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PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 10.90 MILLION
(US\$15.0 MILLION EQUIVALENT)

TO THE

KINGDOM OF CAMBODIA

FOR A

MEKONG INTEGRATED WATER RESOURCES MANAGEMENT
PHASE 3 PROJECT

April 28, 2016

Water Global Practice
East Asia and Pacific Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective December 31, 2015)

Currency Unit	=	US\$
SDR 0.72164	=	US\$1
US\$1.38573	=	SDR 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

2S / 3S / 4P	Sub-Basins of the Mekong River	GIS	Geographic Information System
	Sesan-Srepok / Sekong-Sesan-Srepok-	GRS	Grievance Redress Service
	Sekong Prek/Preah, Prek Krieng, Prek	IAD	Internal Audit Department
	Kampi and Prek Te	IBRD	International Bank for Reconstruction and Development
APL	Adaptable Program Loan	ICB	International Competitive Bidding
AWS	Automatic Weather Station	IDA	International Development Association
BDS	Basin Development Strategy	IFR	Interim Financial Reporting/ Interim
CAS	Country Assistance Strategy		Unaudited Financial Reports
CFi	Community Fisheries Organizations	IFReDI	Inland Fisheries Research and
CGIAR	Global Agricultural Research		Development Institute (Cambodia)
	Partnership (previously: Consultative	IPDP	Indigenous Peoples Development Plan
	Group on International Agricultural	IPF	Investment Project Financing
	Research)	IPPF	Indigenous Peoples Planning
CIP	Commune Investment Programs		Framework
CISA	Cambodia International Standards	IPSAS	International Public Sector Accounting
	Auditing		Standards
CMU	Component Management Unit	IWRM	Integrated Water Resources
CNMC	Cambodia National Mekong Committee		Management
CPUE	Catch Rates Per Unit Effort	IRC	Inter-Ministerial Resettlement
CSO	Civil Society Organizations		Committee
DA	Designated Account	LMB	Lower Mekong Basin
DHRW	Department of Hydrology and River	M&E	Monitoring and Evaluation
	Works		
DOM	Department of Meteorology	M-IWRMP	Mekong Integrated Water Resources
ECOP	Environmental Code of Practice		Management Program
EMP	Environmental Management Plan		M-IWRMP Phases 1/2/3, Phase 1 in
ESMF	Environmental and Social Management		Laos, Phase 2 in Vietnam and Phase 3 in
	Framework	M-IWRM -	Cambodia
FA	Financing Agreement	1/2/3	
FAO	United Nations Food and Agriculture	MAFF	Ministry of Agriculture, Forestry and
	Organization		Fisheries (Cambodia)
FFA	Fishing Area Agreement	MEF	Ministry of Economy and Finance
FiA	Fisheries Administration of Cambodia	MOE	Ministry of Environment
FM/FMM	Financial Management/Financial	MOWRAM	Ministry of Water Resources and
	Management Manual		Meteorology (Cambodia)
FP	Fisheries Program (MRC)	MRC	Mekong River Commission
FCZ	Fishing Areas and Conservation Zones	MRCS	Mekong River Commission Secretariat
GGF	Good Governance Framework	NCB	National Competitive Bidding
		NGO	Non-Governmental Organization

NIP	National Indicative Plan	POM	Project Operational Manual
NMC	National Mekong Committee	PPA	Provincial Project Account
NPSC	National Project Steering Committee	QCS	Quality Selection Based on Consultant Qualifications
O&M	Operation and Maintenance	QCCBS	Quality and Cost Based Selection
OP 4.01	Environmental Assessment Safeguard Policy	RAP	Resettlement Action Plan
OP 4.04	Natural Habitats Safeguard Policy	REA	Rapid Environmental Assessment
OP 4.10	Indigenous Peoples Safeguard Policy	RGC	Royal Government of Cambodia
OP 4.11	Physical Cultural Resources	RPF	Resettlement Policy Framework
OP 4.12	Involuntary Resettlement Safeguard Policy	RPSC	Regional Project Steering Committee
OP 7.50	Projects on International Waterways Legal Safeguard Policy	SIC	Selection Individual Consultants
PCR	Physical Cultural Resources	SOE	Statement of Expenditures
PCA	Provincial Petty Cash Account	SOP	Standard Operating Procedures
PDO	Program/Project Development Objective	TOR	Terms of Reference
PDWRAM	Provincial Department of Water Resources and Meteorology (Cambodia)	TSBA	Tonle Sap Basin Authority
PFiAs	Provincial Fisheries Administration Office	WQMN	Water Quality Monitoring Network (MRC)
PFS	Project Financial Statement	WWF	World Wildlife Fund
PIT	Provincial Implementation Teams		
PMU	Project Management Unit		

Regional Vice President (Acting):	Antonella Bassani
Country Director:	Ulrich Zachau
Practice Director (Acting Senior):	Jennifer Sara
Practice Manager:	Ousmane Dione
Task Team Leader:	Greg Browder

CAMBODIA
MEKONG INTEGRATED WATER RESOURCES MANAGEMENT
PHASE 3 PROJECT
TABLE OF CONTENTS

	Page
I. STRATEGIC CONTEXT	1
A. Country Context.....	1
B. Sectoral and Institutional Context.....	Error! Bookmark not defined.
C. Higher Level Objectives to which the Project Contributes	3
II. PROJECT DEVELOPMENT OBJECTIVES (PDO)	4
A. PDO.....	4
B. Project Beneficiaries	4
C. PDO Level Results Indicators.....	4
III. PROJECT DESCRIPTION	4
A. Project Components	4
B. Project Financing	6
C. Series of Project Objective and Phases	6
IV. IMPLEMENTATION	6
A. Institutional and Implementation Arrangements	6
B. Results Monitoring and Evaluation	7
C. Sustainability.....	7
V. KEY RISKS.....	7
A. Overall Risk Rating and Explanation of Key Risks.....	7
VI. APPRAISAL SUMMARY	9
A. Economic and Financial Analysis.....	9
B. Technical	9
C. Financial Management (FM)	10
D. Procurement	11
E. Social (including Safeguards)	12
F. Environment (including Safeguards)	13

G. World Bank Grievance Redress.....	15
Annex 1: Results Framework and Monitoring	16
Annex 2: Detailed Project Description.....	21
Annex 3: Implementation Arrangements	29
Annex 4: Implementation Support Plan	50
Annex 5: Economic and Financial Analysis	52
Annex 6: Mekong IWRM Program Context and Description.....	58
Annex 7: Project Map.....	63

PAD DATA SHEET*Cambodia**Mekong Integrated Water Resources Management Project- Phase III (P148647)***PROJECT APPRAISAL DOCUMENT***EAST ASIA AND PACIFIC**Water Global Practice*

Report No.: PAD1050

Basic Information			
Project ID P148647	EA Category B - Partial Assessment	Team Leader(s) Greg J. Browder	
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints []		
	Financial Intermediaries []		
	Series of Projects [X]		
Project Implementation Start Date 19-May-2016	Project Implementation End Date 01-Dec-2020		
Expected Effectiveness Date 01-Aug-2016	Expected Closing Date 01-Jun-2021		
Joint IFC No			
Practice Manager/Manager Ousmane Dione	Senior Global Practice Director (Acting) Jennifer J. Sara	Country Director Ulrich Zachau	Regional Vice President(Acting) Antonella Bassani
Borrower: Ministry of Economy and Finance			
Responsible Agency: Cambodia National Mekong Committee (CNMC)			
Contact: Watt Botkosol	Title: Deputy Secretary General		
Telephone No.: (855-23) 216-514	Email: wattbotkosol@gmail.com		
Project Financing Data(in USD Million)			
[] Loan	[] IDA Grant	[] Guarantee	
[X] Credit	[] Grant	[] Other	
Total Project Cost:	16.50	Total Bank Financing:	15.00
Financing Gap:	0.00		

Financing Source						Amount				
BORROWER/RECIPIENT						1.50				
International Development Association (IDA)						15.00				
LOCAL BENEFICIARIES						0.00				
Total						16.50				
Expected Disbursements (in USD Million)										
Fiscal Year	2017	2018	2019	2020	2021	0000	0000	0000	0000	0000
Annual	0.50	2.00	3.50	4.50	4.50	0.00	0.00	0.00	0.00	0.00
Cumulative	0.50	2.50	6.00	10.50	15.00	0.00	0.00	0.00	0.00	0.00
Institutional Data										
Practice Area (Lead)										
Water										
Contributing Practice Areas										
Cross Cutting Topics										
<input checked="" type="checkbox"/> Climate Change <input type="checkbox"/> Fragile, Conflict & Violence <input checked="" type="checkbox"/> Gender <input type="checkbox"/> Jobs <input type="checkbox"/> Public Private Partnership										
Sectors / Climate Change										
Sector (Maximum 5 and total % must equal 100)										
Major Sector				Sector		%	Adaptation Co-benefits %		Mitigation Co-benefits %	
Water, sanitation and flood protection				General water, sanitation and flood protection sector		55	100			
Agriculture, fishing, and forestry				General agriculture, fishing and forestry sector		45				
Total						100				
<input type="checkbox"/> I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.										
Themes										
Theme (Maximum 5 and total % must equal 100)										

Major theme	Theme	%
Environment and natural resources management	Water resource management	60
Rural development	Rural services and infrastructure	20
Environment and natural resources management	Other environment and natural resources management	20
Total		100
Proposed Development Objective(s)		
The project development objective of the Mekong Integrated Water Resources Management Project Phase III is to establish the foundation for effective water resource and fisheries management in project areas in the northeast of Cambodia.		
Components		
Component Name	Cost (USD Millions)	
1. Fisheries and Aquatic Resources Management in Northern Cambodia	11.00	
2. Water Resources Management (WRM) in Northeastern Cambodia	5.50	
Systematic Operations Risk- Rating Tool (SORT)		
Risk Category	Rating	
1. Political and Governance	Substantial	
2. Macroeconomic	Moderate	
3. Sector Strategies and Policies	Substantial	
4. Technical Design of Project or Program	Substantial	
5. Institutional Capacity for Implementation and Sustainability	Substantial	
6. Fiduciary	Substantial	
7. Environment and Social	Moderate	
8. Stakeholders	Moderate	
9. Other	High	
OVERALL	Substantial	
Compliance		
Policy		
Does the project depart from the CAS in content or in other significant respects?	Yes []	No [X]
Does the project require any waivers of Bank policies?	Yes []	No [X]
Have these been approved by Bank management?	Yes []	No []

Is approval for any policy waiver sought from the Board?		Yes [<input type="checkbox"/>]	No [<input checked="" type="checkbox"/>]
Does the project meet the Regional criteria for readiness for implementation?		Yes [<input checked="" type="checkbox"/>]	No [<input type="checkbox"/>]
Safeguard Policies Triggered by the Project			
	Yes	No	
Environmental Assessment OP/BP 4.01	X		
Natural Habitats OP/BP 4.04	X		
Forests OP/BP 4.36		X	
Pest Management OP 4.09		X	
Physical Cultural Resources OP/BP 4.11	X		
Indigenous Peoples OP/BP 4.10	X		
Involuntary Resettlement OP/BP 4.12	X		
Safety of Dams OP/BP 4.37		X	
Projects on International Waterways OP/BP 7.50	X		
Projects in Disputed Areas OP/BP 7.60		X	
Legal Covenants			
Name	Recurrent	Due Date	Frequency
Institutional Arrangements (FA, Schedule 2, Section I.A.1-3)	X		CONTINUOUS
Description of Covenant			
The Recipient shall: (a) maintain, at all times during the implementation of the Regional Project Steering Committee, the Project Management Unit, and a Component 1 Management Unit; and (b) establish, no later than one month after the effectiveness of the Financing Agreement, and thereafter maintain the National Project Steering Committee.			
Name	Recurrent	Due Date	Frequency
Project Operational Manual (FA, Schedule 2, Section I.A.4)	X		CONTINUOUS
Description of Covenant			
The Recipient shall carry out the Project in accordance with the Project operational manual.			
Name	Recurrent	Due Date	Frequency
Annual Work Plans and Budgets (FA, Schedule 2, Section I.C)	X		Yearly
Description of Covenant			
The Recipient shall prepare and furnish to the Association for its approval not later than December 1 of each calendar year, starting December 1, 2016, during the implementation of the Project (or such later date as the Association may agree), a consolidated Annual Work Plan and Budget containing all Project activities and Eligible Expenditures proposed to be included in the Project in the following calendar year, including a specification of the sources of financing for all Eligible Expenditures, and environmental and social safeguard measures taken or planned to be taken.			

Name	Recurrent	Due Date	Frequency	
Livelihood Sub-Projects (FA, Schedule 2, Section I.D.2)	X		CONTINUOUS	
Description of Covenant				
The Recipient shall make available Livelihood Sub-grant to eligible Livelihood Sub-projects under a Livelihood Sub-grant Agreement with the proposed Beneficiary on terms and conditions satisfactory to the Association.				
Name	Recurrent	Due Date	Frequency	
Environmental and Social Safeguards (FA, Schedule 2, Section I.E.2)	X		CONTINUOUS	
Description of Covenant				
The Recipient shall implement the Safeguards Instruments (the ESMF, the EMP, any ECOP, the RPF, any RAP, the IPPF, and any IPDP) in a manner and substance satisfactory to the Association.				
Name	Recurrent	Due Date	Frequency	
Mid-term Review (FA, Schedule 2, Section II.A.2)		31-Dec-2018		
Description of Covenant				
The Recipient shall carry out jointly with the Association a midterm review to assess the status of the Project, as measured against the performance indicators.				
Name	Recurrent	Due Date	Frequency	
Cooperation with MRC (FA, Schedule 2, Section I.A.6)	X		CONTINUOUS	
Description of Covenant				
The Recipient shall fully cooperate on a timely basis with the MRC in its role in coordinating and facilitating the implementation of the Project to maintain the coherence and consistency of the activities under the Project.				
Conditions				
Source Of Fund	Name		Type	
IDA	Livelihoods Enhancement Manual (FA, Schedule 2, Section IV.B.1(b))		Disbursement	
Description of Condition				
No withdrawal shall be made for payments under Category (2) until and unless the Association has received evidence that the Recipient has adopted the Livelihoods Enhancement Manual, in form and substance satisfactory to the Association.				
Team Composition				
Bank Staff				
Name	Role	Title	Specialization	Unit
Greg J. Browder	Team Leader (ADM Responsible)	Lead Water Resource		GWA02

		Management Specialist			
Latharo Lor	Procurement Specialist (ADM Responsible)	Procurement Specialist	Procurement	GGO08	
Sophear Khiev	Financial Management Specialist	Financial Management Analyst	Financial Management	GGO20	
Aristeidis I. Panou	Counsel	Counsel	Legal	LEGOP	
Ashley Stewart Halls	Team Member	Consultant	Fisheries	GWADR	
Carmenchu D. Austriaco	Team Member	Finance Officer	Finance	WFALN	
Demilour Reyes Ignacio	Team Member	Program Assistant	Program Assistant	GWA02	
Irene Rehberger Bescos	Team Member	Consultant	Water Resources	GWADR	
Juan Martinez	Safeguards Specialist	Sr Social Scientist	Social	GSU02	
Makathy Tep	Safeguards Specialist	Consultant	Environment	GENDR	
Nigel Peter Hayball	Team Member	Consultant	Water Resources	GWADR	
Phalla Yin	Team Member	Program Assistant	Program Assistant	GWASE	
Poonyanuch Chulsukon	Team Member	Program Assistant	Program Assistant	EACTF	
Ruxandra Maria Floroiu	Safeguards Specialist	Lead Environmental Specialist	Environment	GEN03	
Toru Konishi	Team Member	Senior Economist	Former TTL	GWA06	
Vansa Chatikavanij	Team Member	Consultant	Water Resources	GWA02	
Veasna Bun	Team Member	Senior Infrastructure Specialist	Infrastructure	GTI02	
Victor Vazquez Alvarez	Team Member	Sr Water & Sanitation Spec.	Former TTL	GWA02	
Virak Chan	Team Member	Water & Sanitation Specialist	Water and Sanitation	GWASE	
Extended Team					
Name		Title	Office Phone	Location	
Locations					
Country	First Administrative Division	Location	Planned	Actual	Comments

Cambodia	Stung Treng	Stung Treng		X	
Cambodia	Ratanakiri	Ratanakiri		X	
Cambodia	Mondolkiri	Mondolkiri		X	
Cambodia	Kratie	Kratie		X	

I. STRATEGIC CONTEXT

A. Country Context

1. **Cambodia has experienced remarkable economic growth and macroeconomic stability since the early 2000s.** It grew by an average annual rate per capita of 7.8 percent in 2004-2014, ranking among the top 15 economies in the world in terms of economic growth. GDP per capita according to the Atlas Method increased more than fourfold, from US\$300 in 1995 to around US\$1,020 in 2014. The main drivers of growth have been garment, manufacturing, agriculture, tourism and, more recently, construction and real state. Economic growth eased in the aftermath of the 2009 global crisis, while remaining strong at 7.2 percent in 2010-2014, on average. Growth is projected to ease slightly to 6.9 percent in 2015, in a context of slowdown in China and appreciating US dollar; stronger domestic demand, boosted by a construction boom, low oil prices, and fast credit growth, would be partly offsetting the moderation in the garment, tourism and agriculture sectors.

2. **The sustained economic performance has lifted a large proportion of the population above the national poverty line, but Cambodia is still one of the poorest countries in the South-East Asia region.** Between 2004 and 2012, the poverty incidence under the national poverty line declined from 50.2 percent to 17.7 percent of the population, reaching the country's Millennium Development Goal before the 2015 deadline. Most of the poverty reduction occurred between 2007 and 2009, when the headcount rate declined by 20 percentage points, driven by a significant hike in the price of rice, the main agricultural product of Cambodia. Despite this progress, the vast majority of the families that rose above the poverty line did so by a small margin, leaving them at risk in the event of an adverse shock. Poverty reduction in Cambodia has been accompanied by shared prosperity - the real consumption growth of the bottom 40 percent of the distribution was larger than that of the top 60 percent - and a decrease in inequality, with the Gini coefficient going down from 0.351 to 0.308 between 2008 and 2012.

3. **The overall welfare of households described by non-monetary indicators has improved significantly throughout the period 2004 to 2014. Still, several challenges remain.** Still, several challenges remain. Cambodia achieved most of the Millennium Development Goal targets, including those related to poverty reduction, child mortality, and maternal mortality. Targets have been nearly achieved in primary education, whereas areas such as gender equality and environmental sustainability have seen less progress. Moreover, the incidence rate and death by tuberculosis remain high. Cambodia's Human Development Index in 2013 was 0.58, well below the East Asia and Pacific average of 0.70 and also below the medium-income countries' average of 0.63.

B. Sectoral and Institutional Context

4. The project is part of a series of parallel projects under the regional Mekong Integrated Water Resources Management Program (Mekong IWRMP). The objective of the program is to establish key examples of integrated water resources management practices at the regional, national, and sub-national levels, thus contributing to more sustainable river basin development in the Lower Mekong Basin (LMB). The Program includes three national projects: Mekong IWRMP-

1 in Laos (2012-2018); Mekong IWRMP-2 in Vietnam (2014-2018), and the proposed Mekong IWRMP-3 in Cambodia, and one regional component managed by the Mekong River Commission (MRC, 2012-2018) that helps integrate the three national projects.

5. **Mekong Basin Context.** The Mekong River is one of the world's great river systems, flowing 4,909 km through six countries: China, Myanmar, Thailand, Lao PDR, Cambodia, and Viet Nam. The Lower Mekong River Basin, consisting of areas in Thailand, Laos, Cambodia, and Vietnam, contains a population of approximately 65 million. In 1995, Laos, Thailand, Cambodia and Vietnam established the MRC to assist in the management and coordinated use of the Mekong's resources. In 1996 China and Myanmar became "dialogue partners" of the MRC and the six countries now work together within a cooperative framework. The Mekong Basin has abundant water resources and supports a rich and productive eco-system. Hydropower development is taking place at a rapid pace throughout the Basin, with approximately 40 large hydropower projects in operation or under construction, and at least 40 more projects in various stages of planning. Protecting the Basin's rich eco-system, while simultaneously exploiting its hydropower potential, is one of the great challenges facing the Mekong countries.

