Category C subprojects (no impact on Indigenous Peoples) are eligible for financing under the project.

VIII. GENDER AND SOCIAL DIMENSIONS

70. The Summary Poverty Reduction and Social Strategy (Linked Document 8) identify the implementation of a Gender Action Plan (GAP), a Stakeholders Communication Strategy and measures to address identified social risks.

71. The project's gender classification is "Effective Gender Mainstreaming" (EGM), which means that at least two of the project outputs are targeted to support women's active participation, access to project benefits and information and empowered through various skills development. A Gender Action Plan (GAP) is developed in accordance with the project activities and based on the findings of the gender assessment report (Supplementary Document 18) conducted in the project area. In implementing the proposed GAP, the mitigation measures on the issues identified in the study conducted are addressed. The GAP proposes to include gender issues in almost all project activities and training ensuring that both men and women get benefit from the project equally. The GAP also pays attention to the project management, monitoring and reporting. Sex-disaggregated data should be included in project progress report.

Table 4: Gender Action Plan

Outputs	Gender Design Features/Activities
1. Efficiency and climate resilience of irrigation systems in the project areas enhanced	<p>1.1 Orientation and training on construction work, such as on canal measurements and work specifications, should be provided to women to ensure the quality of construction work.</p> <p>1.2 Women who can read and write are encouraged to be hired as record keepers.</p> <p>1.3 Orientation on gender equality should be provided to constructors</p> <p>1.4 Gender equity and labor arrangements should be included in the contract of construction companies, i.e. at least 25% of unskilled labor will be given to local women during construction and there should be equal pay for equal work.</p> <p>1.5 At least 30% of women should participate during the presentation of project design and in the discussion and planning of the water distribution and cropping plans.</p> <p>1.6 Conduct meeting with women farmers separately (especially on the early stage of the project) to ensure that their ideas will be collected in developing gender project plans.</p>
2. Water resource management improved	<p>2.1 Encourage both husband and wife to register as member in the FWUC to ensure that at least 30% of the members are women.</p> <p>2.2 Women, as FWUC members, are given equal opportunity with men to participate in project training.</p> <p>2.3 Develop the knowledge, communication and leadership skills of women members through awareness-raising and training to enable them to be leaders of FWUC.</p> <p>2.4 At least 30% of FWUC management committee members, including design and construction committee, are women.</p> <p>2.5 Ensure that women will take part in the operations and maintenance activities with potential for payment or support for livelihood activity.</p> <p>2.6 Provide coaching on gender awareness and leadership for the gender focal person to ensure that they are able to conduct training within MOWRAM and PDWRAM officials and to women FWUCs.</p>

FWUC = farmer water user community, PDWRAM = provincial department of water resources and meteorology, PMIC = project management and implementation consultants, PMU = project management unit

72. The project management unit (PMU) will be responsible for the overall implementation of the project and a gender officer will be appointed within the PMU. She/He will be responsible for the implementation and monitoring of the GAP in coordination with the PMIC. A gender specialist will be hired as part of PMIC. She/He will be responsible for monitoring and reporting of GAP implementation in close coordination with the gender officer of the PMU, as well as responsible for gender awareness training and ensuring that GAP implementation is on track. Adequate resources (human and financial) have been allocated to implement, monitor and report on GAP.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Project Design and Monitoring Framework

Impact the Project is Aligned with:			
Inclusive economic growth through agriculture and irrigation (Rectangular Strategy on Growth, Employment, Equity and Efficiency, Phase III, 2014 to 2018) ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
Outcome Water and agriculture productivity enhanced in the project areas	By 2022: Average annual crop production increased to 4.25 ton per ha (2015 baseline: 1.65 tons per ha)	PPMS Project completion report	Effects of climate change may damage project outputs and assets in the future.
Outputs 1. Efficiency and climate resilience of irrigation systems in the project areas enhanced	By 2021: 1a. Irrigation infrastructure improved, modernized and made climate resilient. Dry- and wet-season cultivated area increased to 29,500 ha (2015 baseline: 13,500 ha) 1b. Irrigation efficiency of three irrigation systems increased by 100% (2015 baseline: 20% efficiency) 1c. Drainage facilities for 1,800 ha improved (2015 baseline: 0 ha) 1d. 2,000 ha land leveled by laser leveling (2015 baseline: 0 ha) 1e. 21,000 ha land improved through irrigation, drainage, and/or flood protection 1f. 25% of unskilled laborers in civil works are women	1a. QPRs of the executing agency, PPMS, LRM reports 1b. PPMS 1c. PPMS 1d–f. QPRs, PPMS	The planning and funding of the O&M of the project irrigation systems may be inadequate.
2. Water resource management improved	By 2021: 2a. Three FWUCs formed and trained (2015 baseline: 0)	2a–d. QPRs, LRM reports	Communication between MOWRAM, the PDWRAMs, and

Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
	2b. 30% of FWUC members are women (2015 baseline: 0) 2c. 30% of FWUC management committee members are women (2015 baseline: 0) 2d. Annual O&M plan prepared during design of each irrigation system 2e. O&M funds allocated by the government for main canals and reservoirs 2f. Eight hydrometeorological stations installed in the watersheds (2015 baseline: 0)	2e. Ministry of Economy and Finance budget documents, QPRs, LRM reports 2f. QPRs, LRM reports, PPMS	the FWUCs may be weak, adversely affecting project implementation.
Key Activities with Milestones 1. Efficiency and climate resilience of irrigation systems in the project areas enhanced 1.1 Award contract for Taing Krasaing main canal by 30 September 2016, and complete works by 30 June 2017 1.2 Complete detailed design, cost estimates, and bidding documents for all subprojects by 31 December 2018 1.3 Award all works contracts by 30 September 2019, and complete works by 31 March 2021 2. Water resource management improved 2.1 Form FWUCs by 30 June 2017 2.2 Complete FWUCs training by 30 September 2020 2.3 Install meteorological stations and river flow gauging stations by 31 December 2018 2.4 Design joint reservoir operation of Stung Chinit and Taing Krasaing reservoirs and Bassac and Dauntri reservoirs by 30 June 2018 for adoption by MOWRAM, PDWRAMs, FWUCs, and provincial authorities by June 2019 Project Management Activities Mobilize project management and implementation consultants by 30 June 2016 Procure office equipment, furniture, and vehicles by 30 June 2016 Establish PPMS by September 2016			
Inputs Asian Development Bank: \$60,000,000 Government of Cambodia : \$6,120,000			
Assumptions for Partner Financing Not applicable.			

FWUC = farmer water user community, ha = hectare, LRM = loan review mission, MOWRAM = Ministry of Water Resources and Meteorology, O&M = operation and maintenance, PCR = project completion report, PDWRAM = provincial department of water resources and meteorology, PPMS = project performance monitoring system, QPR = quarterly progress report.

^a Government of Cambodia. 2013. *Rectangular Strategy for Growth, Employment, Equity, and Efficiency, Phase III*. Phnom Penh. The document presents the 5-year policy agenda of the government and forms the basis of the National Strategic Development Plan, 2014–2018.

Source: Asian Development Bank.

B. Monitoring

73. **Project performance monitoring.** A project performance monitoring system (PPMS), has been developed (**Appendix 3**) based on the key indicators and targets outlined in the project design and monitoring framework (DMF). It shall be established after the implementing agency has develop comprehensive PPMS procedures and plans in accordance with ADB's *Project Performance Monitoring System Handbook* within six months of loan effectiveness with support of PMIC. The PPMS procedures, performance indicators, and their targets will be reviewed and approved by ADB. Benchmark review mainly focusing on secondary data will be conducted. With the help of PMIC, the implementing agency will then undertake every six months quantitative and qualitative project-performance monitoring for each project component to evaluate the delivery of planned facilities and the project benefits that accrued.

74. **Compliance monitoring.** A number of assurances have been given by the Government to ensure smooth implementation of the project. Those are subject to the Loan covenants (Loan Agreement –schedule 5). ADB will monitor compliance with those covenants during the project implementation through regular review missions, quarterly progress reports submitted by the PMU, and review of project accounts and procurement procedures.

75. **Social safeguards monitoring.** The Resettlement Framework details monitoring and reporting requirements for involuntary resettlement. In essence, both internal and external monitoring will be conducted. PMU will be responsible for internal monitoring while an external monitoring agency will be hired to conduct external monitoring and evaluation for involuntary resettlement. Internal and external monitoring will produce quarterly monitoring reports.

76. **Gender and social dimensions monitoring.** The progress of gender and social activities outlined in the GAP will be reported by the PMU in QPRs. Achievement of performance indicators of the GAP outlined in the DMF will be updated six monthly in the PPMS.

C. Evaluation

77. The implementing agency, with support of the PMIC, will provide six monthly updates of the project's performance through PPMS. The status of achievement of performance targets/indicators of the project's outcome and output will be provided in the six monthly updates. ADB review missions will review the PPMS bi-annually to evaluate the project's performance and likelihood of delivering the desired outputs and achieving the envisaged outcome. The corrective actions will be agreed with the executing/implementing agency and recorded in the aid memoirs/MOUs and subsequently monitored by ADB and the executing agency.

D. Reporting

78. The executing agency will provide ADB and MEF with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the

indicator's/performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project accounts and the executing agency's audited financial statements, together with the associated auditor's report, should be adequately reviewed.

E. Stakeholder Communication Strategy

79. The main stakeholders of the project are categorized into government, beneficiaries and affected persons/groups, civil society organizations and NGOs, the Private Sector and the development partners. The stakeholders communication strategy is explained as follows:

Stakeholders	Information Required	Who will provide	Strategy/Mean
Government Key Stakeholders <ul style="list-style-type: none"> • MOWRAM, PDWRAMs • DFWUC • PMU • MEF • MAFF 	Full access to all information on all aspects of project planning and implementation	PMU, ADB	QPRs, PPMS, External monitoring reports of safeguards, ADB website, ADB mission aid memoirs
Beneficiaries and Project Affected Persons/Groups <ul style="list-style-type: none"> • Farmers • FWUC • Other Water users (private companies, domestic water supply) 	Information on project planning, design, implementation, and expected contributions	MOWRAM, PDWRAMs, ADB	Consultations with FWUCs and beneficiaries, QPRs, PPMS, External monitoring reports of safeguards, ADB website, ADB mission aid memoirs
Civil Society Organizations and NGOs	Project plans and activities and impact on target groups	MPWRAM, PDWRAMs, ADB	Consultations with FWUCs and beneficiaries, QPRs, PPMS, External monitoring reports of safeguards, ADB website, ADB mission aid memoirs
Private Sector <ul style="list-style-type: none"> • Construction Companies 	Procurement of contracts	PMU	MOWRAM website
International Development Partners	Project progress and performance	MOWRAM, PMIC, MEF	MOWRAM website, QPRs, PPMS

X. ANTICORRUPTION POLICY

80. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.¹⁵ All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.¹⁶

81. To support these efforts, relevant provisions are included in the loan agreement, project agreement and the bidding documents for the project. In particular, all contracts financed by ADB in connection with the project will include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all contractors, suppliers, consultants, and other service providers as they relate to the project.

