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INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON

A PROPOSED CREDIT
IN THE AMOUNT OF SDR 16.30 MILLION
(US\$25.0 MILLION EQUIVALENT)

TO THE SOCIALIST REPUBLIC OF VIETNAM

FOR A

MEKONG INTEGRATED WATER RESOURCES MANAGEMENT PROJECT PHASE II

October 29, 2013

Vietnam Sustainable Development Unit
Sustainable Development Department
East Asia and Pacific Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective August 1, 2013)

Currency Unit	=	US\$
SDR 0.65186	=	US\$1
US\$1.534	=	SDR 1

FISCAL YEAR

January 1 – December 31

ABBREVIATIONS AND ACRONYMS

2S / 3S	Sesan-Srepok / Sesan-Srepok-Sekong Sub-Basin of the Mekong	NAWAPI	National Center for Water Resources Planning and Investigation
ADB	Asian Development Bank	MARD	Ministry of Agriculture and Rural Development of Vietnam
AusAID	Australian Agency for International Development	M-	Mekong Integrated Water Resources Management Program
CPS	Country Partnership Strategy	IWRMP	Vietnam Institute of Meteorology, Hydrology and Environment
NAWAPI	Center for Water Resources Planning and Investigation	IMHEN	Ministry of Industry and Trade
COD	Chemical Oxygen Demand	MOIT	Ministry of Natural Resources and Environment (Vietnam, Lao PDR)
DA	Designated Account	MONRE	Mekong River Commission
DARD	Department of Agriculture and Rural Development (Province)	MRC	Mekong River Commission Secretariat
DO	Dissolved Oxygen	MRC	Mekong Water Resources Assistance Strategy
DONRE	Department of Natural Resources and the Environment	MWR AS	NEA
DWRM	Department of Water Resources Management	NEA	National Executing Agency
ECOP	Environmental Code of Practice	NGO	Non-Governmental Organization
EMDP	Ethnic Minority Development Plan	NHMS	National Hydromet Services of Vietnam
EMPF	Ethnic Minority Policy Framework	NMC	National Mekong Committee
EPC	Environmental Protection Commitments	PAD	Project Appraisal Document
EVN	Electricity of Vietnam	PCMU	Project Coordination and Monitoring Unit of the MRC
FM	Financial Management	PDO	Program/Project Development Objective
GEF	Global Environmental Facility	PHRD	Policy and Human Resources Development
GIS	Geographic Information System	PMFM	Procedures for Maintenance Flow on the Mainstream
HYCOS	Hydrological Cycle Observation System (MRC)	PMU	Project Management Unit
IBRD	International Bank for Reconstruction and Development	PWQ	Procedures for Water Quality
ICT	Information Communication Technology	RAP	Resettlement Action Plan
IDA	International Development Agency	RBO	River Basin Organization
IESE	Initial Environmental and Social Examination	RPF	Resettlement Policy Framework
IFR	Interim Financial Reporting	RPSC	Regional Project Steering Committee
IPDF	Indigenous People's Development Framework	SOP	Series of Projects
IPF	Investment Project Financing	VNMC/	Vietnam National Mekong Committee/
IWRM	Integrated Water Resources Management	VNMC	VNMC Standing Office)
LMB	Lower Mekong Basin (Thailand, Lao PDR, Cambodia, Vietnam)	VNMC	Water Quality Monitoring Network (MRC)
		WQM	Water Quality Monitoring Network (MRC)
		WUP	Water Utilization Program

Units

km Kilometer

m³/sec Cubic meters (m³) per second

mg/L Milligrams per liter

Regional Vice President:	Axel van Trotsenburg
Country Directors:	Victoria Kwakwa
Sector Director:	John Roome
Sector Managers:	Jennifer Sara
Task Team Leader:	Toru Konishi, Cuong Hung Pham

MEKONG
Mekong Integrated Water Resources Management Project - Phase II

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PAD DATA SHEET

Mekong Regional

Mekong Integrated Water Resources Management Project- Phase II

PROJECT APPRAISAL DOCUMENT

East Asia and Pacific Region

EASVS

Basic Information			
Date:	October 29, 2013	Sectors:	General water, sanitation, and flood protection sector (100%)
Country Directors:	Victoria Kwakwa	Themes:	Water resources management (60%), Rural infrastructure and services (20%), other natural resources and environmental management (20%)
Sector Manager/Director:	Jennifer Sara /John Roome	EA Category:	B
Project ID:	P124942		
Lending Instrument:	IPF		
Team Leader(s):	Toru Konishi, Cuong Hung Pham		
Joint IFC: No			
Borrower: The Socialist Republic of Vietnam			
Responsible Agency: Ministry of Natural Resources and Environment (MONRE)			
Contact:	Trung Le Duc	Title:	Director General, Vietnam National Mekong Committee (VNMC)
Telephone No.:	+8490 3282898	Email:	Trung1658@gmail.com
Project Implementation Period:	Start Date: December 1, 2013	End Date:	December 31, 2018
Expected Effectiveness Date:	January 15, 2014		
Expected Closing Date:	April 30, 2019		
Project Financing Data(US\$M)			
<input type="checkbox"/> Loan	<input type="checkbox"/> Grant	<input type="checkbox"/> Other	
<input checked="" type="checkbox"/> Credit	<input type="checkbox"/> Guarantee		
For Loans/Credits/Others			
Total Project Cost :	30.0	Total Bank Financing :	25.0
Total Cofinancing :	0.0	Financing Gap :	0.0
Financing Source		Amount(US\$M)	
BORROWER/RECIPIENT		5.0	
IBRD			
IDA: New		25.0	
IDA: Recommitted			
Others			
Financing Gap		0.0	

Total									30.0
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Expected Disbursements (in US\$ Million)

Fiscal Year	2014	2015	2016	2017	2018	2019			
Annual	0.5	5.0	5.5	7.0	4.0	3.0			
Cumulative	0.5	5.5	11.0	18.0	22.0	25.0			

Project Development Objective(s)

The Program Development Objective for the overall series of projects is to establish key examples of integrated water resources management practices in the Lower Mekong basin at the regional, national, and sub-national levels, thus contributing to more sustainable river basin development in the Lower Mekong. The project development objective for this second phase of the program is to develop the capacity of the Ministry of Natural Resources and Environment, Vietnam National Mekong Committee and relevant agencies to manage trans-boundary water resources and climate risks through river basin approaches and improved water resources data collection, analysis, and exchange.

Components

Component Name	Cost (US\$ Millions)
Component 1: Support for the Institutional Development of Integrated Water Resources Management in the Vietnam Part of the Sesan-Srepok Basin	3.4
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	17.3
Component 3: Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System in the Central Highlands	7.6
Component 4: Project Management	1.7

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 []	No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No []

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
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Description of Covenant:					
Article 4.01(b), and Section I of Schedule 2		Yes	NA	NA	
Description of Covenant: The Recipient shall: (a) adhere to the principles and objectives of the MRC, and respect mutually agreed procedures including, <i>inter alia</i> , the 'Procedures for Notification, Prior Consultation, and Agreement'; and (b) maintain the implementation arrangements as described in Section I of Schedule 2 to the Financing Agreement.					
Team Composition					
Bank Staff					
Name	Title	Specialization	Unit	UPI	
Toru Konishi	Senior Economist	Task Team Leader (TTL)	EASVS	82228	
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Claire Grisaffi	Young Professional	Water and Sanitation	EASWE	410919	
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Name	Title	Office Phone	City		
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Mara Baranson	Consultant		Washington, DC		
Vic Macasaquit	Consultant (Social Development)		Vientiane, Lao PDR		
Kongmeng Ly	Water Quality Monitoring Specialist (MRC)		Vientiane, Lao PDR		
Locations					
Country	First Administrative Division	Location	Planned	Actual	Comments
Vietnam	Dong Thap, Kien Giang, An Giang, Long An, Tay Ninh, Gia Lai, Dak Lak, Dak Nong, Kon Tum, Lam Dong, Ca Mau, bac Lieu, Hau Giang, Soc Trang, Tien Giang, Tra Vinh, Ben Tre				

I. STRATEGIC CONTEXT

A. Country and Regional Context

1. **Introduction to the Lower Mekong Basin (LMB).** The LMB, including Cambodia, Lao PDR, Thailand and Vietnam, is estimated to have a population of 66 million with a majority living in rural areas. This figure is expected to rise to 80 million by 2020. While the poverty rate has significantly declined in the Vietnam part of the Mekong Delta thanks to extensive water resources utilization, higher agricultural productivity and poverty reduction programs, much of the population in the LMB, particularly communities in Lao PDR and Cambodia, still lives under the poverty line and relies on the natural resources of the Mekong for basic food security and livelihoods. Better management of these resources is key to poverty reduction and shared prosperity. The project is the second phase of the Mekong Integrated Water Resources Management Program (M-IWRMP), a related series of projects (SOP), which aims to support water resources management in the LMB. The first phase (Phase I) became effective on August 17, 2012.¹

2. **Regional hydrological challenges.** The Mekong River originates in China, flows through Myanmar, Thailand, Lao PDR, and Cambodia and then empties into the South China Sea in Vietnam. The annual flow is around 475 billion m³, draining an area of about 795,000 km³. The Mekong and many of its tributaries have highly seasonal discharge patterns, creating rich wetlands and estuaries resulting in a significant biodiversity, abundant capture fisheries, and enriching the soil for rice and other crop cultivation with silt-rich water. However, while these highly seasonal discharge patterns are an essential part of life in this region, floods and droughts are also a threat to livelihoods, particularly in poor rural communities, and are a key water resources management issue in the region. At the same time, additional challenges are emerging, including upstream development, which will affect water and sediment flow patterns, and climate change, which is projected to increase the frequency of extreme weather events, increase sea level rise, change temperature patterns, and result in less predictable weather patterns.

3. **Integrated Water Resources Management (IWRM) in Vietnam.** As Vietnam becomes a middle-income country, pressure on water resources is increasing. Tensions and conflicts are emerging over water as a resource -- and water quality deterioration from industrialization and urbanization is also an emerging issue.² Vietnam has recognized the importance of an integrated approach to water resources management, including the management of natural disasters in the context of river basins. In January 2013, the Government adopted a new Law on Water Resources aligned with principles of IWRM such as river basin management, environmental flows, and water quality management. The law defines the Ministry of Natural Resources and Environment (MONRE) as responsible for overall water resources management in the country.

¹ For reference, the Project Appraisal Document (PAD) for the Phase 1 project is Report No: 54009-EAP. Please note: in that document, the terms “APL” (adaptable programmatic lending), APL-1, APL-2, etc. were used to describe the lending instrument (i.e., the series of projects comprising the program). Effective April 8, 2013 OP/BP 10.00 came into effect and the term “Investment Project Financing” (IPF) is now utilized instead of “APL”.

² An assessment of preliminary water quality data by the Mekong River Commission (MRC) revealed that water quality of the Mekong remained relatively good in 2012, although deterioration is a threat.

4. **Vietnam: upstream and downstream in the LMB.** Concerns about trans-boundary water resources management are very serious in Vietnam, where over 60 percent of the country's surface water originates in upstream countries. In the Central Highlands, Vietnam is an upstream riparian of the 3S (Sesan, Srepok, Sekong) river basin which is shared with Cambodia and Lao PDR. The Sesan-Srepok Basin (i.e., 2S) is part of the greater 3S Basin, and is the most important Mekong tributary in terms of sediments and aquatic resources. Downstream, the Mekong Delta produces more than 50 percent of Vietnam's rice (90 percent of the rice export) and 60 percent of Vietnam's aquaculture products, thanks in great part to investments in water management infrastructure. However, the potential impacts from climate change and upstream development will impact the quantity and quality of water and sediments flowing to Vietnam from Cambodia upstream. This would affect the flow regime and salinity intrusion, threatening current agriculture production and economic activities. In 2013, the Government initiated a major study of impacts of upstream development on the Mekong Delta.

5. **IWRM in the Central Highlands.** In the Central Highlands, the Sesan-Srepok (2S) Basin is increasingly being utilized for hydropower generation. As of 2013, there are six dams under operation in the Sesan River, and 10 in the Srepok River. The lack of coordination among these dams has caused adverse impacts such as increased mean flow during the wet season, and decreased mean flow during the dry season. Daily water level fluctuation has contributed to land erosion. Retrofitting dams for better management (i.e., coordinating operations and cumulative sediment management) is critical. There is a clear need for coordination and integrated management of the major water users and regulators, which include the Ministry of Industry and Trade (MOIT), Electricity of Vietnam (EVN), the Ministry of Agriculture and Rural Development (MARD), and MONRE. In the trans-boundary context, reduction of soil erosion in the watershed and the regulated release of water and sediment management are important.

6. **Flooding and forecasting in the Central Highlands.** The narrow and steep topography of the Central Highlands results in frequent flood events and makes forecasting and early warning difficult. Flooding results in a substantial human and economic cost, for example, a 2009 flood killed 63 people and caused an estimated US\$65 million equivalent in damages. Coordination with Cambodia is also an important issue for flood management in this region. In August 2008, discharge from the Yali Fall Dam in the Sesan River caused floods in Cambodia that resulted in considerable damages, including casualties. After this incident, the Government of Vietnam is fully aware of the need for closer coordination and intensification of dialogue with Cambodia and has taken action by constructing a regulating reservoir near the border to mitigate potential adverse impacts from the discharge. The Government also intends to share hydrometeorological ("hydromet") information to enable more accurate and advanced forecast and early warning for Cambodia.