6. **Cambodian Fisheries.** Capture fisheries are particularly important for Cambodia. The Ministry of Agriculture, Forestry and Fisheries (MAFF) is in charge of overall fisheries management. MAFF created the Fisheries Administration (FiA) to oversee the fisheries sector. FiA has offices in all provincial offices which are referred to as PFiAs. According to FiA, inland fisheries account for about 8-10 percent of the country's GDP. About five percent of the total population is engaged in inland fisheries on a full time basis, and about thirty percent of the population is engaged in inland fisheries in some way. Fisheries also contribute to the food security in Cambodia; freshwater fish and aquatic animals from the Mekong contribute more than two thirds of the total protein intake for the Cambodian population. However, these resources are being threatened by basin development activities including hydropower dam construction, overexploitation arising from ineffective management and lack of alternative livelihoods; critical fish habitat degradation; and climate change.

7. The national Fisheries Law was promulgated in 2006. In 2012 the Government of Cambodia revoked the concession of the inland fisheries licenses to the private sector and accelerated the establishment of community-based fisheries co-management through Community Fisheries (CFi). Community fisheries co-management, where communities share management roles with the Government is commonly regarded as more effective and equitable than traditional government management.

8. **Water Resources Management in Cambodia.** The Cambodia National Water Resources Policy (2004) sets out a wide range of water management strategies and the subsequent Law on Water Resources Management (2007) includes provisions for water resources management, development and protection. In June 2015 the Sub-decree of River Basin Management was approved, requiring the establishment of a National River Basin Committee, Sub-National River Basin Committees and corresponding river basin plans. Sub-decrees on water quality (ambient water) and water licensing have been drafted and are under consideration by the Minister of Water Resources and Meteorology (MOWRAM). MOWRAM was established in 1999 with specific water resource management and water development responsibilities. Corresponding provincial

departments (PDWRAMs) have been established for all provinces. The Cambodia National Mekong Committee (CNMC) and the Tonle Sap Authority have also been established to provide oversight functions to assist the sustainable development of the Mekong River Basin and the Tonle Sap Lake, respectively.

9. The Cambodia National Water Status Report 2015 helped to clarify the national water reform progress, and over sixty water sector challenges were identified. A major finding was the extremely poor state of Cambodia's water resources monitoring and assessment systems. The inadequacy of the national monitoring program for supporting sustainable management makes investment decisions high risk. Aquatic ecosystem information was found to be almost non-existent. Provincial department capacity and resources are also severely constrained, making it very difficult for them to undertake their legislated responsibilities.

C. Higher Level Objectives to which the Project Contributes

10. **World Bank Group Twin Goals.** The Mekong IWRMP-3 contributes directly to the twin goals of reducing extreme poverty and boosting shared prosperity. It supports activities in the northeast of Cambodia, one of the country's poorest and most isolated regions with a high percentage of ethnic minorities. The project will help local communities to better manage their fishery resources as well as provide much needed small-scale infrastructure. The project will also help develop sub-national and national water and fishery management capacity, as well as enhance regional cooperation through the Mekong IWRMP.

11. **East Asia Pacific Regional Strategy.** The proposed M-IWRMP-3 is consistent with the current strategy, presented to the Board in February 2016, and links directly to the strategic pillars of: (a) Inclusion and Empowerment through support to the fisheries sector; and (b) Governance and Institutions through support to capacity building for national and regional bodies, and (c) Climate Change and Disaster Risk Management through upgrades in the hydro-meteorological monitoring system.

12. **Alignment with the World Bank Group Cambodia Country Engagement Note.** The project is one of the priority projects identified in the forthcoming Cambodia Country Engagement Note (FY2016-2017) which is planned for the Board discussion on May 19, 2016.

13. **Consistency with MRC priorities.** The MRC has recently completed its Basin Development Strategy for 2016-2020 (BDS), as well as the organization's Strategic Plan for 2016-2020. The Strategic Plan describes how the MRC will support the implementation of the BDS. Both documents confirm the importance of promoting integrated water resources management at the regional basin level, as well as the national level. The MRC IWRMP remains a central element of the MRC's portfolio.

14. **Linkages to other development partners.** The European Union funds a sector support program for agriculture and fisheries, including support to FiA's annual work program. The Asian Development Bank (ADB), with funding support from Australia, has implemented a water resources management capacity development and technical assistance (CTDA) project. The CTDA finished in late 2015 and dealt with policy formulation, institutional development, river basin

planning, and capacity building. The French International Office of Water and Japan International Cooperation Agency (JICA) are also supporting river basin planning exercises in other parts of Cambodia. The World Bank will collaborate with other international partners to ensure coordination in policy advice, planning methodologies, and complementary investments.

II. PROJECT DEVELOPMENT OBJECTIVES (PDO)

A. PDO

15. The project development objective is to establish the foundation for effective water resource and fisheries management in the Project areas in the northeast of the Recipient's territory.

B. Project Beneficiaries

16. Direct and indirect project beneficiaries include: i) members of CFIs and their families who will benefit directly from the community fishery activities under the project (minimum of 25,000 people); ii) an estimated 100,000 people who are involved directly or indirectly in the artisanal fisheries sector in Kratie and Stung Treng Provinces in Cambodia; and iii) approximately 350,000 people living in the 3S (within Cambodia) and 4P basins who will benefit from enhanced water resources management and more efficient management of hydraulic infrastructure.

C. PDO Level Results Indicators

17. The key PDO indicators are: i) Number of direct project beneficiaries from component 1, of which female (%); ii) Fully functioning community fishery organizations; iii) 3S/4P sub-basin with functional water resources models developed; and iv) exchange of water resources management data between Vietnam and Cambodia as a result of transboundary cooperation.

III. PROJECT DESCRIPTION

A. Project Components

18. **Component 1: Fisheries and Aquatic Resources Management in Northern Cambodia (Total Cost US\$11 million; IDA finance US\$10 million and RGC US\$1 million).** The objective of this component is to improve the management of fish and aquatic resources in selected areas in Kratie and Stung Treng provinces.

19. ***Sub-Component 1.1: Establishment of Community Fisheries Management (US\$2.5 million).*** Approximately 70 new and/or existing Community Fishery Organizations (CFIs) will be supported through formulation of CFI fishery management plans including demarcation of fishing areas and conservation zones (FCZ), enforcement of fishing regulations, systematic monitoring and reporting, and evaluation of management plans.

20. ***Sub-Component 1.2: Fisheries Co-Management Infrastructure and Equipment (US\$ 2.2 million).*** This will provide infrastructure, equipment, and technical support to local, provincial, and national fishery management organizations. Activities include (a) strengthen fishery co-

management capacity at the Commune, District and Provincial level; (b) provision of infrastructure and equipment for CFIs to implement their management plans; (c) provision of infrastructure and equipment for Provincial FiA (PFiA); and (d) strengthen FiA's capacity to monitor and assess fishery resources, and to engage in transboundary fisheries management with Laos under the framework of the Mekong IWRM Program.

21. ***Sub-Component 1.3: Enhancements of Fisher Community Livelihoods (US\$4.0 million).*** Activities include: (a) construction of a fish hatchery with capacity to produce roughly three million fingerlings per annum; (b) provision of small grants to CFI member households or groups to support livelihood diversification under a "Livelihood Enhancement Program"; and (c) construction of small-scale infrastructure identified in Commune Development Plans.

22. ***Sub-Component 1.4: Project Administration and Management (US\$2.3 million: US\$1.3 million IDA and \$1.0 million RGC).*** This will provide FiA and provincial FiAs with funds for (a) office renovation, equipment, and vehicles; (b) technical support to meet minimum fiduciary/safeguard standards; and (c) incremental operating costs. The RGC will make in-kind contributions through the participation of government staff, and by providing office space and basic utilities.

23. ***Component 2: Water Resources Management (WRM) in Northeastern Cambodia (Total Cost US\$ 5.5 million; IDA US\$5.0 million and RGC US\$0.5 million).*** This component aims to improve water resources management in Northeastern Cambodia in the 3S and the 4P sub-basins, and support trans-boundary dialogue with Vietnam under the framework of the Mekong IWRM Program.

24. ***Sub-component 2.1: Strengthening Water Resource Management Institutions (US\$1.6 million):*** This component will focus on developing the capacity of MOWRAM and PDOWRAM departments and agencies at the national and provincial levels by providing equipment, buildings, river basin committee and stakeholder education program support. The component will also finance activities related to the transboundary water management activities with Vietnam for the 2S basin.

25. ***Subcomponent 2.2: Water Resources Monitoring and Management in the 3S and 4P Basins (US\$3.0 million):*** This component will finance the establishment of hydrological and meteorological monitoring stations, field surveys, development of water resource models, formulation of basin profile studies, and establish water resources monitoring and assessment programs.

26. ***Sub component 2.3: Project Administration and Management (US\$0.9 million: IDA US\$0.4 million and RGC US\$0.5 million):*** This component finances specialized fiduciary consultants to support the CNMC to enable successful implementation of Components 1 and 2 of project. The RGC will make in-kind contributions by seconding government staff, and by providing office space and basic utilities.

B. Project Financing

27. **Lending Instrument.** Provision of IDA financing for the project is proposed *via* the Investment Project Financing (IPF) instrument.

28. **Project cost and financing.** The total costs for the Mekong IWRMP-3 are estimated at US\$16.5 million, of which IDA would finance up to US\$15.00 million. The project costs are summarized in Table 2 below and in Annex 2.

Table 1: Summary of the Project Cost (Mekong IWRMP-3) (US\$ million)

Project Components	Project cost	IDA Financing	RGC Financing
1: Support for Fisheries and Aquatic Resources Management in Northern Cambodia	11.0	10.0	1.0
(1-1) Establishment of Community Fisheries Management	2.5	2.5	0.0
(1-2) Fisheries Co-Management Infrastructure and Equipment	2.2	2.2	0.0
(1-3) Enhancements of Fisher Community Livelihoods	4.0	4.0	0.0
(1-4) Project Administration and Management	2.3	1.3	1.0
2: Support for WRM in Northeastern Cambodia	5.5	5.0	0.5
(2-1) Strengthening Water Resource Management Institutions	1.6	1.6	0.0
(2-2) Water Resources Monitoring and Management	3.0	3.0	0.0
(2-3) Project Administration and Management	0.9	0.4	0.5
Total Project Costs	16.5	15.0	1.5

C. Series of Project Objective and Phases

29. The project is the third phase of regional Mekong Integrated Water Resources Management Program (Mekong IWRMP). The detailed description of the strategic context of the overall Mekong IWRMP is described in the 2012 Project Appraisal Document for the Mekong IWRMP-1. An update of the strategic context and the status of the projects is presented in Annex 6.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

30. **Regional Oversight.** The Mekong IWRMP-3 will be implemented by the Cambodian government, but is a part of the regional program. In order to ensure regional coherence, the MRC will also monitor implementation of the project.

31. **National Oversight.** A National Project Steering Committee (NPSC) will be set up to oversee the implementation of Mekong IWRMP-3 and provide technical and policy guidance to facilitate the implementation of the project. The NPSC includes representatives from the CNMC, FiA/MAFF, Ministry of Economy and Finance (MEF), and MOWRAM. . In the event there is any

resettlement under the project, implementation of the Resettlement Policy Framework will be done in coordination with the Inter-Ministerial Resettlement Committee (IRC) under MEF.

32. **Implementation.** CNMC has been designated to be responsible for overall project implementation. CNMC will establish a PMU and appoint a project director and deputy director. The PMU shall be responsible for overall financial management, safeguards compliance, and monitoring and evaluation. The PMU will also be responsible for implementation of Component 2 in coordination with MOWRAM line agencies. Implementation of Component 1 will be delegated to the Fisheries Administration, which will establish a Component Management Unit (CMU1). A capacity assessment has been carried out for the CNMC, FiA, and MOWRAM, to assess their current respective capacities. The assessment found that these agencies have adequate minimum technical and fiduciary capacity; however, they need institutional strengthening to increase the overall project management, procurement, safeguards and administration capacity.

B. Results Monitoring and Evaluation

33. **The** key performance indicators and intermediary indicators for the project are provided in Annex 1. Specific information on these indicators will be collected by the CMU1 and the PMU. The CNMC and FiA will carry out a mid-term review with the Bank and the MRC by December 31, 2018 to assess the status of project implementation against the performance indicators.

C. Sustainability

34. **Component 1.** The infrastructure developed or rehabilitated under Component 1 would largely be managed by the respective local communities, with support from the FiA and provincial governments. During project preparation, an understanding was reached with the RGC to ensure adequate allocation of budget and technical staff to sustainably operate and maintain the proposed investments over the longer-term. The planned investments are of small scale and would be operated and maintained by the concerned communities

35. **Component 2.** The sustainability of the hydro-met stations is a significant concern. The Project provides a contingency fund to help finance the supply and installation of any needed spare parts for the project-financed hydro-met stations. The fund will also be available for helping to maintain the Mekong River mainstream monitoring stations in Cambodia; a responsibility which has recently transferred from the MRC to the national governments. Arrangements for securing post-project sustainability will be developed through the Component 2 technical assistance program.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

36. **Overall risk.** Overall implementation risk is rated as substantial considering the regional and inter-disciplinary nature of the project. The specific risks with substantial or high ratings are presented below.

37. **Political and Governance:** This risk is considered *substantial* at two levels. First, the successful implementation of the overall Mekong IWRMP will require collaboration among the governments of Lao PDR, Thailand, Cambodia, and Vietnam. This risk is mitigated by requiring an IWRMP Steering Committee in the MRC which includes all four countries. Second, the successful implementation of the Mekong IWRM-3 will require a stable political environment throughout the course of project implementation.

38. **Sector Strategies and Policies:** This risk is considered *substantial* for both the water resources sector and the fisheries sector. The water sector is undergoing a period of transition, including the adoption of 2015 Sub-Decree on River Basin Management. In the fisheries sector, developing functional community co-management mechanisms has historically been a challenge in Cambodia. The project will help mitigate these risks by building capacity in both water resources and fisheries management.

39. **Technical Design of Project:** This risk is considered *substantial* primarily due the challenges in the fisheries component. Engaging with over seventy community fishery organizations in the development and implementation of fishery management plans is technically demanding and requires both a regional perspective and a village level approach. This project will help mitigate this risk by including fishery experts as well as community participation specialists in Component 1.

40. **Institutional Capacity for Implementation and Sustainability:** This risk is considered *substantial* for both components. There is limited capacity at the national level to achieve effective conservation of critical natural habitats and fisheries resources, combined with weak governance and limited livelihood opportunities at the community level. In the water resources sector there is limited capacity at the PDWRAM level as well as the national level. The project will help mitigate these risks by including capacity building as a core element of the project.

41. **Fiduciary:** This risk is considered *substantial*. The risk emanates from the overall country context, as well as the relative lack of experience of the implementing agencies. The specific risks and mitigation measures are discussed in the financial management and procurement sections of the PAD, and the detailed mitigation measures are presented in Annex 3.

42. **Other-Hydropower Development:** The other risk is related to the reputational and operational risks associated with hydropower development. Rapid hydropower development in the Mekong Basin has become a controversial issue. The 1995 Mekong Agreement calls for the MRC member states to consult and aim for agreement on Mekong River mainstream projects. To-date, the MRC has gone through consultation processes for two mainstream hydropower projects proposed by Lao PDR: the Xayaburi dam in 2010-2011 and Don Sahong dam in 2014-2015, neither of which resulted in a formal agreement. Construction of the Lower Sesan 2 hydropower project, a tributary project located in the Cambodian part of the 2S Basin, is scheduled to be completed by 2019. The RGC notified the MRC of the Lower Sesan 2 project in 2011 per the MRC requirements.

43. The overall Mekong IWRWP, including this project, does not finance hydropower development. There is, however, a *reputational* risk that this project may be viewed as being

associated with hydropower development. This risk can be mitigated through proper communication to the public that the Mekong IWRMP does not finance any activity directly related to hydropower, but rather builds national capacity to help address national and transnational water and related resource issues. The risk of non-engagement in the M-IWRMP-3 would be high, including: i) not moving forward with the overall Mekong IWRMP; and ii) not supporting Cambodia's fisheries and water resource agencies at precisely the moment when it is most needed in a period of anticipated rapid change.

44. The *operational risk* emanates from hydropower development in the vicinity of the project area which may adversely impact fisheries and alter the hydrological regime. This makes the necessity of building adaptive monitoring and management capacity even more urgent. The objective of the project is to build fisheries and water resources management capacity to monitor and manage these changes in the most effective manner possible.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

45. **Fisheries benefits.** The project's first component aims to establish sound fisheries resources management in the two provinces of Kratie and Stung Treng. The main socio-economic benefits of the planned activities come from the improvement of the communities' resilience to development pressures in the Mekong arising from improved fisheries management and by supporting community development through small rural investments. A quantitative economic appraisal of the construction of a new hatchery to supply fingerlings for wild stock enhancement of natural water bodies, and for stocking in artificial water bodies by participating communities has been developed. Annex 5 presents a qualitative assessment of the importance of the fisheries sector, particularly at the project location, and an indicative household level analysis.

46. **Water Resources Management.** The major economic benefits of Component 2 come from the hydro-met investments and improved water resources management capacity. Currently, there are no hydro-met stations in either the 2S or the 4P basins in Cambodia. Construction of these hydro-met stations is expected to accrue benefits from reduced disaster losses and enhances productivity increases, particularly in agriculture and hydropower. Improved capacity, in terms of enhanced modelling tools and equipment for PDWRAMs, will help to significantly improve the management of economically important water resources.

47. **Transboundary Benefits.** Moreover, the joint management of shared fishery resources with Cambodia and water resources with Vietnam in the 2S basin is expected to generate significant benefits for all three countries due to improved management of transboundary resources.

B. Technical

48. *Community fisheries.* To date, a total of 114 village and commune-level CFIs have been established in Kratie and Stung Treng Provinces. However, only a few of these CFIs have fisheries area management plans yet and they urgently require additional support in order to be effective. In

the project design process, it has been learnt that structured support to the fisheries communities - including capacity building for monitoring and enforcement, and support to community development are key to the successful implementation of community-based fisheries co-management practices. Through the project, the FiA plans to support at least 50 CFis to be fully functional – meaning that the community fisheries area management plans are prepared and accepted by the respective CFi, fishing regulations are in place and being enforced, protected areas designated, sustainable fisheries management practices are enforced, and community development is supported.

49. Many of the members of the CFis are not full-time fishers; they seldom sell their catches, so most fishing activities are to provide fish for their own consumption. The livelihoods strategy of most of the beneficiary communities is typified by a pluralistic approach to natural resource usage (fishing and farming) to reduce risk. During the dry season, fish populations are concentrated in the deep pools, which are often considered to be critical habitats. At the same time, insufficient or inadequate infrastructure, particularly lack of reliable water supply, road access, equipment for monitoring or proper demarcation of the fisheries conservation zones, is also negatively affecting the development of these communities. Examples of activities that the project would support include small-scale infrastructure, animal husbandry (raising ducks), aquaculture, post-harvest technology (fish preservation/processing), crop diversification and market gardens.

50. In order to improve fisheries resource management, it will be necessary to strengthen the capacity of the public sector at the national, provincial and commune levels. The public sector has the following roles and responsibilities for fisheries co-management: (a) enforcement of the fishing regulations; (b) monitoring and reporting on the fish catch; (c) extension activities, such as aquaculture and processing; (d) research and development; and (e) protection of the endangered species, including restocking. In addition, it is also considered to be very important for the FiA to have adequate capacity to assess impacts of water resources development (particularly hydropower) on the fisheries. The project will support a systematic and comprehensive support for capacity building of the public sector at the local level.