¹⁵ Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

¹⁶ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

XI. ACCOUNTABILITY MECHANISM

82. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.¹⁷

¹⁷ For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

XII. RECORD OF PAM CHANGES

83. All revisions/updates during the course of implementation will be retained in this section to provide a chronological history of changes to implementation arrangements recorded in the PAM.

TERMS OF REFERENCE FOR CONSULTING SERVICES

I. BACKGROUND

1. The Uplands Irrigation and Water Resources Management Sector Project will enhance agricultural and rural economic productivity through increased efficiency of irrigation and improved management of water resources in uplands, areas away from the Tonle Sap Lake, in Kampong Thom (KT) and Battambang (BA) provinces.

A. Outputs

2. **Enhanced efficiency and climate resilience of irrigation systems in the project areas.** The project will support rehabilitation, modernization, and climate proofing of Taing Krasaing and O Kra Nahk irrigation systems in the Kampong Thom province and Prek Chik irrigation system in Battambang province. It will (i) rehabilitate main and distribution canals and appurtenant structures, (ii) install water measurement gauges at all inlets and outlets of canals, and (iii) reinstate/improve drainage facilities to protect agricultural land and canals from potential flooding that may be caused by high intensity-long duration rains due to climate change.

3. **Improved water resource management.** The project will (i) organize farmer water user communities (FWUCs) and provide gender inclusive trainings to members of the FWUCs in operation and maintenance of canals, management of FWUCs, (ii) install hydro-meteorological stations in the watersheds, (iii) establish canals flow measurement system, (iv) train staff of PDWRAM, FWUCs and MAFF on modern canal operation techniques, irrigation scheduling, watershed management, and water management, (v) modernize canal operations; (vi) design joint reservoir operation of Stung Chinit and Taing Krasaing reservoirs in Kampong Thom province, and Bassac and Dauntri reservoirs in Battambang province to improve water sharing arrangements between linked systems.

B. Impact and Outcome

4. The impact will be inclusive economic growth through agriculture and irrigation, in line with phase 3 of the government's Rectangular Strategy on Growth, Employment, Equity, and Efficiency for 2014–2018. The outcome will be water and agriculture productivity enhanced in the project areas.

II. PROJECT MANAGEMENT AND IMPLEMENTATION CONSULTANTS

5. The project will construct/rehabilitate/improve/modernize the Taing Krasaing, Prek Chik and O Kra Nahk irrigation systems and other non-core subprojects, selected during the preparation period. Full feasibility studies for both Taing Krasaing and Prek Chik systems have been carried out. The detailed engineering design of the main canal and preliminary design of the distribution system have been done. The detailed engineering design of the distribution system is to be done after carrying out topographic surveys. The feasibility study and detailed design of the O Kra Nahk irrigation system in Kampong Thom will be done by PMIC, if the subproject is found feasible, otherwise another irrigation system will be selected for carrying out feasibility study and detailed design. Same approach will be adopted for other non-core subprojects.

A. Scope and Objective of the Services

6. The objective of the consulting services is to provide management and technical assistance to the executing agency and implementing agency in the implementation of the project and strengthen technical and management capacities of the participating government agencies and FWUCs.

7. The scope of work will include but not be limited to the following:

- (i) Carry out detailed engineering design of the secondary and tertiary canals in the Taing Krasaing and Prek Chik irrigation systems;
- (ii) Carry out feasibility study of the O Kra Nahk Irrigation system in Kampong Thom and any other system if O Kra Nahk is not found feasible;
- (iii) Carry out detailed engineering design of the O Kra Nahk or other subproject that is considered feasible for financing;
- (iv) Detailed planning of yearly activities in all aspects of the agreed and foreseen construction schedule;
- (v) Prepare bidding documents of subprojects;
- (vi) Provide assistance to PMU in procurement of works, goods, services;
- (vii) Supervise construction of civil works;
- (viii) Ensure timely completion, adherence to specifications, and quality of construction works;
- (ix) Coordinate installation of hydro-met stations by ADB's GMS Flood and Drought Risk Management and Mitigation Project and ADB's Flood Damage Emergency Reconstruction Project–Additional Financing;
- (x) Establish modern canal operations systems;
- (xi) Form FWUCs in the subprojects' areas, and provide them trainings. Following FWUC sub-decree approved by the Government in 2015, facilitate involvement of FWUCs in the subproject implementation, and operation & maintenance;
- (xii) Estimate operation and maintenance (O&M) cost of each subproject and assist FWUCs in establishing O&M system;
- (xiii) Prepare irrigation scheduling of each system and train FWUCs and PDWRAMs;
- (xiv) Coordinate with ADB's CRRCS DP and link farmers with that for introducing use of improved seeds, fertilizers, and benefiting from agriculture value chain established under CRRCS DP;
- (xv) Coordinate with CRRCS DP for laser levelling of 2,000 hectare;
- (xvi) Prepare quarterly progress reports (QPRs);
- (xvii) Establish the project performance monitoring system (PPMS), update on six monthly basis;
- (xviii) Assist the PMU in the financial management of the project such as the management of imprest account, preparation of withdrawal applications, accounting, and internal audit, coordination with finance department of the MOWRAM on project finance/accounting system;
- (xix) Design joint reservoir operation of Stung Chinit and Taing Krasaing reservoirs in Kampong Thom province, and Bassac and Dauntri reservoirs in Battambang province to improve water sharing arrangements between linked systems and assist MOWRAM in adopting those;
- (xx) Estimate irrigation service fee (ISF) for each irrigation system based on the estimate of annual O&M requirements of the secondary and tertiary canals and prepare O&M plans;
- (xxi) Estimate annual O&M cost of the main canals and prepare O&M plans to be adopted by PDWRAM/MOWRAM;

- (xxii) Facilitate tripartite agreement between PDWRAM/MOWRAM, FWUCs and Private Land Owners. Estimate the amount of water to be provided to the private owners and service fee to be paid by them;
- (xxiii) Carry out environmental and social due diligence of each subproject;
- (xxiv) Prepare IEE of each subproject;
- (xxv) Prepare Resettlement Plan of category B subprojects;
- (xxvi) Ensure compliance with ADB Safeguard Policy Statement (2009);
- (xxvii) Provide trainings to PDWRAM, PMU, MOWRAM and Ministry of Agriculture, Forestry and Fisheries (MAFF) staff in irrigation and water management, watershed management, operations of canals
- (xxviii) Ensure technology and know-how transfer from the PIMC to their counterparts in the PMU;
- (xxix) Establish canals flow measurement systems;
- (xxx) Establish modern canal operation systems;
- (xxxi) Develop and conduct Focused Information and Awareness program for the FWUCs and other stakeholders;
- (xxxii) Conduct a study for assessing the gap between O&M budget allocations and requirements for irrigation systems in Cambodia and
- (xxxiii) Any other activities for delivering the envisage outputs of the project and achieving desired outcome.

8. Consultancy services will comprise the following teams for providing assistance to the executing agency and the implementing agency in the implementation and management of the project:

- (i) **The Project Management Team will be** located within PMU at Phnom Penh. The team will provide support in overall coordination and management of the project including procurement, progress and performance monitoring and reporting, financial management, safeguards compliance, organizing and training FWUCs, and training the PMU and other government staff to ensure effective project implementation.
- (ii) **Feasibility and Design Team** will also be located in the PMU. This team will carry out feasibility studies of the subprojects and prepare detailed engineering design, drawings, bill of quantities, construction schedules and tender documents.
- (iii) **Construction Supervision Teams** will be located at PDWRAM Kampong Thom and in PDWRAM Battambang. The teams will be responsible for supervising the construction works, progress reporting, and quality assurance.

B. Duration of Assignment and Inputs Required

9. The project implementation period of the consultant services is **60 months (1 April 2016 to 31 March 2021)**. A total of **668 person months** including **58** person-months of the International experts and **610** person-months for the National experts would be required. The estimated staffing and expertise person-months requirements per component are summarized below:

Table A1.1: Summary of Consulting Services Requirements

Positions	Peron-Months Required	
	International	National
Team Leader/Water Resources Specialist	24	-
Institutional/Training Specialist for FWUCs	4	12
Procurement Specialist & Contract Specialist	12	24
Financial Management and Accounting Specialist	-	54
Hydrologist	12	24
Deputy Team Leader/ Irrigation Management Specialist	-	54
Hydraulic Structural Engineer	-	24
Monitoring and Evaluation Specialist	6	24
Construction Management Engineer	-	108
Agricultural Specialist/Agronomist	-	10
Materials/Quality Control Engineer	-	24
Gender Specialist	-	18
Social Safeguards/ Resettlement Specialist	-	24
Environment Specialist	-	18
Assistant Engineers	-	192
Total	58	610

C. Terms of Reference of Experts

1. International Experts

10. **Team Leader/Water Resources Specialist**, (24 person-months). The expert will have a Master's degree in water resources engineering/management with preferably 15 years of experience in design, implementation and management for water sector projects including dams, barrages and irrigations systems; and team leadership of preferably 2 ADB financed projects. The candidate must have demonstrated ability to lead teams composed of international and national consultants and create a strong working relationship with the executing/implementing agency. Excellent communication (written and oral) skills and strong inter-personal skills will be considered an asset. The Team Leader will: (i) provide overall responsibility for technical support during implementation, including preparation and implementation of work plans; (ii) coordinate financial management; (iii) monitor progress against project implementation schedule and coordinate preparation and submission of periodic progress reports and technical reports; (iv) work closely with MOWRAM-PMU and advise the Project Director (PMU); (v) maintain good coordination among ADB, PMU and others stakeholders and assure links with key institutions as MAFF, MEF and Local Authorities; (vi) Provide guidance to Team to ensure that the quality of works meet a required standard; (vii) monitor work of the Civil Works Contractors; (viii) assist PMU in contracts management; (ix) monitor financial performance of the project; (x) monitor the environment, health and safety, quality assurance & control, resettlement and social safeguards aspects to bring minimum delays to the project work; (xi) Conduct a study for assessing the gap between O&M budget allocations and requirements for irrigation systems in Cambodia and (xii) coordination with on-going ADB-financed projects for the installation of hydro-met and telemetry, FWUC training and other support to provincial and district agencies,

11. **Institutional/Training Specialists for FWUCs**, (4 person-months). The expert will have

a Master's degree in related field with preferably 10 years of experience in similar work with donor financed projects. The candidate will have demonstrated ability to work in a multidisciplinary team and will possess excellent communication (written and oral) skills. Tasks include: (i) review of the project related documentation to assess current capacity and capacity building objectives and implications of proposed investments under the project; (ii) undertake need assessment at various levels of implementation (PMU and FWUCs) to determine the capacity building needs at these levels; (iii) prepare training programs for FWUCs/other stakeholders; (iv) prepare training program for PMU staff and coordinate with existing ADB-financed projects with capacity development components on sharing of resources; (v) prepare guidelines for FWUC selection, establishment, and trainings; (vi) map existing FWUCs and prepare a plan for organizing and/or strengthening FWUCs in coordination with the MOWRAM and PDWRAM; (vii) work closely with PDWRAMs to establish the important link of PDWRAMs with FWUCS; and (viii) provide trainings.