7. **Trans-boundary water quality in the Central Highlands.** Monitoring of water quality in the Central Highlands is very limited, which makes it difficult to understand the state and trends of water quality in the area. Deterioration is reportedly increasing and can be expected to increase further with development. There have also been reports of poor water quality from downstream users in Cambodia. The two stations under the regional Water Quality Monitoring Network indicate that nutrient levels are well within the recommended guideline, but the Dissolved Oxygen (DO) may be an issue in the future. Currently, the DO levels observed at the

two stations are higher than the Mekong River Commission (MRC) recommendation; however, temporal trend analysis of DO at these stations revealed that the dissolved oxygen level has decreased significantly since 2004 (from about 8 milligrams per liter [mg/L] to 6 mg/L).

8. **Trans-boundary water quality in the Mekong Delta.** Assessments based on the MRC's Water Quality Monitoring Network (WQMN) monitoring data indicate that, overall, the water quality in the delta is still classified as "high quality" for the protection of aquatic life and not requiring restriction for any type of agricultural use. Higher concentrations of nutrients were observed, while the level is still well within the MRC's Water Quality Criteria for the Protection of Human Health and Aquatic Life. An assessment of temporal nutrient trends in the Mekong Delta from 1985 to 2012 reveals that nutrient concentrations (ammonium and total phosphorus) have increased slightly over time which is likely a reflection of increased human activities in the basin and increased amounts of untreated agricultural and domestic effluents. The DO at many stations in the Mekong Delta was lower than the MRC Water Quality Criteria for the Protection of Human Health. DO levels of stations located in canals were generally lower than those observed in the rivers, likely a reflection of weak flow and poor dilution capacity of the canals. Currently, there are eight WQMN monitoring stations in the Mekong Delta, with two located near the border. MARD also monitors water quality, but only at canal intakes. Due to the critical importance of this area, the Government has prioritized monitoring of the water quality and flows at the border to establish a baseline and collect information for negotiations with the upstream riparian countries.

B. Regional Institutional Context

9. **The MRC and regional water resources monitoring.** In 1985, the MRC countries established the Water Quality Monitoring Network to detect changes in the Mekong River water quality under the United Nations-led Mekong River Committee. The WQMN manually measures a number of water quality parameters at stations at monthly intervals. Since 2005, a total of 48 stations have been monitored by the WQMN, 10 of which are located in Vietnam (eight in the Mekong Delta and two in the Central Highlands). In recognition of Vietnam's growing capacity and as part of the decentralization of the MRC, Vietnam and the MRC are now planning to hand over these 10 stations to Vietnam. The MRC also oversees the Mekong Hydrological Cycle Observation System (HYCOS), established in 2006, which collects rainfall and water level data from 49 stations in Cambodia, Lao PDR, Thailand, Vietnam and China. The information is distributed to government agencies as well as to the MRC's Regional Flood Management and Mitigation Centre in Phnom Penh, Cambodia. In 2011, the MRC handed over the HYCOS stations located in the Central Highlands and the Mekong Delta to the Government of Vietnam.

10. **Regional cooperation for water quantity and quality.** The MRC countries have agreed to share data on specified water monitoring parameters by adopting the 2006 Procedures of Water Quality (PWQ) and 2011 Procedures on the Maintenance of Flow in the Mainstream (PMFM), which were developed under the Global Environmental Facility (GEF)-funded Water Utilization Project (WUP, completed in June 2008). The guidelines for implementing these two procedures are being finalized. The PWQ and PMFM represent significant steps in trans-boundary water management and data sharing as information collected and exchanged under these procedures will improve the evaluation of downstream impacts and inform trans-boundary

negotiations. Under the trans-boundary IWRM support provided in the Phase 1 project, Cambodia and Vietnam have started joint activities for trans-boundary cooperation under the guidance of the MRC, including: (a) development of a jointly owned trans-boundary hydrological models; and (b) establishment of a data-sharing mechanism for Cambodia and Vietnam, which will facilitate the implementation of the PWQ and PMFM.

11. Water Resources Management and Monitoring in Vietnam. While MARD had traditionally been responsible for water resources management in Vietnam, the 2013 Law on Water Resources defines MONRE as responsible for overall water resources management in the country. The law sets out an ambitious agenda for water resources monitoring and river basin management, an activity which will have to be closely coordinated with MARD and MOIT. MONRE has also been tasked with the responsibility for broader water quality monitoring, although MARD can and does still monitor water quality at canal intakes. There is a recognized need for integration and sharing of water quality monitoring information. The law also stipulates the establishment of the river basin organizations (RBOs), whose main functions are: (a) monitoring the water use; (b) coordination among the water users; (c) identification of the water related issues; and (d) exploration of the possible solution and recommendation to the Government (MONRE).

C. Higher Level Objectives to which the Project Contributes

12. Consistency with the Bank's regional priorities. The M-IWRMP has been identified as a priority in the *Strategy Note on World Bank Regional Support for the Greater Mekong Sub-Region*, presented to the Board of Directors of the Bank in June 2007. The note specified water resources management as one of the priorities for Bank support in the region, and proposed a regional operation to: (a) promote IWRM at regional and national levels in a comprehensive manner; (b) support water resources development to address local needs to help alleviate poverty among riparian communities; and (c) address critical cross-border water resources management issues. Furthermore, the project is also consistent with the current East Asia Pacific regional strategy, and responds particularly to the pillars of: (a) *regional and global involvement*, through strengthening of regional institutions and partnerships by supporting the MRC's efforts; and (b) *managing crisis and disasters*, through helping to build resilience with support for strengthening of the hydro-meteorological network and flood forecasting and warning systems.

13. Alignment with Country Partnership Strategy (CPS). The M-IWRMP (i.e., the program) and the Phase II program (the project, the subject of this document) are fully aligned with the CPS for Vietnam. And, the current Vietnam CPS, which is dated November 7, 2011, is fully aligned with the country's five-year Socio-Economic Development Plan. The project directly contributes to the sustainability pillar, which emphasizes the importance of strengthened natural resource and environmental management and climate resilience.

14. Consistency with MRC priorities. The M-IWRMP is consistent with the Strategic Plan of the MRC 2011-16, specifically Goal 4: *"to strengthen the Integrated Water Resources and Management capacity and knowledge base of the MRC bodies, National Mekong Committees (NMCs) and line agencies and other stakeholders."*

15. **Consistency with IDA regional project eligibility criteria.** During the preparation for Phase I, it was confirmed that the M-IWRMP meets IDA's regional project eligibility criteria. Specifically, it: (a) supports at least three countries (Lao PDR, Cambodia and Vietnam); (b) provides a capacity building platform for regional policy and strategy harmonization; (c) supports country-specific investments that have regional as well as national social and economic benefits (water resources and hydromet data collection and sharing), and it complements the investments by MRC itself; and (d) is consistent with the Bank's regional strategy described in the above-mentioned *Strategy Note on World Bank Regional Support for the Greater Mekong Sub-Region*. These statements remain unchanged for the project.

16. **Country commitment.** Lao PDR, Cambodia, and Vietnam Governments, together with the MRC, have expressed their respective commitment to the M-IWRMP and have requested World Bank support. Policy and Human Resources Development (PHRD) Grants from the Government of Japan have financed essential preparation activities for these three countries. As agreed, a horizontal programmatic approach has been adopted in order to accommodate different speeds of project preparation across countries because of differences in technical capacities and administrative procedures, as well as the scope of project components. Phase I, supporting the MRC and Lao PDR, was approved in March 2012 and is under implementation. The project originally aimed to support both Cambodia and Vietnam; however, due to reprogramming of the Bank support for Cambodia, it has been decided that the Cambodia part would be processed separately at later stage (proposed to be included in the Phase III) and that the Vietnam part would be processed as the Phase II in order to maintain momentum.

17. **Links to the World Bank Vietnam portfolio.** The project will ensure synergies with the broader Vietnam portfolio, especially the projects and analytical studies supporting IWRM. At the policy level, the Climate Change Development Policy Operation (DPO; P131775) through the Vietnam Climate Change Partnership has supported the drafting of the 2013 Water Resources Law and is currently supporting the development of the Law Implementation Decree and the National Action Plan on Water Resources. While not directly covering the Sesan-Srepok Basin, the ongoing Small Hydropower Cumulative Impact Assessment analyzes environmental flows in the context of hydropower operation and is expected to support a better understanding of small hydropower impacts. In addition, under the Renewable Energy Development Project (P103238), the World Bank is financing a small hydropower project located on the Srepok River. With the support of the Water Partnership Program, the Bank is in the initial stages of developing a study on Climate Change Adaptation and the Mekong Delta. On the investment side, the Vietnam Mekong Delta Water Resources Management for Rural Development Project (P113949, approved in June 2011), implemented by MARD, invests in irrigation infrastructure while providing support for various water resources management activities such as water resources planning, operation and maintenance, and pilot activities for enhancing water productivity. The Vietnam Managing Natural Hazards Project (P118783, approved in July 2012), recognizing the majority of natural disasters are water related, takes the river basin as a planning unit for the hazard protection plans. The project also intends to finance upgrading of the hydromet data collection and analysis systems in the central coast provinces, which is the area where landfall occurs for many storms.

18. **Linkages to other development partners.** Close collaboration with the Australian Agency for International Development (AusAID), which partly financed the MRC's IWRM Program that is a coordination mechanism for the World Bank's M-IWRMP, will continue to support the implementation of the project. For the specific activities envisioned under the project, the river basin organization support under Component 1 will build on earlier support by the Asian Development Bank (ADB) and Denmark to support the technical studies and institutional support for river basin management. The project will also closely liaise with the United States Government's Lower Mekong Initiatives to seek possible collaboration through the M-IWRMP and the project, particularly regarding sediment in the 3S basin. The team will also liaise with ADB regarding their proposed water resources monitoring investment in Vietnam.

19. In addition, the World Bank team is actively involved in coordination with about 20 other development partners through the biannual development partners meetings of the MRC.

II. PROJECT DEVELOPMENT OBJECTIVES

A. M-IWRMP Program Development Objective and Phases

20. **M-IWRMP Program Development Objective (PDO).** The broader M-IWRMP provides parallel investment and technical support across the three LMB countries and supports the MRC to facilitate technical cooperation on water resources management, and in carrying out priority IWRM activities in the key tributaries of the Mekong Basin in the respective countries. The PDO of the M-IWRMP (for the complete series of projects) is to establish key examples of integrated water resources management practices in the LMB at the regional, national, and sub-national levels, thus contributing to more sustainable river basin development in the Lower Mekong.

21. **M-IWRMP design.** In order to achieve the program objective, the M-IWRMP has been designed to: (a) support implementation of tools and pilot activities for IWRM and natural disaster management in the four LMB riparian countries, as well as improved communications and dialogue; (b) improve institutional capacity for IWRM 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.

22. **M-IWRMP phases.** The program comprises: (a) Phase I (for MRC and Lao PDR, 2012-2017); (b) Phase II (Phase II for Vietnam, 2013-2018, the subject of this PAD); (c) Phase III (for Cambodia, planned for 2014-2019); and (d) Phase IV (for MRC, planned for 2015-2020). Table 1 below gives an overview of the program. This 'horizontal' arrangement results from differences in institutional capacity and regulatory requirements for IDA processing in each country. As agreed during the processing of Phase I, the Phase II has been processed following the achievement of two readiness criteria: (a) adoption of the project operational manual for the project by Vietnam; and (b) extension of the mandate of the Regional Project Steering Committee (RPSC) established at the Mekong River Commission Secretariat (MRCS) to include the oversight of Phase II. While originally planned for Phase II, the processing of the Cambodia part has been postponed to Phase III because of the ongoing dialogue to reprogram Bank support for Cambodia. The planned Phase III would provide support to Cambodia in a horizontal manner on various IWRM issues, covering fisheries, irrigation development, hydromet support and river

basin management. The envisioned Phase IV would contain vertical elements for supporting the MRC for regional integration of hydromet data collection and analysis. Before processing Phase IV, a comprehensive review on the performance of the first three phases in the series will be carried out to confirm satisfactory project implementation and to draw lessons from implementation.

23. **Estimated cost for the M-IWRMP.** The overall program cost – covering the four phases – is estimated at US\$89.5 million, for which the IDA contribution would be US\$84.0 million (with the remainder financed by counterpart funds from Lao PDR, Vietnam, and Cambodia).

Table 1: Overview of the M-IWRMP (Four Phases)

Partner	Activity	Tentative cost (including counterpart funds) (US\$ Millions)
Phase I (2012-2017)		
MRC	Regional Support for Trans-boundary IWRM Dialogue; Support for Establishing an Approach for Environment; Impact Risk and Disaster Risk Assessment in the LMB; Communication Outreach; and Project Administration and Management.	8.0
Lao PDR	Institutional Strengthening for MONRE regarding water resources management; and Floodplain and Aquatic Resources Management.	18.5
Phase II (2013-2018)		
Vietnam	Support for the Institutional Development of Integrated Water Resources Management in the Vietnam Part of the Sesan-Srepok Basin; 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 ; Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System in the Central Highlands; and Project Management.	30.0
Proposed Phase III (2014-2019)		
Cambodia	Fisheries; River Basin Organization the Sesan Srepok and Sekong Area; Support for Water Resources Management in Eastern Mekong Delta; and Support for Hydromet for the Eastern Mekong Delta.	26.0
Proposed Phase IV (2015-2020)		
MRC	Support for Regional Data Collection and Analysis for Flood Risk Management; and Support for Agriculture/Fishery Knowledge Base and Management.	7.0

B. Project Development Objective, Key Indicators, and Beneficiaries

24. **Development Objective.** The project development objective is to develop the capacity of the Ministry of Natural Resources and Environment, the Vietnam National Mekong Committee and relevant agencies to manage trans-boundary water resources and climate risks through river basin approaches and improved water resources data collection, analysis, and exchange. The project will thus contribute to the overall program objective of implementation of integrated water

resources management in the Lower Mekong Basin for sustainable economic, social and environmental development.