51. *River Basin Management.* The difficulties in establishing successful river basin organizations and building consensus between water users have been well documented. The PDWRAM will be responsible for implementing MOWRAM's mandate under the 2007 Water Law. However, a brief assessment was completed in the target area and identified that PDWRAM had very limited capacity for overall implementation and specifically in water resources management. It was therefore identified that the first step towards establishing effective water resources management in the target area would be strengthening PDWRAM to implement their responsibilities under the 2007 Water Law, including the implementation of a 2015 sub-decree to establish sub-national level river basin committees. The component will build upon the work of developing river basin profiles funded by other development partners, including ADB and the International Union for Conservation of Nature (IUCN).

C. Financial Management (FM)

52. Although both FiA and the CNMC have implemented donor-funded projects in the past, considering the scale of operations under the project, the FM capacity will need to be further

strengthened through dedicated staffing, training, and FM consultant's support. The FiA and CNMC will be responsible for financial management for Components 1 and 2, respectively. In addition, CNMC will establish a PMU to oversee financial management for the whole project. The Bank has carried out the financial management capacity and risk assessments to ensure that adequate arrangements are in place and concluded that both entities meet the Bank's minimum financial management implementation requirements. A summary of the overall FM arrangements is provided in Annex 3.

53. The governance environment in the country is relatively weak and the overall financial management risk is considered "High." However, this risk can be reduced through the implementation of mitigating measures such as establishment of clear funds flow procedures, designated key FM staff in place, proper accounting of financial transactions with adequate documentations, and accurate reporting of fund receipts and expenditures. These measures and internal control systems are to ensure the use of fund for intended purposes. The required procedures on internal control will be specified in the Project Operational Manual (POM). With the incorporation of these mitigation measures, the residual financial management risk under the Project is determined to be "Substantial." More details are elaborated in the financial management section of Annex 3.

D. Procurement

54. Procurement under the project will be governed by Bank Procurement Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011 and revised in July 2014; and Consultant Guidelines: Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers dated January 2011, revised July 2014. The Government Standard Operating Procedures and Procurement Manual issued under Sub Decree 74 dated May 22, 2012 will also apply for procurement under national competitive bidding subject to the improvement included in the NCB procedures set forth an annex to the Financing Agreement. The FiA and CNMC will be responsible for overall procurement implementation for Components 1 and 2, respectively. An assessment of procurement implementation capacity and procurement risk for FiA and CNMC was carried out during project preparation. This assessment found that the FiA and CNMC do not have experience using the World Bank Procurement and Consultants Guidelines, nor qualified staff familiar with the World Bank procurement procedures. Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants, dated October 2006 and revised January 2011, shall apply to the project.

55. **The procurement risk is assessed high.** The key procurement risks emanate from (i) the weak capacity of the FiA and CNMC and procurement oversight at central level, (ii) activities at community level are scattered and the community does not have adequate capacity to understand and implement procurement activities, (iii) possible delay due to slow technical inputs for procurement start up; and (iv) governance associated risks. Risk mitigation measures have been discussed and agreed with Government and detailed in an action plan in Annex 3. The residual procurement risk under the project is considered to be substantial.

E. Social (including Safeguards)

56. **Population in the project area.** The project area would cover four target provinces: Mondulhiri, Ratanakiri, Kratie, and Stung Treng, which comprise a total population of about 700,000 people or 140,000 households. Kratie province has the biggest population and Mondulhiri has the smallest. These four provinces also have fairly diversified ethnicity; at least 13 indigenous groups may be found in these provinces with Phnong, Tompoun, and Kouy claiming the biggest representation. Members of three minority groups, common to all provinces, can be found, namely: Khmer Islam, Laotian and Vietnamese. Agriculture (primarily rice farming) is the main occupation/source of livelihood of the residents in these four provinces, and fishing is also important.

57. **Social aspects.** A large segment of the population in all provinces is considered illiterate. Women have a much lower rate of literacy -- which could reflect the low priority accorded to women when it comes to secondary and tertiary education. Across the four provinces the majority of people do not have access to safe water and latrines, leading to public health risks particularly for children. The most vulnerable groups found in the four provinces are commonly: victims of natural disasters, orphaned/abandoned children under 18 years of age, and elderly persons. The needs and requirements of these vulnerable groups should be duly considered in determining any project intervention. A rapid rural appraisal was conducted in the four target provinces based on focus group discussions supplemented by publicly available data during project preparation. Participants of community meetings expressed broad community support for the project, as the project activities would directly benefit the communities.

58. **Involuntary Resettlement (OP 4.12).** The project will involve only small-scale land acquisition, as most of the investment would be of small scale and involve rehabilitation. However, the project might involve unavoidable land appropriation mainly for the construction of small-scale community infrastructure; furthermore, in developing community fisheries management plans, fish conservation areas may be established, resulting in reduced access to resources during certain times of the year. For these reasons OP 4.12 (Involuntary Resettlement) applies. To address the potential adverse impact related to land acquisition in cases where avoidance is not possible, a Resettlement Policy Framework (RPF) has been developed in accordance with the Bank's OP 4.12 for application during project implementation. In the event there is any resettlement under the project, the responsible implanting entity—either CNMC or FiA, will coordinate with the Inter-Ministerial Resettlement Committee under MEF in the application of the RPF.

59. **Indigenous Peoples (OP 4.10).** In the target provinces, the population of indigenous and minority groups range from 12 percent in Stung Treng, 17 percent in Kratie, 74 percent in Ratanakiri, and 70percent in Mondulhiri, comprising a number of Chinese and/or Vietnamese minority groups and another seven indigenous groups: Phnong, Kouy, Mil, Khonh, Kraol, Steang, and Thanmoun. The ethnic minority communities to be involved in the project are expected to benefit from investment and livelihood support/infrastructure investments. An Indigenous People Planning Framework (IPPF) has been developed to ensure adequate consultation with and participation of the local population during the planning and implementation of the Project. The IPPF includes a description of the impacts, socio-economic characteristics of the ethnic group(s), and suggested mitigation measures. This IPPF will help maximize project benefits to the ethnic

minority communities and mitigate any possible adverse impacts. The framework also provides a sample community consultation framework, an outline of an Indigenous People's Development Plan (IPDP), and monitoring/reporting requirements. This plan will help maximize project benefits to the ethnic minority communities and mitigate any possible adverse impacts.

60. **Social safeguards implementation.** Implementation of the social safeguards instruments would be the responsibility of the respective CMUs, namely FiA for Component 1 and CNMC for Component 2. Costs related to land acquisition as well as the costs for other mitigation measures associated with the implementation of the Resettlement Action Plan and IPDP are included in the counterpart funds.

61. **Gender equity.** Consultation workshops targeted at women indicated that, although most existing CFIs have women members and have elected women to their committees, women do not yet have an equal role or voice in these institutions. The World Bank's Gender Mainstream Strategy has been used as a guiding principle to design Component 1. Under this component a Gender Action Plan will be prepared and incorporated in the Fisheries Area Management Plan.

F. Environment (including Safeguards)

62. The Project has been classified as "Category B" and triggers four environmental safeguard polices: OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats), OP 7.50 (Projects on International Waterways) and OP/BP 4.11(Physical Cultural Resources).

63. **Overall impacts.** The overall environmental impact of the project is expected to be positive. Component 1 will improve the sustainability of capture fisheries in the project and indirectly help maintain biodiversity; the component will also help enhance fisher community's livelihoods and infrastructure. Component 2 is also considered environmentally positive as it will improve the collection and analysis of hydro-meteorological information, and provide tools, equipment, and provide capacity building for enhanced water resources management.

64. Potential negative environmental impacts would include: (a) impacts associated with the small scale construction works; and (b) discharge of organic sludge from the hatchery operation. Construction impacts will be managed through close supervision and the application of an Environmental Code of Practice (ECOP). A comprehensive environmental management plan has been developed for the fishery hatchery to minimize and mitigate potential impacts.

65. **Natural Habitats (OP/BP4.04).** The project area covers a Ramsar site located in Stung Treng Province. Twenty-one fishing villages, which would receive support under the project, such as establishment of CFIs, infrastructure, and supplementary livelihood demonstrations, are located within the Ramsar site. The planned location of the hatchery is outside the Ramsar site. The Ramsar site is managed by the Ministry of Environment (MOE), which is currently preparing the final management plan. The proposed project activities will be fully consistent with the management plan and, in fact, will contribute to the implementation of the plan.

66. **Impacts of hydropower development.** The Mekong IWRMP-3 does not finance activities directly related to any of the ongoing or future hydropower projects in the project area. Project activities will contribute to adaptive management by building capacity to better manage water and fishery resources through the improvement of hydrological information, the development of WRM tools and promotion of sustainable fisheries. Furthermore, any use of the water management tools developed by the project to build adaptive management capacity will need to be used in a manner consistent with World Bank safeguards policies.

67. **Environmental and Social Management Framework (ESMF).** An ESMF has been prepared to examine the issues and impacts associated with a series of activities or sub-projects which have not yet been detailed. The ESMF includes: (a) guidance on the screening of potential environmental and social impacts caused by a proposed activity or sub-project; (b) specific safeguards procedures and measures for activities with environmental and/or social impacts; and (c) outlining institutional and monitoring arrangements.

68. **Public Consultation and Disclosure.** Public consultation with key stakeholders was conducted by the CNMC in January 2011 and December 3-4, 2013 and March 25-27 2014 to inform them about project implementation, environmental impacts (including positive and potential negative impacts) and measures to enhance environmental benefits and mitigate potential negative environmental impacts. All comments and suggestions from the key stakeholders were incorporated into the safeguards documents. All draft safeguards instruments including the ESMF, Hatchery EMP, RPF and IPPF were disclosed locally in local language, on May 8 2014, and on the World Bank's external website in English on May 26, 2014 in accordance with the World Bank Policy on Access to Information. Updated ESMF and Hatchery EMP documents were disclosed on the World Bank's external website in English and disclosed locally in both Khmer and English languages on November 10, 2015. In the event the location of the hatchery is changed during project implementation, a new EMP will be prepared and disclosed prior to the undertaking of any activities in the new location.

69. **International Waterways (OP/BP 7.50).** The Mekong River is an International Waterway and therefore OP 7.50 is triggered. The overall Mekong IWRM Program, including all three national IWRM projects, was approved by the MRC's Council in November 2009. MRC member states include Vietnam, Thailand, Cambodia, and Lao PDR. The OP 7.50 notification requirements for these four riparian states were thus met through the MRC Council approval. China and Myanmar are upper Mekong River riparian states; they are not MRC members but participate as Dialogue Partners. The Bank notified China and Myanmar, of Component 1 (Fisheries and Aquatic Resources Management Component) on September 30, 2010. No response was provided by these two countries and so, for the purposes of OP 7.50, the riparian notification was considered completed in 2010. Considering that there is no change in the scope of investments envisaged under this Project from the one described in the riparian notification letters provided in 2010, the original notification process remains valid.

70. Investments proposed under Component 2 are exclusively technical assistance and installation of hydro-met monitoring stations, which are intended for monitoring purposes and do not alter the flow or quantity of the river; therefore, they will fall into the category of the investments stipulated under paragraph (b) of OP. 7.50, which stipulates that an exemption from

the notification can be applied for “water resource surveys and feasibility studies on or involving international waterways.”

71. **Physical Cultural Resources (OP/BP 4.11).** The hatchery subproject is the only identified works contract that will require significant excavation and earth works. The hatchery EMP includes a check on potential impacts on Physical Cultural Resources (PCR). Archaeological chance finds will be covered by a chance-finds procedures clause included in the works contract.

G. World Bank Grievance Redress

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

Annex 1: Results Framework and Monitoring

Cambodia: Mekong Integrated Water Resources Management Project Phase 3

Program Development Objective (for the M-IWRM): To establish key examples of integrated water resource management (IWRM) practices in the Lower Mekong Basin, at the regional, country and sub-national levels.

Project Development Objective (for M-IWRM-3): The project development objective is to establish the foundation for effective water resource and fisheries management in the project areas in the northeast of Cambodia.

PDO Level Results Indicators*	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR5				
1. Direct Project Beneficiaries from Component 1 of which female (%)	x	Number	0					25,000 Of which female (50%)	Annual	Progress Reports	FiA	See Definition 1
2. Fully functioning CFis		Number	0	0	0	30	40	50	Annual	Field survey; Progress reports	FiA	See Definition 2
3. 3S/ 4P sub-basin with functional water resources management models developed		Number	0	0	0	0	0	4	Annual	Meeting records; Progress reports	CNMC	See Definition 3
4. Exchange of WRM data between Vietnam and Cambodia as a result of Transboundary Cooperation.		Yes/No	No	No	No	No	Yes	Yes	Annual	Meeting Records; Progress Reports	CNMC	See Definition 4
INTERMEDIATE RESULTS												
Intermediate Result (Component One): Support for Fisheries and Aquatic Resources Management in Northern Cambodia												
5. CFis with an approved management plan		Number	0			40	50	60	Annual	Field survey; Progress reports	FiA	See Definition 5

6. Citizens involved in planning/implementation/e valuation of development programs through participation in partially or fully functional CFIs.		Number	0			200	300	400	Annual	Field survey; Progress reports	FiA	This meets the IDA citizen engagement requirements. See Definition 6
7. Number of approved CFi Fisheries Management Plans with Gender Action Plans		%	0	0	0	30	40	50	Annual	Field survey; Progress reports	FiA	
8. Standard indicators and methodology to monitor fishery and management performance is designed by IFRDI/FiA		Yes/No	No	No	No	No	Yes	Yes	Annual	Progress Reports	FiA	See Definition 8
9. Operation of a hatchery in the project area		Yes/No	No	No	No	No	Yes	Yes	Annual	Progress Reports	FiA	See Definition 9
10. Eligibility criteria and disbursement mechanisms for livelihood enhancement packages are developed and agreed.		Yes/No	No	No	No	Yes	Yes	Yes	Annual	Progress Reports	FiA	See Definition 10
Intermediate Result (Component two): Support for IWRM in Northeastern Cambodia and trans-boundary dialogue												
11. Sub-national river basin committees established in the 3S and 4P sub-basins per Government of Cambodia regulations.		Number	0	0	0	1	2	2	Annual	Progress Reports	CNMC	The geographical scope of the committees will be determined during implementation

12. River Basins stakeholders trained in water resource management processes and benefits (Number of Workshops)		Number			2	4	6	8	Annual	Progress Reports	CNMC	See Definition 12.
13. River Sub-Basin Profiles Updated in the 3S and 4P sub-basins (seven sub-basins in total)		Number	0	0	0	4	6	7	Annual	Progress Reports	CNMC	See Definition 13.
14. Hydro-meteorological monitoring stations newly established or improved and functioning in the 3S and 4P sub-basin		Number	0	0	0	10	25	25	Annual	Progress Reports	CNMC	See Definition 14 for information on hydro-met stations.

Definitions:

No.	Indicator	Definition
1	Direct project beneficiaries from Component 1 of which 50 percent are female.	The number of households that belong to each CFI that meets criteria PDO Indicator 2 will be determined, and the number will be multiplied by average household size. This is a close approximation of the number of people benefitting under the component. It is estimated at project preparation that each CFI will include a minimum of 100 households with an average household size of five people; thus each CFI benefits at least 500 people. The number of beneficiary households will be monitored during implementation.
2	Fully functioning CFIs	Fully functioning CFIs is defined as: (i) CFI officially recognized and registered as specified by Cambodian law; (ii) CFI management plan approved by FiA; (iii) boundaries of area under CFI responsibility physically demarcated; (iv) CFI budgeted and staffed according to plans; and (v) fishing regulations in CFI management plans are enforced. An estimate of 70 CFIs will be targeted under the project. However, an analysis of CFIs in Cambodia indicates that the success rate is less than 50%. Thus the target of the project is to achieve a success rate of at least 50 out of 70, or around 70%.
3	3S/ 4P sub-basins with functional water resource management models.	A functional water management model is defined as having the following components: i) rainfall-runoff; ii) water balance model that takes into account water demands; iii) as necessary 1D hydraulic models indicating water depth; and iv) routine collection of water resource information according to established protocols and plans to ensure the models are as accurate as possible. There shall be at least two people in the MOWRAM who are able to run and manage the models, and at least two people in each PDWRAM office who can understand how the model works and interpret the results. The project will explore developing models for all seven river basins (3S and 4P). However, the target is to develop at least four models: the Sesan and Srepok basins (i.e. due to linkage with the 2S Transboundary Project) and at least two of the 4P basins.
4	Exchange of WRM data between Vietnam and Cambodia as a result of Transboundary Cooperation.	This implies that Cambodia and Vietnam reach agreement on the type of data to be shared, data sharing procedures are developed under the MRC-supported 2S Transboundary Project, and actual exchange of information according to the procedures take place. The type of data to be shared may include: i) hydrological data; ii) meteorological data, and iii) modelling data.
5	CFIs with an approved management plan	As per subcomponent 1.1, new or reviewed management plans will be approved by the General Assembly, which is formed by members of the CFIs. Commune Council and District Government will be invited to participate in the General Assembly. The target is to have at least 60 of the proposed 70 CFIs with approved management plans.
6	Citizens involved in planning/implementation/evaluation of development programs through participation in partially or fully functional CFIs.	For this indicator, the term citizens refers to the members of a CFI committee (General Assembly). It is estimated that 7 members form each of these committees, including the head. The indicator refers to planning/implementation/evaluation because (i) CFIs will formulate CFI's management plans (planning); (ii) CFIs will implement the plan (implementation) and (iii) CFIs will evaluate themselves through IFREDI approved standards indicators and methodology. All these with the support of the Communes, PITs and Provincial FiAs.
7	Standard indicators and methodology to monitor fishery and management performance is designed by IFReDI/FiA	IFReDI/FiA will design and support CFIs to implement monitoring systems for fisheries and to evaluation of Management Plan. Standard indicators and methodology to monitor fishery and management performance will be developed in coordination with existing methodology used by IFReDI.
8	Operation of a hatchery in the project area.	The operation of the hatchery refers to hatchery operating, producing at least 30% of its total capacity at the end of the project. Bear in mind that the hatchery subcomponent includes training for fish farmers who will create the demand for fingerlings. This training will happen only after the hatchery is built, therefore utilization of the full capacity of the hatchery will require a longer period of time.
10	Eligibility criteria and disbursement mechanisms for livelihood	As stated in Project Description (sub-component 1.3 b)), funds will be provided to enhance livelihood diversification. To ensure the transparency of this process, an eligibility criteria and disbursement mechanisms will be developed.

	enhancement packages (LEP) are developed and agreed.	
12	River Basins stakeholders trained in water resource management processes and benefits (Number of Workshops)	Workshops for PDWRAM and/or MONRE participants that cover issues related to water resources management and/or hydro-meteorological monitoring.
13	River Sub-Basin Profiles Updated in the 3S and 4P sub-basins (seven sub-basins in total)	Reports back by GIS information with all relevant hydrological, land use, environmental and socio-economic information.
14	Hydro-meteorological monitoring stations newly established or improved and functioning in the 3S and 4P sub-basin.	It is estimated that this will include: Water Level Stations (10), Weather Stations (4), Rain Gauge Stations (10), and Water Quality Monitoring Stations (3).

Annex 2: Detailed Project Description

Cambodia: Mekong Integrated Water Resources Management Project Phase 3

1. The M-IWRMP-3 will focus on (a) critical habitat (spawning, feeding and refuge habitat) in the Sekong River and the Mekong mainstream in the northern part of Cambodia, (b) Cambodian section of the regionally significant Sekong -Sesan-Srepok- (3S) Sub-basin, shared by Lao PDR, Cambodia, and Vietnam, and related tributaries, and (c) the Prek Preah, Prek Krieng, Prek Kampi and Prek Te (4P) sub-basin east of Kratie and South of Mondulkiri province. In light of the accelerating water resources exploitation (such as hydropower and irrigation) within and upstream of Cambodia, the RGC has identified the following as the most acute issues in the LMB:

- *Strengthen community fisheries co-management.* This includes increasing the resilience of fish stocks and fishing communities to basin development pressures such as hydropower, irrigation and population growth. The priority area is in the northeast of Cambodia, where fisheries dependency among communities is high, regionally important critical habitat for migratory and endangered species exists, and little systematic support from other development partners are available.
- *Establishing WRM principles in key basins to ensure sustainable development and due attention to social and environmental factors.* The two priority areas include (a) development of the 4P sub-basin management models in order to respond to the rapid development in mining and forestry. The model will be replicated for smaller tributaries and build upon the earlier work supported by the ADB, and (b) development of joint management in the 2S sub-basin with Vietnam, including joint monitoring on water use, data sharing and analysis, and impact assessment due to rapid hydropower development.