12. **Hydrologist**, (12 person-months). The expert will have a Master's degree in hydrology/water resources engineering with preferably 10 years of experience in hydrological studies, modelling and estimating flows. He /She will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. Tasks include: (i) design joint reservoir operation of Bassac and Dauntri reservoirs and Stung Chinit and Taing Krasaing reservoirs and facilitate MOWRAM in adopting those; (ii) carry out hydrological studies for subprojects and update the hydrological analysis and data for the purpose of determining water availability; (iii) in close coordination with the GMS Flood and Drought Risk Management and Mitigation Project, facilitate and monitor installation of the Hydro-met stations and assure institutional operations, data collection and processing, and develop linkage with reservoir operators (PDWRAM) to use data made available for joint reservoir operations and irrigation scheduling; (iv) supervise installation of canal flow measurement gauges; (v) assist in modernizing canal operations; (vi) assist in designing discharge capacity of distribution canals based on crop water requirements in command area of each tertiary and secondary canal; and (vii) provide awareness and trainings on watershed management.

13. **Procurement and Contract Management Specialists**, (12 person-months). The expert will have a Master's degree in business administration, engineering or other related fields with preferably 10 years' experience in procurement of works and goods, preparation of tender and contract documents, evaluation of bids, and contracts managements of projects, and recruitment of consultants including at least one ADB financed project. The specialist should have demonstrated experience with developing and managing FIDIC contracts for large works. Tasks include: (i) assist the PMU in preparing bidding documents; (ii) assist the PMU in preparing RFP for external monitoring agency (EMA); (iii) assist PMU in the evaluation of bids/proposal, prepare bid evaluation reports/submission for recruitment of EMA; (iv) assist PMU in negotiations and finalizing contract agreements for works, goods and services; (v) develop, and organize contract management capacity building and training covering FIDIC, and ADB procurement guidelines and procedures for the project implementation staff of the executing agency and PMU; (vi) advise Team Leader/team on the progress reporting, quality control and inspection systems to be followed during execution of civil work contracts; and (vii) advice PMU in resolving contractual issues.

14. **Monitoring and Evaluation Specialist**, (6 person-months). The expert will have a Master's degree in related field with preferably 10 years of relevant work experience. He /she will have experience working with international consultants preferably in donor funded projects. He/she will have demonstrated ability to work in a multidisciplinary team and will possess excellent communication skills in spoken and written English. The expert will: (i) establish the

project performance monitoring system (PPMS) and update every six months; (ii) establish data collection, analysis and reporting mechanism for the PPMS; (iii) collect benchmark/baseline data for performance indicators in the DMF; (iv) prepare quarterly progress reports (QPRs), annual reports and Borrower's project completion report.

2. National Experts

15. **Deputy Team Leader/Irrigation Management Specialist**, (54 person-months). The expert will have a Master's degree in water resources/irrigation engineering and preferably 10 years of experience in design, implementation and management of irrigations systems. Experience of working with international consulting firms in donor funded projects and government institutes will be considered an asset. The candidate must have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. In the absence of the Team Leader, the Deputy Team Leader will assume the management of the project. Tasks include: (i) assist the Team Leader in management and implementation of the project; (ii) supervise feasibility studies, detailed design and construction supervision of the subprojects; (iii) ensure effective coordination with the executing agency and other government agencies; (iv) prepare O&M plans for subprojects; (iv) assist M&E specialist on data collection for QPRs and PPMs; (v) assess irrigation efficiency and water productivity and incorporate measures to improve efficiency and water productivity in design of subprojects; (vi) prepare irrigation schedules based on crop water requirements; (vii) ensure timely completion of works contracts and other activities; (viii) ensure timely preparation of QPRs and PPMS; and (ix) assist team leader in conducting a study for assessing the gap between O&M budget allocations and requirements for irrigation systems in Cambodia.

16. **Procurement & Contract Specialists**, (24 person-months). The national procurement & contracts specialist will have a Master's degree in business administration, engineering or other related field with preferably 7 years' experience in procurement of works and goods, recruitment of consultants, preparation of tender and contract documents, evaluation of bids, and contract management including one ADB loan project. He /she will have demonstrated ability to work in a multidisciplinary team and excellent communication (written and oral) skills. The national expert will provide support to the Team Leader and International Procurement & Contract Specialists to: (i) assist the PMU in preparing bidding documents; (ii) assist the PMU in preparing RFP for external monitoring agency (EMA); (iii) assist PMU in the evaluation of bids/ proposal, prepare bid evaluation reports/submission for recruitment of EMA (iv) assist PMU in negotiations and finalizing contract agreements for works, goods and services; (v) develop, and organize contract management capacity building and training covering FIDIC, and ADB procurement guidelines and procedures for the project implementation staff of the executing agency and PMU (vi) advise Team Leader/team on the progress reporting, quality control and inspection systems to be followed during execution of civil work contracts; and (vii) advice PMU in resolving contractual issues.

17. **Financial and Accounting Specialist**, (54 person-months). The expert will have a Master's degree in Finance/Accounting with preferably 7 years of relevant work experience including experience working with international consultants preferably in donor funded projects and government institutes. He /she will have experience in financial management and accounting of preferably on one ADB financed project and will have excellent communication skills in spoken and written English. Tasks include: (i) assist the executing agency in preparing withdrawal applications to ADB, management of impress account, in accordance with ADB disbursement guidelines; (ii) assist in developing procedures for financial disbursement,

accounting, reporting and auditing of O&M budget for the subprojects in accordance with procedural requirements of the Government and ADB; and (iii) assist in processing ADB loan withdrawal including certificates and reporting formats for efficient flow of funds between ADB, Government, and contractors.

18. **Institutional/Training Specialists for FWUCs**, (12 person-months). The expert will have a Bachelor's degree in related field and preferably 5 years of relevant work experience; including experience working with international consultants preferably in donor funded projects and government institutes. He /she will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. The National Institutional/Training Specialists will assist the International expert to: (i) review the project related documentation, to assess current capacity and capacity building objectives and implications of proposed investments under the project; (ii) undertake need assessment at various levels of implementation (PMU and FWUCs) to determine the capacity building needs at these levels; (iii) prepare training programs for FWUCs/other stakeholders; (iv) prepare training program for PMU staff and coordinate with existing ADB-financed projects with capacity development components on sharing of resources; (v) prepare guidelines for FWUC selection, establishment, and trainings; (vi) map existing FWUCs and prepare a plan for organizing and/or strengthening FWUCs in coordination with the MOWRAM and PDWRAM; (vii) work closely with PDWRAMs to establish the important link of PDWRAMs with FWUCs; and (viii) provide trainings.

19. **Monitoring and Evaluation Specialist**, (24 person-months). The expert will have a Master's degree in related field with preferably 5 years of relevant work experience. He /she will have experience working with international consultants preferably in donor funded projects. He/she will have demonstrated ability to work in a multidisciplinary team and will have excellent communication skills in spoken and written English. The expert will: (i) assist in establishing the project performance monitoring system (PPMS) and update every six months; (ii) establish data collection, analysis and reporting mechanism for the PPMS; (iii) collect benchmark/baseline data for performance indicators in the DMF; (iv) prepare quarterly progress reports (QPRs), annual reports and Borrower's project completion report.

20. **Hydraulic Structural Engineer**, (24 person-months). The expert will have a Master's degree in water resources engineering/hydraulics engineering with preferably 5 years of experience in design of hydraulic structures including small dams, weirs, and irrigation systems; cost estimation, preparation of BOQs, including experience working with international consultants preferably in donor funded projects. He /she will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. The National Hydraulic Structural Engineer will assist the International expert in: (i) review and update of hydraulic calculation of canal, drain and hydraulic structures of the Taing Krasaing and Prek Chik main canals; (ii) design canals, drains and appurtenant structures of all other subprojects; (iii) estimate cost of subprojects, prepare BOQs, tender drawings and complete all other requirements for award and construction of work contracts; (iv) supervise topographic surveys, review the results of the topographical survey and geotechnical studies and integrate these considerations in the design; and (v) assist team leader in conducting a study for assessing the gap between O&M budget allocations and requirements for irrigation systems in Cambodia.

21. **Hydrologist**, (24 person-months). The expert will have a Master's degree in hydrology/water resources engineering with preferably 5 years of relevant work experience; including experience working with international consultants preferably in donor funded projects.

He /She will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. Tasks include assisting international hydrologist to: (i) design joint reservoir operation of Bassac and Dauntri reservoirs, and Stung Chinit an Taing Krasaing reservoirs and facilitate MOWRAM in adopting those; (ii) carry out hydrological studies for subprojects and update the hydrological analysis and data for the purpose of determining water availability; (iii) In close coordination with the GMS Flood and Drought Risk Management and Mitigation Project, facilitate and monitor installation of the Hydro-met stations and assure institutional operations, data collection and processing, and develop linkage with reservoir operators (PDRWAM) to use data made available for joint reservoir operations and irrigation scheduling; (iv) supervise installation of canal flow measurement gauges; (v) assist in modernizing canal operations; (vi) assist in designing discharge capacity of distribution canals based on crop water requirements in command area of each tertiary and secondary canal; (vii) provide awareness and trainings on watershed management.