25. **Vietnam Beneficiaries.** In Vietnam, expected primary benefits of the project include improved water resources monitoring and forecasting in the Mekong Delta and the Central Highlands and river basin management in the Central Highlands. Thus, the project will benefit the general public in the Central Highlands and the Mekong Delta through reducing the risk of floods and salinity intrusion (the latter specifically in Kien Giang province). The estimated number of beneficiaries, which is the general population of the Mekong Delta and the Central Highlands, is approximately 24 million in total.

26. **Regional Benefits.** The project will also induce regional benefits shared with the other three riparian countries (Thailand, Lao PDR, and Cambodia) as follows:

- *Establishing a model of river basin management in the regionally significant 3S Basin shared by Lao PDR, Cambodia, and Vietnam.* The project will support Vietnam to carry out technical studies and support the development of a river basin organization to manage the Vietnam part of 3S. These actions are essential building blocks to managing the 3S Basin jointly with Lao PDR and Cambodia. This support planned under the project will complement the activities under Phase I such as supporting trans-boundary IWRM dialogue between Cambodia and Vietnam, and water quality and health river monitoring in the Sekong River in Lao PDR.
- *Enhancing Vietnam's ability to monitor water resources in the 3S Basin and Mekong Delta and share information with riparian countries.* The information provided from a strengthened hydromet and water resources monitoring networks in the Vietnam part of the 3S Basin and the Mekong Delta will be shared with riparian countries either bilaterally or through MRC, and will provide a scientific basis for more sustainable regional management.
- *Enhancing Vietnam's ability to implement regionally agreed water resources management procedures* by supporting the implementation of regional procedures for water utilization, particularly the PMFM and the PWQ, as well as collection and analysis of critical information such as sediment and salinity.

27. **PDO Level Results Indicators.** In order to measure the regional impacts of the project, key outcome indicators/targets for this project include:

- Representative river basin management organization established and operational in the Vietnamese part of the 2S Basin;
- Central Highland Hydrometeorology forecasting information shared with Cambodia by the National Hydromet Services of Vietnam (NHMS);
- Number of provinces receiving improved hydrometeorology forecasting and early warning information in the Central Highlands; and
- Water quality information shared with MRC in line with the MRC's procedures.

III. PROJECT DESCRIPTION

A. Project Components

28. **Geographic focus.** The project will focus on the two key areas of the Vietnam territory of the Mekong Basin: the Central Highlands (Lam Dong, Gia Lai, Dak Lak, Dak Nong, and Kon Tum provinces) and the Mekong Delta (Long An, Dong Thap, Kien Giang, Tay Ninh, and An Giang provinces). Tay Ninh Province is considered to be a part of the Mekong Basin as part of the province is affected by the Mekong floods.

29. **Rationale for the proposed components and activities.** The Government of Vietnam has identified the following three key activities to be included in the project: (a) Support for the Institutional Development of Integrated Water Resources Management in the Vietnam Part of the Sesan-Srepok Basin; (b) 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; and (c) Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System in the Central Highlands. The rationale for each Component is summarized below:

- *Integrated Water Resources Management in the Srepok and Sesan River Basins.* The Government (including provincial authorities) has recognized the need for coordination of water resources management in the Central Highlands, especially for flood and drought risk management, and hydropower operation. This activity will also be supplementary to the ongoing trans-boundary dialogue activity for the 3S Basin supported by Component 1-1 of Phase I of the Program.
- *Water Resources Monitoring Network and Water Resources Information System.* Currently, monitoring water quality in the Mekong Delta and Central Highlands is limited in terms of number of the monitoring points (18 water quality measurement points in total, and no permanent stations), and frequency (once a month). MONRE intends to develop permanent water resources monitoring stations at the border areas with Cambodia to establish a baseline and enable periodical monitoring of the water resources in the area. The information collected will be shared with various users to review the current water use planning, including water allocation. The water quality data to be collected will cover all parameters included under the PWQ, and will be shared with MRC as well as other riparian countries and the information collected will constitute a report for implementing the PWQ.
- *Hydro-Meteorological Information Network, Flood Forecasting and Warning System in the Central Highlands.* The Government has started nation-wide major upgrading of hydromet equipment to enhance forecasting and early warning for the natural disaster risk management. Under the Bank-financed Natural Disaster Risk Management Project (scheduled to close on December 31, 2013), about US\$5.0 million has been invested in upgrading the hydromet equipment in the Mekong Delta. The ongoing Managing Natural Hazard Project is upgrading hydromet equipment in the Central Coast. Hydromet and weather forecasting in the Central Highlands Region have been prioritized by the

government due to the need to develop a protocol to share hydromet information with Cambodia.

30. **Project Components.** The following points summarize the project Components and activities. Details are available in Annex 2 to this Project Appraisal Document.

31. ***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 Component will support the following activities:

(a) Establishment and support for operation of a River Basin Organization: (i) development and establishment of the organizational structure, operational rules and business plan, and assessment of human resource needs; (ii) renovation of office; (iii) purchase of goods (including vehicles) and furniture; and (iv) development of logistics arrangements.

(b) Provision of Support for River Basin Planning and Studies: (i) development of a basin profile database based on a geographical information system; (ii) review and update of the river basin management plan; and (iii) undertaking of technical studies in the field.

(c) Provision of Support for Monitoring: establishment of a water resources monitoring database system for the Sesan Srepok Basin.

(d) Capacity Development: provision of technical training for the staff and other stakeholders of the river basin organization.

(e) Component management: Provision of 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.

32. ***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 will support the following activities;

(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 Data on Water Quality and Quantity: (i) development of transboundary water resources monitoring network in the Mekong Delta and the Central Highlands; (ii) provision of water quality laboratory equipment and (iii) development of a data sharing mechanism with Cambodia and the MRC.

(b) Establishment of a Water Resources Information System for the Lower Mekong in Vietnam: (i) undertaking of relevant studies and development of a data sharing system; (ii) carrying out of capacity building in operating and managing the information system developed under item (i) of this sub-paragraph for the staff of the relevant institutions; and (iii) promotion of a data sharing system to other stakeholders and development of a portal website.

- (c) Provision of Support for a Salinity Monitoring Pilot for Kien Giang Province: (i) establishment of salinity monitoring stations; and (ii) undertaking of an integration study and capacity building in hydrology modeling, geographical information systems and data collection for staff of relevant institutions.
- (d) Component Management: provision of 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.

33. Component 3: Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System in the Central Highlands (US\$7.6 million). This Component will include the following activities;

- (a) Strengthening of Hydrometeorology Network and Forecasting Services in the Central Highlands: (i) upgrading and construction of hydrometeorology stations; (ii) integration of the upgraded and newly constructed stations into the regional and national systems; and (iii) enhancement of the flood forecasting and flood warning system, through technical assistance and provision of software and hardware.
- (b) Institutional Strengthening and Capacity Building: carrying out of 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: (i) provision of support to staff of MONRE for the regional integration of hydrometeorology data; (ii) provision of necessary equipment to MONRE; (iii) and carrying out of relevant studies and support for capacity building.
- (d) Component Management: provision of 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.

34. Component 4: Project Management (US\$1.7 million). This Component will include the provision of support for the regional management and coordination of the Project, including: (a) Incremental Operating Costs of the Project Management Unit; (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.

B. Project Financing

35. Lending Instrument. Provision of IDA financing is proposed via the Investment Project Financing (IPF) instrument. The project which is the second in the envisioned series of projects under the IPF, will provide investment support to Vietnam. Considering the regional benefits of

the project, the project will utilize the IDA Regional Program,³ similar to the Phase I program. The credit will be provided to Vietnam as IDA Blend Terms.

36. **Project cost and financing.** The total costs for the project are estimated at US\$30.0 million, of which IDA will finance up to US\$25.0 million. It is anticipated that two-thirds of the IDA resources needed will be financed through the IDA regional window. The project costs are summarized in Table 2 below.

Table 2: Project Cost

Project Components	Project cost	IDA Financing	% Financing
1: Support for the Institutional Development of Integrated Water Resources Management	3.4	2.5	73.5
2: Establishment of a Water Resources Monitoring Network and a Water Resources Information System	17.3	15.1	87.3
3: Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System	7.6	6.2	81.6
4: Project management	1.7	1.2	70.6
Total Project Costs	30.0	25.0	83.4
Total Financing Required	30.0	25.0	83.4

C. Lessons Learned and Reflected in the Project Design

37. **Lessons Learned from Regional Operations.** The program has been designed incorporating the following lessons learned from regional operations. A 2010 Quality Assurance Group review of regional projects⁴ outlined a number of recommendations, of which the most relevant for the project are summarized below:

- *Regional operations should be well grounded in analytical and knowledge products to ensure relevance.* The M-IWRMP builds on the Mekong Water Resources Assistance Strategy (MWRAS), the Bank’s joint analytical work with the ADB. Furthermore, the program has been developed jointly with the MRC’s technical program, particularly the Basin Development Program and the Environmental Program. The project is also grounded in the 2012 World Bank Water Paper on trans-boundary water cooperation, which identified seven categories of risk reduction to enhance cooperation, one of which is *knowledge and skill expansion*.⁵ The project has sought to incorporate the lessons from this study on reducing risk through knowledge and skill expansion, including the importance of developing capacity of institutions and individuals within the river basin in use of modern techniques for knowledge management.

³ The three-country eligibility requirement would be fulfilled across three phases of the IPF’s series of projects: Phase I covers one country (Lao PDR); Phase II would cover Vietnam; and Phase III would cover Cambodia. MRC is a regional entity and so does not count as a “country.”

⁴ Regional Projects: A Quality Assurance Group (QAG) Learning Review (Draft), February 2, 2010, QAG, World Bank.

⁵ Subramanian, Brown and Wolf 2012. “Reaching Across Waters: Facing the Risks of Cooperation in International Waters.” World Bank Water Paper.

- *In recognition of the additional complexity of regional operations, sufficient time should be given in preparation to build country and regional ownership, and there should be realism regarding project objectives.* Since the identification and preparation of the project in early 2007, extensive dialogue involving concerned line ministries of the respective countries has been carried out at the national and regional level (MRC). The project has adopted a flexible horizontal four-phase series of operations under the IPF instrument to allow each country adequate time to develop full ownership at both national and regional level, and to ensure sufficient capacity to implement the project.
- *Project design should be sufficiently flexible to allow for the different pace of implementation between countries, and for the possibility that some activities may move forward faster than others.* The horizontal IPF design, allowing the three countries to process and implement the respective activities at the national level, is well suited to address these risks. In the meantime, the M-IWRMP also supports the MRC to ensure consistency and integrity of the activities carried out by the respective countries.
- *Project scale should be sufficient to ensure country ownership and tangible impacts.* The activities proposed under the project will be of appropriate scale for Vietnam, and will make tangible impacts through institutional strengthening as well as investments.
- *Sufficient support on fiduciary aspects during preparation and implementation is key.* Following fiduciary capacity assessments, project design provides for support during implementation. Hands-on support during supervision visits from staff based in the region is also planned.

38. **Lessons learned from Phase I.** The following lessons learned from the first project (P104806) have been incorporated: roles and responsibilities of the MRC (the intergovernmental organization) vis-à-vis the countries should be well defined in advance. Also, providing proactive technical guidance to ensure regional consistency while avoiding interference on sovereign matters is a delicate balance -- and it is critical to clearly define the responsibilities of the MRC and the countries in advance. Furthermore, the Phase I program also provided the Bank with practical arrangements for the two country units to collaborate closely to prepare for a regional project, which can be replicated for other regional projects in the future.

39. **Lessons learned from water resources management and analytical work.** The following lessons from recent river basin and hydromet support projects in the region have been incorporated:

- Experience indicates that capacity building, policy development, and modeling at the central level alone are necessary but insufficient to promote IWRM on the ground. Investments in water resources management are also needed which benefit local communities and ensure local ownership of IWRM approaches.
- Considering the asymmetric nature of the riparian countries' capacity, adequate attention needs to be paid to institutional and human resources development in the relatively low capacity countries.

- Hydromet activities in general include purchase of high-value high-tech sophisticated equipment. It is therefore important to develop technical specifications at the appraisal stage to ensure the compatibility with the other parts of the country, and avoid major delays resulting from procurement issues. The technical specifications for the hydromet equipment for the Central Highland will be completed by appraisal.