2. **Component 1: Fisheries and Aquatic Resources Management in Northern Cambodia (US\$11 million):** The objective of this component is to improve the management of fish resources in areas of Cambodia that contribute significantly to livelihoods, food security and biodiversity, at local, national and regional levels. The Component objective will be achieved by undertaking the following:

3. ***Sub-Component 1.1: Establishment of Community Fisheries Management (US\$2.5 million)*** This would support establishment of up to seventy fully-functioning CFIs in two provinces of Cambodia (Kratie and Stung Treng) where fish and other aquatic resources are highly vulnerable to overexploitation and basin development, fisheries livelihood-dependency is high, alternative livelihoods are few, and where concentrations of critical fish habitat of local and regional significance exist. Activities include:

4. *Identification and engagement with new and existing fishing communities (CFi):* The projects' Provincial Implementation Teams (PIT), with the assistance of the Provincial FiA, Commune Councils and NGOs, will establish 20 new (10 in each Province) and strengthen 50 previously registered CFis in Kratie and Stung provinces. The CFis will be selected during implementation phase, with the potential selection criteria based on (i) dependency on fisheries, (ii) proximity to the mainstream Mekong and the Sekong Rivers, (iii) the number of critical habitats

fished by the community, and (iv) level of commitment to co-manage fish resources. All fishing communities included in the project will be officially registered, with mapped boundary demarcation, and will exhibit legal rights. As part of this, a Gender Assessment will be conducted to identify women's roles in the community and opportunities to engage fully in the management process. A database will be developed to manage information from community survey, as well as the livelihoods, infrastructure and institutional capacity assessment.

5. *Formulation of Management Plans and identification of alternative livelihoods and investments.* PITs will provide support to the key management stakeholders (PFiA, CC and CFi) to formulate new, or revise existing management plans, including support to create Community Fishing Area Agreement (FFA), baseline surveys, information collection, selection of management measures, design of monitoring and reporting programmes, and identification of roles and responsibilities. Activities span:

(a) *Official Recognition and Registration of the Community Fishery.* This process will be facilitated by the PIT with the support of the PFiA and the Commune Council. The process includes the identification and mapping of the fishing areas, preparation and registration of FFA.

(b) *Formulation of Management Plan.* The Management Plan serves as an important strategic guideline, and will include summary of the state of knowledge of the resource, fishery management objectives and strategy, monitoring and evaluation procedures, and management roles and responsibilities. The PIT will support the PFiA and CFi to undertake a complete socio-economic and fishery baseline assessment to support selection of appropriate existing management measures (outlined in the national fisheries legislation), proposed new rules to govern the exploitation of resources, and identification of required equipment, infrastructure and services to implement the Management Plan. Each Plan will include a Gender Action Plan to promote the empowerment of women. The General Assembly, which is the highest decision-making body of a CFi formed by seven of its members, will be responsible for reviewing and approving the Management Plan. The Commune Council and the District Government will be invited to participate in the General Assembly in order to help align the Management Plan and ensure complementarity with existing commune rules and regulations. The final official approval will be done by Central FiA, via PFiA.

(c) *Identification of Alternative Livelihoods Activities and Rural Investments to Support Fisheries.* The management planning process will serve to identify options and accompanying infrastructure, to diversify or complement livelihoods within the fishing community including eco-tourism, fish culture, animal husbandry, and alternative cropping strategies. These will be documented in the management plan.

6. *Implementation of CFi Management Plan.* The Management Plan will be implemented by the CFi, with the support of the FiA and the PIT. The proposed design for monitoring programmes for co-managed fisheries, and for evaluating and adapting management plans for tropical river fisheries is based on previous accepted methodologies (Halls et al., 2005, Hoggarth, 1999, Hoggarth et al., 2006) includes:

- (a) *Demarcation of Community Fisheries Boundary.* The project will assist the CFis to physically demarcate the boundaries of their fishing areas and conservation zones (FCZ). Work plans to be prepared by the PIT will include installation of signs and local information networks.
- (b) *Design and Implement Fishery Monitoring Program.* Limited baseline information exists on fisheries and livelihoods. Fisher-based catch and effort monitoring has been conducted by the MRC at several locations in the project area since 1998 but not continuously (Halls et al., 2013a). IFReDI/FiA will design and support CFis to implement monitoring systems for fisheries and to carry out an evaluation of the Management Plan. Standard indicators and methodology to monitor fishery and management performance will be developed and adopted across CFis, in coordination with existing methodology used by IFReDI.

Monitoring variables may include (a) fishing variables (fishing effort, illegal fishing activities, the area of FCZ, and duration of any closed seasons), (b) environmental and hydrological variables (water level, dissolved oxygen, and turbidity), and (c) institutional arrangements. It is expected that at least five fishers will be monitored daily. It is proposed that the cost of this monitoring programme be met by a monthly ‘CFi fisheries administration fee’ of US\$2 payable by all fishers operating in the CFi, equivalent to about two percent of average fisher earnings.

Opportunities for sharing management experiences (and data) among CFis, and with the provincial and national fisheries authorities, will also be explored to support adaptive learning and management. Close coordination with the M-IWRMP-1 MRC Transboundary Management project between Cambodia-Laos will be conducted to facilitate the sharing and ‘pooling’ of data at the regional scale.

- (c) *Enforce Rules and Regulations.* Support will be provided to CFi to implement community fishery monitoring and reporting of illegal fishing activities to the Provincial FiA, who can sanction non-compliance per the existing national fisheries regulations. The FiA will also help organise the fisher community to undertake their own surveillance activities.
- (d) *Evaluate and Review Management Performance.* The project will facilitate the Provincial FiA and the CFi Committee to review and evaluate Management performance via an annual¹ workshop. Representatives of the fishing community and the Commune Council will also be invited to participate. To support this evaluation, IFReDI will undertake a trammel net survey to estimate fish abundance, biomass and diversity in the FCZ to help

¹ An annual evaluation of the management plan with the FiA is an obligation of the CFi according to the Sub-Decree on Community Fisheries Management.

assess their effectiveness at protecting fish stocks and diversity. The evaluation will compare management outcomes from observed previous year(s), and across the CFis. Management strategy will be adjusted accordingly. Bi-annual workshops will also be held with CFI from each province to promote the sharing of experiences and lessons on co-management.

7. ***Sub-Component 1.2: Fisheries Co-Management Infrastructure and Equipment (US\$2.2 million)***. This sub-component aims to build capacity among the main management actors to more effectively co-manage fish resources in the project area and to plan and implement small-scale infrastructure development. Activities include:

(a) *Local Capacity Building: Commune and District*. The Commune Council and District Government play important roles in harmonizing and enforcing the Management Plan. Commune Councils also plan and administer local development works funded under their Commune Investment Programmes (CIP). The PIT will provide training and capacity building for (i) fisheries co-management and livelihoods, (ii) participatory needs assessment and planning for small-scale infrastructure, (iii) fiduciary matters for CIP implementation, (iv) networking, communication, and information dissemination, (v) law-enforcement, and (vi) protected area management.

(b) *Provincial Capacity Building: FiA*. Training will be provided to strengthen the PFIa capacity to co-manage the fishery resources in the project area. Topics will include (i) participatory management planning, and (ii) monitoring, control and evaluation. It may also cover: (iii) strengthen CFis capacity, (iv) delineation and demarcation of management areas, and (v) Geographic Information System (GIS). International and local consultants will be made available for coaching and mentoring support. Capacity building provided by the PFIa for CFis will begin with the engagement and management planning processes and will continue throughout the project through ongoing project support provided to the CFis.

(c) *Infrastructure and Equipment for CFI*: A budget of approximately US\$10,000 will be allocated to each CFI to procure infrastructure, equipment and services needed to implement their Management Plan. Expenditure may include offices, patrol boats, surveillance and communication equipment, materials to demarcate management and FCZ boundaries, hydrology and water quality monitoring equipment, and items and services for information dissemination. Procurement of works and goods will be conducted by the FiA. Arrangements and procedures will be agreed and documented during implementation.

(d) *Infrastructure and equipment for Provincial FiA*: A budget of US\$160,000 will be allocated to the Provincial FiA for monitoring, general administration activities, and to support co-management roles and responsibilities at the project location. Expenditure covers office building, renovation and equipment, vehicles and patrol boats.

(e) *Strengthening FiA Capacity*: Activities aim to strengthen the capacity of IFRaDI of FiA to investigate pollution-related impacts on fish. It will also support IFRaDI's new mandate to assess the impact on freshwater fisheries resulting from possible water resources development in the Mekong, such as irrigation, flood management and (mainstream) dam development.

This also includes equipment and training to investigate pollution-related impacts on fish, particularly those causing sudden fish kills. This activity will also support activities related to fishery modelling and impact assessment.

(f) *Transboundary Management*. Financial and technical assistance will be provided to FiA in order to engage in the transboundary management of fisheries with Laos through the MRC Transboundary Fisheries Management Project, mainly through regional workshops.

8. ***Sub-Component 1.3: Enhancements of Fisher Community Livelihoods (US\$4.0 million)***: This sub-component will support the identification and development of alternative livelihoods of the CFi members. Aquaculture will be promoted, while activities such as animal husbandry, eco-tourism, crop diversification, and market gardens will be explored. Priority small infrastructure identified in the Commune Development Plan, such as such water supplies, improved sanitation, the construction of small bridges, will also be supported.

(a) *Construction of Fish Hatchery*: Establishment of a new hatchery to produce fingerlings of both indigenous and non-native species into different culture systems (tank, pond, and cage). The hatchery is tentatively programmed to be constructed close to Stung Treng town, but the final location will be confirmed during project implementation. The conceptual design calls for three buildings including a fish hatchery, an office with accommodation, and storage. Fifteen concrete tanks for fingerlings and Moina (water flea used as hatchling feed) production, a number of larger earth ponds, as well as concrete and fibreglass tanks will be constructed. The hatchery will have the capacity to produce at least three million fingerlings per annum. Capacity building activities will be provided for fish farmers through technical advisory, farmer-to-farmer training, grow-out systems demonstration, and study tours

(b) *Fisher Livelihood Enhancements*: Funding of approximately US\$15,000 will be provided to implement livelihood diversification, as identified under the CFi Management Plans. Funds may be used towards construction of fish ponds, concrete tanks of fish cages to farm (grow-out) juveniles (fingerlings) of non-native or indigenous species of fish that will be produced by a hatchery (Sub-component 1.3.1). Other potential alternative may include improvement in agricultural production using irrigation schemes, vegetable growing and livestock-raising. Handicraft as well as resin, fish processing, improved storage facilities for agricultural produce, and ecotourism are also possibilities.

Individual households or groups with members registered with the CFi would be eligible to receive funds. It is estimated that on average each CFi would have around 121 households. Eligibility criteria and disbursement mechanisms will be developed and agreed upon during implementation (as part of the Livelihoods Enhancement Manual). The PIT will support communities with training, development of livelihood enhancement packages, conduct cost-benefit analyses, and safeguards screening to select livelihoods activities. The FiA will transfer the funds directly to the households after the PIT approves the investment.

(c) *Small-Scale Infrastructure Based on Commune Development Plans*: Funds of the approximately US\$10,000 per commune per year over a period of three to four years will be allocated for priority infrastructure needs for communes that are actively participating and

supporting their CFIs. It is estimated that the 70 to-be identified CFIs will be located in around 33 communes, i.e. an average of two CFI's per commune. The proposal for funding will be submitted to the already existing CIP for approval. The proposed investment should benefit the Commune as a whole, as well as benefit the Commune's fisher community. The PIT will provide support to select priority small-scale infrastructure investments. The FiA will be responsible for procurement of works and goods under this component

9. ***Subcomponent 1.4 Project Administration and Management (US\$2.3 million: IDA US\$1.3 million and RGC US\$1.0 million)***: This sub-component will finance (a) office and logistics costs, including office renovation, equipment, vehicles and administrative costs, (b) support to meet minimum fiduciary and safeguard standards, and (c) incremental operating costs of FiA and PFIs². The RGC will make in-kind contributions by seconding government staff, and by providing office space and basic utilities estimated to cost approximately US\$1 million.

10. ***Component 2: Water Resources Management (WRM) in the Northeastern Cambodia (IDA financing US\$5.5 million: IDA US\$5 million and RGC US\$0.5 million)***. This component aims to improve water resources management in Northeastern Cambodia in the 3S and the 4P sub-basins, and support trans-boundary dialogue with Vietnam under the framework of the Mekong IWRM Program.

11. ***Sub-component 2.1: Strengthening Water Resource Management Institutions (US\$1.6 million)***: This component will focus on developing the capacity of MOWRAM and PDWRAM departments and agencies at the national and provincial levels by providing equipment, buildings, river basin committee and stakeholder education program support. Specific activities include:

(a) Support to the establishment of PDWRAM offices and MOWRAM equipment for undertaking water resources management activities: buildings, equipment, vehicles and organizational development.

(b) Support to establishment of Sub-national River Basin Committees in accordance with the recently approved Sub-Decree on River Basin Management (2015).

(c) Support to MOWRAM and PDWRAMs to improve general stakeholder awareness of water resource management processes and benefits.

(d) Upgrade and operationalization of the MRC-CNMC's National Information System.

(e) Support to the implementation of the M-IWRM Trans-boundary Water Management Programs: MRC- trans-boundary initiatives with Vietnam in the 2S basin.

12. ***Subcomponent 2.2: Water Resources Monitoring and Management in the 3S and 4P Basins (US\$3.0 million)***: This component will finance the establishment of hydrological and meteorological monitoring stations, undertaking field surveys, development of water resource

² Covering costs of consumable materials and non-consulting service required for the day-to-day coordination, administration and supervision of Project activities.

models, and operationalized water resources monitoring and assessment programs at the multi-basin scale. Specific activities include:

- (a) Upgrade of the hydrological and meteorological monitoring networks, including network design, equipment selection and installation, and operation and maintenance support of new and existing equipment.
- (b) Support to establish and operationalize meteorological and hydrological data collection and storage procedures, includes cross section surveys, sediment dynamics and water flows data collection, and the development of PDWRAM water resources databases.
- (c) Support to develop water resource management decision support systems, covering data analysis, sharing and reporting.
- (d) Support for the preparation of specialized technical studies to investigate specific areas of concern in the basin (e.g. sediment dynamics, environmental flow requirements, land-use change impacts).
- (e) Support for the preparation of River Basin Profile Reports for the 3S and 4P basin regions to establish a baseline of the state of the water sector (e.g. water resources, water services, water development) and social, economic and environment conditions of these regions.
- (f) Support for the operation and maintenance of the Mekong River mainstream hydrological monitoring stations per MOWRAM's obligations to the MRC.

13. **Sub component 2.3: Project Administration and Management (US\$0.9 million: IDA US\$0.4 million and RGC US\$0.5 million):** This component finances specialized fiduciary consultants to support the PMU to enable successful implementation of Components 1 and 2 of project. The RGC will make in-kind contributions by seconding government staff, and by providing office space and basic utilities.

14. **Detailed Project Costs:** The following tables summarizes the estimated costs by sub-component and expenditure category.

Table A2. 1: Summary of Costs

Summary of Costs by Expenditure Categories						
Category	Comp. 1 (US\$1,000)	% of Comp. 1	Comp. 2 (US\$1,000)	% of Comp. 2	Total (US\$1,000)	% of Total
Goods	576	6%	1,154	23%	1,730	12%
Works	4,752	48%	390	8%	5,142	34%
Services	2,823	28%	2,500	50%	5,323	35%
Incremental Costs	1,122	11%	546	11%	1,668	11%
Training/Workshops	726	7%	410	8%	1,136	8%
Totals	10,000	100%	5,000	100%	15,000	100%

Table A2.2: Detailed Costs

Detailed Cost Table for Mekong Integrated Water Resources Management Project Phase 3	US\$1,000
Component 1: Fisheries and Aquatic Resources Management in Northern Cambodia	
Sub-Component: 1.1: Establishment of Community Fisheries Management	2,508
1.1 Identification and engagement with new and existing fishing communities (CFi)	338
1.2 Formulation of New and Existing Management Plan	976
1.3 Implementation of CFi MPs	1,194
Sub-Component: 1.2: Fisheries Co-Management Infrastructure, Equipment and Capacity Building	2,190
2.1 Strengthening Co-Management	648
2.2 Infrastructure and Equipment for CFis	840
2.4 Strengthening FiA Capabilities (Consultants)	702
Sub-Component: 1.3 Enhancements of Fisher Community Livelihoods	4,073
3.1 Construction of Fish Hatchery	905
3.2 Fisher Livelihood Enhancements	1,692
3.3 Rural Infrastructure Based on Commune Development Plans	1,476
Sub-Component: 1.4 Project Administration and Management	2,229
4.1 FiA Office Renovation, Equipment, Vehicles, Etc.	126
4.2 Project Management Consultants: Financial Management, Procurement, Coordination, Safeguards,	665
4.3 FiA Incremental Operating Costs	438
4.4 In Kind Government Contribution	1,000
Component Total IDA	10,000
Component Total Cost	11,000
Component 2: Water Resources Management (WRM) in the Northeastern Cambodia and Trans-Boundary Dialogue	
Sub-Component: 2.1: Strengthened water resources management institutions	1,626
1.1 PDWRMs and CNMC Equipment	870
1.2 River Basin Committee Establishment in 3S and 4P	368
1.3 Stakeholder Awareness	288
1.4 MRC Related: National Information System and Transboundary Dialogue	100
Sub-Component: 2.2 Water Resources Monitoring and Management in the 3S and 4P Basins	2,930
2.1 Hydro-Meteorological Monitoring Equipment	1,128
2.2 Water Resources Monitoring Equipment and Surveys	750
2.3 Water Resources Decision Modelling and Decision Support System	702
2.4 Technical Studies and River Basin Profile	350
Sub-Component: 2.3 Project Administration and Management	944
4.2 Project Management Consultants: Financial Management, Procurement, Coordination, Safeguards, etc.	444
4.4 In Kind Government Contribution	500
Component Total IDA	5,000
Component Total Cost	5,500
Total Project Cost	16,500
Total IDA Financing	15,000

Annex 3: Implementation Arrangements

Cambodia: Mekong Integrated Water Resources Management Project Phase 3

1. The Cambodia National Mekong Committee has been assigned by the Cambodian government to be responsible for overall project management. The Fisheries Administration within the Ministry of Agriculture, Forestry and Fisheries is responsible for implementing Component 1. The CNMC in coordination with the Ministry of Water Resources and Meteorology is responsible for Component 2, The CNMC is responsible for implementing Component 2 as well as overall project management.
2. **Project Oversight.** As the proposed Mekong IWRMP-3 is a part of the regional Mekong IWRM Project comprising Lao PDR, Cambodia, Vietnam, and the MRC, there will be two levels of project oversight: regional and national. At the regional level, the existing Regional Project Steering Committee (RPSC) – supported by the MRC’s PCMU– established for the Mekong IWRMP will monitor overall progress, facilitate the resolution of technical matters which require regional attention, and ensure coherence and consistency in implementation of both Components to achieve the overall project objective. The RPSC is comprised of representatives of the MRCS, the National Mekong Committees (NMCs) in Thailand, Cambodia, Vietnam, and Lao PDR, and representatives of the national executing agencies for each phase (MONRE in Lao PDR, VNMCSO in Vietnam, CNMC in Cambodia).
3. At the national level there will be a NPSC established and chaired by the Secretary General of the CNMC. This NPSC will be a mechanism for ensuring the participation of the interested Ministries and will include representatives from CNMC, MOWRAM; FiA; and MEF.
4. **Project Management Unit (PMU).** CNMC will have overall responsibility for managing the project, including the strategic direction, monitoring and accountability. A PMU will be established at CNMC, which will have overall implementation responsibilities for Mekong IWRMP-3 and be responsible for implementing Component 2, including:
 - (a) Overall: financial management – internal and external audits, monitoring and evaluation, reporting and safeguards compliance; and
 - (b) Component 2: procurement (including contract signatory), financial management, safeguards, and technical oversight.
5. A Project Director will be appointed by CNMC and will be assisted by two Deputy Project Directors - one from FiA and one seconded into CNMC from MOWRAM, who will provide oversight and coordination of Components 1 and 2, respectively. The PMU will also include: technical coordinators (from CNMC or MOWRAM), a water resources planner, safeguards and monitoring and evaluation (M&E) specialists, a chief finance officer, project accountant, cashier, procurement officer, and an administrative assistant. In addition, a small team of specialists, comprising a mix of long and short-term international and national technical consultants will be contracted as required. The majority of these staff will be appointed from their respective organizations and will complete this work as part of their existing duties. However, some project-

specific positions will be financed by the project, specifically the accountant and procurement officer, due to the lack of existing capacity.