22. **Agriculture Specialist/Agronomist**, (10 person-months). The expert will have a Master's degree in agronomy with preferably 5 years' experience in estimating crop water requirements, designing cropping patterns and cropping intensities. He /she will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. Tasks include: (i) work closely with hydraulics design engineer to map out the existing cropping patterns in the subprojects' command area; (ii) identify current practices of famers within the subproject area on the farming technique; (iii) identify agro input (fertilizer, pesticide, herbicide) and agro-tools which are used in the project area; (iv) propose cropping pattern and intensities to farmers by taking into account the soils quality, climatic condition, crop water requirement and water availability; (v) prepare cropping calendars for the each subproject; (vi) provide inputs in the feasibility studies and design; (vii) track yields and harvest and post-harvest issues faced by FWUCS; (viii) assess seed types used and impact on cropping calendars proposed and agreed by PDWRAMs – FWUC; and (ix) facilitate farmers access to quality seed and agriculture value chains through coordination with CRRCSDP.

23. **Materials/Quality Control Engineers**, (2 positions, 12 months each). The experts will have a Bachelor's degree in Civil Engineering with preferably 5 years' experience in quality control of construction projects preferably canals and hydraulic structures with an International/Multinational consultancy/construction firm. Their task will be to ensure the quality of construction is as per the design specifications. They will carry out on site quality tests as well as review the laboratory tests of the materials submitted by the contractors.

24. **Social Safeguards/Resettlement Specialist**, (24 person-months). The expert will have Bachelor's degree in social sciences with preferably 5 years of relevant work experience including experience working with international consultants, preferably in donor funded projects and government institutes. He/she will have experience of working on ADB financed projects and fully familiar with ADB's Safeguard Policy Statement (SPS), 2009. He/she will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. Tasks include: (i) screen subprojects for involuntary resettlement impacts to determine eligibility of the subproject for financing under the project; (ii) for subprojects with involuntary resettlement impacts, prepare Resettlement Plans in accordance with the Resettlement Framework; (iii) assist and supervise detailed design of subprojects to ensure involuntary resettlement impacts are minimized, if not avoided; (iv) based on detailed design, conduct detailed measurement survey and update the Resettlement Plan in accordance with the Resettlement Framework; (v) assist in organizing and conducting consultations with affected people to ensure that the Resettlement Plan have been fully discussed and agreed; (vi)

assist PMU and field staff in the implementation of Resettlement Plans in the subproject areas; (vii) develop and conduct training modules to ensure proper understanding and implementation of Resettlement Plans; (viii) monitor implementation of Resettlement Plans; and (ix) contribute to the PPMS for monitoring and reporting on resettlement by developing monitoring and evaluation indicators for involuntary resettlement and assisting in the preparation of monitoring reports for involuntary resettlement.

25. **Gender Specialist**, (18 person-months). The Gender specialist will have a Bachelor's degree with preferably 5 years of experience in gender and development. He/she will have experience of working with ADB financed projects and fully familiar with ADB's gender policy. He/she will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. The specialist will: (i) lead the implementation, monitoring and reporting of gender action plan (GAP); (ii) train project gender focal persons while working closely with executing/implementing agency gender team as well as other projects Specialists; and (iii) provide trainings and ensure achieving the targets. The specialist will prepare periodic gender monitoring reports and provide gender disaggregated data to M&E Specialist.

26. **Environment Specialist**, (18 person-months). The specialist will have: (i) an undergraduate degree or higher in environmental management or related field; (ii) at least 10 years of experience in environmental management, monitoring, and/or impact assessment; (iii) familiarity with ADB environmental safeguards requirements and national environmental management procedures; (iv) ability to communicate and work effectively with local communities, contractors, and government agencies; (v) ability to analyze data and prepare technical reports; (vi) willingness and health to regularly visit the sub-project sites; and (vii) proficiency in spoken and written English. Working closely with the PMO and the PMO Environmental Management Officer, and other relevant personnel and agencies, the specialist will assist in all aspects of the implementation of the project EARF and subproject IEEs. The specialist will: (i) Ensure that the steps of the EARF covering environmental screening and impact assessment are followed by PMUs; (ii) Deliver training in (a) EARF procedures for screening, and assessing environmental impact (IEEs); and (b) record-keeping and reporting; (iii) Assist the PMO and PMUs to establish and publicize the grievance redress mechanism (GRM) for sub-projects, ensuring that the GRM publicity is appropriate to the scale and complexity of the sub-project and includes, as a minimum, the disclosure of all contact persons for lodging complaints; and (iv) Assist the PMO to prepare quarterly (during construction) and semi-annual project monitoring progress reports (otherwise) for submission to ADB within 2 months after each reporting period.

27. **Construction Management Engineers**, (2 positions, 54 months each). The experts will be qualified Civil Engineers, with Master's degree in construction management with 7 years of experience of managing construction canals and hydraulic structures of donor financed projects. They will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. Their tasks include: (i) prepare construction schedules; (ii) ensure construction progress adheres to the schedules; (iii) supervise the work of assistant engineers; (iv) monitor progress and quality of construction works; (v) review measurements for completed works, and verify bills for payment; (vi) take measures to minimize contract variations; (vii) assess adequacy of contractors' input in terms of materials, equipment, construction machinery, workers, and construction approach and methodologies; (viii) monitor physical and financial progress against the milestones, for timely completion; (ix) review and approve the construction drawings of the contractor and permit the contractors to carry out construction work effectively and efficiently and to the highest standards of quality; and (x)

report progress, disputes and all the other matters to the Team Leader.

28. **Assistant Engineers**, (4 positions, 48 person-months each). Qualified Engineer, with Bachelor's degree in Civil Engineering and preferably 5 years of experience in site supervision of construction works preferably canals and hydraulic structures. They will have demonstrated ability to work in a multidisciplinary team and excellent communication skills in spoken and written English. Tasks include: (i) reporting to the Construction Management Engineer; (ii) supervise and monitor the construction of works, prepare measurements for works completed and in progress; (iii) certify contractors' bills; (iv) Check the construction schedule submitted by contractor, and assist contractor's site manager to make detailed construction plan; (v) report weekly and monthly construction progress and issues to the Construction Management Engineer; (vi) report field variations to the Construction Management Engineer and regularly monitor physical and financial progress against the milestones, according to the contracts to ensure the completion of the contracts on time; (vii) examine contractors' claims for time extension, variations, and additional compensation, etc., and recommend appropriate decisions to the Construction Management Engineer; (ix) Assist PMU in resolving contractual issues and overall contract management; and (x) ensure quality of construction as per design specifications.

D. Deliverables

29. Deliverables will include:

- (i) **Inception Report** – within 3 months of mobilization – presenting approach to tasks and reporting, with details of how each task will be performed, and identifying what resources will or may be required.
- (ii) **Quarterly Progress Reports (QPRs)** - summarizes the highlights per quarter, the activities undertaken and a summary of disbursements; physical and financial progress of the project; achievements of targets for outputs and inputs defined in the DMF, to be submitted within 7 working day of the first month of the succeeding quarter.
- (iii) **Project Performance Monitoring Reports (PPMS)** - shall be submitted every six months, highlighting the performance based on the DMF targets
- (iv) **Borrower's Project Completion Report** (At completion of the project).

E. Client's Input and Counterpart Personnel

30. Services, facilities and property to be made available to the Consultant by the Client:

- (i) All available project reports and data. Feasibility Reports of Taing Krasaing and Prek Chik irrigation systems and detailed engineering design and drawings of main canals;
- (ii) Office space with furniture and office equipment at Phnom Penh, Battambang and Kampong Thom; and
- (iii) Vehicles.

III. EXTERNAL MONITORING AGENCY FOR SAFEGUARDS

A. Objectives

31. The project requires the services of external monitoring and evaluation experts¹/qualified non-government organizations (NGOs) to conduct an external assessment of the extent to which resettlement and rehabilitation objectives are being met. Specifically, the objectives of the monitoring program are:

- (i) To verify ongoing internal monitoring information;
- (ii) To verify whether the overall project and resettlement objectives are being met in accordance with the Resettlement Framework (RF), and if not to suggest corrective measures;
- (iii) To assess the extent to which implementation of Resettlement Plans (RPs) complies with the RF;
- (iv) To identify problems or potential problems;
- (v) To identify methods of responding immediately to mitigate problems and advise MOWRAM and IRC accordingly; and
- (vi) To verify if the livelihoods and the standard of living of affected persons (APs), including those of the non-titled displaced persons, are restored or improved;

B. Tasks

32. The external experts will address specific issues such as the following:

- (i) Verify the detailed measurement survey (DMS) database generated by the project management unit (PMU), identify differences in inventory of loss (IOL) and/or DMS recorded in the RP, and document changes to the database;
- (ii) Confirm that all APs are eligible for compensation, resettlement and rehabilitation assistance, irrespective of tenure status, social or economic standing, and any such factors that may discriminate against achieving the project objectives; Payment of compensation, allowances and other assistance are as per approved RP;
- (iii) Confirm timing of disbursement of payment and assess that the level of compensation is sufficient to replace their losses;
- (iv) Public consultation and awareness of key information in the resettlement plan;²
- (v) Coordination of resettlement activities with construction schedule;
- (vi) Land acquisition and transfer procedures;
- (vii) Construction/rebuilding of replacement houses and structures on residual land, relocation sites (outside the residual land), and self-selected land;
- (viii) Implementation of gender and/or Indigenous Peoples measures as indicated in the RP;
- (ix) Level of satisfaction of APs with the provisions and implementation of the RP;
- (x) Effectiveness of grievance redress mechanism (accessibility, documentation, process, resolution);
- (xi) Effectiveness, sufficiency, impact, and sustainability of entitlements and income restoration programs and the need for further improvement and corrective measures, if any;

¹ External experts mean experts not involved in day-to-day project implementation or supervision.

² Key information in the RP include: Scope of Land Acquisition and Resettlement Impacts, Entitlement Matrix, Grievance Redress Mechanism.

- (xii) Relocation site development (civic infrastructure and community services as required), identification and selection of sites in consultation with APs and host communities, equivalent or enhanced access to livelihood opportunities, process and timeliness of providing land titles/certificates;
- (xiii) Capacity of APs to restore/re-establish livelihoods and living standards. Special attention will be given to severely affected APs and vulnerable APs;
- (xiv) Involuntary resettlement impacts caused during construction activities;
- (xv) Participation of APs in RP implementation; and
- (xvi) Adequacy of budget and human resources³ at executing agency/implementing agency level for resettlement activities, including internal monitoring.