40. **Lessons learned regarding RBOs.** The preparation of the project has drawn from past experience in Vietnam and in the World Bank Portfolio with respect to the following lessons:

- It is essential that the legislative and policy arrangements clearly show how integrated river basin management will link with existing ministries and provincial bodies. In addition, all relevant entities should be brought into the process from the start. Otherwise, the creation of a new entity will be seen as competing with or intruding in the affairs of existing administrative bodies.
- RBOs need to evolve around issues within the basin evolve, otherwise their relevance is eroded over time, and there may be a return to management by separate agencies. Thus, it is important that relationships and responsibilities of the RBO are able to change over time and adjust according to new requirements. A transparent set of processes should be established to facilitate this continual evolution.
- Coordination at the high ministerial level is necessary to ensure that relevant provincial and central government bodies have a common vision.
- Equal partnership among the various ministries and provincial governments is seen as a critical success factor in the functioning of an RBO. Thus, while the new Law on Water Resources assigns MONRE the responsibility for water resources management, other key ministries must also be partners in the RBO.
- Lessons learned from other river basin support projects in Vietnam specifically suggest that the following are critical pre-requisites for successful outcomes: (a) a clear legal framework to mandate the participation of key sectors, notably energy and agriculture (irrigation); (b) upfront agreement among key stakeholders on the mandate of the river basin organizations and business plans; and (c) commitment of adequate human and financial resources.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

41. **Regional Oversight.** The project will be implemented by Vietnam, but is a part of the regional program. In order to ensure the regional coherence, particularly with Phase I (MRC and Lao PDR), and the planned Phase III (Cambodia), the MRC's M-IWRMP Project Coordination and Monitoring Unit (PCMU) will also monitor implementation of this project. The Regional Project Steering Committee established to provide oversight on the implementation of Phase I will be responsible for managing regional issues in the oversight of the implementation of this

project. The RPSC comprises: representatives of the National Executing Agencies (NEAs) in Lao PDR (Department of Water Resources, MONRE), Vietnam (Vietnam National Mekong Committee Standing Office [VNMCSO]), and Cambodia (Cambodia National Mekong Committee); the representatives from the four National Mekong Committees (NMCs), including Thailand; and the representatives of the MRCS.

42. **Implementation.** The project will be implemented by MONRE of Vietnam. MONRE has assigned the Vietnam National Mekong Committee Standing Office (VNMCSO) to be the executing agency responsible for implementing the project. A Project Management Unit (PMU) has been established in the VNMCSO and the PMU is entrusted with overall management responsibilities of project, including financial management, procurement and safeguards. VNMCSO will work closely with: (a) the Department of Water Resources Management (DWRM) of MONRE for Component 1; (b) the National Center for Water Resources Planning and Investigation (NAWAPI) recently renamed from the Center for Water Resources Planning and Investigation, for Component 2; and (c) the National Hydromet Service (NHMS) for Component 3. MONRE will appoint a project director and deputy directors from VNMCSO, DWRM, NAWAPI and NHMS responsible for coordinating components and day-to-day management. Deputy Directors -- seconded from DWRM, NAWAPI, and NHMS -- will be responsible for implementing Components 1, 2 and 3, respectively. In order to support implementation, VNMCSO will establish a technical team (based on nominations from DWRM, NAWAPI and NHMS) to support implementation of the respective Components, particularly procurement-related activities (e.g., preparation of technical specifications, procurement evaluation reports) and oversight of the performance of consultants, civil works contractors and equipment suppliers. VNMCSO will be the contract signatory for all components; investments supported under the project will be accepted by these entities upon completion and transferred to them.

43. A Designated Account (DA) will be established for and managed by VNMCSO, and no sub-account would be opened.

B. Results Monitoring and Evaluation

44. **Indicators.** The key performance indicators and intermediary indicators are provided in Annex 1. Data will be collected for each of the indicators by the PMU, and then compiled by the PCMU established within the MRCS to maintain the integrity of the results framework for the entire series of projects in the program. The PCMU will be responsible for reporting to the RPSC and the Bank. The detailed institutional arrangements for data collection and compilation are provided in Annex 3.

45. **Monitoring.** VNMCSO will carry out with the Bank a mid-term review by June 30, 2017 to assess the status of project implementation against the performance indicators. Such a review will include an assessment of the following: (a) overall progress in implementation of the project; (b) results of monitoring and evaluation activities; (c) progress on procurement, disbursement, and financial management; (d) progress on the implementation of safeguards instruments; (e) effectiveness of implementation and coordination arrangements with MRC and Lao PDR, which are implementing Phase I; and (f) any needs for restructuring or reallocation to

responds to the emerging needs. The VNMCSO will prepare and furnish a report to the Bank at least three months before the mid-term review that will integrate the results of the monitoring and evaluation activities performed. This report will be reviewed with the Bank and the MRC to help the VNMCSO take all measures required to ensure the efficient use of the resources and achievement of the PDO.

C. Sustainability

46. **Sustainability of the MRC.** Historically, the MRC has been largely supported by development partners' funding mainly for the various technical programs, and its financial sustainability has been a major issue. In this context, the MRC is in the process of defining its core functions for which the member countries would gradually increase their own financial contributions to cover core operational expenditures. The member countries are committed to finance the full operational expenditure budget, which comprises the operation and riparian staff cost for the core budget, by December 2015, while the development partners would continue to provide the MRC with the financial support and technical assistance. The World Bank intends to monitor the progress of the MRC in coordination with other development partners.

47. **Investments in water resources monitoring and hydromet.** Providing adequate human and financial resources for operation and maintenance of the investments made under Components 2 and 3 is the key element for sustainability. The water quality monitoring networks will be managed by the NAWAPI, which is under MONRE. NAWAPI I has already assigned a team located in My Tho office and Buon Ma Thuot office to manage the new water resources monitoring stations in the Mekong Delta and the Central Highlands respectively. An indicative operational plan for these equipment have been prepared to present the financial and staffing plan for the operation and maintenance of these equipment estimated at US\$200,000 (including in-kind contribution) and MONRE has agreed to allocate the financial resources to cover the estimated operating costs; the allocation of the budget will be monitored as part of the key indicators. Similarly, the hydromet stations to be constructed under Component 3 will be managed by the National Hydromet Services, which has appropriated the operating cost, estimated at about US\$100,000 annually.

48. **River Basin Organizations.** The Government is committed to establish an RBO covering both Sesan and Srepok under Component 1. The RBO is a new organization, and the eventual financing mechanisms for the operational costs have not been determined yet. Therefore, for the time being, all the expenditures have been borne by budgetary support, estimated at approximately US\$100,000 per year (including in-kind contribution), and MONRE has made a commitment to provide budgets for the technical staff and operating costs. The project will take a cautious approach. In particular, during the first year, preparatory works including preparation of statutes and development of a detailed operational plan will be undertaken to obtain consensus about the role and function of the RBO, determining the detailed staff needs and operational costs. The RBO will be established only after a detailed plan is available and MONRE makes adequate staff and resources available for the RBO. The establishment of the RBO is scheduled at the end of the second project year.

V. KEY RISKS AND MITIGATION MEASURE

A. Risk Ratings Summary Table

Risk	Rating
Stakeholder Risk	M
Implementing Agency Risk	S
- Capacity	S
- Governance	S
Project Risk	S
- Design	S
- Social and Environmental	M
- Program and Donor	L
- Delivery Monitoring and Sustainability	S
- Other: Reputational Risks	S
Overall Implementation Risk	S

B. Overall Risk Rating Explanation

49. **Overall risk.** Overall implementation risk is substantial (see Annex 4), considering the regional and inter-disciplinary nature of the project. The major risks during implementation are: (a) integrity of the various Components activities to maintain the regional nature of the project; (b) fiduciary management, including governance, fraud and corruption concerns inherited from the country and sector environment; and (c) delivery monitoring and sustainability of the investment. The following mitigation measures have been incorporated: (a) engagement of the MRC to facilitate the implementation of the activities at the national level; (b) use of a Regional Project Steering Committee which will oversee the entire program activities; (c) training on procurement and safeguards; (d) monitoring the pledged allocation of the human and financial resources for operation and maintenance (O&M) of the equipment purchased; and (e) engagement of international experts to guide procurement of high value equipment.

50. **Reputational risk.** Water resources management in the Mekong is an issue drawing public attention in light of increasing pressure on the utilization of water resources. In this context, engagement of the Bank in the water resources management in the Mekong through the M-IWRMP may bring a reputational risk, although M-IWRMP will not support large scale infrastructure. This issue has been extensively discussed during the preparation of Phase I. It has been concluded that the risk of engagement can be mitigated through proper communication to the public and participation in policy dialogue towards sustainable water resources management with the MRC and the member countries in coordination with the other development partners. On the contrary, the risk of non-engagement will be higher as the issue of water resources

management in the Mekong is one of the key factors influencing the economic development in the Mekong region.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analyses

51. Physical investments planned under the project include: (a) water resources monitoring stations and the associated database; and (b) a hydromet data collection and analysis system. Many of the benefits from these investments are long-term and intangible, and are difficult to measure; therefore, the conventional benefit-and-cost based economic analysis may not be suitable. However, in order to justify the proposed investments from economic prospective, efforts have been made to quantify the hydromet investments, which will induce somewhat tangible economic benefits of reducing the natural disaster risks through better forecasting.

52. *Hydromet networks and improved weather forecasting.* The Central Highlands are a flood-prone area: during 2005 and 2009, in total 126 persons have been killed and the total direct damage of the flood events (not including loss of businesses) were estimated at US\$91 million equivalent, implying approximately US\$18 million of annual damage of the flood events. The main benefits of the investment proposed under Component 3 are: (a) more accurate forecasts; (b) longer time span (increase from 24 hours to 48 hours), (c) near-real-time data sharing of upstream hydromet data with the hydropower operators, and (d) providing at least one hour lead time for warning. However, these benefits are difficult to estimate in monetary terms due to the lack of information and other factors such as: capacity to utilize the forecasted data, effectiveness of the early warning system, and the existence of supporting infrastructure (evacuation points and mitigation infrastructure), which are needed to develop a set of assumptions. Recently, among a few attempts to estimate the economic benefits of hydromet investments, Schroeter et al (2008)'s study could be relevant. The study investigated the effectiveness and efficiency of early warning systems for flash floods in small river basins and found that a 12-hour lead time provides a potential reduction of damage by 60 percent whereas a one-hour lead time reduction would result in a mere 20 percent reduction of damage in general. Applying this finding, the potential economic benefits for the proposed investment could be estimated at US\$3.6 million per year on average.

53. *Water Quality Monitoring Network.* Benefits from the water quality monitoring stations are rather long term, and are difficult to quantify, as there is no urgent issue of water quality threatening livelihoods or health of the population. Nevertheless, the proposed investment on water quality monitoring network and the associated database system is important from a socio-economic prospective. The Vietnam part of the Mekong Delta is predominantly an agriculture-based economy and there are approximately 1.92 million hectares of the agriculture and aquaculture land and 18.6 million people. Water resources are critical to sustain the economic development. Presently, the water quality in the Mekong Delta is generally fine and there have been no major damages caused by poor quality of water, except some minor incidents with aquaculture damages resulting from the low dissolved oxygen during the dry season. However, in light of continued economic development the pollutants in the water in the Mekong Delta are steadily increasing. In addition, ongoing development of hydropower stations in the Mekong

Basin is expected to substantially reduce the sediments and nutrition, affecting the river morphology as well as livelihoods. Irrigation development in the Cambodia part of the Mekong Delta may reduce the availability of fresh water during the dry season. In this sense, the water resources monitoring network planned under the proposed series of projects will provide critical near-real-time information on the water quality and quantity to enable timely intervention by the authorities (including negotiations with upper riparian countries) to protect and maintain the livelihood activities in the Mekong Delta. For example, such information will be shared with riparian countries and the MRC to help enforce PWQ and PMFM. The information could be used to forecast salinity intrusion and help farmers adjust their crops; in the long-run, the information could also be provided to MARD as a basis for water resources planning and management.

B. Technical

54. **Integrated water resource management at the program level.** IWRM, an approach which balances social, environmental and economic concerns, upstream and downstream perspectives, and interests from different sectors, and which includes different stakeholders in transparent decision-making processes, is accepted as global best practice in river basin management. The program aims to support application of this approach in the Lower Mekong Basin countries, involving four LMB countries through engagement of the MRC. In the context of the Mekong, the following aspects have been carefully considered:

- *Integration of the mainstream and tributaries*, particularly: (a) developing a river basin management in the key tributaries: Phase I supports Lao PDR, and the Phase II program will support Vietnam for the 2S Basin (similar support for Cambodia is proposed through Phase III); (b) supporting establishment of essential data collection and analysis at the key tributaries; and (c) floodplain and fisheries management in the significant habitats, both in the mainstream and tributaries, which will also induce regional benefits in terms of biodiversity and livelihoods; and
- *Country-specific geographical setting and policy, institutional, and human resources capacity while keeping the regional consistency*: Because of the asymmetries among the four LMB countries, country-specific topics have been identified for the support from the program. In particular, Phase I is providing an extensive institutional strengthening program for the recently-established MONRE in Lao PDR, while this project proposes to address hydromet and water resources monitoring network in Vietnam for the Central Highlands and Mekong Delta and River Basin Management in the upstream 3S tributary of the Mekong located in Vietnam's Central Highlands.

55. *River Basin Organization (RBO) in the Sesan-Srepok.* The Sesan and the Srepok are two different rivers in Vietnamese territory that converge in Cambodian territory. In addition, the Ia Dran and Ea Hleo rivers, which are the two major tributaries of the Srepok, also form separate catchments in Vietnam as they flow into the Srepok in Cambodian territory. During preparation, a review has been made to identify the advantages and disadvantages among the options for river basin management of these rivers, namely: (a) developing two separate RBOs: Sesan and Srepok; and (b) developing one single RBO: Sesan-Srepok. The former has clear advantages such as focusing on the smaller and distinctive sub-basin, while the latter has the advantage of

having a single entity to coordinate with Electricity of Vietnam, participate in the Basin Development Plan of the MRC, and negotiate with Cambodia. From the provinces' viewpoint, the latter is more convenient as the provinces do not need to participate in more than one RBO. After consultation with the provinces, option "(b)" above has been selected. In preparation for establishing the RBO, lessons learned from past experience in Vietnam have been considered since similar attempts in the past have not been successful. In particular, as a direct results of lessons learned during the experience of the Srepok Committee in early 2000, special attention will be paid to ensure the following: (a) participation of MOIT from the beginning; (b) strong ownership of the concerned provinces; (c) definition of a clear mandate such as monitoring the water use and identify the water resources related issues, backed by the law; and (d) up-front commitment regarding adequate human and financial resources. The project supports strengthening of the RBO through developing adequate technical and monitoring capacity.