6. The Department of Water Resources Management and Conservation, Department of Hydrology and River Works, and Department of Meteorology of MORWAM, and Department of Planning and International Cooperation of CNMC will provide technical oversight of Component 2 implementation. Provincial water resource and meteorology departments (PDWRAMS) will support implementation of component 2 at the Provincial levels.

7. **Component 1 Management Unit (CMU1).** CMU1 will be established and will be responsible for implementation of Component 1 including: procurement (including contract signatory), financial management, safeguards, and technical oversight, reporting, and monitoring and evaluation. CMU1 will be headed by the FiA and the Component Manager will report to the Project Director. The staff of the CMU1 will include: fisheries and community livelihoods specialists, safeguards and M&E specialist, finance officer, accountant, cashier, procurement officer, and administrative assistant. In addition, a small team of specialists, comprising a mix of long- and short-term international and national technical consultants will be contracted as required. The majority of these staff will be appointed from their respective organizations and will complete this work as part of their existing duties. However, some project-specific positions will be financed by the project, specifically the accountant and procurement officer, due to the lack of existing capacity. Furthermore, CMU1 will recruit international technical experts on an as-needed basis to respond to issues arising during implementation.

8. **Institutional arrangements regarding fisheries.** In Cambodia, between 2005 and 2007, the Ministry of Agriculture, Forestry and Fisheries established a legal framework to enable community-based fisheries co-management, comprising: a Sub-decree on Community Fisheries Management (2005), a new Fisheries Law for Cambodia (2006), and the Guidelines for Community Fisheries (2007).

9. At the Provincial level, the project will be implemented through Provincial FiAs through “provincial implementation teams” (PITs) in Stung Treng and Kratie, cascading down to the local level through Commune Councils and CFis. PITs, with the assistance of the Provincial FiA and Commune Councils will form new and strengthen existent CFis. At the local level, the Commune Council, designates village and commune level CFis’ fishing grounds, and is the main institution to address conflicts within and between CFis. The Sub-decree on Community Fisheries Management (2005) stipulated that the Commune Councils facilitate establishment of CFis and fisheries area management plans so as to mainstream these plans into the overall commune development planning. Once the fishery area management plan is approved by the General Assembly of each CFi, CFis will implement the plan in close coordination with the respective Communes and support from the PITs, while the Fishery Administration of Cambodia would then monitor and carry out surveillance of the implementation. For all these reasons, Component 1 will support a co-management local approach involving CFis and Commune Councils, and a provincial approach involving PITs and Provincial FiA. All this will be presented in more detailed in the POM.

Financial Management, Disbursements and Procurement

Financial Management

10. An updated FM assessment was carried out in September 2015 for FiA and CNMC to ensure the FM arrangements were acceptable and in accordance with the Bank's OP/BP 10.00. The objective of the assessment was to determine the adequacy of the FM arrangements and whether they meet IDA's requirements for the purpose of managing project funds. These arrangements are acceptable if they: (i) are capable of correctly and completely recording all transactions and financial information relating to the project; (ii) facilitate the preparation of regular, timely and reliable financial reports and statements; (iii) safeguard the project's assets; and (iv) include auditing arrangements acceptable to IDA. The assessment concluded that FiA and CNMC, and the provincial sub-offices, have minimum FM system and capacity. After taking into account of additional mitigating measures to the existing FM arrangements at the entities level and sub-national level, the FM arrangements are assessed as acceptable to the Bank.

11. The Project will be implemented in a high risk environment with the financial management risk specific to the project being assessed as substantial. Appropriate mitigating action have been incorporated into the design of the financial management arrangements to address the identified risks and deficiencies. The FiA and CNMC were involved in the implementation of the Project Preparation Facility (TF092899) in 2008 under Mekong IWRMP using funds provided by the Japan PHRD Grant. Following a transaction review of this Grant, it was agreed that Mekong IWRMP-3 will further strengthen its internal control system for FiA and CNMC. The FM capacity will need to be strengthened through dedicated staffing, trainings and FM consultant support. The required procedures on internal controls will be specified in the specific project financial management manual to guide staff during implementation.

12. A number of mitigating actions have been proposed and embedded into the implementation arrangements including: (i) establishment of clear funds flow procedures, (ii) key dedicated and qualified FM staff in place, (iii) proper recording of financial transactions containing adequate valid supporting documents, and accurate and timely reporting of fund receipts and expenditures; (iv) monitoring arrangements under community livelihood enhancement grants, and commune small-scale infrastructure investment, (v) review of internal controls by the internal/external auditors, (vi) financial statements audit with an emphasis on review of internal controls by external auditing firm.

Table A3.1: Financial Management Actions

No.	FM action	Responsible entity	Due date
1	Acceptable draft Project Operational Manual	FiA & CNMC	Completed
2	Complete appointment of key government staff for the project (both at national and at sub-national level) based on standard RGC SOP and issue appointment letter	FiA & CNMC	At Effectiveness
3	Project staff receive e-disbursement training including withdrawal of funds, and SOE supporting documents.	FiA & CNMC, Bank	One-month after effectiveness
4	Open separate designated accounts at the National Bank of Cambodia	FiA & CNMC	One-month after effectiveness
5	Complete recruitment of international and local FM consultants and issue appointment letter	CNMC	Two-months after effectiveness
6	Update FM Manual and prepare disbursement forecasts for Bank NoL	FiA & CNMC	Before 1st Disbursement
7	Engage an acceptable auditing firm under acceptable ToR to the Bank as part of bundled audit exercise.	CNMC	Six-month after effectiveness

13. **FM Staffing and Structure:** The implementing agencies will have a dedicated staff and full time senior level finance officer to undertake overall financial management responsibility which includes coordination and supervision for: (i) annual budget/program preparation; (ii) funds flow management; (iii) accounting and reporting; and (iv) internal controls and auditing. He/she should be assisted by project accountant and assistant accountant. Considering the complexity and scale of operations, it is suggested to have a local FM consultant to assist/support in overall FM aspects. There will be a need for training and capacity building on FM during the implementation of the project. The number of experienced and qualified FM staff meets the functional needs of the project as follows:

- a. **FM staff for Component 1.** The Finance Unit of FiA will be headed by a Finance Officer supported by a Project Accountant and a Cashier/Secretary to maintain the project accounts (i.e. designated account and petty cash account) at the FiA office. At the provincial implementing agencies, Provincial Accountant, supported by a Cashier/Secretary to maintain a petty cash using an *imprest* system. A petty cash will be set up for each provincial office (at Kratie and at Stung Treng) for office operating expenses, per diems, and travel costs.
- b. **FM staff for Component 2.** Similarly, the Finance Unit of CNMC will be headed by a Finance Officer supported by a Project Accountant and a Cashier/Secretary to maintain the project accounts (i.e. designated account and petty cash account). A petty cash will be set up for each provincial office (Kratie, Stung Treng, Ratanakiri, and Mondulakiri) for office operating expenses, per diems, and travel costs.
- c. The national FM consultants will be required to support overall FM aspects for each component. An International Finance Advisor will be hired for three months under

Component 2 as the start-up technical support during the first year of implementation and will work on a part-time basis. The International Finance Advisor will be located in the CNMC office and will provide support to both FiA and CNMC. This International Finance Advisor will transfer knowledge to the project staff and organize on-the-job-training and classroom training for the Government staff. This knowledge transfer will contribute to the platform of long term sustainability of the Project.

14. **Budgeting.** For Components 1 and 2, the Project will use the existing Standard Operating Procedures (SOP)/ Financial Management Manual (FMM) budgeting system applying a bottom-up participatory process from the sub-component level, and consolidated at the central level. In the budgeting process, each component will ensure budget allocation to each sub-component. The implementing agencies should use the cost table developed during project appraisal as a guide to develop their annual work plans and budgets. This will help to ensure that, by the end of December of the current year, the work plan and budget for the following year will be approved and the implementing agencies will be able to implement at the beginning of the new calendar year.

15. **Accounting.** The Project shall use the Government existing accounting policies and internal control procedures which are laid out in the harmonized country system following to MEF's SOP, the FMM (updated in May 2012) and the World Bank policy and procedures. The project shall apply IPSAS modified cash basis for its accounting policy and procedure. It is agreed that each component will put in place a supplementary financial management manual for their respective entity following to MEF's SOP and FMM. The FM manual has been drafted and will be an integral part of the POM.

16. **Accounting Software.** The project shall operate the computerized accounting software to capture all the project financial transactions and enable the project to generate financial reports for management purpose. The type of the computerized accounting software should meet the project's operations and reporting requirements. The software will have the capacity to configure with the Government new chart of accounts. This will allow for proper recording of all financial transactions and budget component in accordance with the disbursement categories. The installation of the software and training to the finance staff to operate the computerized accounting systems shall be completed within six-months after the project effectiveness.

17. **Internal Controls and Compliance.** As there will be high volume of financial transactions, funds flow, and payments to the beneficiaries, there should be a robust internal control system to ensure use of funds for intended purposes. The required procedures on internal controls will be specified in the Supplementary Financial Management Manual. To continue to strengthen the financial management arrangements for the Project and to help further reduce the risk of fraud and corruption, particular emphasis needs to be given to the following areas:

- a. ***Staff capacity building aligned with the project.*** Training on Bank procedures will be delivered to those involved in the project financial management by the Bank before negotiation of the Project, followed by intensive training on FM matters during the first year of implementation. Each the project staff may contribute in the strengthening of the internal control systems.

- b. ***Clear FM responsibilities.*** There should be clear delegation and authorization of payments, verification, and evaluation of payments. Duties of staff will be segregated to avoid full controls by a single person.
- c. ***Authorization of expenditures.*** All payments are to be approved in accordance with the delegated line of authority of the Project Director, each Component Manager (Director General of FiA and CNMC), and/or Provincial Fishery Cantonment and Provincial Department of Water Resources and Meteorology.
- d. ***Validate receipts and reduce handbills.*** The pre-screening procedures for valid receipts and claims for payments shall be strengthened. The PMU shall ensure that internal checking procedures are put in place to ensure authenticity of original receipts, identity of vendors, goods received notes and other finance supporting documentation.
- e. ***Contract payment register needs to be carefully controlled.*** The Project is anticipated to have several contractors under civil works, goods, consulting services and non-consulting services. The contracts will be managed by each implementing agency. A “contract register” will need to be maintained to record details of each contract and payments made against the contract prices. The contract payment register can be applied for individual, consulting firms, contractors and suppliers. This helps prevent possible risks arising from payments without validity of the contract, over payments, payment made when services did not render/ deliver, and payment including withholding tax.
- f. ***Advance payment or “advance register”.*** Control of cash advance is important and this needs to be maintained to record details of each advance payment made to individual such as advance payment for training activities, mission/ travel or transportation costs. An advance register will be maintained. This will help to ensure that the policy on clearing of advances will be applied consistently so as not to put pressure on the cash flow needs of the project when the advance is long overdue for acquittal.
- g. ***Payment.*** The administrative procedures for processing of invoices will be used for the project and they have been assessed as adequate. Payments in cash will be minimized with most of the payments to be made by direct payment, bank transfer or by cheque. The Bank transfer of payment is recommended for livelihood enhancement household members, and the contractors under the Commune/*Sangkat* Infrastructure Investment. Large volume of payments to suppliers, contractors, and consulting firms or individual consultants can be made by direct payment from the World Bank. This helps prevent putting pressure on the designated account ceiling.
- h. ***Fixed asset management.*** All assets purchased under the proceeds of the project will be inventoried as the fixed assets of the project. The asset will be properly tagged and coded. The asset will only be used for the purpose of the project. The Project will record all assets in a fixed asset register to safeguard and protect them from fraud and waste, as required by MEF’s SOP/FMM.
- i. ***Project records management.*** Project records such as disbursement records, supporting documents, copies of contracts, suppliers’ invoices, and statement of bank accounts,

official receipts, soft and hard copies must be stored in fire-proof cabinets in a safe location. The RGC's regulations by law require that certain types of documents must be kept for a minimum of ten years (SOP/FMM Page 114).

18. **Livelihood Sub-Grants.** Component 1 will allocate grant funding to support alternative livelihood enhancement of the selected community fishery (CFi). The proposed scheme will diversify livelihoods in fishing communities identified during the management planning phase will receive a total funding allocation of approximately US\$15,000 per participating CFi. Under the project, approximately 70 CFis are expected to be registered. Individual member households or groups of households with members registered with the CFi would be eligible to receive funds. Transparent eligibility criteria and disbursement mechanisms for these funds should be formulated and clearly documented by the Project Implementation Team during the initial implementation phase of the project. Each household will submit its proposal for livelihood enhancement to the CFIs for approval. After CFIs has approved the household livelihood proposal, FiA will transfer the fund directly to the household for their implementation of the proposal. The CFi will confirm that the transfer of fund will be used for the intended purpose. The disbursement is on a lump-sum basis, with a "sub-grants category" included in the description of eligible expenditures. FiA shall develop clear procedures and eligibility criteria for the household livelihoods program and shall submit to the Bank for its review and no-objection the "Livelihood Enhancement Manual" prior to any disbursement of funds; this requirement has been incorporated into the Financing Agreement. The Livelihood Enhancement Manual will be an integral part of the Project Operational Manual.

19. **Quarterly Financial Report.** The FiA and CNMC will prepare a separate Quarterly Interim unaudited Financial Reports (IFR) based on their respective components. These IFRs shall be submitted to the Bank on a quarterly basis within 45 days after end of the quarter. The IFR format was finalized and agreed to. All expenditures reported in the quarterly IFRs would be subject to review by the external auditor as part of the audit work. The FiA and CNMC will submit separate IFRs to the Bank.

20. **Internal Audit.** The Internal Audit Departments (IAD) of each relevant Ministry has limited internal audit experience in projects/ programs funded by the external development partners. The Departments are not adequately staffed with qualified and experienced personnel and in many cases, issues on language skills are a barrier, as M-IWRM-3 documents will be mostly in English. Considering complexity and scale of operations, effective internal audit is critical to ensure sound FM management. To address this potential gap, an internal audit consultant will be hired to conduct internal audit and review compliance with existing policies and procedures. The TOR for the internal auditor would cover all aspects relating to internal controls and contract management of both CNMC and FiA. A semi-annual internal audit report (with findings and recommendations) will be furnished by the local consultant to Project Director for their attention and action and will make the final report available to the World Bank on a semi-annual basis. Any recommendations or follow-up actions should be implemented as a matter of priority, and implementation of the auditor's recommendation shall be completed in timely manner.

21. **External Audit.** The annual audit of the Project Financial Statements would be carried out by a private independent auditing firm appointed by the Ministry of Economy and Finance as

per the TOR agreed with the Bank. The auditor will audit FiA and CNMC and will issue a consolidated audited financial statements covering the two entities and together with the individual management letters highlighting the respective control weaknesses. Any recommendations or follow-up actions should be implemented accordingly. The annual audit report would be submitted to the Bank by June 30 each year (six months after the end of each calendar year).

22. **Disclosure of Project Audited Financial Statements.** The Borrower shall disclose the audit report for the Project by posting the reports on the website of individual implementing agencies or website of the CNMC (www.cnmc.gov.kh). Following the Bank's formal receipt of these reports from the Borrower, the Bank will make them publicly available according to the World Bank Policy on Access to Information.

23. **Bank Supervision.** IDA will follow a risk based approach in supervising the FM activities of the project including field visits. In the first year, supervision would be carried out more frequently to enhance FM capacity and set-up FM systems. Once the system has been established to the satisfaction of the Bank, supervision will return to standard half-yearly missions. The Project supervision will closely monitor the FM aspects, and will include evaluation of the quality of budgets, IFRs, compliance with the Project finance manual, speed of disbursements, internal controls, work and document flow, and quality of financial records. The supervision will also conduct a random review of statements of expenses, financial covenants, and changes in procedures related to financial management arrangements, if deemed necessary. The recommendations for the FM action plan and an FM performance rating will be suggested.

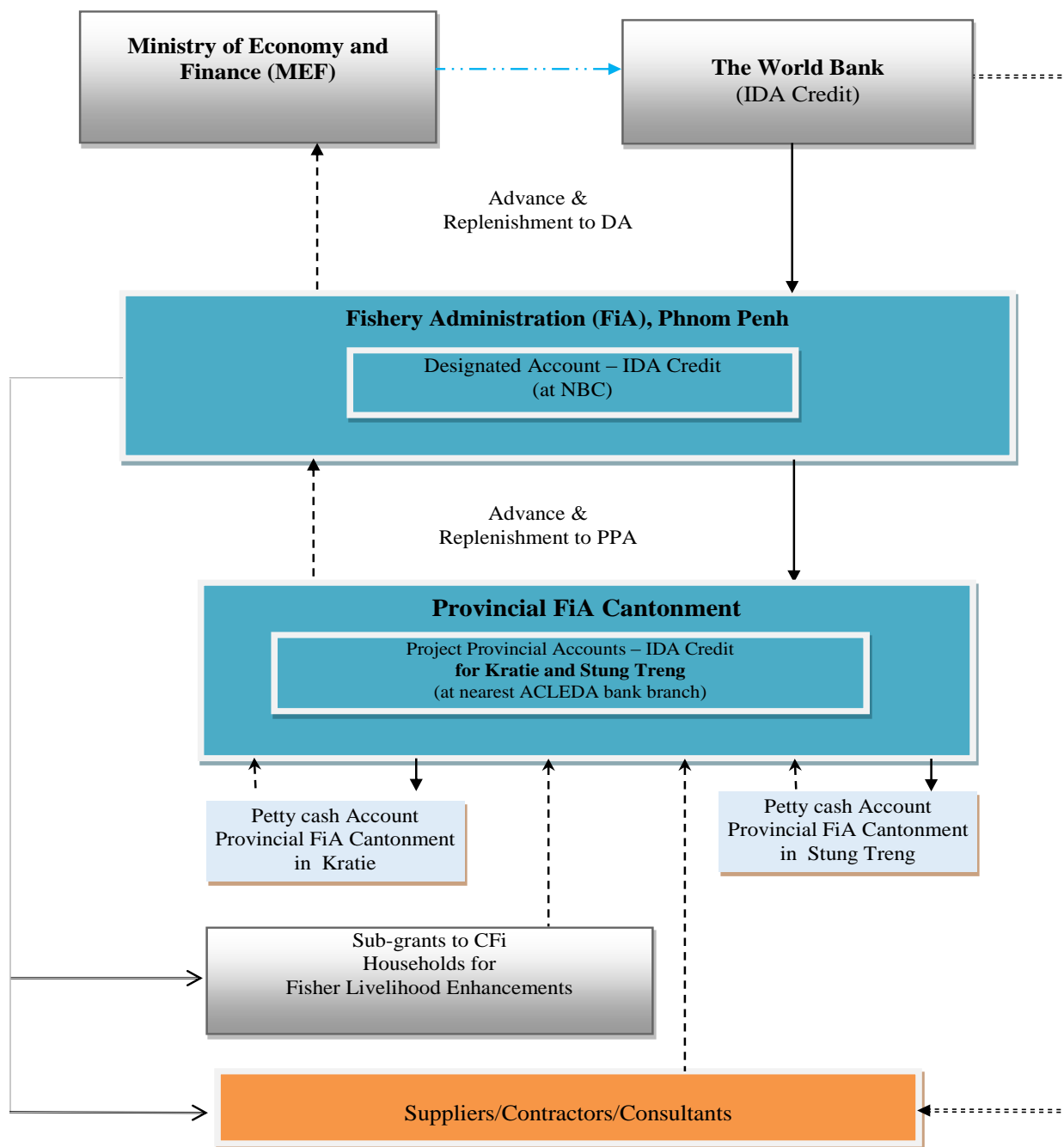
Disbursements

24. **Funds Flow.** There will be two segregated US Dollar –dominated designated accounts (DAs) to be set up and managed: one for Component 1 (managed by FiA) and the other for Component 2 (managed by CNMC). The below graphics present the general flow of funds. Funds will be channeled from the World Bank to these two respective DAs to finance eligible expenditures listed in Components 1 and 2. Each Implementing Agency will maintain a DA at the National Bank of Cambodia for the Project. There would be a first initial advance deposit of US\$1,000,000 for FiA (DA1) and US\$800,000 for CNMC (DA2). This advance ceiling would be maintained throughout the project life and may be adjusted when the project is fully operational at the third year of implementation.