C. Methodology

33. The methods for external monitoring activities include:

- (i) Review of DMS process to be able to establish a baseline for monitoring and evaluating project benefits. The external monitoring organization (EMO) to check on a random basis⁴ the DMS process with APs, from identification to agreement on DMS results. The EMO will also evaluate the DMS process to determine and assess if DMS activities are being carried out/was carried out in a participatory and transparent manner.
- (ii) Resettlement audit conducted during monitoring. The EMO will carry out random checks of payments⁵ disbursed to APs during monitoring. The EMO will submit a resettlement audit report upon completion of compensation payment to APs.
- (iii) Review of socioeconomic data⁶ prepared during the project preparatory technical assistance (PPTA). With this review, the DMS data, and additional data compiled, the EMO will provide the baseline data to be used in comparison to the post-resettlement survey. A post-resettlement survey will be carried out one year following completion of all resettlement activities, including livelihood restoration activities. Sampling will include at least 20% of severely affected and vulnerable households, as well as at least 10% of all other APs. Special attention will be paid to the inclusion of women, ethnic groups, the very poor, the landless and other vulnerable groups, with set questions for women and other target groups. The database will disaggregate information by gender, vulnerability, and ethnicity.
- (iv) Participatory Rapid Appraisal (PRA), which will involve obtaining information, identifying existing or potential problems, and finding specific time-bound solutions through participatory means including: a) key informant interviews including representatives of civil society, community groups, and NGOs; b) focus group discussions (FGDs) on specific topics such as compensation payment, income restoration and relocation⁷; c) community public meetings to discuss community losses, integration of resettled households in host communities or construction work employment; d) direct field observations, for example, of resettlement site development; e) formal and informal interviews with affected households, women, ethnic minorities, and other vulnerable

³ Assessment of human resources is in terms of both number of staff assigned, as well as capacity.

⁴ Depending on number of affected households (AHs).

⁵ Depending on number of AHs.

⁶ Possible data sources include: census, IOL, socioeconomic survey, village records/documents.

⁷ Groups that may be targeted for involvement in FGDs include AHs in general, and vulnerable AHs such as women-headed households, the poor, and ethnic minorities

groups to monitor and assess the progress the APs are making to restore their living standards, APs' perceived need for additional assistance (and type of assistance), and their individual satisfaction with current economic activities; and f) in-depth case studies of problems identified by internal or external monitoring that required special efforts to resolve. The PRA will also focus on good practices in land acquisition and involuntary resettlement objectives, approaches, and implementation strategies.

- (v) Review the results of internal monitoring.

D. Timing & Team Composition

34. The external experts will conduct monitoring missions to be carried out on a quarterly basis starting from the completion of DMS for the first batch of subprojects until the completion of livelihood/income restoration activities in all subprojects. For subprojects where payment of compensation/allowances has been substantially completed, the external experts will also conduct resettlement audit mission to validate status of compensation and hand-over of plots and recommend issuance of (no-objection letter) NOL for the commencement of civil works.

35. The external monitoring and evaluation experts/qualified NGOs will be composed of one team leader with extensive experience in monitoring and evaluation of resettlement activities in the country with strong ability in preparing resettlement reports. He/she should demonstrate good communication skills and have at least a bachelor degree in a relevant field. The team leader will be assisted by at least 1 specialist with similar experience and background. All reports will be submitted in English (and in local language, if required) to the government and ADB simultaneously.

E. Deliverables

36. Inception report, including findings of review of baseline data, monitoring methodology and detailed work plan (in terms of sampling, timing, budget, other required resources)

37. Quarterly monitoring report, including (a) methods used by the EMO during the monitoring period; (b) progress of RP implementation, including any deviations from the provisions of the RP; (c) identification of problem issues and recommended corrective actions to inform implementing agencies and resolve issues in a timely manner (refer to Table A.1); (d) identification of specific gender and ethnic minorities issues, as relevant; (e) report on progress of the follow-up of issues and problems identified in the previous reports; (f) lessons learned that might be useful for future activities; and, (g) resettlement audit report.

Table A1.2: Sample Corrective Action Plan Summary Table

[illegible]

Total									

38. Include Monitoring and Evaluation indicators (commonly a table in the RP). A set of suggested indicators are in Table A1.3,⁸ to be replaced with RP table as required:

Table A1.3: Indicators for Verification by External Experts

Monitoring Indicator	Basis for Indicator
Basic information on displaced persons' households (Gender disaggregated data essential for all aspects)	<ul style="list-style-type: none"> • Location of the project • Composition and structure, ages, educational, and skill levels • Gender of household head • Ethnic group • Access to health, education, utilities, and other social services • Housing type • Land and other resource-owning and resource-using patterns • Occupations and employment patterns • Income sources and levels • Agricultural production data (for rural households) • Participation in neighborhood or community groups • Access to cultural sites and events • Valuation of all assets
Restoration of living standards	<ul style="list-style-type: none"> • Were house compensation payments made free of depreciation, fees, or transfer costs to the displaced persons? • Have displaced persons adopted the housing options developed? • Have perceptions of community been restored? • Have displaced persons achieved replacement of key social and cultural elements?
Restoration of livelihoods (Disaggregate data for displaced persons moving to group resettlement sites, self-relocating displaced persons, displaced persons with enterprises affected)	<ul style="list-style-type: none"> • Were compensation payments free of deductions for depreciations, fees, or transfer costs to the displaced persons? • Were compensation payments sufficient to replace lost assets? • Was sufficient replacement land available of suitable standard? • Did income substitution allow for reestablishment of enterprises and production? • Have affected enterprises received sufficient assistance to reestablish themselves? • Have vulnerable groups been provided income-earning opportunities? • Are these opportunities effective and sustainable? • Do jobs provided restore pre-project income levels and living standards?
Levels of displaced persons' satisfaction	<ul style="list-style-type: none"> • How much do the displaced persons know about resettlement procedures and entitlements? • Do the displaced persons know their entitlements? • Do they know whether these have been met? • How do the displaced persons assess the extent to which their own living standards and livelihoods have been restored? • How much do the displaced persons know about grievance procedures and conflict resolution procedures?

⁸ ADB. 2012. *Involuntary Resettlement Safeguards: A Planning and Implementation Good Practice Sourcebook – Draft Working Document*. Manila.

Monitoring Indicator	Basis for Indicator
Effectiveness of resettlement planning	<ul style="list-style-type: none"> • Were the displaced persons and their assets correctly enumerated? • Was the time frame and budget sufficient to meet objectives, were there institutional constraints? • Were entitlements too generous? • Were vulnerable groups identified and assisted? • How did resettlement implementers deal with unforeseen problems?

SCREENING FORM FOR IMPACTS ON INDIGENOUS PEOPLES

KEY CONCERNS (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
A. Indigenous Peoples Identification				
1. Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, scheduled tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area?				
2. Are there national or local laws or policies as well as anthropological researches/studies that consider these groups present in or using the project area as belonging to "ethnic minorities", scheduled tribes, tribal peoples, national minorities, or cultural communities?				
3. Do such groups self-identify as being part of a distinct social and cultural group?				
4. Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories?				
5. Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?				
6. Do such groups speak a distinct language or dialect?				
7. Has such groups been historically, socially and economically marginalized, disempowered, excluded, and/or discriminated against?				
8. Are such groups represented as "Indigenous Peoples" or as "ethnic minorities" or "scheduled tribes" or "tribal populations" in any formal decision-making bodies at the national or local levels?				
B. Identification of Potential Impacts				
9. Will the project directly or indirectly benefit or target Indigenous Peoples?				
10. Will the project directly or indirectly affect Indigenous Peoples' traditional socio-cultural and belief practices? (e.g. child-rearing, health, education, arts, and governance)				
11. Will the project affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status)				

KEY CONCERNS (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
12. Will the project be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain?				
C. Identification of Special Requirements <i>Will the project activities include:</i>				
13. Commercial development of the cultural resources and knowledge of Indigenous Peoples?				
14. Physical displacement from traditional or customary lands?				
15. Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of Indigenous Peoples?				
16. Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied or claimed by indigenous peoples?				
17. Acquisition of lands that are traditionally owned or customarily used, occupied or claimed by indigenous peoples?				

Anticipated project impacts on Indigenous Peoples

Subproject activity	Anticipated positive effect	Anticipated negative effect
1.		
2.		
3.		
4.		
5.		

Indigenous Peoples Category (Encircle 1)

Category	Description	Subproject Eligibility
A	Significant impacts on Indigenous Peoples	Not Eligible
B	Insignificant impacts on Indigenous Peoples	Eligible
C	No impact on Indigenous Peoples	Eligible

PROJECT PERFORMANCE MONITORING SYSTEM

I. Introduction

1. This document presents the project performance monitoring system (PPMS) for the Cambodia: Uplands Irrigation and Water Resources Management Sector Project, funded by the Asian Development Bank (ADB) and the Government of Cambodia. The PPMS is developed for monitoring the indicators and targets for outcome and outputs outlined in the project design and monitoring framework (DMF).

II. Project Description

A. Components

2. The project will have the following two outputs:

3. **Output 1: Enhanced efficiency and climate resilience of irrigation systems in the project areas.** The project will support rehabilitation, modernization, and climate proofing of at least three irrigation systems to increase the cultivated area in the project areas in Kampong Thom and Battambang provinces to 29,500 ha.¹ It will (i) rehabilitate the undersluices and the spillway of the Taing Krasaing headworks, 22-kilometers (km) main Taing Krasaing canal, and 48.0 km of secondary and tertiary canals; (ii) install a pumping system and associated distribution channels to lift water by a maximum of 3 meters for 2,960 ha of developed rain-fed land in the Taing Krasaing system command area; (iii) rehabilitate the Prek Chik headworks (including raising the spillway by 1.5 meters), 28-km main Prek Chik canal, and 70.2 km of secondary and tertiary canals to cover 10,400 ha net irrigated area; (iv) install structures and gauges for water measurement, control, and distribution on the Taing Krasaing and Prek Chik system's main and distribution canals; (v) improve drainage facilities for 1,800 ha to climate proof the irrigation facilities against floods; (vi) carry out laser land leveling of 2,000 ha; (vii) improve 21,000 ha of land through irrigation, drainage, and/or flood protection; and (viii) conduct feasibility studies, design, and improvement works for the O Kra Nahk irrigation system serving about 1,500 ha in Kampong Thom province, and other noncore subprojects.