56. **Water resources monitoring network.** Under the project, significant investments are proposed to construct the water resources monitoring network, which is to measure both flow and water quality. The investment is planned at the mainstream Mekong, Sesan, and Srepok as well as ten other major tributaries shared with Cambodia. The parameters of water quality to be measured includes pH (a measure of acidity/alkalinity), chemical oxygen demand (COD), DO, temperature, salinity, suspended soil, nutrients, heavy metals, and pesticide, and fully cover the parameters agreed under the PWQ. The investment will include laboratory equipment to measure heavy metals and pesticide, and automatic water quality monitoring equipment to measure the rest of the parameters. The selection of the automatic monitoring equipment was made because of: (a) compatibility with the other national water quality monitoring system (particularly in the Chinese border); and (b) the need to monitor the water quality in a more frequent manner considering discharge from the hydropower stations in the Central Highlands and occasional swift change in the DO level in the rivers in the Mekong Delta. In order to ensure the proper operation and maintenance, a detailed operational plan will be prepared during the first year of implementation, and the investment will be carried out in two phases with review of the outcome after the first phase.

57. **Hydromet network upgrading.** The project will invest in hydromet in the Central Highlands and will, in principle, replicate the methods used in the Central Coast under the Managing Natural Hazards Project (P118783). The implementation of the activity will be carried out together with the above-mentioned project. In particular, the activity will follow the on-going study on national integration of the hydromet systems aiming at developing a synchronized and connected integrated national system. The technical specification will also follow the ones developed under the project. A few automatic weather stations, rain gauges and water level measurement stations will be built to enable automatic data recording and transfer to hydro-meteorological forecasting centers at the provincial, regional and central levels.

C. Financial Management (FM)

58. The PMU established at VNMCSO by MONRE, which is responsible for the overall implementation of the Project, will be responsible for FM for the project. The Bank carried out the FM Capacity and Risk assessment based on the capacity assessment of the VNMCSO.

59. The financial management function of VNMCSO meets the Bank's minimum financial management requirements. The action plan includes: (a) preparation of a financial management section in the Project Operations Manual; (b) appointment of qualified staff with adequate training on Bank's procedures; and (c) installation of accounting and contract management software for the project.

60. Fund flow will be channeled through one Designated Account for all project activities maintained by VNMCSO at a commercial bank. This design was agreed with the implementing agencies to overcome current limitations of the country system fund flow. VNMCSO will prepare project financial statements on an annual basis and appoint an independent auditor acceptable to the Bank. The audited financial statements shall be sent to Bank annually within six months after the year end. Interim Financial Reporting (IFR) will be done on a semester basis. More details on financial management capacity and arrangements are available in Annex 3.

D. Procurement

61. Procurement financed by the Bank under the project will be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011; and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011; as well as the relevant provisions under the financing agreement.

62. The PMU will be in charge of the procurement for all Components of the project (including managing procurement activities, ensuring the quality of all procurement processes for works, goods and consulting services, and submitting final documents to the Project owner, VNMCSO), including equipment, civil works, and consultants' services financed by the project. The PMU will be a contract signatory. However, in order to facilitate the process, a management team will be established for each Component, as described previously. Under the close guidance of the Deputy Project Directors, the management teams are to: (a) develop Terms of Reference (TORs) and technical specifications; (b) carry out evaluation of the consulting firms, contractors, and equipment suppliers and make recommendations to the PMU for contract signature; and (c) monitor the implementation of the signed contracts (civil works, equipment delivery and consultants' outputs); and (d) make recommendations for the certificate of acceptance.

63. The assessment of procurement implementation capacity and procurement risk and management of VNMCSO and some related agencies of MONRE was carried out during April - July 2013. The main procurement risks for the project are: (a) delays in procurement process, particularly for procurement of specialized equipment (the most significant procurement delays occur at the stage of development of technical specifications); and (b) possible non-compliance with Bank procedures (including governance and corruption issues). Procurement delays could occur at all stages of the procurement cycle, including planning, preparation of procurement documents, bid evaluation, approval of bid evaluation reports, award recommendation, and contract management. Based on these initial capacity assessment results, the procurement risk for the project is rated as "Substantial."

64. In order to mitigate the risks, the following measures will be implemented: (a) intensive capacity building and procurement training for procurement staff, particularly during the first 12 months of project implementation; (b) formalizing the involvement of DWRM, NAWAPI and NHMS with clear responsibility demarcation and coordination mechanism; (c) appointment of qualified and adequate number of procurement staff at the VNMCSO in addition to the mobilization of experienced technical and procurement consultants to support procurement implementation, especially for high value contracts; (d) close bank supervision and prior review of the contract(s) in accordance with the review thresholds set for Vietnam; and (e) regular bank procurement post reviews. More details are presented in Annex 3.

E. Social (including Safeguards)

65. *General.* Most of the LMB population (approximately 60 million people) lives in rural areas. They are predominantly subsistence farmers whose livelihood activities are based mainly in agriculture, fisheries, and the collection of non-timber forest products. They depend in large part on the aquatic resources of the Mekong and its tributaries to sustain their livelihoods. There are a number of ethnic minority groups living in the Mekong Basin, and they are found in all LMB countries. Nearly 40 percent of the people in Cambodia and Lao PDR, the two countries that lie mainly in the basin, have incomes below the respective poverty lines. In Thailand and Vietnam, poverty rates are higher in the northeastern part of Thailand (Isaan) and the central highland of Vietnam than in other parts of the respective countries.

66. In general, the project will benefit the population in the LMB through introduction of IWRM principles, which will facilitate proper consideration of the social and environmental aspects of water resources management in the planning and decision making processes and will support a transparent consultative mechanism. IWRM also recognizes trade-offs in water resources development, such as ones between national revenue generation from infrastructure concessions and safeguarding river health for livelihoods. Investments considered under the project will be largely beneficial to the communities.

67. *Involuntary Resettlement (OP 4.12).* The project will involve only small-scale land acquisition as most of the investment will be of small scale and rehabilitation by nature, for instance, construction of small-scale community infrastructure, automatic monitoring stations, facilities for hydromet. 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 Bank's OP 4.12 for application during project implementation in Vietnam. The RPF outlines key principles, process and implementation arrangements for both preparation and implementation of any site specific Resettlement Action Plan (RAP) that will be identified during project implementation.

68. *Indigenous People (OP 4.10).* The target provinces in Vietnam are home to various ethnic minority groups. In the Central Highland, Gia Rai, Ede, Ba Na are the largest ethnic minority groups. K'mer constitutes a large ethnic minority group in the Mekong Delta region of Vietnam. Since ethnic minority peoples are present in the project area, a social assessment has been conducted as per OP 4.10. The results of the social assessment and consultations with the ethnic minority peoples indicate there is a broad support from ethnic minority peoples from the project

area for the project implementation. An Ethnic Minority Policy Framework (EMPF) has been prepared in compliance with Bank's OP 4.10 to guide the preparation of Ethnic Minority Development Plan (EMDP), where needed, for investments (to be identified) during project implementation. The EMDP, which will be prepared in accordance with the EMPF, will set forth measures to ensure that ethnic minority people receive, where relevant, socio economic benefits that are culturally appropriate to them. Where adverse impact (due to land acquisition) could not be avoided, an action plan is in place to minimize, mitigate, and/or compensate for such adverse effects. Participatory planning and implementation approach will be adopted under Components 1 and 2 to ensure that ethnic minority people receive socio-economic benefits from the sub-projects (to be identified during project implementation).

69. **Social safeguards implementation.** Implementation of the social safeguards instruments will be the responsibility of the VNMCSO. Costs related to land acquisition as well as the costs for other mitigation measures associated with the implementation of the RAP and EMDP are included in the counterpart funds.

70. **Gender equity.** In the LMB, women play a key role in water resources related activities, particularly in agriculture and fisheries, and this is also the case in the project area of the project, in the Mekong Delta and the Central Highlands. Female-headed households are often the poorest of the poor and more vulnerable to impacts of development. During project preparation, effort has been made to ensure women and men had equal opportunities to participate in consultation and planning of project activities, as indicated through the social assessment exercise and other technical consultation series. Under Component 1, the RBO will include representatives of the Vietnam Women's Union and other civil societies to ensure the women's point of view will be incorporated. Furthermore, the studies planned under the project -- such as ecosystem or water pollution -- will also incorporate the viewpoint of women. The pilot salinity monitoring planned under Component 2 will target equally both men and women who are engaged in livelihood activities through establishing gender sensitive focus groups.

71. **Consultation framework.** The process of developing the project is based on extensive consultations with various stakeholders, mainly with local governments and villagers. Consultations were carried out during project preparation on February 4, 2013 in Dong Thap province, February 5-6, 2013 in Dak Lak province, and June 20, 2013 in Dak Lak province to confirm the communities' interest in and support for project implementation. The consultation also aimed to collect communities' feedback on project design and activities. There is no adverse impact anticipated as a result of project activities. Nevertheless, during project implementation, consultation with local people will continue to be made for any subproject/project activities to ensure the intended benefit of the project could be achieved and maximized, particularly the establishment of an RBO in the Central Highlands (Component 1) and salinity monitoring mechanism in the Mekong Delta (Component 2). Where project activities could be beneficial to ethnic minorities in the project areas and are culturally appropriate to them, consultation with Ethnic Minority peoples, as per the project's EMPF, will be made; where appropriate, an EMDP will be prepared to ensure ethnic minorities could receive socioeconomic benefits from the project.

F. Environment (including Safeguards)

Category: B (partial assessment)

72. **Overall impacts.** The overall environmental impact of the project will be positive. The proposed investments under Component 1 include water resources monitoring networks to collect information on the water quality and which are essential to identifying the key water quality related environmental issues, if any, and taking proper actions. The technical assistance and institutional support activities planned under Component 1 (River basin management) will support the country towards multi-sectorial analysis and decision making processes on river basin development taking into account inter-sectoral and upstream and downstream impacts or impacts on water quality or broader ecosystems health and sustainability.

73. **Potential negative impacts.** The project will not create any significant negative impacts on the local environment or for the local population. The project only triggers OP 4.01 (*Environmental Assessment*) because the implementation of the project will involve construction activities of small monitoring stations. Given minor environmental impacts, an Environmental Code of Practice (ECOP) was prepared for the project to manage potential environmental impacts during construction. Although the project does not trigger OP 4.11 (Physical Cultural Resources), the ECOP includes the “chance find procedures” to address Physical Cultural Resources unexpectedly found during construction. The ECOP was disclosed in the Bank’s InfoShop and Vietnam Development Information Center on March 11, 2013 and locally on March 11, 2013. The ECOP will be included in the bidding document and the potential contractors will be informed of this obligation. This requirement will be included in the safeguard part of the Project Implementation Plan. Public consultation with key stakeholders was also conducted by the Vietnam National Mekong Committee to inform them about the 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 have been incorporated into the ECOP. During the project implementation the client will prepare environmental protection commitments (EPC) for construction of the water resources monitoring stations as required by the governmental environmental management regulation to address the project negative environmental impacts.

74. **Training.** Training on safeguard principles and instruments, including the ECOP and safeguard operation manual, will be provided to the project staff and key stakeholders during project implementation. This is to ensure that: (a) the project activities will be properly screened through the ECOP; (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.

International Waterways (OP/BP 7.50). The Mekong River is an International Waterway and the project activities trigger the application of OP 7.50. However, all investments under the project are for the purpose of water resources surveys, and the proposed water resources monitoring stations will not alter the quantity or quality of the flows in the river. Therefore, no riparian notification is required as the project activities

fall under paragraph 7 (b) of OP 7.50, which stipulates an exception to the said policy requirement.