- a. Component 1 will open two PPAs, in Kratie and in Stung Treng province at the nearest ACLEDA bank branch, each will maintain an *imprest* account with a ceiling equivalent to an average of three months budget (excluding direct payment from the national level) of work plan to cover for the project eligible expenditures. The PPAs will be replenished monthly from the DA. The PPAs will be managed by the each Provincial Fisheries Administration Cantonment. These PPAs will be replenished on a monthly basis based on rolling budget.
- b. Component 2 will have project petty cash account (PCA) at each Provincial Department of Water Resources and Meteorology (DPWRAM) in Kratie, Stung Treng, Mondulkiri,

and Ratanakiri respectively. The PCA will be managed by PDWRAM and the ceiling for the PCAs in each of the provinces is fixed at US\$1,000 and to be replenished periodically.

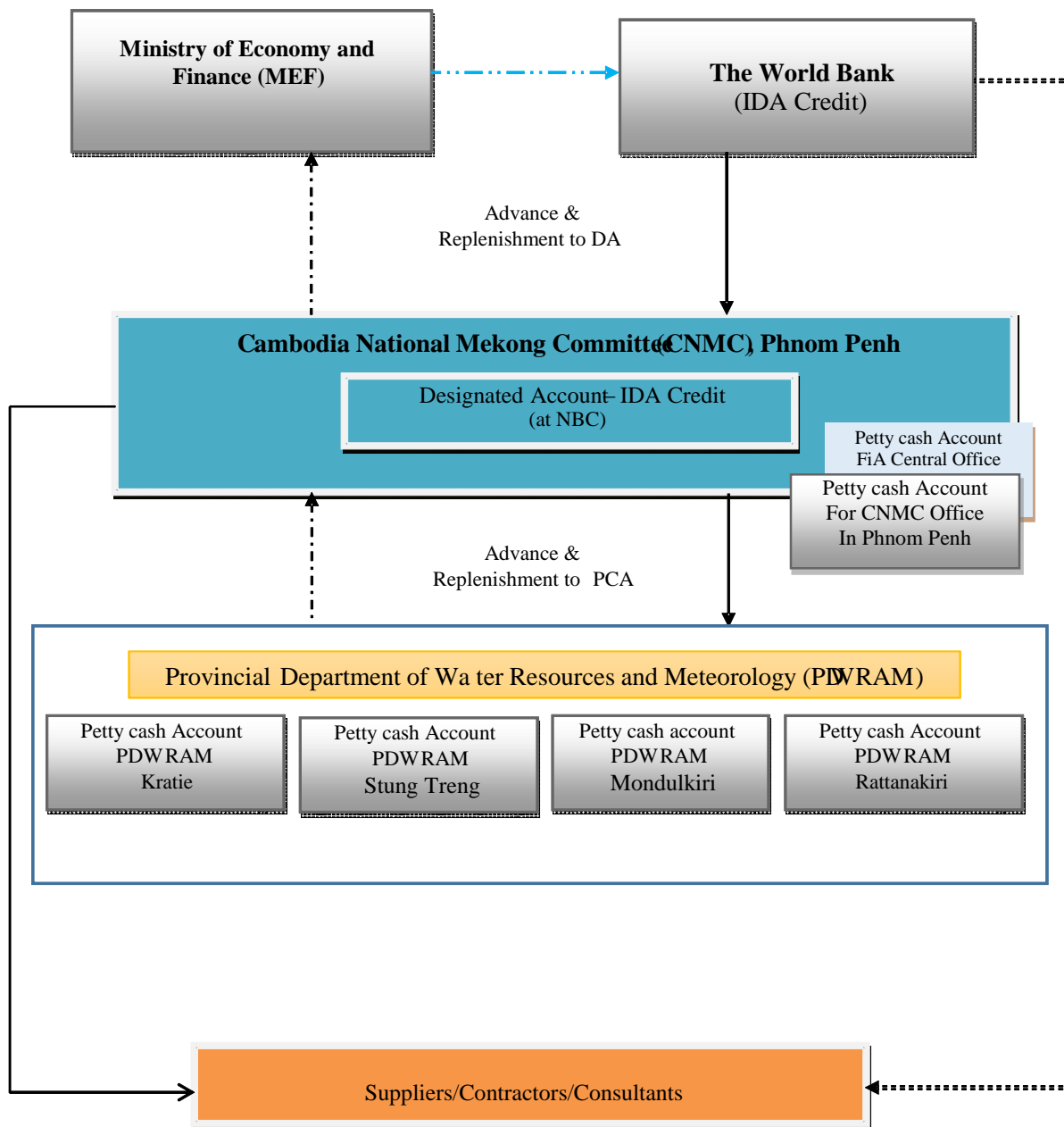
M-IWRMP 3 – Component 1 Funds Flow Arrangements



Legend:

- - -> Reporting/ Request/ Withdrawal Applications route
- > Disbursement/Payments
- ===> Direct payments from the World Bank

M-IWRMP 3 – Component 2 Funds Flow Arrangements



Legend:

-➔ Reporting/ Request/ Withdrawal Applications route
- ➔ Disbursement/Payments
-➔ Direct payments from the World Bank

25. **The Primary Method of Withdrawal of Funds from the Bank is Advance.** Withdrawal of funds from the World Bank shall be through submission of withdrawal applications signed by authorized signatory(s) along with the supporting documents using statement of expenditures (SOE) and summary sheet. The Project shall comply with the Bank policies and procedures as reflected in the Bank's Disbursements Handbook. All replenishments to the DAs shall only be for eligible expenditures based on the agreed financing category/(ies) and shall have adequate supporting documents. The preparation of the withdrawal applications shall be in accordance with the instruction specified in the Disbursement Letter. The FM team in each Component will be trained to use a web-based request for withdrawal of funds from the Bank through a fast mode of electronic disbursements (e-disbursement) by using the World Bank Client Connection website. The electronic withdrawal applications along with the supporting documents will be submitted to the Bank and the original copies will be retained at the office of the implementing agencies. The frequency for reporting eligible expenditures paid from the DAs will be on a monthly basis (especially when the Project picks up its momentum).

26. **Disbursement Categories.** Component 1 (referred to as Part "a" in Table A3.2) will be managed by the Fisheries Administration and Component 2 (referred to as Part "b" in Table A3.2) will be managed by the CNMC. IFRs will disclose the use of funds by category and by component. The Project has the following disbursement categories (Table A3.2):

Table A3.2: Disbursement Categories

Category	Category Description	Amount of Financing Allocated (SDR)	Percentage of Expenditures to be Financed (inclusive of taxes)
1	Goods, Works, Non-Consultant Services, Consultants' Services, Training and Workshops, and Incremental Operating Costs <u>under Component 1.</u>	6,500,000	100%
2	Livelihood Sub-grants for Fisher Livelihood Enhancements under Sub-component 1.3 (b).	750,000	100% of amount disbursed
3	Goods, Works, Non-Consultant Services, Consultants' Services, Training and Workshops, and Incremental Operating Costs <u>under Component 2.</u>	3,650,000	100%
Total Amount		10,900,000	

27. **Disbursement Method.** The Project may use the following disbursement methods to withdraw funds from the Bank:

- (a) *Reimbursement.* The Bank may reimburse the project for eligible expenditures that the project has pre-financed from its own sources of funds;
- (b) *Advance.* The Bank will advance credit proceeds (first initial advance deposit) into a Designated Account to finance eligible expenditures;
- (c) *Direct payment.* The Bank will make payments at the project's request, directly to a third party such as a supplier, a contractor or a consultant for eligible expenditures. The minimum application size for direct payment is proposed at 20 percent more than the outstanding DA balance at the time of making payment. The outstanding balance can be found in the ending balance of the monthly Bank Statement; and
- (d) *Special commitment.* The Bank may pay amounts to a third party for eligible expenditures under special commitments entered into on basis of irrevocable Letters of Credit (LC) being opened with a reputable commercial bank by the Borrower, in writing, at the Borrower's request and on terms and conditions agreed between the Bank and the Borrower.

28. **Disbursement Deadline Date and Grace Period.** The project will have a Disbursement Deadline Date which is defined as the final date on which the Bank will accept applications for withdrawal and/or documentation on the use of Credit. This date is specified in the Disbursement Letter. The Grace Period means four months after the Closing Date. The closing date is specifically stated in the Financing Agreement. The Grace Period is granted in order to permit the orderly project completion and closure of the Credit accounts via the submission of applications and supporting documentation for expenditures incurred on or before the Closing Date. Expenditures incurred between the Closing Date and the Disbursement Deadline Date are not eligible for disbursement, except as otherwise agreed with the Bank.

Procurement

29. Public procurement in Cambodia is governed by Public Procurement Law enacted in January 2012. Article 3 of the law provides an exception to follow procurement guidelines and procedures agreed between the Royal Government of Cambodia and a Development Partner for the project financed by the Development Partner. Accordingly, the Updated Standard Operating Procedures (SOP) and Updated Procurement Manual for all Externally Financed Projects and Programs issued under Sub Decree 74 dated May 22, 2012 has been agreed and applicable for the World Bank financed/administered projects/programs. The Update Standard Operating Procedures and Procurement Manual (SOP/PM) contains principles, rules and guidelines for planning, supervision, procurement procedures for all externally financed projects/programs. These SOP/PM include comprehensive complaints, disclosure and transparency regime to be followed. SOP/PM apply at central level. Public Procurement Law enacted in January 2012 also provides for the policy and procedures for procurement under government own financed projects/programs. The law establishes the General Department for Public Procurement (GDPP) within Ministry of Economy and Finance as the responsible body for regulatory and oversight responsibilities. The Law also provides for disclosure and complaints rules to be followed by both bidders and public officials. Both documents are publicly available on the MEF website.

30. The enabling legal frameworks are generally comprehensive and incorporate fundamentals of a modern procurement legislation. The key challenge, however, lies with the capacity to implement the legal framework and to provide oversight for the implementation. Staff capacities are still developing and the procurement profession needs further development within the public sector. GDPP needs to increase their staff strength and expertise to provide oversight on procurement activities.

31. Procurement under the project will be governed by Bank Procurement Guidelines dated January 2011 revised July 2014 and Consultant Guidelines dated January 2011, revised July 2014. Bank Anti-Corruption Guidelines dated October 2006 revised January 2011 will also apply. The Government Updated Standard Operating Procedures issued under Sub Decree 74 dated May 22, 2012 will apply for procurement under national competitive bidding and low value contracts subject to the improvement included in the NCB procedures set forth in an annex to the Financing Agreement. The procurement under the small grant to support Alternative Livelihood Enhancement of the selected community fishery (CFi) under Component 1 will follow the Community Participation Procedure which is stipulated in the POM, accepted to the Bank for the procurement of goods, works, and non-consulting services.

32. **Capacity Assessment.** The project would be implemented by two entities i) the FiA and ii) CNMC. The FiA and CNMC will be responsible for procurement implementation for Components 1 and 2, respectively. An assessment of procurement implementation capacity for FiA and CNMC was carried out and found that the FiA and CNMC have neither experience using the World Bank Procurement and Consultants Guidelines, nor qualified staff familiar with the World Bank procurement procedures.

33. **Risks and Mitigation Measures.** The following risk mitigation measures have been agreed with Government

Risk/Risk Area	Mitigation measure	Period of implementation of the measure
Weak capacity of the FiA and CNMC and procurement oversight at central level	High prior review by the Bank and lowered prior review thresholds. Post review by the Bank annually on sample of 20% of contracts. Hire one international procurement consultant for 60 days in first year to help the project get started, particularly with the selection of a large consultant firm for Technical Water Resource Management and engage full times at least two local procurement consultants with World Bank procurement experience to assist the two IAs i.e. i) FiA and ii) CNMC; and the World Bank procurement specialist assigned to support the project will provide regular hands-on	During implementation and annually

	procurement training for FiA and CNMC project staff.	
Unclear procedures for community participation in procurement	The Livelihoods Enhancement Manual (LEM) will be prepared with the Bank's support to have clear procedures for community participation in procurement. LEM is an annex to the POM.	During implementation
Delays in procurement cycle management	Keep tracking form of procurement actions and monitor progress. Appoint focal person to provide technical inputs for each package and provide training to evaluation committees for each package	During implementation
Governance associated risks	The Project design includes a communication strategy to inform stakeholders about the project which would bring more awareness. SOP and Procurement Law provides grounds for enhanced mitigation of governance risks and each bidding documents/RFP will provide for channels and contacts of both Government and Bank through which interested parties may lodge their procurement complaints.	During implementation
Misrepresentation of staffing/documents in the bids/proposals of bidders	The project implementing agencies (National Level and Sub-national levels) shall carry out due diligence in verifying the proposed staffing and document submitted directly with the proposed staff/consultants, former clients of bidders, and other associated entities/manufacturers. Fraud and corruption policies in the Bank guidelines as well as in the bidding documents/RFP and contracts shall be applied in case of misrepresentation.	During the bid/proposals evaluation process and contract execution.

34. Based on the current governance and procurement environment, and weak capacity of the project implementing agencies, the overall procurement risk is high. However, the identified risks would be managed and mitigated through the above agreed action plan, and the residual procurement risk of this proposed Mekong Integrated Water Resources Management Project Phase III is substantial.

35. **Procurement Plan.** A procurement plan dated January 19, 2016 for the whole life of the project has been prepared and the summary is presented below.

A. Goods, Works, and non-consulting services. Prior Review Threshold: Procurement Decisions subject to Prior Review by the Bank, as stated in Appendix 1 to the Bank's Guidelines for Procurement, are as follows (Table A3.3):

Table A3.3: Prior Review Thresholds for Goods, Works and Non-Consulting Services

#	Procurement Method	Contract Value Threshold (\$'000)	Prior Review Threshold (\$'000)	Comments
1.	ICB (Goods)	>=600	All	All ICB contracts
2.	NCB (Goods)	100 – 600	First NCB	First contract procured by each procuring agency
3.	Shopping (Goods)	<100	First contract	
4.	Direct Contracting (Goods & Works)	-	> 5	
5.	ICB (Works)	>= 2,000	All	All ICB contracts
6.	NCB (Works)	200-2,000	All >1,000 and First NCB < 1,000	
7.	Shopping (Works)	<200	First contract	
8.	Community participation in Procurement	-	-	Project Operation Manual acceptable to the Bank

Table A3.3.1: Summary of Planned Procurement Packages for Component 1 under FiA

Description	Estimated Cost (\$'000)	Procurement Method	Domestic Preference	Review by the Bank	Comments
Procurement of Works					
Hatchery construction, civil works and installation of equipment and Demarcation of CFi Fishery Areas	920	NCB	Yes	Prior	2 packages, 1 for prior review
Construction of Office for PFiA Stung Treng and Kratie and Office renovation for FiA	160	Shopping	No	Post	2 packages, 1 for prior review
Procurement of Goods					
Procurement of vehicles,	130	NCB	No	Prior	1 package
Procurement of office equipment, furniture, boats, motorcycles, Lab equipment, Mapping Equipment	213	Shopping	No	Prior	7 packages, 1 for prior review

Table A3.3.2: Summary of Planned Procurement Packages for Component 1 under CNMC

Description	Estimated Cost (\$'000)	Procurement Method	Domestic Preference	Review by the Bank	Comments
Procurement of Works					
Construction of PDOWRAM office building, in Kratie, Steung Treng , Rattanakiri, and Mondulkiri Province (4 buildings)	390	NCB	Yes	Prior	1 package
Procurement of Goods					
Procurement of vehicles, Water and hydrological measurement equipment and Supply and Installation of Meteorology measurement equipment	798	NCB	No	Prior	3 packages, 1 for prior review
Procurement of office equipment, furniture, boats, motorcycles, Hydro-meteorological information equipment//software for PDORAM & MOWRAM management,	246	Shopping	No	Post	5 packages, 1 for prior review

B. Selection of Consultants. For Selection decisions subject to Prior Review by Bank, as stated in Appendix 1 to the Guidelines Selection and Employment of Consultants, the prior review thresholds are as follows (Table A3.4):

Table A3.4: Overview of Prior Review Thresholds for Selection of Consultants

	Selection Method	Procurement Method Threshold US\$	Prior Review Threshold US\$	Comment
1.	QCBS, QBS, LCS (Firms)	= >300,000	>\$100,000	
2.	CQS	< 300,000	>100,000	
3.	Single Source Selection		Where justified and subject to IDA's prior agreement >10,000	
4.	Individual Consultants		all long-term positions and fiduciary / legal positions	

- C. The Short list of consultants for services estimated to cost less than US\$200,000 equivalent per contract may comprise entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines. In the case where no sufficient number of national firms is available, international advertisement (REOI on UNDB) can be applied.

Table 3.4.1: Consultancy Assignments for Component 1 under FiA

Description of Assignment	Estimated Cost (US\$' 000)	Selection Method	Review by the Bank	Comments
Design and Supervision of Hatchery Construction (Firm)	75	CQS	Prior	
Fishery Resource Management Specialists, Community Fishery Specialists, Project Coordinators, Project Assistants, Gender Specialist, Environmental Management consultants, Community Facilitators, Livelihood Specialists, procurement consultants, and financial management consultants, etc.	1,723	Selection of Individual Consultants	Post	More than 23 individual consultants would be selected at national level, and provincial level.

Table 3.4.2: Consultancy Assignments for Component 2 under CNMC

Description of Assignment	Estimated Cost (US\$' 000)	Selection Method	Review by the Bank	Comments
External audit firm	50	CQS	Prior	
NIS upgrading support consultant (Firm)	50	CQS	Post	
Component 2 Technical Water Resource Management (Firm)	2,500	QCBS	Prior	
International and national procurement consultants, International and national financial management consultants, Project account, Internal Auditor consultant etc.	322	Selection of Individual Consultants	Prior	6 individual consultants would be selected at national level.(Fiduciary positions)

Environmental and Social (including safeguards)

36. **Bank's safeguard policies triggered.** The Project has been classified as 'Category B' and five of the Bank's safeguard policies are triggered: *Environmental Assessment (OP 4.01)*, *Natural Habitats (OP/BP 4.04)*, *Indigenous Peoples (OP 4.10)*, *Physical Cultural Resources (OP/BP 4.11)*; *Involuntary Resettlement (OP 4.12)*, and *Projects on International Waterways (OP 7.50)*. No major adverse impacts on the local environment or local communities are expected. Potential

negative environmental and social impacts are of small scale, localized and temporary, and could be adequately mitigated through appropriate measures.

(a) **Environmental Assessment (OP/BP 4.01).** The project will involve rehabilitation of critical small-scale infrastructures (e.g., village access roads, foot bridges, etc.), rehabilitation/construction of a small hatchery under Component 1, and construction of hydrological observation stations along the Sekong and Sesan Rivers under Component 2.

(b) **Natural Habitats (OP 4.04).** Implementation of Component 1 involves the Ramsar site located at the Lao PDR-Cambodia border in Stung Treng Province.