4. **Output 2: Improved water resource management.** The project will organize FWUCs and provide gender-inclusive training to FWUC members on (i) O&M of canals, (ii) management of FWUCs, (iii) issues related to climate variability and change, and (iv) water management. It will also involve them in the design and implementation of subprojects. It will install hydrometeorological stations in the watersheds and establish canal flow measurement systems. The project will train staff of the Ministry of Water Resources and Meteorology (MOWRAM), MOWRAM's Department of Farmer Water User Communities (DFWUC), provincial departments of water resources and meteorology (PDWRAMs), the FWUCs, and the MAFF on (i) modern canal operation techniques, (ii) irrigation scheduling, (iii) watershed management, and (iv) water management. It will also strengthen their awareness of climate resilience in water resource management. The project will modernize canal operations, undertake irrigation scheduling, and integrate the scheduling with the canal flow gauging system to manage supplies, particularly during droughts. It will also design joint reservoir operations for (i) Stung Chinit and Taing Krasaing reservoirs in Kampong Thom, and (ii) Bassac and Dauntri reservoirs in Battambang.

¹ Feasibility studies have been completed for the Taing Kraisang and Prek Chik irrigation systems. The feasibility study for the O Kra Nahk irrigation system will be carried out during project implementation.

This will improve water-sharing arrangements between linked systems and ensure equitable distribution, particularly during droughts.

B. Project Area

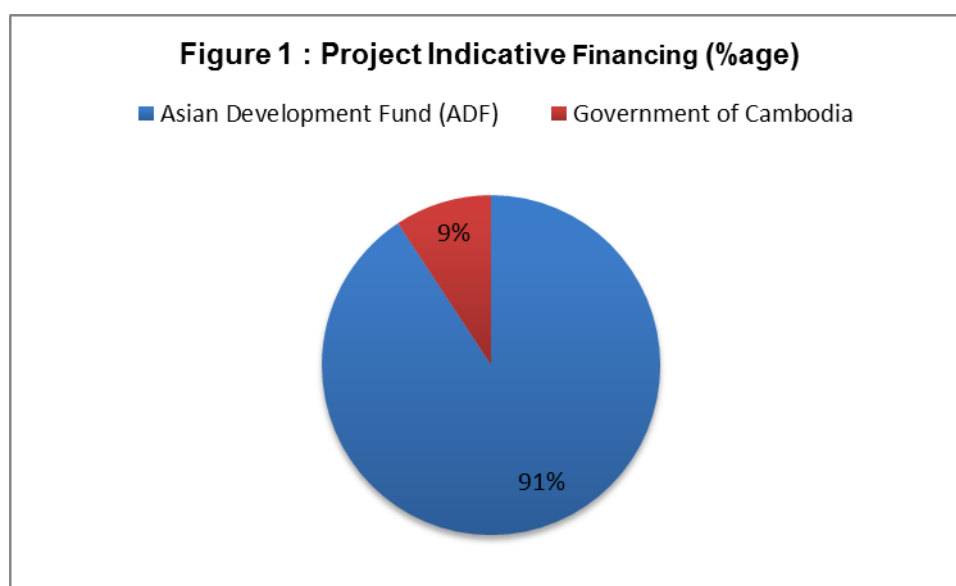
5. The project area comprises selected irrigation systems in Kampong Thom and Battambang provinces, away from the Tonle Sap Lake. Population living below poverty line is 25% in Battambang and 29% in Kampong Thom.²

III. Project Costing

6. The project cost is estimated at \$60 million ADB and \$6.12 million from the Government of Cambodia. The indicative financing plan for the project is given in Table 2 and figure 2 below. Component wise project cost is presented in Table 1 and Figure 1 below.

Table A3.1: Indicative Financing Plan

Source	Amount (\$ Million)	Share of Total (%)
Asian Development Fund (ADF)	60.00	90.7
Government of Cambodia	6.12	9.3
Total	66.12	100.0



7. The project investment plan is given in Table A3.2 below.

Table A3.2: Component-wise Cost of Project

Item	Amount ^a
A. Base Cost^b	
1. Efficiency and climate resilience of irrigation systems	50.80
2. Water resource management	1.31

² Annex 8: Summary Poverty Reduction and Social Strategy.

Item	Amount ^a
3. Project management	1.15
Subtotal (A)	53.26
B. Contingencies^c	11.24
C. Financing Charges During Implementation^d	1.62
Total (A+B+C)	66.12

IV. Project Implementation Arrangements

8. MOWRAM will be the executing agency and DFWUC will be the implementing agency. A PMU has been established in DFWUC before commencement of the project preparatory technical assistance (PPTA). The PMU is headed by a Project Director who is the Deputy Director General for Technical Affairs, DFWUC and a Project Manager who is the Director of the DFWUC. The PMU was fully involved in the preparation of the project. For implementation of the project, the PMU will be composed of 24 designated personnel from MOWRAM, DFWUC, MAFF, Department of Hydrology and River Work (DHRW), and (PDWRAMs) of Kampong Thom and Battambang provinces. MAFF staff will coordinate the land levelling and other supporting activities to be provided from CRRCS DP including access to quality seed and agriculture value chain facilities and services. PDWRAMs will be responsible for coordinating all field activities with FWUCs and DFWUC. DHRW will coordinate installation, operation, and data collection of hydro-meteorological stations.

9. A steering committee, chaired by H.E. Minister MOWRAM and comprising senior officials from MOWRAM, MAFF, Ministry of Economy and Finance (MEF) and Provincial Governor's Office of two provinces, will oversee the project implementation and management and provide policy guidance. Resettlement and land acquisition will be implemented by and under the management of the Inter-Ministerial Resettlement Committee (IRC) chaired by MEF with membership from the representatives of relevant line ministries in close cooperation with the Kampong Thom and Battambang Provincial Resettlement Sub-committees. The PMU will be responsible for implementation, planning, organization, monitoring and reporting of the project and will be supported by the project management and implementation consultants (PMIC). The PMIC will comprise 64 person-months of international and 610 person-months of national experts to provide technical support to the PMU to efficiently manage and implement the project. ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) will be used for recruiting the consulting firms. The anticipated procurements include small and large works contracts and goods, which will be procured by using ADB's national and international competitive bidding and shopping methods. An imprest account will be maintained at the PMU level for ADB loan funds.

V. Implementation Progress

10. [Brief write-up on the status of implementation of activities]

11. Implementation progress in terms of start-up activities, safeguards, procurement of goods and services, contracts, and physical progress are presented below.

A. Start-up Activities

12. [Brief write-up on the status of activities]

Table A3.3: Start-up Activities

Activity	Deadline	Status
Opening of Imprest account		
Recruitment of PMIC		
Award of Works Package TK		
Procurement of Goods		

B. Safeguards

13. [Brief write-up on the status of activities]. The table below presents the project's status on safeguards.

Table A3.4: Safeguards

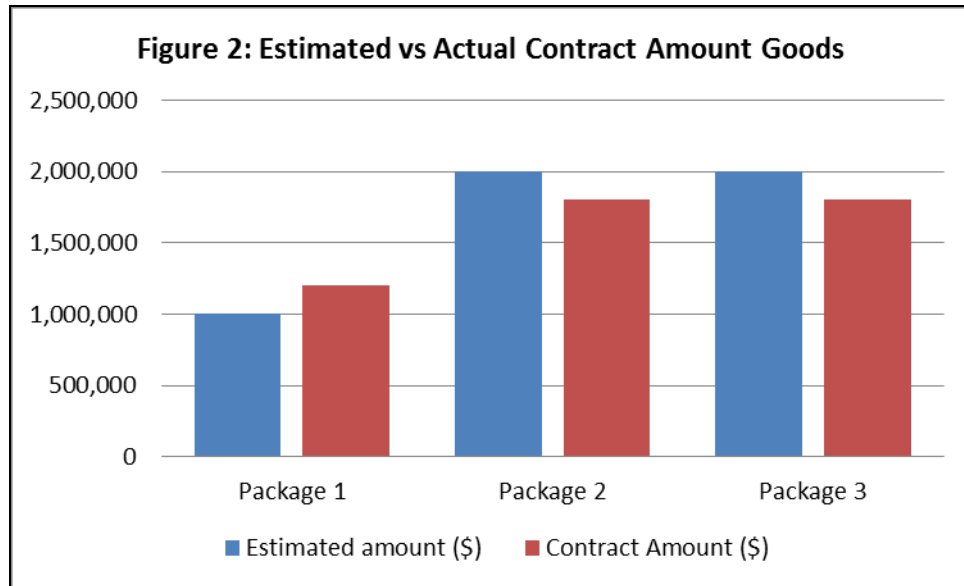
Sub-project/ Contract	Social Safeguard Assessment	Social Safeguard Screening (Y/N)	Resettlement Plan		Environment Assessment	
			Completed	On-going	Completed	Ongoing
Sub-project 1	Completed	Y	Yes/No/NR	-	Yes/No	-
Sub-project 2	Completed	Y	Yes/No/NR	-	Yes/No	-
Sub-project 3	Completed	Y	Yes/No/NR	-	Yes	-

C. Procurement

14. [Brief write-up on the status of procurements]. The tables and graphs below present the project progress on procurement of goods and equipment, works, and works contracts.