Annex 1: Results Framework and Monitoring

Mekong Integrated Water Resources Management Project - Phase II

Project Development Objective (PDO): <i>to develop the capacity of the Vietnam Ministry of Natural Resources and Environment, Vietnam National Mekong Committee and relevant agencies to manage trans-boundary water resources and climate risks through river basin approaches and improved water resources data collection, analysis and exchange.</i>												
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				
Indicator One: Representative river basin management organization established and operational in the Vietnamese part of the 2S Basin	<input type="checkbox"/>	event	non existent	Statute and business plan developed and approved	RBO physically and legally established with at least 40 percent of the operational cost covered	RBO monitoring the water use and at least 60 percent of the operational cost covered	RBO monitoring the water use and at least 80 percent of the operational cost covered	RBO monitoring the water use and 100 percent of the operational cost covered	Yearly	Semi-annual reports Bank missions	Vietnam (MONRE)	
Indicator Two: Central Highland Hydrometeorology forecasting information shared with Cambodia by the NHMS	<input type="checkbox"/>	event	0	0	0	data shared	data shared	data shared	Yearly	Annual reports Bank missions	Vietnam (MONRE)	A Salinity model and a sediment model
Indicator Three: Number of provinces receiving improved hydrometeorology forecasting and early warning information in the Central Highlands	<input type="checkbox"/>	number	0	0	0	5	5	5	Yearly	Yearly	Annual reports	Annual Report
Indicator Four: Water Quality Information shared with MRC in line with the MRC's procedures and the associated technical guidelines	<input type="checkbox"/>	event	0	0	0	data shared with MRC and required report prepared	data shared with MRC and required report prepared	data shared with MRC and required report prepared	Yearly	Annual reports	Vietnam (MONRE)	Annual Report
INTERMEDIATE RESULTS												

Intermediate Result (Component One): Support for River Basin Management in the Vietnam part of the Sesan-Srepok sub-basin											
<i>Intermediate Result Indicator One:</i> Preparation of RBO business plan		number	0	1	1	1	1	1	Annual	Annual Project Report	MONRE, Vietnam
<i>Intermediate Result Indicator Two:</i> Number of the identified technical studies conducted with quality acceptable to the Bank		number	0	0	1	2	3	4	Annual	Annual Project Report	MONRE, Vietnam
<i>Intermediate Result Indicator Three:</i> Issuance of the annual report confirming the participation of the key stakeholders representing the energy sector, agriculture sector (representing farming communities), and Vietnam Women's Union (women)		event	0	0	0	report issued	report issued	report issued	Annual	Annual Project Report	MONRE, Vietnam
Intermediate Result (Component two): Water Resources Monitoring											
<i>Intermediate Result Indicator One:</i> Number of water quality monitoring stations established/upgraded in the Mekong Delta and the Central Highlands		Monitoring stations	0	0	9	18	18	18	Annual	Annual Project Report	MONRE, Vietnam
<i>Intermediate Result Indicator Two:</i> Allocation of the estimated operation and maintenance cost of the water resources monitoring network		percentage	0	0	20	60	100	100	Annual	Annual Project Report	MONRE, Vietnam
Intermediate Result (Component three): Hydro-meteorological information network, flood forecasting, and early warning systems											
<i>Intermediate Result Indicator One:</i> No. of additional hydromet stations installed/upgraded in the Central Highlands and connected to the national system	<input type="checkbox"/>	Monitoring stations	0	0	9	18	18	18	Annual	Annual Project Report	MONRE, Vietnam
<i>Intermediate Result Indicator Two:</i> Allocation of the estimated operation and maintenance cost of the hydromet monitoring network	<input type="checkbox"/>	percentage	0	0	20	60	100	100	Annual	Annual Project Report	MONRE, Vietnam

Annex 2: Detailed Project Description

Mekong Integrated Water Resources Management Project - Phase II

1. **Overview:** Phase 2 of the M-IWRMP targets Vietnam, including both upstream and downstream portions of the Mekong River, which comprise the Central Highland and the Mekong Delta regions. This phase is comprised of four Components, as follows:

Component 1: Support for the Institutional Development of Integrated Water Resources Management in the Vietnam Part of the Sesan-Srepok Basin (Estimated Cost: US\$3.4 million, including contingencies)

2. **Component 1 Overview.** This Component will support institutional development for implementation of IWRM in the Sesan-Srepok (Upper) Basin, which is shared with Cambodia, through: establishment of, and support to, an RBO; development and operation of a water resources monitoring system for the areas of the basin located in Vietnamese territory; and the undertaking of critical studies. The Sesan-Srepok (Upper) Basin (i.e., 2S Basin) is part of the greater 3S (Sekong-Sesan-Srepok) Basin shared by Cambodia, Lao PDR, and Vietnam, and is the most critical basin of the Mekong tributaries in terms of water flow, sediment, and biodiversity. The major water resources related issues in this basin are: (a) drought and flood risk management, including conflicts among water users; (b) major and small hydropower development, cascade operations and impact mitigation; (c) benefit sharing among developers, local people and the environment; (d) water pollution control; and (e) coordination with Cambodia, downstream riparian, on various IWRM issues such as release of water from hydropower stations, water quality, disaster risk management, sedimentation. In order to address these issues, MONRE aims to prepare for the establishment of the RBO in this basin.

3. The key stakeholders in the RBOs are: (a) MOIT (hydropower); (b) MARD (water services); (c) MONRE (water resources; environment) at central and provincial levels; (d) water users; (e) technical institutions; and (f) community groups and civil society, in addition to the five provincial authorities, and RBO shall reflect their voices.

4. This Component will be complementary to the support for the Cambodia-Vietnam trans-boundary water resources management dialogue supported by the ongoing Phase I. Similar support is planned for Cambodia through the forthcoming Phase III. In this Component, the following activities will be supported:

- **Activity (1-1): Establishment and support for operation of a RBO.** Preparation for the establishment of the RBO will include: (a) preparation of the RBO organizational structure and business plan (organization charts, staffing plan, and financing plan); (b) finalizing the statutes and operating rules of the RBO; (c) assessment of human resources needs, including capacity and training, followed by a support program; and (d) stakeholder workshops and awareness raising activities. These activities will be implemented during the first two years of project implementation.
 - Establishment of the RBO will include the following: (a) renovation of the office which is to be based in the Sesan-Srepok basin area; (b) purchase of vehicles, office equipment and furniture; and (c) development of logistics arrangements. Establishment of the RBO

is envisaged by the end of project year 2, and MONRE has already made a commitment to allocate adequate staff (about 20 in total) and operating costs.

- **Activity (1-2): Support for River Basin Planning & Studies.** This will include: (a) geographic information system (GIS)-based basin profile database which will include inventories of surface and groundwater resources information, land use, ecosystems, forest coverage, socio-economic development, and water resources infrastructure (including dams); and (b) review and updating the current river basin management plan. This activity will also support technical studies, including: (a) assessment of potential impacts on water availability due to the potential inter-basin transfer between Sesan and Srepok river basins; (b) identification of critical water pollution areas; (c) sediment study; and (d) study of bank erosion and restoration of depleted water resources and ecosystems. Some of the technical studies will be identified during implementation by the RBO once it has been established.
- **Activity (1-3): Support for Monitoring.** This will include establishment of the basin water resources monitoring system -- which is a database comprising a hydrological model, software and tools linked to the hydromet stations and hydropower dams as well as major water use and discharge points (irrigation, urban water supply and sewerage, industrial zone) -- to enable real time monitoring of flow. The system is also expected to monitor groundwater and water quality to support the overall WRM monitoring in the basin.
- **Activity (1-4): Capacity Development.** Technical training for staff, and other stakeholders, of the RBO including hydrological modeling, IWRM-based water resources planning, dispute management and consensus making and overseas study tours. It is also planned that key RBO staff will also participate in the regional sub-basin planning supported under the MRC's Basin Development Program.
- **Activity (1-5): Component management:** Provision of support for component management, including incremental operating cost, monitoring and evaluation, capacity building, provision of technical advisory services, purchase of goods (including office equipment and vehicles), and facilitation of workshops and trainings.

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 (Estimated Cost: US\$17.3 Million, including contingencies)

5. **Component 2 Overview.** This Component will finance the establishment of a water resources monitoring network in the Mekong Delta and Central Highlands. This will enable the Government of Vietnam to collect essential information on water resources in terms of flows and quality in order to establish a baseline and undertake trend analyses of water resources which will serve as a basis for local planning as well as bi-lateral and multi-lateral dialogue. The information collected by this network will also be shared with the MRC and will contribute to the overall water quality monitoring carried out by MRC's Environmental Program. Lastly, on a pilot basis, the Component also aims to support provinces and communities in the Mekong Delta to collect more detailed information on salinity intrusion and support better decision making. This Component will consist of three activities:

- **Activity (2-1): 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 data on water quality and quantity.** This activity will aim at enabling the collection of data at the border areas through the following:
 - *Trans-boundary water resources monitoring network development at the border areas with Cambodia and Laos in the Mekong Delta and the Central Highlands.* This activity includes upgrading of the existing hydromet stations and construction of nine new water resources monitoring stations in the border provinces of Long An, Dong Thap, An Giang, and Tay Ninh along the mainstream (the Bassac and the Mekong) and high priority tributaries shared with Cambodia (Vinh Te and Caico) and seven stations in the border area in the Central Highland (border provinces such as Kon Tum, Gia Lai, Đak Lak và Đak Nông which are in Sesan and Srepok basin as well as main tributaries such as Ia Drang and Ia H'leo). The station located in Tay Ninh Province (Van Co Dong) is outside the Mekong Basin geographic area; however, this area is affected by the Mekong floods and thus is included in the monitoring network. An automatic data collection system will be installed at each of these stations to collect the data including: flow, temperature, conductivity, turbidity, salinity, pH, COD, DO, NH₄⁺ (Ammonium ion), etc. Two stations in Dong Thap province have been identified for the possible upgrading to enable collection on the water flow/quality data.
 - *Water Quality Monitoring Laboratory Equipment:* In order to support detailed analysis on water quality such as heavy metals, pesticides and nutrients, equipment will be provided to the NAWAPI, which is in charge of operation and maintenance of the water resources monitoring networks once established. It is expected that the equipment will be used to measure heavy metals and pesticides.
 - *Developing a Data Sharing Mechanism with Cambodia and the MRC.* Support will be provided to develop a data sharing mechanism with Cambodia according to the bilateral regulations to be agreed and with the MRC according to the MRC's Procedures on Data and Information Exchange and Sharing. This activity will be carried out in close coordination with the Phase I activities on trans-boundary integrated water resources management dialogue.
- **Activity (2-2): Establishment of a water resources information system for the Lower Mekong in Vietnam.** This activity will help integrate and develop an information system for the data collected by MONRE and MARD (to be shared by MONRE, MARD, and the concerned provinces). More specifically, this will include the following activities:
 - *Studies and Development of Data Sharing.* This activity involves assessing the status of the current monitoring practices by different institutions, defining the purpose and objectives, and identifying the opportunities and constraints for the system integration possibilities. It would also identify the key users of the system, define the parameters of the information collected, and protocols for the data sharing, and develop a prototype database.

- *Capacity Development*: This activity includes training for operation and management for the staff of the concerned institutions and the provinces.
- *Promotion of the data sharing system* to other stakeholders (for example NGOs) and development of a portal website.
- **Activity (2-3): Pilot Salinity Monitoring Support for Kien Giang province.** The activity will support a salinity intrusion control pilot in the coastal province of Kien Giang. The main purpose of salinity control in this province is to support farmers to make informed decision on their agriculture/aquaculture activities and the trade-offs of using fresh and brackish water for different water users. The activities proposed under this activity will promote close collaboration between the provincial entities: Department of Natural Resources and Environment (DONRE) and the Department of Agriculture and Rural Development (DARD). The information will also be shared with An Giang province, which is located upstream to Kien Giang province to allow An Giang to also benefit from the information collected. This will build on Kien Giang and An Giang's 2013 water cooperation Memorandum of Understanding. In particular, the activity will include the following activities:
 - *Salinity Monitoring Stations*: upgrading and modernization of existing hydrological monitoring stations that monitor salinity intrusion and construction of selected additional water quality monitoring stations in Kien Giang province. The exact location for the constructing the new stations will be determined by the integration study mentioned below.
 - *Integration Study*: undertaking of an integration study in Kien Giang province including: (a) inventory and analysis of existing monitoring networks; (b) diagnostic review of critical areas for salinity intrusion; (c) identification of major gaps and needs for new stations; (d) identification of measures for protocol and synchronization of existing salinity monitoring information; and (e) development of a GIS-based salinity monitoring system including parameters, format, modalities and procedures for data collection. This activity will also include technical training for staff at provincial level on hydrology modeling, GIS and data collection. Training will also be provided at the sub-provincial level on how to use the information and on different forms of information for forecasting results and early warning.
- **Activity (2-4): Component management:** Provision of support for component management, including incremental operating cost, monitoring and evaluation, capacity building, provision of technical advisory services, purchase of goods (including office equipment and vehicles), and facilitation of workshops and trainings.

Component 3: Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System in the Central Highlands (Estimated Cost: US\$7.6 million, including contingencies)

6. **Component 3 Overview:** This Component aims to modernize forecasting networks in Vietnam's Central Highlands, strengthen the capacity of hydromet centers for enhanced service

delivery, and support the regional integration of forecasting systems in the Lower Mekong Basin. The current hydromet service in the Central highlands is relatively weak due to: (a) obsolete equipment and communication system installed in mid 1970s; (b) inadequate capacity of the staff, and (c) inadequate coverage of the stations, particularly at the upstream of the dams. Recently, the Government of Vietnam has embarked on a major initiative to upgrade the hydromet forecasting system to improve natural disaster risk management in the Central Coast region supported by IDA's Vietnam Managing Natural Hazards Project. This Component will, in principle, replicate the initiative in the Central highlands. This Component will aim at providing at least 48-hour flood forecasting (currently 24 hours) and update at every interval for provincial flood and storm control committee and reservoir operators through upgrading the equipment, training of the staff and construction of additional stations in the critical areas. In addition, considering the regional linkage, this Component will also help the Government of Vietnam share the hydromet information with Cambodia. This Component includes the following three main activities:

- ***Activity (3-1): Strengthening of Hydromet Observation Networks and Forecasting Services in the Central Highlands:*** This activity aims to modernize the observation networks and information communication technology (ICT) systems for the regional hydromet station in the Central Highlands and enhance the service delivery of provincial hydromet centers. In particular, it will include the following activities:
 - *Upgrading and Construction of Hydromet Stations.* Upgrading of six existing hydrological stations and 12 existing metrological stations, as well as construction of eight new hydrological stations in Kon Tum, Gia Lai, Dak Nong and Dak Lak provinces. The new hydrological stations will be located in the upstream of the existing hydropower stations to enable more accurate and reliable forecast of the water flow.
 - *Integration of the upgraded and newly constructed stations into the regional and the national system.* This activity, mainly technical assistance and hardware, will support the integration of the new and existing hydrological and metrological stations located in the Central Highlands , including the four hydrological stations located in Kon Tum, Ban Don, Duc Xuyen, Giang Son recently transferred from the MRC (HYCOS program) to the MONRE and link to the national hydromet system.
 - *Enhancement of flood forecasting and flood warning system.* This activity includes technical assistance and provision of relevant hardware for enhanced data Management and service delivery, specifically: (a) modernization of ICT infrastructure and computer hardware at regional and provincial hydromet centers and enhancement of data transfer and communication between the provincial, regional, and national hydromet centers; and (b) enhancement of service delivery in the NHMS and the provincial centers through support for weather and impact forecasts; for example, a GIS mapping facility will be installed to deliver rapid location-specific forecasts; Forecaster workstations will be installed to deliver specialized communications to different users.
- ***Activity (3-2): Institutional Strengthening and Capacity Building.*** The activities under this activity will focus on capacity development for hydromet and forecasting. Specifically, this

will include training for the operation and maintenance of the installed equipment, particularly automated weather station, and training for forecasting for both hydromet and major users such as agriculture communities and hydropower stations.