(c) **Indigenous Peoples (OP 4.10).** In the target provinces, in 2010 the percentage of indigenous and minority groups range from 12 percent in Stung Treng out of a total population 112,237; 17 percent in Kratie out of a total population of 331,592; 74 percent in Ratanakiri out of a total population of 156,705; and 70 percent in Mondulakiri out of a total population of 62,218. There are over 10 indigenous groups and ethnic minority groups include Khmer Islam, Vietnamese, Chinese and Lao. In terms of ethnic relations, the Cambodian people in Stung Treng, Kratie, Ratanakiri and Mondulakiri often refer to themselves as Nek Srok Lue (literally ‘uplanders’) which denotes people who inhabit the agricultural zone and who grow rice and cash crops for either their own consumption or for sale. Hill tribes or Khmer Lue, as they are collectively known, are concentrated in the mountainous regions of northeast Cambodia.

(d) **Physical Cultural Resources (OP/BP 4.11):** The hatchery subproject is the only identified works contract that will require significant excavation and earth works. The hatchery EMP includes a check on potential impacts on PCR. Archaeological chance finds will be covered by a chance-finds procedures clause included in the works contract. In the event any other significant civil works projects are undertaken, the chance-finds procedures will be included in the contract.

(e) **Involuntary Resettlement (OP 4.12).** The investments proposed are of small scale and rehabilitation by nature; however, the project might involve unavoidable land appropriation mainly for the construction of small scale community infrastructure. In addition, in developing community fisheries management plans, fish conservation areas may be established, resulting in reduced access to resources during certain times of the year.

(f) **Projects on International Waterways (OP/BP 7.50).** The proposed project would carry out investments within the basin of the Mekong River, an international river shared by Lao PDR, Cambodia, Thailand, Vietnam, Myanmar and China. Therefore, the proposed project triggers the OP 7.50.

Project impacts and mitigation – including key safeguard documents.

37. An Initial Environmental and Social Impact Examination (IESE) has been carried out with the support of a team of international and national consultants. The study was conducted through

a desk review of available documents and reports, including various safeguard instruments being used in the countries; field visits; and meeting with agencies, local authorities, and local communities, including carrying out consultation with ethnic groups during the finalization of the IESE report and safeguard instruments. The IESE provided background on the lower Mekong as well as key project sites and carried out a simple checklist for potential negative impacts and proposed mitigation measures. The IESE also verified that the proposed Project will not adversely affect sites with archeological, paleontological, historical, religious, or unique natural values and will not involve activities causing damage to natural habitats, logging or large forest clearance.

38. **Environmental.** The overall environmental impact of the project is positive as the proposed investment will enable hydrological and water quality (i.e., sediment) data collection and analysis and to pilot community fisheries and contribute to the establishment of a common approach among the LMB countries for sustainable community fisheries co-management in key spawning and feeding habitats of regional significance. The physical investments proposed under the project – the rehabilitation of critical small-scale infrastructures and construction of hydrological observation stations – will not cause indirect and/or long-term impacts due to anticipated future activities in the project area.

39. The main potential negative impacts of the project include limited land acquisition, dust, noise, and construction wastes resulted from small civil works. However, these impacts are assessed to be small, localized, temporary, and possible to mitigate through good practices and close monitoring. To mitigate the potential negative impacts due to civil works, good engineering practices and environmental codes of practices would be required as well as close supervision of contractors. During project preparation, an ESMF has been prepared by the CNMC and FIA to address environmental and social issues related to implementation. Given that there will be minor environmental impacts associated with civil works of rehabilitation of the critical small-scale infrastructure (e.g., roads, foot bridges, etc.) and construction of monitoring stations, a number of Environmental Codes of Practices were prepared as part of the ESMF. These ECOPs comprise a set of measures to mitigate potential negative environmental impacts during construction through application of good construction and management practices. During project implementation, ECOPs will be included in bidding documents and contracts to make sure that contractors understand and strictly adhere to environmental covenants during construction. This requirement will be included in the safeguard part of the POM. A monitoring program will be carried out by the Client to ensure that contractors comply with mitigation measures as indicated in ECOPs and ambient environmental quality meets national required standards. Additionally, consultations with local authority and locally-affected people will be conducted as necessary to address Environmental Assessment related issues in a timely manner.

40. A separate EMP has been prepared for the hatchery, and has been disclosed and consulted in parallel with the ESMF. The EMP include (i) a description of detailed potential negative and positive impacts due to the hatchery, along with proposed mitigation measures to be taken during the implementation and operation to eliminate or offset adverse environmental impacts, and (ii) actions needed to implement these measures. In the event the location of the proposed hatchery is changed to another site during project implementation, a new EMP will be prepared and disclosed and consulted per the requirements of the ESMF, prior to the undertaking of any activities in the new location.

41. Civil works within the Ramsar site as part of Component 1 will not cause any significant impacts due to their small scale and simplicity. Special attention will be given to ensure that the activities in and/or nearby the Ramsar sites will be undertaken with the highest care and consistency with the management plan of the site and in close coordination with the agency responsible for managing the Ramsar site.

42. **Social.** Only small/minor land acquisition is anticipated as a result of small-scale civil works. No adverse impacts are anticipated for the ethnic minority peoples present in the project area. To address the negative impacts associated with land acquisition for small-scale civil works, a Resettlement Policy Framework was prepared for Cambodia in accordance with the Bank's OP 4.12 to minimize, mitigate and/or compensate for all identified adverse impacts. The RPF will guide the preparation and implementation of sub-project RAPs to be identified during project implementation. In particular, it articulates: (a) the entitlements for compensation and mitigation measures for all losses of assets (if any); (b) community consultation and participation process; (c) gender mainstreaming strategies; (d) grievance redress mechanism; (e) monitoring and evaluation; and (f) public consultation and disclosure. Voluntary donations for land, crops, or assets associated to land will not be accepted unless for very minor donation of affected land as a result of the civil works with a consensus and informed decision made by the affected households. Physical resettlement of people and assets are not allowed and such impacts will be screened through application of the RAP checklist.

43. The ethnic minority communities to be involved in the project are expected to benefit from investment and livelihood support activities. To guide consultations and the participatory process with ethnic minority peoples in line with the Bank's policy on indigenous peoples, an IPPF was prepared for Cambodia. The IPPF describes a preliminary screening of indigenous/ethnic minority peoples and how the policy is applied to the Project as well as a sample public consultation framework, including the content for the preparation of a specific Indigenous Peoples Development Plan, grievance redress procedures, and monitoring/reporting requirements. This is to ensure that the project is designed and implemented to maximize benefits for the ethnic minority peoples.

44. Public Consultations and information disclosure: Stakeholder participation has been promoted during the preparation of the Project and this approach will be continued throughout implementation. This participation is to ensure that the local communities, especially the indigenous peoples/ethnic groups, understand the objective of the Project, and benefit from the information and knowledge to be acquired from the investments. The participation of both men and women, ethnic minority groups and involvement of interested non-government organizations (NGOs) and civil societies are also key elements of IWRM to improve governance in the water resources management.

45. Consultation has been completed with key stakeholders, including CNMC, MAFF, FiA, MOWRAM, the Ministry of Economy and Finance, local communities and some Civil Society Organizations. Following public consultation in early 2011 to present the planned activities under Component 1 and proposed safeguards documents, a follow up public consultation at the project provinces was conducted by CNMC and FiA in early December 2013 and again in May 2014, to

inform them of the entire set of project activities, social and environmental impacts (including potential positive and negative impacts) as well as measures to enhance social and environmental benefits and avoid/mitigate/compensate potential negative social and environmental impacts. The public consultation confirmed overall broad support for the project, and all comments and suggestions from the key stakeholders have been incorporated into the ESMF, the RFP, and the IPPF.

46. All draft safeguards instruments including the ESMF, Hatchery EMP, RPF and IPPF were disclosed locally in local language, on May 8 2014, and on the World Bank's external website in English on May 26, 2014 in accordance with the World Bank policy on Access to Information. Updated documents ESMF and Hatchery EMP documents were also submitted to World Bank's external website in English and disclosed locally in both Khmer and English languages on November 10, 2015. In the event the location of the proposed hatchery is changed to another site during project implementation, a new EMP will be prepared and disclosed and consulted per the requirements of the ESMF, prior to the undertaking of any activities in the new location.

47. Implementation and monitoring arrangements and training. CNMC will be responsible for ensuring the overall compliance with the Government and the Bank's safeguards requirements, including reporting safeguards performance in the Project Progress Reports.

48. Given the limited local capacity to implement the World Bank's safeguards requirements and to address safeguards issues in general, a series of safeguard trainings will be provided to the project staff and key stakeholders during the first three years of project implementation. The safeguard training will include, but is not be limited to, the following aspects: (a) overall Bank's safeguard policy applicable to the project; (b) project-specific issues and adopted safeguards measures; and (c) monitoring and reporting requirements. This training is to ensure that: (a) the proposed project activities will be properly screened; (b) the ECOP is included in the bidding documents and contracts and supervision and monitoring of the contractor performance is conducted by the supervision consultant; and (c) close consultation with local agencies and communities is carried out throughout project planning and implementation.

Monitoring & Evaluation

49. Data collection regarding the indicators in the results framework (Annex 1) would be carried out by PMU (CNMC) for Component 2 and CMU1 (FiA) for Component 1. The PMU would be responsible for compiling and verifying the information. The indicators designated for this project are fairly straightforward, and it was found that the current capacity of the above-mentioned entities is adequate to collect information on the indicators. In addition, two supplemental indicators will be tracked during project implementation: i) CPUE for important species of fish, and for the multispecies assemblage to provide information on whether fish stock in the project area have been maintained or enhanced; and ii) incomes of households receiving livelihood support.

Annex 4: Implementation Support Plan

Cambodia: Mekong Integrated Water Resources Management Project Phase 3

Strategy and Approach for Implementation Support

1. The strategy for the Bank's implementation support for the proposed M-IWRM-3 has been developed based on the nature of the project and its risk profile. The Systematic Operations Risk Rating Tool (SORT) rates the overall implementation risk as Substantial. The following risk elements are considered to be substantial: (a) Political and Governance; (b) Sector Strategies and Policies; (c) Technical Design; (d) Institutional Capacity for Implementation and Sustainability; and (d) Fiduciary.

Implementation Support Plan

2. A unified team, comprising staff from headquarters, regional and country offices will be maintained to monitor progress and provide clients with technical support for the entire Mekong IWRMP. In this way, the Bank can provide adequate leverage to maintain synergies between (and integration of) these three projects, thereby supporting the achievement of a regional objective.

3. In order to mitigate the risks mentioned in paragraph 1, during the first 18 months of Mekong IWRMP-3 implementation, the Bank support missions will be fielded every three to four months. These will include short follow-up missions in order to proactively provide the CNMC and the FiA with technical guidance and fiduciary oversight to facilitate project implementation and efficient use of the financial resources. Implementation support missions will also focus on key technical issues such as establishment of community fisheries, institutional strengthening for river basin management, identification of the key locations for hydromet stations and so on, through the participation of Bank experts.

4. In parallel with technical supervision, training courses on the core project administration issues (i.e., fiduciary and safeguards aspects) would be carried out during the earliest implementation period. Training would be completed for the CNMC, FiA and MOWRAM both at the national and provincial levels to ensure full understanding of the governing guidelines (especially procurement) and operational policies (particularly involuntary resettlement). The Bank will also review and confirm that adequate qualified staff and consultants are in place for project management (including the safeguards), and technical aspects. The Bank will maintain regular contact with the MRC to inform them of the major findings of the implementation support missions, and request their follow up as necessary.

5. It is envisaged that the Bank will continue to participate in the key MRC management meetings, such as Joint Development Partners' Meetings and the Council Meetings, to: (a) monitor the overall governance of the MRC; (b) nurture regional collaboration with other development partners; and (c) monitor progress in processing large scale infrastructure.

6. In order to provide timely implementation support, through missions and on-demand guidance, the majority of the Bank task team, particularly fiduciary and safeguards staff, will

continue to be based in the region. The table below indicates the level of effort required annually from the Bank team to provide implementation support for the project. As described above, in order to maintain the close coordination with development partners, the Bank team will also participate in MRC development partner meetings periodically.

Skills needed	Number of Staff weeks (annually)	Number of trips (annually)	Resources (US\$)	Comments
Task Team Leader (WRM Specialist)	6	4	30,000	Region Based
Co-Task Team Leader	6	4	12,000	Region based
Water Resource Specialist	6	4	18,000	Region based Consultant
Hydro-Met Specialist	4	3	12,000	Region based Consultant
Environmental Specialist	3	3	9,000	Region based
Social Development / Gender Specialist	6	4	18,000	Region based
Procurement Specialist	4	3	8,000	Phnom Penh based
Financial Specialist	4	3	8,000	Phnom Penh based
Fisheries Specialist	4	3	12,000	Consultant
		Total	127,000	

Annex 5: Economic and Financial Analysis

Cambodia: Mekong Integrated Water Resources Management Project Phase 3

1. The analysis adopts a combination of qualitative economic assessment combined with a quantitative analysis of the financial viability of the fish hatchery. The economic assessment is based on a preliminary conceptual design for a hatchery located in Stung Treng. The final location of the hatchery will be confirmed during project implementation.
2. **Qualitative Component 1 Assessment:** The component aims to establish sound fisheries resources management in the two provinces of Kratie and Stung Treng. The main socio-economic benefits of the planned activities come from the improvement of the communities' resilience to development pressures in the Mekong arising from improved fisheries management and by supporting community development through small rural investments. However, quantifying these benefits is difficult because: (a) the current status of exploitation and the expected management responses of most fish populations in the basin are currently unknown; (b) the nature and rate of basin development and its effect on fisheries are difficult to predict, and (c) the scope of small-scale infrastructure to be supported will be identified by participating communities during the project implementation phase.
3. According to the WorldFish Center, Cambodia's freshwater capture fisheries officially rank fourth worldwide after China, India and Bangladesh.³ Per capita fish consumption in Cambodia is among the highest in the world (49 kg/capita/year).⁴ Second only to the unique fishery in the Tonle Sap Lake and River, the project target areas of Stung Treng and Kratie provinces are among the most important in the country, ranked as 1st and 6th in terms of landing value, respectively. The net economic value of aquatic resource (fishing and fish related) based activities has been estimated as US\$190,000 for an average village community, although this value does vary greatly depending upon the location of villages and hence the degree of dependence on aquatic resources and market access. Annual returns to labor (the amount the communities earn from fishing) were estimated to be an average of US\$108,614/village/year.⁵
4. While the percentage of full-time fishermen in these two provinces is not large (6.5 and 3.5 percent of total population in Stung Treng and Kratie, respectively), the majority of the people are engaged in capture fisheries on a part-time basis. Nearly 90 percent of the households regularly harvest aquatic resources, and fish products provide about 80 percent of the animal protein in the diet nationwide.. It is apparent that the fisheries sector clearly plays a vital role in food security and maintaining and improving nutrition. An average household's annual consumption of freshwater fish is nearly 150 kilograms, estimated to cost US\$600-750 at the market value. Considering that that expenditure on other foods, utilities, health care, and education is about US\$780 per year, fish account for about 40-50 percent of the total household expenditure.

³ Baran E., Jantunen T. and Chong C. K. 2007 Values of inland fisheries in the Mekong River Basin. WorldFish Center, Phnom Penh, Cambodia. Further citations of this report are shown as (WorldFish Center, 2007). The Center's website is: <http://www.worldfishcenter.org/>

⁴ While there are on-going discussions among researchers, the latest data from FiA suggest that the annual catch is about 445,000 metric tons from inland fisheries.

⁵ WorldFish Center, 2007.

5. Unlike agriculture projects, it is difficult to develop a household model in the fishing villages because of substantial variation regarding land holdings and dependency on capture fisheries (resulting from geographical location and equipment). The project aims to support activities included in the Community Development Plans, which include, in addition to identified small scale infrastructure, demonstration activities such as livestock (mainly poultry), household aquaculture and home garden.

6. As the project approach is to help fishing communities improve fisheries resources management in the two provinces, the project will assist the FiA in closely monitoring the fish catch during the project period and beyond. In addition, a baseline rapid rural appraisal has been carried out for the selected villages to record the household expenditures; a rapid rural appraisal would be conducted at the mid-term and the completion to assess economic impacts of the project.

7. **Qualitative Component 2 Assessment.** The major economic benefits of Component 2 come from the hydro-met investments and improved water resources management capacity. Currently, there are no hydro-met stations in either the 2S or the 4P basins in Cambodia. Construction of these hydro-met stations is expected to accrue benefits from reduced disaster losses and productivity increases, particularly in agriculture and hydropower. Improved capacity, in terms of enhanced modelling tools and equipment for PDWRAMs will help to significantly improve the management of economically important water resources.

8. **Transboundary Benefits:** The joint management of shared fishery resources with Laos and water resources with Vietnam in the 2S basin are expected to generate significant benefits for all three countries.

9. **Financial Analysis of Hatchery:** The proposed hatchery is to be built upon approximately four hectares of land owned by the Ministry of Agriculture located approximately 5.4 km from Stung Treng town on the outskirts of Strepo village, Srapresay commune 300 m from the Sekong River and 7 km from the Stung Treng Ramsar site. An environmental impact assessment for the hatchery was prepared in February 2014. The completed hatchery will consist of three buildings (a fish hatchery, an office with accommodation, and store room); 15 concrete tanks for fingerlings and Moina (water flea used as hatchling feed) production; and an unspecified number of larger earth ponds. Inside the hatchery building there will be further concrete and fiberglass tanks. It is proposed that the hatchery will produce fingerlings of indigenous or non-native species for grow-out. Eventually, the hatchery may be used to stock dam reservoirs with indigenous species. However, this is unlikely to be undertaken in the foreseeable future and therefore has been omitted from the economic assessment.

10. Key parameters for the evaluation of the economic benefit of grow-out operations (fish-farming) by local communities were derived from existing household-based operations at the proposed project location sampled in March 2015 (Table 1 below). The sample comprised operations using concrete tanks, CT (n = 4); river cages, RC (n = 1); and earth ponds, EP (n = 2) in Stung Treng (ST) and Kratie Provinces (K). Two of the sampled concrete-tank operations were

reported to be poorly managed⁶ and unprofitable, and were therefore not included in the assessment.

11. Assuming that initial investments (infrastructure) are repaid over a period of 10 years, the average annual net benefit across the case studies examined (the reported profit) was estimated to be in the order of \$4 m⁻² of the grow-out system. For concrete tank systems, the annual net benefit is approximately \$6 m⁻².

12. Return on investment for those households reporting benefit was found to be in the order of 20 percent to 50 percent over three years or 20 percent to 60 percent over five years. Initial farm investment (construction costs) can be repaid within three to five years.

13. Cage culture is the most profitable grow-out system but requires significant initial investment and costly feed inputs during each production cycle. Feed conversion ratios ranged from 0.93 to 1.82 suggesting that, in some cases, supplementary feeding was taking place.

14. The evaluation below (Table 2) assumes that the project would support concrete tank systems for growing-out (farming) African catfish (*Clarias gariepinus*) – a non-native species. Tanks would have a total area of 13,000 m² comprising, for example, two 8 m² tanks constructed for about 12 households associated with each of the 70 CFIs supported by the project. Fingerlings would be stocked at 200 m⁻². This would require an investment of approximately \$422,000 or 75 percent of the total project budget allocated to livelihoods enhancement. Fingerlings would be purchased from the hatchery at a unit price of \$0.05 (market price).

15. Hatchery investment and operational costs were provided by the Government of Cambodia, FiA. It was assumed that fingerling production accounts for 80 percent of the operation and maintenance costs. Fingerling unit cost of production was estimated to be \$0.01 from year 4 onwards. Revenue would be generated from the sale of fingerlings with a unit price of \$0.05.

16. Based upon these assumptions and parameter values, the hatchery would have an economic internal rate of return (IRR) of approximately 17 percent (Table 2). This excludes the benefits accruing to the fish farmers from growing out the fingerlings. The net present value is estimated between approximately US\$314,000 and US\$138,000 depending upon the discount rate applied (5-10 percent).