Table A3.5: Goods and Equipment

Package	Estimated amount (\$)	Date of Award	Contract Amount (\$)
Package 1	Insert Amount	Insert Date	Insert amount
Package 2	Insert Amount	Insert Date	Insert amount
Package 3	Insert Amount	Insert Date	Insert amount

**Table A3.6: Works**

Package	Description	Estimated amount (\$)	Date of Award	Contract Amount (\$)
Contract 1				
Contract 2				
Contract 3				

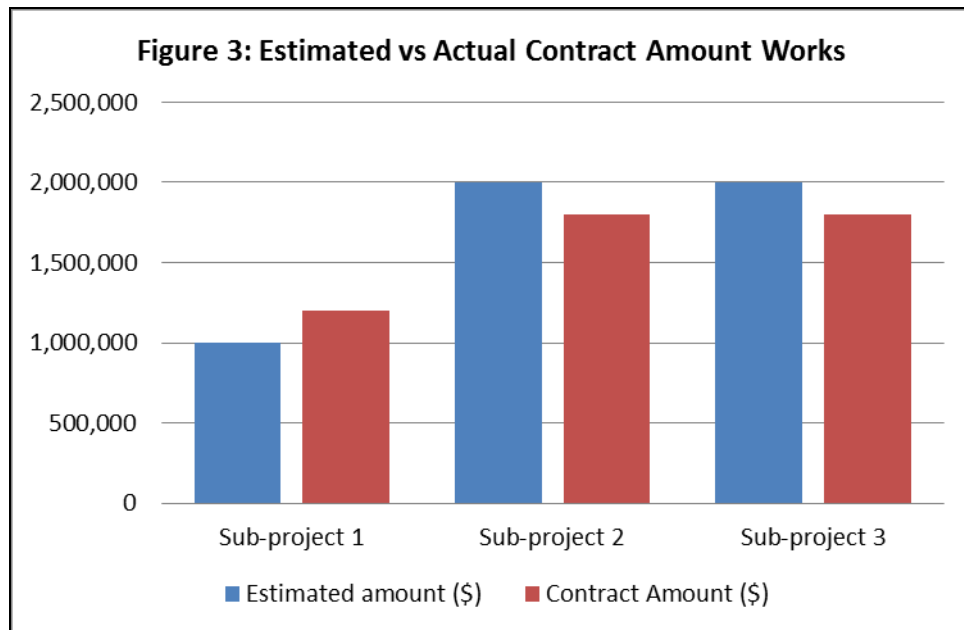
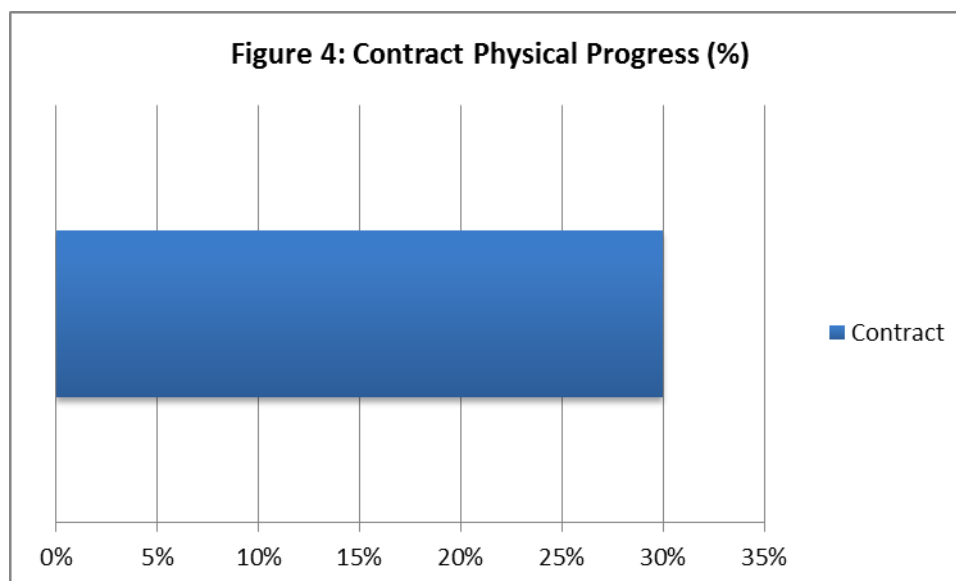


Table A3.7: Progress of Works Contracts

Sub-project/ Contract	Scheduled completion date	Time elapsed (Months)	Physical Progress (%)
Contract 1	Insert date		
Contract 2	Insert date		
Contract 3	Insert date		

**Table A3.8: Disbursements**

Loan Category	Amount Allocation (\$)	Amount Disbursed (\$)
ADB	60,000,000	Insert amount
Government	6,120,000	Insert amount

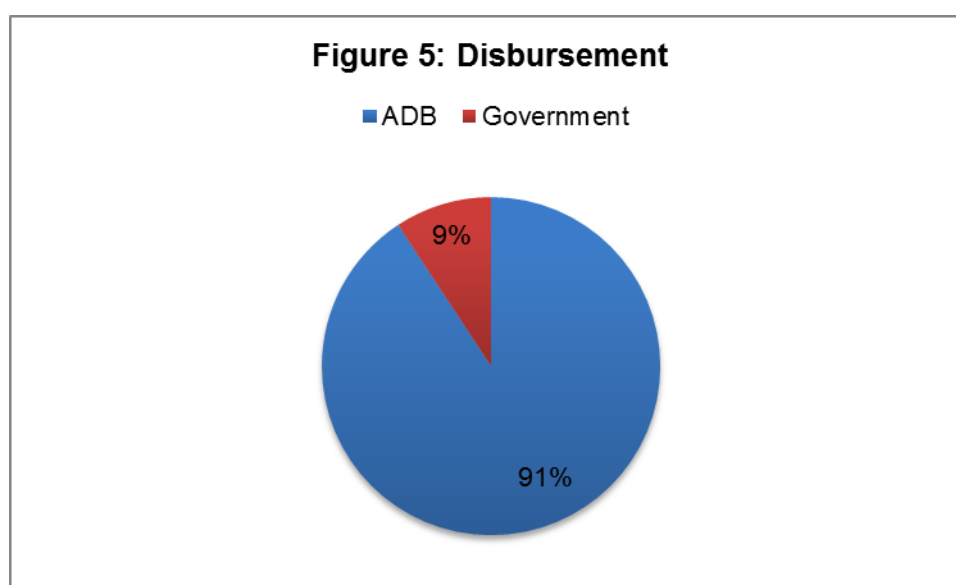
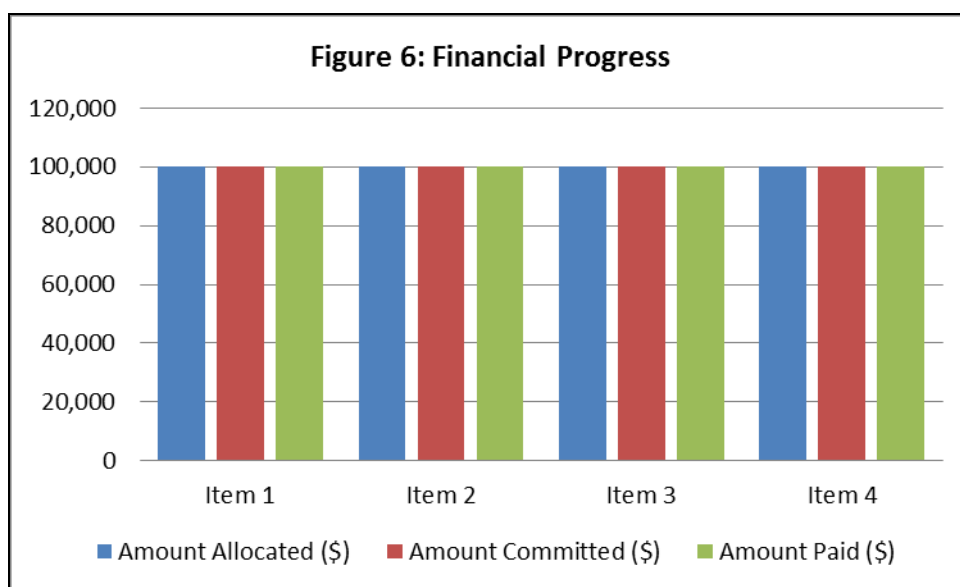


Table A3.9: Financial Progress

Item	Amount Allocated (\$)	Amount Committed (\$)	Amount Paid by IA(\$)
Goods			
Contract 1			
Contract 2			
Contract 3			
Consulting Services			
Contract 1			
Contract 2			
Works			
Contract 1			
Contract 2			
Contract 3			



VI. Project Performance

A. Performance Against DMF

15. The project's performance against the targets set out in the DMF for outcome, outputs and inputs is reported in the table below.

Table A3.10: DMF Targets vs Achievements

Project Results Chain	Performance Indicators with Targets and Baselines	Achievements
Outcome Water and agriculture productivity enhanced in the project areas	By 2022: Average annual crop production increased to 4.25 ton per ha (2015 baseline: 1.65 tons per ha)	
Outputs 1. Efficiency and climate resilience of irrigation systems in the project areas enhanced	By 2021: 1a. Irrigation infrastructure improved, modernized and made climate resilient. Dry- and wet-season cultivated area increased to 29,500 ha (2015 baseline: 13,500 ha) 1b. Irrigation efficiency of three irrigation systems increased by 100% (2015 baseline: 20% efficiency) 1c. Drainage facilities for 1,800 ha improved (2015 baseline: 0 ha) 1d. 2,000 ha land leveled by laser leveling (2015 baseline: 0 ha) 1e. 21,000 ha land improved through irrigation, drainage, and/or flood protection 1f. 25% of unskilled laborers in civil works are women	
2. Water resource management improved	By 2021: 2a. Three FWUCs formed and trained (2015 baseline: 0) 2b. 30% of FWUC members are women (2015 baseline: 0) 2c. 30% of FWUC management committee members are women (2015 baseline: 0)	2a–d. QPRs, LRM reports

Project Results Chain	Performance Indicators with Targets and Baselines	Achievements
	2d. Annual O&M plan prepared during design of each irrigation system 2e. O&M funds allocated by the government for main canals and reservoirs 2f. Eight hydrometeorological stations installed in the watersheds (2015 baseline: 0)	
Activities with Milestones		
1. Efficiency and climate resilience of irrigation systems in the project areas enhanced		
1.1 Award contract for Taing Krasaing main canal by 30 September 2016, and complete works by 30 June 2017		
1.2 Complete detailed design, cost estimates, and bidding documents for all subprojects by 31 December 2018		
1.3 Award all works contracts by 30 September 2019, and complete works by 31 March 2021		
2. Water resource management improved		
2.1 Form FWUCs by 30 June 2017		
2.2 Complete FWUCs training by 30 September 2020		
2.3 Install meteorological stations and river flow gauging stations by 31 December 2018.		
2.4 Design joint reservoir operation of Stung Chinit and Taing Krasaing reservoirs and Bassac and Dauntri reservoirs by 30 June 2018 for adoption by MOWRAM, PDWRAMs, FWUCs, and provincial authorities by June 2019		
Project Management Activities		
Mobilize project management and implementation consultants by 30 June 2016		
Procure office equipment, furniture, and vehicles by 30 June 2016		
Establish PPMS by September 2016		

B. Gender Action Plan

16. The project's progress against the Gender Action Plan is presented in the table below.

Table A3.11: Gender Action Plan

Outputs	Gender Design Features/Activities
1. Efficiency and climate resilience of irrigation systems in the project areas enhanced	1.1 Orientation and training on construction work, such as on canal measurements and work specifications, should be provided to women to ensure the quality of construction work. 1.2 Women who can read and write are encouraged to be hired as record keepers. 1.3 Orientation on gender equality should be provided to constructors 1.4 Gender equity and labor arrangements should be included in the

Outputs	Gender Design Features/Activities
	<p>contract of construction companies, i.e. at least 25% of unskilled labor will be given to local women during construction and there should be equal pay for equal work.</p> <p>1.5 At least 30% of women should participate during the presentation of project design and in the discussion and planning of the water distribution and cropping plans.</p> <p>1.6 Conduct meeting with women farmers separately (especially on the early stage of the project) to ensure that their ideas will be collected in developing gender project plans.</p>
2. Water resource management improved	<p>2.1 Encourage both husband and wife to register as member in the FWUC to ensure that at least 30% of the members are women.</p> <p>2.2 50% of project training to FWUC members to be participated by women</p> <p>2.3 Develop the knowledge, communication and leadership skills of women members through awareness-raising and training to enable them to be leaders of FWUC.</p> <p>2.4 At least 30% of FWUC management committee members, including design and construction committee, are women.</p> <p>2.5 Ensure that women will take part in the operations and maintenance activities with potential for payment or support for livelihood activity.</p> <p>2.6 Provide coaching on gender awareness and leadership for the gender focal person to ensure that they are able to conduct training within MOWRAM and PDWRAM officials and to women FWUCs.</p>

FWUC = farmer water user community, PDWRAM = provincial departments of water resources and meteorology, PMIC = project management and implementation consultants, PMU = project management unit

C. Data Management System

17. The process of Data Management consists of Data Collection, Data Communication, Analysis and Reporting. This is discussed in detail below.