- **Activity (3-3): Regional Integration for Forecasting and Early Warning Systems in the Lower Mekong.** This activity will support the regional integration of hydromet data to be shared with Cambodia, and possibly with Thailand and Lao PDR. With the support of AusAID, the Bank is currently carrying out a study to identify the technical and institutional constraints to regional integration and explore solutions. As a follow up, this activity will support additional studies, equipment and capacity building necessary to strengthen regional harmonization, and interoperability of the observation networks and data sharing. Detailed investments under this Component will be identified in the above-mentioned on-going study. The study will identify the key technical and capacity issues for the Vietnam NHMS to become a regional center that can provide data and services to Cambodia and Lao PDR. This activity will allocate some funds to implementation of the recommendations of the AusAID supported study.
- **Activity (3-4): Component management:** Provision of support for component management, including incremental operating cost, monitoring and evaluation, capacity building, provision of technical advisory services, purchase of goods (including office equipment and vehicles), and facilitation of workshops and trainings.

Component 4: Project Management (Estimated Cost: US\$1.7 million, including contingencies)

7. **Component 4 Overview.** This Component will provide support for management and regional coordination for the implementation of the project. The activity will finance: (a) Incremental Operating Costs of the PMU; (b) purchase of goods (including office equipment and vehicles); (c) provision of technical advisory services assistance for VNMC for collaboration with riparian countries; (d) monitoring and evaluation of project implementation and impacts; (e) facilitation of workshops and training, including financial management, procurement, and safeguards; (f) external audits; (g) capacity building, including various technical consultancies needed to support VNMC in implementing the project such as monitoring and evaluation (M&E), safeguards monitoring, and procurement support; and (h) support for collaboration and coordination with other riparian countries of the Lower Mekong Basin. The cost of project staff (including national consultants for managing the project, per diems and transportation costs) and office, and utilities will be financed by counterpart funds.

8. The total cost for the project is estimated at US\$30.0 million, and the IDA will finance US\$25 million. The summary project cost table can be found below:

Table A2-1: Project Costs Table

	(US\$ '000)			% Foreign Exchange	% Total Base Costs
	Foreign	Local	Total		
Project Cost by Component (Base Cost)					
1. Support to Institutional Development for River Basin Management in the Vietnam part of the Sesan-Srepok sub-basin	742	2,348	3,090	24	12
2. Establishment of a water resources monitoring network and water resources information system	9,751	5,976	15,727	62	58
3. Strengthening the Hydro-Meteorological Information Network, Flood Forecasting and Warning System	4,836	2,073	6,909	70	26
4. Project Management	525	1,020	1,545	34	5
Base Cost	15,854	11,417	27,271	58	100
Physical Contingencies	793	571	1,364	58	5
Price Contingencies	793	571	1,364	58	5
Total Project Cost	17,440	12,558	29,998	66	110
Total Financing Plan					
Government	3,728	1,270	4,998		
IDA Credit	8,824	16,176	25,000.0		
Total	12,552	17,436	29,998.0		

Annex 3: Implementation Arrangements
Mekong Integrated Water Resources Management Project - Phase II

A. Project Institutional and Implementation Arrangements

1. The project will be implemented by Vietnam. MONRE has been designated to be responsible for implementing the project. The VNMC Standing Office (VNMCSO) under the auspices of MONRE has been assigned as the overall executing agency.

2. **Project Oversight.** As the project is a part of the regional program comprising Lao PDR, Cambodia, Vietnam, and the MRC, there will be two levels of project oversight: regional and national. At the regional level, a Regional Project Steering Committee (RPSC) established for the M-IWRMP Phase I, will also monitor the overall progress of this project, facilitate the resolution of technical matters which requires 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, National Mekong Committees (NMCs) in Thailand, Cambodia, Vietnam, and Lao PDR, and the executing agencies in Lao PDR (MONRE for Phase I), Vietnam (MONRE for this project), and Cambodia (Cambodian National Mekong Committee for the planned Phase III). The Project Coordination and Management Unit (PCMU) established in the MRCS under the Phase I will serve as a secretariat.

3. The RPSC will organize bi-annual meetings to formally review progress reports made by the PCMU and the executing agencies at the national level, approve the annual plan, and give overall guidance to the PCMU and the executing agencies with respect to project implementation.

4. **Project Management Unit (PMU).** MONRE has established a PMU at the VNMCSO, which will have overall implementation responsibilities for the project. VNMCSO will be solely responsible for managing the project, including procurement processing (including contract signatory) and financial management.

5. **Staffing of the PMU.** A Project Director will be appointed by the MONRE and will be assisted by the Deputy Project Directors, who will include: a permanent Deputy Director from VNMCSO, a Deputy Director from the Department of Water resources management (DWRM) responsible for Component 1 management, a Deputy Director from National Centre for water resources planning and investigation (NAWAPI) responsible for Component 2 management, and a Deputy Director from the NHMS responsible for Component 3 management. PMU staff will include: a Project coordinator, chief 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 to assist the PMU. During implementation, the number of PMU staff will be increased and decreased based on the actual needs agreed by VNMCSO and the Bank.

6. **Component Technical Team.** VNMC will establish a component technical team (CTT) for each component in order to ensure technical support for each Component, specifically: preparation of technical specifications and TORs, technical evaluations during procurement, inspection of the purchased equipment, review of interim and final outputs from the consultants, and issuance of certification of acceptance. The CTT will assist deputy directors in performing their responsibilities. Each CTT will comprise of technical experts, headed by the senior technical expert of the respective department/institute, and report to the relevant deputy director.

B. **Financial Management, Disbursements and Procurement**

Financial Management and Disbursement

7. The overall financial management risk is assessed as Substantial. The key risks identified are: (a) project management personnel are not yet formally appointed, leading to lack of responsibility in project design and preparation; (b) lack of experience in managing Official Development Assistance (ODA) projects of the internal control system, which may lead to the failure to detect misuse of Project fund at early stages; and (c) weak capacity of reporting, which may result in inaccurate and delayed financial information for project management decision making.

8. Key actions planned during Project preparation to improve Financial Management have been completed including; (i) Appointment of adequate qualified experienced officers to be in charge of financial management of the Project, (ii) Completion of the Operation Manual, including FM section, and (iii) Including a package for accounting and contract management software in the procurement plan. The only outstanding action is the training on project financial management to Project financial management staff. This training will be completed immediately following effectiveness as planned.

9. **Interim Financial Reports (IFRs).** VNMCSO will prepare and submit interim financial reports to the Bank not later than forty-five (45) days after the end of each calendar semester. The IFRs, which are unaudited, will cover all project activities and contain the following forms: (a) IFR1: Sources and Uses of Funds; (b) IFR2: Disbursement by Component and by activity; and (c) IFR3: Statements of Designated Accounts Reconciliation.

10. **External Audit.** Project financial statements will be prepared by each of the implementing agencies for their own Components and activities, and consolidated by the VNMCSO for audit. The project's annual financial statements will be audited in accordance with international auditing standards and in compliance with the independent auditing regulations of Vietnam. The VNMCSO will be responsible for preparation of the whole project financial statements and appointment of the auditor for the entire project in accordance with the Bank's guidelines.

11. **Governance and Anti-corruption.** To strengthen the financial management arrangements for the project and to help reduce the risk of fraud and corruption, particular emphasis is needed in the following areas: (a) clear FM responsibilities without gaps and overlaps in the duties to be performed in the Financial Management (FM) manual; and (b) authorization by Expenditures

Verification Agencies (State Treasury and VDB) prior to payments, following the procedures in the country.

Disbursements

12. **Funds Flow.** The primary disbursement method will be Advances. One segregated US dollar-denominated Designated Account (DA) will be set up and managed by the VNMC at a bank acceptable to IDA with a Fixed Ceiling of US\$2,000,000. Supporting documentation required for documenting eligible expenditures paid from the DA are Statement of Expenditures and a list of payments against contracts that are subject to the Bank's prior review with Records. The frequency for reporting eligible expenditures paid from the DA is quarterly. The Reimbursement, Special Commitment, and Direct Payment disbursement methods will also be available. Reimbursements will also be documented by Statement of Expenditures and a list of payments against contracts that are subject to the Bank's prior review with Records. Direct Payments will be documented by Records. The Minimum Application Size for Reimbursement, Special Commitment and Direct Payments will be US\$400,000 equivalent.

13. The Project will have a Disbursement Deadline Date (final date on which the Bank will accept applications for withdrawal from the Recipient or documentation on the use of Credit proceeds already advanced by the Bank) four months after the Closing Date. This "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.

14. **Proposed Disbursement Withdrawal Schedule.** It is expected that the proceeds of the credit will be disbursed over a period of five years from 2014 to 2019, including the Grace Period.

Table A3-1: Proposed Disbursement Withdrawal Schedule

	<i>Category</i>	<i>US\$ (million)</i>	<i>SDR (million)</i>	<i>% Financing (inclusive of Taxes)</i>
1	Eligible expenditures ^[1] of the Project	25.00		100
	TOTAL	25.00		

Notes:

^[1]“Eligible expenditures” is defined as the payment for the financing of the reasonable cost of goods (including vehicles), works, services, Incremental Operating Costs, or Training and Workshops required for the Project, and to be financed out of the proceeds of the Financing and procured, all in accordance with the provisions of the Financing Agreement.

- “Incremental Operating Costs” means the reasonable cost of incremental eligible expenditures incurred by the Recipient and implementing agencies as well as concerned participating agencies and local beneficiaries in the implementation of the Project, based on annual work plans and budgets approved by the Association, which expenditures will not have been incurred absent the Project, including the costs of consumables, operation, maintenance, and/or rental of equipment and vehicles; communication costs; information and communication campaigns; transportation costs; and per diem for Project staff including contracted staff and other participants for purposes of Project implementation, management, and supervision; and wages of contracted staff; but in all cases excluding salaries, salary allowances, and salary supplements of the Recipient’s civil servants (“công chức”, “viên chức”).
- “Training and Workshops” means the reasonable costs of expenditure incurred by the Recipient, based on annual work plans and/or terms of reference acceptable to the Association, in facilitating, conducting, and/or undertaking domestic and overseas training and workshop activities under the Project, including: costs of training or workshop materials; equipment and venue rental; and per diem, accommodation, and transportation for those attending the training or workshop, honoraria for government trainers; but excluding salary and salary supplements of the Recipient’s civil servants (“công chức”, “viên chức”).

Procurement

15. **Institutional Arrangement.** MONRE has established a project management unit at the VNMCSO and will appoint: (a) a Project Director and a Deputy Director from VNMC, and (b) Deputy Directors from Department of Water Resources Management, National Center for Water Resources Planning and Investigation (NAWAPI), and National Hydromet Services (NHMS) responsible for implementation of Components 1, 2 and 3 respectively. The Project Director, in turn, will appoint technical staff for each Component based on nominations from DWRM, NAWAPI and NHMS. The PMU will be responsible for overall procurement responsibilities including contract signing. To ensure adequate technical support and coordination, the technical staff will provide support to: (a) develop TORs and technical specifications; (b) evaluate bid/proposals; (c) monitor contract execution; and (d) make recommendations for acceptance of goods, civil works or consultant outputs.

16. **Procurement capacity and risk assessment.** The assessment was carried out during project preparation and revealed the following findings:

- VNMCSO has accumulated extensive experience in regional cooperation with international development partners through the activities of the Mekong River Commission (MRC). However, in terms of managing donors funded projects and programs, VNMCSO has experience with only two small projects: one of US\$500,000

financed by UNDP and the other of around US\$330,000 by the Bank (M-IWRM Project PHRD Grant, TF092901);

- VNMCSO staff does not have practical experience with large procurement subject to Quality-and-Cost-Based Selection (QCBS), International Competitive Bidding (ICB) or national Competitive Bidding (NCB) procedures. The PHRD preparation Grant mentioned above only financed small consulting assignments and procurement of office equipment through Shopping procedures. However, VNMCSO has gained some experience in preparing TOR for technical services;
- Many staff of VNMCSO have participated in training on public procurement organized by the Ministry of Planning and Investment and received the Certificates. During the period of 2008-2011, the staff of VNMCSO also attended procurement training workshops organized by MRC for the member countries on the procurement regulations of the Commission. VNMCSO for the first time attended the training on the Bank procurement rules and procedures in Hanoi from June 17 to 19, 2013;
- The procurement experience of DWRM and NAWAPI is mainly limited to Government rules and procedures, while NHMS has a PMU which has been implementing the Bank financed Vietnam Managing Natural Hazards Project since September 2012. At present the PMU is in process for selection of several consulting services using QCBS, Selection Based on Consultants' Qualifications (CQS) and ICB methods, and for procurement of goods following NCB procedures. The PMU has received two trainings on Bank procurement rules and procedures. It is anticipated that NHMS will support VNMCSO in procurement under Component 3.