17. Should only 50 percent of the livelihoods budget be allocated for this type of fish culture and assuming no other capital investment was available to members of the community to construct tanks for fish farming, then the return on the hatchery investment would be marginal (three percent) given the reduced demand for, and sales of, fingerlings. Should the entire livelihoods budget be invested in these fish farming systems then favorable returns of 13 percent could be achieved.

18. **Sensitivity Analysis.** A sensitivity analysis was conducted based on the following risks: (i) a 10 percent increase in construction costs; (ii) a 10 percent increase in operational costs; (iii) a one-year delay in operation (fingerling production); and (iv) a 10 percent reduction in the area under community grow-out operations from the baseline (13,000 m²). Under the scenarios

⁶ Poor fingerling transportation and management practices.

examined, the IRR decreased between 0.8 percent and 4.6 percent (Table 3). The IRR was most sensitive to the one-year delay to fingerling production.

19. A reduction in fingerling unit costs would improve the benefit of grow-out operations for participating communities from \$6 m2 y-1 to \$7 m2 y-1, equivalent to a 16 percent increase. Demand for fingerlings for grow-out by local fisher communities will require that viable operations can be established and sustained in the project location.

20. Recent surveys suggest that non-native species can be farmed profitably with good rates of return. In spite of imports of fish from Vietnam, farmers at the project site can sell all of their production. It remains uncertain if systems for indigenous species, other than cage, are viable at the project location. The project might therefore consider undertaking pilot production systems for perhaps two of the nine proposed indigenous species which are not currently farmed to assess their technical and economic viability as future aquaculture species. This could be undertaken alongside pilot projects to assess the benefits of stocking larger water bodies.

21. As well as African catfish in concrete tanks, Tilapia grown in earth pond systems also appear viable and would benefit further if higher priced red tilapia can be grown. Pangasius sanitwongsei and red tilapia river cage culture shows potential in both provinces. The Pangasius cage culture system benefits from low unit production costs but requires significant investment in cages and feed.

22. It is essential to support local communities through technical assistance to ensure the viability of the grow-out operations. Technical assistance should address all aspects of design, operation, access to credit, capacity building and training and extension. Experience suggests that tank and pond grow-out systems should only be located where sufficient borehole water exists to support at least three, three-month production cycles.

23. The hatchery should be capable of producing the volumes of fingerlings included in the economic evaluation (approximately three million per year) but relying on water supplied from a nearby seasonal spate river potentially exposes the hatchery to disease risk. Alternative site locations for the hatchery might therefore be considered. These might include locations below reservoir irrigation schemes that could potentially provide gravity-fed water of high quality throughout the year.

Table A5. 1 Comparison of the economic performance of individual grow-out operations assessed at the project site.

ST – Stung Treng; K- Kratie; CT – concrete tanks; RC – river cage; EP – earth ponds.

	<i>Clarias gariepinus</i>	<i>Clarias gariepinus</i>	<i>Clarias gariepinus</i>	<i>Clarias gariepinus</i>	<i>Pangasius sanitwongsei</i>	<i>Clarias gariepinus</i>	<i>Oreochromis niloticus</i>
Province	ST	ST	ST	ST	K	K	K
Grow-out system	CT	CT	CT	CT	RC	EP	EP
Stocking area (m ² or m ³)	8	8	40	8	104	160	80
Production cycle duration (months)	3	3	3	3	12	7	10
# Fingerlings stocked	800	600	3300	600	2000	400	240
Stocking density (# m ⁻²) or (# m ⁻³)	100	75	82.5	75	19.2308	2.5	3
Fingerling Unit Price (\$)	0.05	0.05	0.05	0.05	0.06	0.05	0.06
Fingerling cost (\$)	\$40	\$30	\$165	\$30	\$120	\$20	\$14
Feed quantity (kg)	\$70	\$50	\$375	\$46	\$1,500	\$300	\$150
Unit Feed Cost (\$/kg)	\$1	\$1	\$1	\$1	\$1	\$1	\$1
Total Feed Cost \$	\$70	\$48	\$413	\$51	\$1,275	\$240	\$120
Fuel, electricity, transport, pumping (\$)	\$10	\$10	\$20	\$10	\$30	\$30	\$50
Labour costs (\$)	\$4	\$4	\$8	\$4	\$15	\$10	\$25
Total Costs	\$124	\$92	\$606	\$95	\$1,440	\$300	\$209
Investment (\$)	\$260	\$260	\$1,040	\$260	\$3,000	\$400	\$400
Number of fish harvested	500	450		160	1765		
Weight of fish harvested (kg)	75	45	354	40	1500	165	120
Mean weight (g)	150	100		250	850		
Market price (\$/kg)	\$2.25	\$2.00	\$2.10	\$2.25	\$1.75	\$2.50	\$2.50
Income (\$)	\$169	\$90	\$743	\$90	\$2,625	\$413	\$300
Survival Rate of fingerlings (%)	63%	75%		27%	88%		
Feed Conversion Ratio (FCR)	0.93	1.11	1.06	1.15	1.00	1.82	1.25
Supplementary Feeding?	Y	Y	Y	?	?	Y	?
Production cycles per year	2	2	2	1	1	1	1
Profit per production cycle (\$)	\$45	-\$2	\$138	-\$5	\$1,185	\$113	\$91
Profit per year (\$)	\$90	-\$3	\$276	-\$5	\$1,185	\$113	\$91
Payback period (Years)	2.9	NA	3.8	NA	2.5	3.6	4.4
Return on Investment (3 years) (%)	27%	NA	18%	NA	49%	26%	26%
Return on Investment (5 years) (%)	30%	NA	19%	NA	58%	30%	31%
Production costs/kg (\$/kg)	\$1.65	\$2.03	\$1.71	\$2.37	\$0.96	\$1.82	\$1.75
Net benefit per year (\$ m⁻²)	\$7.94	-\$3.63	\$4.30	-\$3.83	\$8.51	\$0.45	\$0.63

Table A5.2: Results of the Financial Analysis of the hatchery

	Year 1	Year 2	Year 3	Year 4-10	Year 11	Total
<i>Project Cost</i>						
Construction (\$)	\$331,436					
Operation and Maintenance (\$)	\$6,714	\$16,785	\$33,570	\$33,570	\$33,570	
Total Project Cost (\$)	\$338,150	\$16,785	\$33,570	\$33,570	\$33,570	\$657,065
<i>Production details</i>						
Fingerling production for grow-out (#)		260,000	780,000	2,600,000	2,600,000	
Fingerling unit production costs (\$)		\$0.05	\$0.03	\$0.01	\$0.01	
Area under grow-out operations (m2)		1,300	3,900	13,000	13,000	
<i>Project Benefits</i>						
Benefits from community grow-out operations (\$)		\$7,800	\$23,400	\$78,000	\$78,000	
Sales of fingerlings (@\$0.05 per fingerling)		\$13,000	\$39,000	\$130,000	\$130,000	
Residual value (\$)					\$165,718	
Total Project Benefit (\$)		\$13,000	\$39,000	\$130,000	\$295,718	\$1,257,718
Net Benefit (Benefit-Cost) (\$)	-\$338,150	-\$3,785	\$5,430	\$96,430	\$262,148	\$600,653
			Return on investment			91%
			Annual return on investment			8%
			Internal Rate of Return			17%
			NPV (@5 % discount rate)			\$314,487
			NPV (@10 % discount rate)			\$138,137

Table A5.3: The effect of varying the proportion of the project livelihood budget invested into the grow-out of African catfish on hatchery return on investment

Total culture area (m)	8600	13000	17000
Livelihoods budget expenditure (%)	50	75	100
Number of tanks (@8m ²)	1075	1625	2125
Return on investment (11 years) (%)	35	91	143
Annual return on investment (5)	3	8	13

Table A5.4: Sensitivity Analysis

Scenario	IRR %	IRR change
Base case	16.6	0
Construction costs increased by 10%	14.9	-1.7
Operation cost increased by 10%	15.8	-0.8
Production delay by 1 year	12	-4.6
Area under grow-out reduced by 10%	14.1	-2.5

Annex 6: Mekong IWRM Program Context and Description

Cambodia: Mekong Integrated Water Resources Management Project Phase 3

Mekong River Basin Description

1. The Mekong River is a transboundary resource of significant socio-economic, environmental and cultural value. The Mekong River originates in the northeastern rim of the Tibetan Plateau and flows through Qinghai, Tibet, Yunnan (China), Myanmar, Thailand, Lao PDR, Cambodia, and empties into the South Sea in Vietnam. The catchment comprises 795,000 square kilometers (km²), and stretches nearly 5,000 kilometers. The total population living in the LMB is estimated at approximately 66 million (86 percent of Cambodia, 97 percent of Lao PDR, 36 percent of Thailand and 20 percent Vietnam), with a majority living in rural areas. By 2020, the population is estimated to reach 80 million. At present, much of the rural population still lives near or under the poverty line and relies mainly on the exploitation of the natural resources of the Mekong River and its tributaries for basic food security and livelihood.

2. Capture fisheries is of particular importance, and the seasonal flooding of the wetlands and flood plains (covering nearly 10 percent of the basin) is a critical determinant of the high productivity of the natural fisheries. An estimation made by the Mekong River Commission (MRC) suggests that the average capture fisheries yield is about 1.5 to 2 million tons per year, with an additional 0.55 tons per year of other aquatic animals. Fisheries and aquatic animals provide the great majority of animal protein in the LMB. The Basin's wetlands also play an important role to support 15 globally-threatened bird species as well as the endangered Siamese Crocodile and Irrawaddy dolphin, and 20 species of turtle.

3. Rice cultivation is also crucial, and largely depends on the natural flooding regime, which also helps to maintain soil fertility and provides wet season habitat for fisheries. Wet season lowland rice comprises 84 percent of rice production systems in Cambodia and Northeast Thailand, 67 percent in Lao PDR and 40 percent in Vietnam. Dry season irrigated rice has remained relatively limited.

4. Management of natural flow variation presents a major challenge in the Basin. High seasonal discharge patterns, with considerable flows during the wet season are a result of the snow melt in the Himalayas and monsoon rains in the LMB. During the dry season, flows in the major tributary rivers are reduced to a fraction of the wet season discharge. Annual runoff averages around 475 cubic kilometer per year (km³/year), with China and Myanmar constituting around 18 percent, while Cambodia and the Lao PDR constitute 63 percent of the total Mekong flows.

5. Large parts of the Mekong Basin are still unregulated. The tributaries in Northeast Thailand have been developed close to their potential, while there are dams on the upper mainstream in China, and the Mekong Delta in Vietnam has extensive irrigation canals. Lao and Cambodia, however, only divert about one percent of the Mekong annual water resources in their territories. Thus, there is substantial scope for water resources development in the LMB, both for further hydropower and for dry-season irrigation development. The full development potential for hydropower is estimated at 30,000 MW, and only 10 percent has been developed to date.

6. Climate change also poses a new challenge to the LMB countries. While the models predict overall temperature increases, predictions regarding precipitation are less certain. Furthermore, extreme weather events - both floods and droughts - are likely to become more frequent, with less predictability in weather patterns.

7. Because of the hydrological connectivity across the Basin, investments for flood and drought risk mitigation, irrigation and hydropower in the main Mekong tributaries need careful coordination among the riparian countries and environmental consideration, since trade-offs and development risks expand across national boundaries.

Regional Cooperation

8. In the early 1990s, following the Paris Peace Agreement in Cambodia and the overall reduction in regional tensions, the four countries of the LMB signed the 1995 Mekong Agreement, in which they pledged to cooperate on the sustainable development of the Mekong River Basin and created the Mekong River Commission (MRC). China and Myanmar did not sign the Mekong Agreement, but participate as “MRC Dialogue Partners.” The MRC is composed of three bodies: i) the Secretariat which is the technical support entity; ii) the Joint Committee acts as the technical decision-making body and is composed one representative from each country, typically at the Department Director level; and iii) the Council, which is the policy making body and is composed of one representative from the country at the ministerial level.

9. The Agreement calls upon the MRC to periodically formulate a “BDS” and requires the member states to notify the MRC of proposed projects, and to engage in prior consultation on projects on the mainstream that “aim at agreement.” The MRC has been funded primarily by grants from development partners, typically on the order of US\$15 million per year; the World Bank Group has provided US\$19 million to the MRC since 2000.

10. The BDS 2016-2020 serves as a guideline to set out the development opportunities for basin-wide, joint and national implementation and medium-term strategic priorities and actions for all relevant actors. The BDS analyses the trends, takes a long-term outlook, and examines longer term water resources development and management needs and challenges. Subsequently, the BDS defines a range of basin-wide and medium term strategic priorities with 5-year actions that contribute to the optimal and sustainable development of the LMB, with increased regional benefits, minimized transboundary impacts, and strengthened cooperation among stakeholders.

11. The MRC will implement the BDS 2016-2020 at the regional level through the MRC Strategic Plan 2016-2020 and at the national level through the updated National Indicative Plans (NIPs). The NIP is a complementary plan to the BDS as it defines a range of basin-wide significant projects and activities that supplements the existing national plans. The MRC Strategic Plan calls for a downsizing of the MRC Secretariat staff and a process of decentralization of functions to MRC-member country agencies, allowing the MRC Secretariat to focus on core river basin management functions.

12. The MRC has facilitated the prior consultation process for two mainstream hydropower projects in Laos (Xayaburi in 2011 and Don Sahong in 2015), neither of which resulted in an agreement among the MRC member states. The Cambodian government has notified the MRC of the Lower Sesan 2 tributary hydropower project, but the project was not subject to prior consultation within the MRC.

Overall Mekong IWRM Program

13. The overall Program development objective is to establish key examples of IWRM practices in the LMB at the regional, national, and sub-national levels, thus contributing to more sustainable river basin development in the Lower Mekong. In order to achieve this objective, the Program (designed as a series of adaptable program loans) includes the following: (a) support implementation of tools and pilot activities for IWRM in the four riparian countries of the LMB (e.g. Thailand, Lao PDR, Cambodia, and Vietnam), together with improved communications and dialogue, (b) improve institutional capacity for integrated water resources management in selected countries, including strengthening hydromet systems, and (c) support improved floodplain management and aquatic resources management in areas of regional significance for regional environmental benefits and the enhancement of rural livelihoods in pilot areas. This program was developed in collaboration with the MRC and in 2010. The main elements of the program include:

14. *Support to the Mekong River Commission:* The World Bank has provided an US\$8 million regional IDA grant, scheduled to end in March 2018, and the Australian government has provided around US\$6 million, scheduled to end at the end of 2015. The two main activities are:

- Support to the MRC for the refinement and implementation of the “Rules for Water Utilization” that were developed under the Global Environmental Facility (GEF) funded World Bank executed Water Utilization Project with the MRC. These activities are funded mainly by Australia.
- Three trans-boundary projects, and two transboundary communication projects, which address water and environmental management at the transnational sub-basin level. These projects are implemented by the MRC and the NMCs, but are linked to the national components (M-IWRM-1, 2 and 3). These activities are funded mainly by the World Bank.

15. *Support to National Governments for Water Resource and Fisheries Management:* IDA regional credits have been provided to Laos and Vietnam, and are pending for Cambodia, to build up the capacity of each government so that it can both effectively manage its own water resources, as well as participate in Mekong basin management. The specific national projects include:

- Mekong IWRMP-1 Laos: (US\$18 Million, August 2012-March 2018): Developing national water resources capacity, hydromet development, river basin management in two Mekong sub-basins, irrigation development, and fisheries management.
- Mekong IWRMP-2 Vietnam: (US\$25 million, April 2014-December 2018): River basin management in the Upper Sesan and Srepok rivers (known as the 2-S basins); hydromet development in the upper 2-S basin and Mekong delta.

- Mekong IWRMP-3 Cambodia (US\$15 million, pending): Fisheries and aquatic resources management in Northern Cambodia, IWRM in the Northeastern Cambodia, and trans-boundary dialogue.

Mekong IWRMP-1

16. The PDO is identical to the overall Program objective to establish key examples of integrated water resource management practices in the LMB at regional, national, and sub-national levels, thus contributing to more sustainable river basin development in the lower Mekong. The project became effective on August 17, 2012 and is scheduled to close on March 31, 2018. Component 1 is being implemented by the MRC, while Components 2 and 3 are being implemented by the Government of Lao PDR.

17. *Component 1: MRC IWRMP: (US\$8.00 million):* The objective is to promote IWRM at the regional level through (a) facilitation of trans-boundary dialogue on critical water resources management issues among LMB countries to promote regionally-harmonized solutions, (b) establishment of a regional approach on environmental and disaster risk assessment, (c) promotion of the understanding of regional IWRM principles to a broad range of stakeholders, and (d) facilitate transboundary cooperation across the overall Mekong IWRMP activities at the national level.

18. The MRC IWRMP helps to link the national level activities financed through Mekong IWRMP 1, 2 and 3 at the transboundary level. For instance, both Lao and Cambodia national projects fisheries management components are linked through the MRC-supported transboundary fisheries project. In a similar manner, the Vietnam and Cambodia national water resource management components are linked through MRC-supported transboundary water resources management projects in the 2S basin and the Mekong Delta.

19. *Component 2: National Water Resources Management (US\$6.01 million).* This component supports legal, institutional, and human resources strengthening to implement IWRM and better water resources planning in Lao PDR through (a) development of a new Water Resources Law and (b) installing essential institutional capacity regarding water quality monitoring, hydromet modeling, and collection and analysis of the hydromet networks.

20. *Component 3: Improved Floodplain and Aquatic Resources Management in Regionally Significant Areas in Lao PDR (US\$12.58 million).* The component contributes to establishment of a pilot common approach among the LMB countries for (a) sustainable floodplain management, balancing livelihood support for local communities with enhancing regional ecological and biodiversity values in wetlands which are of basin-wise significance, and (b) sustainable community fisheries co-management in key spawning and feeding habitats of regional significance.

Mekong IWRMP-2

21. *Component 1: Support for the Institutional Development of Integrated Water Resources Management in the Vietnam Part of the Sesan-Srepok Basin (US\$3.4 million):* This includes (a) establishment and support for operation of a River Basin Organization (RBOs), (b) support for river basin planning and studies, (c) support for establishment of a water resources monitoring database system for the Sesan Srepok Basin, (d) support for capacity building and technical training for the staff and other stakeholders of the RBOs, (e) support for component management, including incremental operating cost, monitoring and evaluation, capacity building, provision of technical advisory services, purchase of goods (including vehicles) and facilitation of workshops and trainings.

22. *Component 2: Establishment of a Water Resources Monitoring Network at the Border Areas with Cambodia and Lao PDR in the Lower Mekong and a Water Resources Information System for the Vietnam Part of the Lower Mekong (US\$17.3 million):* This component supports (a) development of Water Resources Monitoring Networks at the border areas with Cambodia and Lao PDR in the Mekong Delta and the Central Highlands to measure and analyze water resources quality and quantity, (b) establishment of a Water Resources Information System for the Lower Mekong in Vietnam, (c) support for a Salinity Monitoring Pilot in Kien Giang Province, (d) support for component management, including incremental operating costs, monitoring and evaluation, capacity building, provision of technical advisory services, purchase of goods (including vehicles), and facilitation of training and workshops.

23. *Component 3: Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System in the Central Highlands (US\$7.6 million):* This Component include (a) strengthening of Hydrometeorology Network and Forecasting Services in the Central Highlands, (b) institutional strengthening and capacity building activities for MONRE and other users of forecasting services, in the operation and maintenance of the installed equipment and upgraded forecasting services, (c) regional integration for forecasting and early warning systems in the Lower Mekong, and (d) support for component management, including incremental operating costs, monitoring and evaluation, capacity building, provision of technical advisory services, purchase of goods (including vehicles), and facilitation of training and workshops.

24. *Component 4: Project Management (US\$1.7 million):* This Component supports the regional management and coordination of the Project, including (a) incremental operating costs of the PMU, (b) provision of technical advisory services, (c) purchase of goods (including vehicles), (d) facilitation of training and workshops, (e) monitoring and evaluation of Project implementation and impacts, (f) financial management, procurement, and safeguards, (g) audits, (h) capacity building, and (i) support for regional collaboration and coordination.