18. Data will be collected on all the indicators defined in the DMF by PMIC and PDWRAM. It shall be reported to the M&E specialist of the PMIC in the PMU. This will include data on irrigation infrastructure improved, irrigation efficiency, upgrades of drainage facilities, land leveling, percentage of women employed as unskilled laborers, FWUCs formed and trained, O&M, and installation of hydro-meteorological stations.

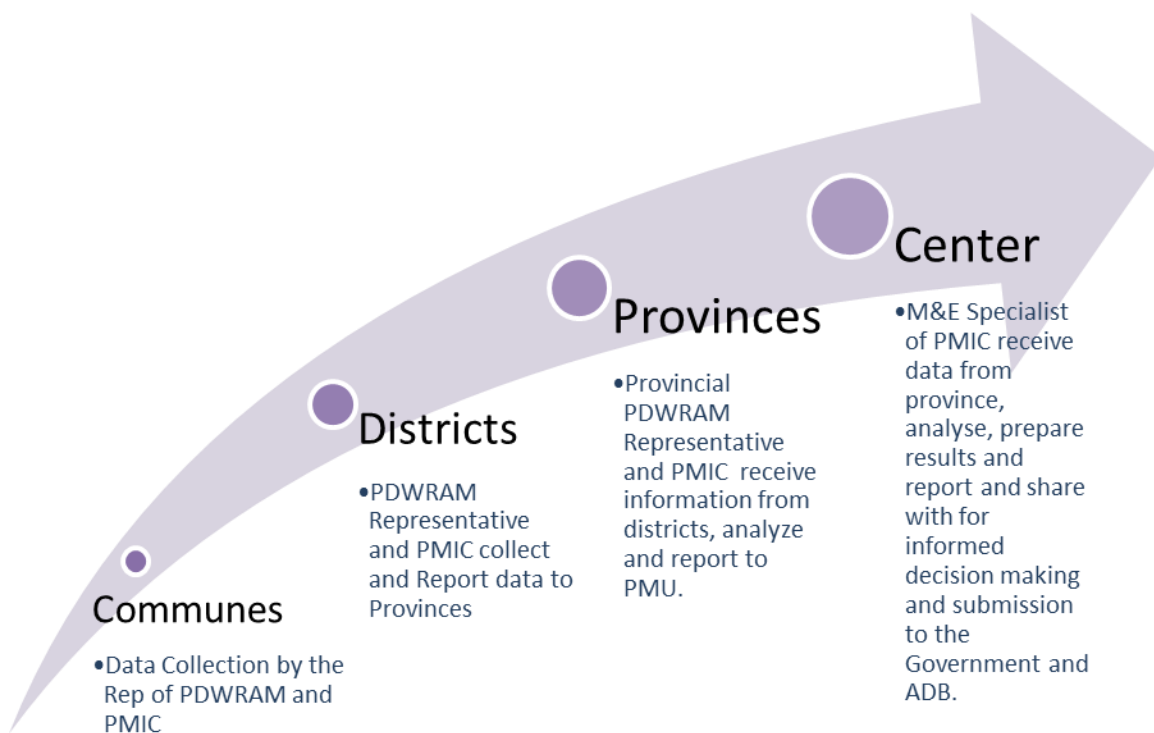
19. The PMIC and PDWRAM will compile the information in respect of the individual schemes carried out by the project and submit this to the PMU once they have collected the necessary details required for evaluating the output of the activities. The PMU would review the data submitted and will accordingly update the PPMS with support of PMIC.

20. Data on indicators related to laser land leveling and FWUC will be collected by MOWRAM and PMIC through MAFF. Data on indicators related to irrigation, O&M planning, and allocation of government funds for O&M of main, secondary and primary canals and storage/diversion structures will be collected by MOWRAM.

21. Data will be collected by MOWRAM through their PDWRAM in the two project focused provinces. PDWRAM will assign a focal point in their respective province. This person will be responsible for collecting and communicating data to MOWRAM. The focal point in MOWRAM will also analyze the data and then report it to the PMIC and PMU.

22. PPMS will be updated every 6 months from the start to end of the project. It will be sent to ADB by 30 January and 30 July every year. The diagram presenting the data flow is presented as Figure 7 below.

Figure 7: Flow Diagram – Data Management System



D. Status of Compliance with Loan Covenants

23. There are [number] loan covenants, out of which [number] are complied with, [number] are partly complied, [number] are ongoing, [number] and are still not met, [number] are not yet due. The list of covenants under relevant categories and their status of compliance as of [date] is provided in the table below.

Table A3.12: Status of Compliance with Loan Covenants

Sr. No.	Covenant	Reference in Loan Agreement (LA)	Status of Compliance	Remarks
	Financial Covenants			
1.				
2.				
	Safeguard Covenants			
3.				
4.				
	Social Covenants			
5.				
6.				
	Economic Covenants			
7.				
8.				
	Others Covenants			
9.				
10.				

E. Problems and Issues during Implementation

Describes problems caused by delayed project implementation over the last 6 months. The list of actions taken and the status of proposed actions are recorded

Annex 1: Design and Monitoring Framework

Impact the Project is Aligned with:			
Inclusive economic growth through agriculture and irrigation (Rectangular Strategy on Growth, Employment, Equity and Efficiency, Phase III, 2014 to 2018) ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
Outcome Water and agriculture productivity enhanced in the project areas	By 2022: Average annual crop production increased to 4.25 ton per ha (2015 baseline: 1.65 tons per ha)	PPMS Project completion report	Effects of climate change may damage project outputs and assets in the future.
Outputs 1. Efficiency and climate resilience of irrigation systems in the project areas enhanced	By 2021: 1a. Irrigation infrastructure improved, modernized and made climate resilient. Dry- and wet-season cultivated area increased to 29,500 ha (2015 baseline: 13,500 ha) 1b. Irrigation efficiency of three irrigation systems increased by 100% (2015 baseline: 20% efficiency) 1c. Drainage facilities for 1,800 ha improved (2015 baseline: 0 ha) 1d. 2,000 ha land leveled by laser leveling (2015 baseline: 0 ha) 1e. 21,000 ha land improved through irrigation, drainage, and/or flood protection 1f. 25% of unskilled laborers in civil works are women	1a. QPRs of the executing agency, PPMS, LRM reports 1b. PPMS 1c. PPMS 1d–f. QPRs, PPMS	The planning and funding of the O&M of the project irrigation systems may be inadequate.
2. Water resource management improved	By 2021: 2a. Three FWUCs formed and trained (2015 baseline: 0) 2b. 30% of FWUC members are women (2015 baseline: 0) 2c. 30% of FWUC management committee members are women (2015 baseline: 0)	2a–d. QPRs, LRM reports	Communication between MOWRAM, the PDWRAMs, and the FWUCs may be weak, adversely affecting project implementation.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
	<p>2d. Annual O&M plan prepared during design of each irrigation system</p> <p>2e. O&M funds allocated by the government for main canals and reservoirs</p> <p>2f. Eight hydrometeorological stations installed in the watersheds (2015 baseline: 0)</p>	<p>2e. Ministry of Economy and Finance budget documents, QPRs, LRM reports</p> <p>2f. QPRs, LRM reports, PPMS</p>	
Key Activities with Milestones <p>1. Efficiency and climate resilience of irrigation systems in the project area enhanced</p> <p>1.1 Award contract for Taing Krasaing main canal by 30 September 2016, and complete works by 30 June 2017</p> <p>1.2 Complete detailed design, cost estimates, and bidding documents for all subprojects by 31 December 2018</p> <p>1.3 Award all works contracts by 30 September 2019, and complete works by 31 March 2021</p> <p>2. Water resource management improved</p> <p>2.1 Form FWUCs by 30 June 2017</p> <p>2.2 Complete FWUCs training by 30 September 2020</p> <p>2.3 Install meteorological stations and river flow gauging stations by 31 December 2018</p> <p>2.4 Design joint reservoir operation of Stung Chinit and Taing Krasaing reservoirs and Bassac and Dauntri reservoirs by 30 June 2018 for adoption by MOWRAM, PDWRAMs, FWUCs, and provincial authorities by June 2019</p> <p>Project Management Activities</p> <p>Mobilize project management and implementation consultants by 30 June 2016</p> <p>Procure office equipment, furniture, and vehicles by 30 June 2016</p> <p>Establish PPMS by September 2016</p>			
Inputs <p>Asian Development Bank: \$60,000,000</p> <p>Government of Cambodia : \$6,120,000</p>			
Assumptions for Partner Financing <p>Not applicable.</p>			

FWUC = farmer water user community, ha = hectare, LRM = loan review mission, MOWRAM = Ministry of Water Resources and Meteorology, O&M = operation and maintenance, PCR = project completion report, PDWRAM = provincial department of water resources and meteorology, PPMS = project performance monitoring system, QPR = quarterly progress report.

^a Government of Cambodia. 2013. *Rectangular Strategy for Growth, Employment, Equity, and Efficiency, Phase III*. Phnom Penh. The document presents the 5-year policy agenda of the government and forms the basis of the National Strategic Development Plan, 2014–2018.

Source: Asian Development Bank.

Annex 2: DATA

[Provide data for indicators]