17. In view of the foregoing, the implementation entities in general have limited knowledge and experience in procurement of the Bank financed projects, especially in procurement of large and complex packages. Accordingly, the following risks are identified: (a) delays in procurement process, particularly for procurement of specialized equipment (the most significant procurement delays occur at the stage of development of technical specifications); and (b) possible non-compliance with Bank procedures (including governance and corruption issues). Procurement delays could occur at all stages of the procurement cycle, including planning, preparation of procurement documents, bid evaluation, approval of bid evaluation reports, award recommendation, and contract management.

18. Based on this initial capacity assessment and considering the nature and size of procurement according to the initial procurement plan, the procurement risk for the project is rated as "Substantial."

19. To mitigate the risk and build up the procurement capacity, the Bank team agreed with VNMCSO the following key measures to be taken: (a) responsibility for clearance and approval of procurement decisions will be fully delegated to VNMCSO, (b) appointment of qualified procurement staff at the implementation unit; (c) formalizing the involvement of DWRM, NAWAPI and NHMS with clear responsibility demarcation and coordination mechanism between the PMU and the technical teams in those supporting agencies; the responsibilities of

and coordination between the various players were described in the Project Operational Manual, which was approved by MONRE on October 22, 2013 ; (d) the PMU and the technical teams to start early work on the definition of technical specifications for the specialized equipment and the information systems to be procured under the project; (e) staff of VNMCSO and the related MONRE agencies who are involved in procurement should receive further training on the Bank procurement procedures and contract management prior to the start of project implementation; (f) individual consultants for procurement and contract management support, particularly for the high value specialized equipment contracts, shall be hired; and (g) VNMCSO, NHMS, DWRM, and NAWAPI will learn procurement experiences from the other project implementing agencies in rural and water sectors who have gained considerable experiences in procurement of the Bank financed projects and in implementation of similar projects. In addition, the Bank team should provide intensive hands-on support and closely monitor the procurement performance, particularly during the initial period of project implementation.

20. Applicable Procurement Procedures. Procurement for the project will be carried out in accordance with the World Bank's "*Guidelines: Procurement of Goods, Works and Non-Consulting Services Under IBRD Loans, IDA Credits & Grants by World Bank Borrowers*" dated January 2011 and "*Guidelines: Selection and Employment of Consultants Under IBRD Loans, IDA Credits & Grants by World Bank Borrowers*" dated January 2011. For each contract under the project to be financed by the IDA Credit, the different procurement methods or consultant selection methods, the estimated costs, prior review requirements, and time frame shall be agreed between the PMU and the Bank in the Procurement Plan.

21. Procurement Thresholds. The following procurement thresholds are applicable to the project which may be reviewed and revised during project implementation:

- Civil works: \geq US\$10 million/contract: International Competitive Bidding (ICB); $<$ US\$10 million/contract: National Competitive Bidding (NCB); $<$ US\$0.2 million/contract: Shopping; Direct Contracting: permissible in only exceptional circumstances; and
- Goods and non-consulting services: \geq US\$1 million/contract: International Competitive Bidding (ICB); $<$ US\$1 million/contract: National Competitive Bidding (NCB)⁶; $<$ US\$0.1 million/contract: Shopping; Direct Contracting: permissible in only exceptional circumstances.

22. Consulting services: Quality-and-Cost-Based Selection (QCBS); Quality-Based Selection (QBS); Least-Cost Selection (LCS); Selection Based on Consultants' Qualifications (CQS); Single Source Selection (SSS); and Selection of Individual Consultant, and Selection of Individual Consultant under Single-source basis.

23. Review of the Procurement Activities. The Bank will review the Borrower's procurement decisions through two modalities: prior review and post review. The following thresholds for the Bank's prior review will be applied for the project (contracts below the Bank's prior review thresholds shall be subject to the Bank's post review on a sample basis):

⁶ Where goods are not normally available from within Vietnam, the method of procurement will be ICB even if the contract value is less than US\$1 million.

- Civil works and Goods: all ICB contracts, the first three NCB contracts, and all contracts procured and awarded under Direct Contracting method;
- Consulting services: Contracts with firms estimated to cost equivalent or more than US\$300,000 each for competitive selection, and the first contract for each method regardless of value; contracts with firms procured and awarded under SSS method: \geq US\$50,000; contracts with individual consultants for specialized assignments such as procurement support, long term technical assistances; contracts with individual consultants procured and awarded under Single-source basis: \geq US\$20,000; and all audit contracts.

24. **Procurement post Review.** Contracts below the prior review thresholds will be subject to post review as per procedures set forth in paragraph 5 of Appendix 1 of the Procurement Guidelines and Consultant Guidelines. The rate of post-review will be set initially at twenty percent. This rate may be adjusted periodically based on the performance of the implementing agencies.

25. **Procurement Plan.** VNMCSO has prepared an initial Procurement Plan which has been reviewed by the Bank, was finalized on October 17, 2013 and agreed at the negotiations. The procurement plan will then be updated periodically or as needed by the PMU to reflect project implementation needs. Each update will be subject to the Bank review and clearance. The initial procurement plan and subsequent updates will be published under the Projects and Operations pages of the Bank's external website.

26. The Vietnam Institute of Meteorology, Hydrology and Environment (IMHEN) is proposed to conduct the sedimentation studies under Component 1 (Support for River Basin Management) of the project. IMHEN is a governmental research institution under MONRE. This institute has been engaged under USAID (United States Agency for International Development) financing to carry out a preliminary analysis on the sediment issue in the whole 3S basin (covering Vietnam, Cambodia and Laos). The first phase of this study was completed in 2012; however, the second phase has not yet started due to the construction of a hydropower dam in Lao PDR. The sedimentation study under the project (covering Vietnam only) is a natural continuation of the previous study, thus it would make sense to continue to the engagement of IMHEN for the sake of continuity, consistency, and cost effectiveness. It appears to the Bank team that this agency has the required experience and expertise and is performing satisfactorily under the ongoing study. The cost estimate of this package is about US\$150,000 which is a relatively of small scale. In view of the above, the engagement of IMHEN could be justified in accordance with the provisions in paragraph 1.13(c) of Consultant Guidelines. At present no perceived or potential Conflict of Interest issues are identified relating to the participation of this institution in delivering those consulting services. This exceptional arrangement will be further reviewed and confirmed before the contract is awarded. IMHEN may also be proposed for carrying out other tasks under the project. The Bank will review these specific proposals as well as the eligibility and participation of other MONRE Institutions during implementation.

C. Environmental and Social (including safeguards)

27. **The Project impacts.** The overall impact of the project is positive despite some potential and unavoidable minor adverse impacts, particularly in cases where the Project builds small-scale civil works that may necessitate small land acquisition for construction. No major adverse impacts on the local environment and local communities are expected. Potential negative environmental and social impacts are of small scale, localized and temporary, and could be adequately mitigated through appropriate Bank instruments.

28. **The Bank's safeguard policies triggered.** The Project has been classified as 'Category B' and four of the Bank's safeguard policies are triggered: *Environmental Assessment (OP 4.01)*, *Indigenous Peoples (OP 4.10)*, *Involuntary Resettlement (OP 4.12)*, and *Projects on International Waterways (OP 7.50)*.

- **Environmental Assessment (OP/BP 4.01).** The project activities are expected to comprise: technical assistance, training and workshops, and small civil works necessary for facilitating effective implementation of the Project (such as construction of office building, small hydromet stations, and small water quality monitoring sites). The overall impacts would be of small scale, localized, temporary, and could be adequately mitigated. To mitigate the potential negative impacts due to civil works, good engineering practices will be required as well as close supervision of contractors. An Environmental Code of Practice (ECOP) will be included in the bidding document and the potential contractors will be informed of this obligation. This requirement will be included in the safeguard part of the Project Operation Manual. Although the project does not trigger OP 4.11 (Physical Cultural Resources), the ECOP includes the "chance find procedures" to address Physical Cultural Resources in the context of environmental assessment.
- **Projects on International Waterways (OP/BP 7.50).** The project will 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 project triggers the OP 7.50. Investments to be made under Component 1, exclusively water resources and hydromet monitoring, shall fall into the category of the investment stipulated in paragraph 7(b) of OP.7.50, which exempts from notification "water resource surveys" on or involving international waterways. Thus, no notification is required for the project.

29. *Public Consultations and information disclosure:* In accordance with the IWRM principle, stakeholder participation has been promoted during the preparation of the Project and this approach will be continued throughout the implementation. This 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 Project has also been designed to strengthen communities and local government in the Central Highlands regarding principles of integrated water resources management and to promote their active participation in Component 2 activities. This approach is in line with the Bank's policies on *Indigenous Peoples (OP 4.10)*. All draft safeguards instruments such as ECOP, RPF, the Indigenous People's Development Framework (IPDF)/EMPF were disclosed locally in Vietnamese language and in the Bank's InfoShop in English language in accordance with the World Bank policy on Access to Information.

30. *Gender equity, Ethnic Minority groups, and involvement of NGOs.* 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 increase the governance related to the water resources management. The project will emphasize the need to ensure the equality of gender and participation of NGOs/ relevant groups in the RBO to be established in the 2S basin under Component 1 and in river basin planning. In particular, the representatives of the Vietnam Women's Union and Provincial Ethnic Minority Committee will be included in the member of the RBO. The business plan will include a mechanism for the concerned community to report urgent water resources related issues (e.g., shortage of water, poor water quality) directly to the RBO. During the implementation of the project, participation of women, poor, and ethnic minority groups will also be stated in the annual report to be issued by the RBO. The knowledge generated by the investments of this project Components 2 and 3 in the Central Highlands and the Mekong Delta will be critical for improvement of agriculture and livelihoods of local people. It is expected that both men and women will equally benefit from these improvements in information about salinity intrusion and water resources, for example, to be able to make more informed decisions about crop selection. Under Component 3, the activities on salinity monitoring in the Mekong Delta will aim to also target equally both men and women and civil societies for information dissemination. Involvement of interested NGOs active in the Project area (such as Worldwide Fund for Nature, which is conducting a major study on sediment flows in the Mekong Delta) will also be encouraged to increase the quality and sustainability of activities.

Safeguards Instruments

31. *Initial Environmental and Social Examination (IESE) and Key Safeguard Instruments.* An initial impact assessment (i.e., an Initial Environment and Social Impact Examination (IESE)) has been carried with support of a team of international and national consultants. The study was conducted through 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 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 as defined in the Bank's *Safeguard Policy such as Forests (OP/BP 4.36), Natural Habitats (OP/BP 4.04) and Physical Cultural Resources (OP/BP 4.11)*. It concluded that the overall impacts would be positive, and that socially and environmentally and the potential negative impacts (possible minor land acquisition and pollutions related to the construction of monitoring stations) could be mitigated through consultation with communities and adoption of best practices.

32. Only small/minor land acquisition is anticipated as a result of small-scale civil works while no adverse impacts are anticipated for the ethnic minority peoples present in the project area. To address negative impact associated to land acquisition for small-scale civil works, a *Resettlement Policy Framework (RPF)* was prepared for Vietnam to minimize, mitigate and/or compensate for

all identified adverse impacts. The RPF will guide the preparation and implementation of subproject 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 this has been included in the “*negative list*.” To guide consultations and the participatory process with ethnic minority peoples in line with the Bank’s policy on indigenous peoples, an Ethnic Minority Policy Framework (EMPF) was prepared for Vietnam. The EMPF 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 Ethnic Minority Development Plan and monitoring/reporting requirements. This is to ensure that the project is designed and implemented to maximize benefits for the ethnic minority peoples.

33. The potential negative impacts due to small civil works are expected to be minor, local, and/or temporary, and could be minimized through the application of good construction practices and planned mitigation/compensation measures. Close monitoring will be carried out during implementation of the Project and by communities. Given that there will be minor environmental impacts associated with civil works of small monitoring stations an Environmental Code of Practice (ECOP) was prepared. The ECOP comprises a set of measures to mitigate potential negative environmental impacts during construction. During the project implementation the client will prepare environmental protection commitments (EPC) for construction of the water resources monitoring stations as required by the governmental environmental management regulation to address the project negative environmental impacts.

34. The ECOP, the RPF and EMPF were submitted to the Bank for review and found to be satisfactory. All safeguard instruments were disclosed in English at the Bank’s InfoShop and in Vietnamese language in the project areas in Vietnam. The ECOP was disclosed in English and Vietnamese on March 11, 2013. The RPF and EMPF were disclosed in Vietnamese on May 27, 2013 and in English on June 19, 2013.

Actions to Mitigate the Expected Social Impacts

35. **Land acquisition.** No major land acquisition is envisaged. If land acquisition is involved, the implementing agencies will explain the basic principles and guidelines provided in the RPF during the consultation process and prepare a RAP. Any objection, concerns, and/or requests by the land owners as well as actions taken by the communities and /or agencies will be documented and any deviation from the RPF will be consulted with World Bank. If the affected population is from indigenous/ethnic minority peoples (as defined by OP 4.10), free, prior and informed consultation will be held with them following the principle and process described in the EMPF. Proper documentation and filing will also be required. Special attention will be given to minimize negative impacts on women and other vulnerable groups.

Actions to Mitigate the Potential Environmental Impacts

36. **Impacts due to civil works.** Implementation of Components 2 and 3 will involve small civil works of construction of monitoring stations. Visits to these sites confirmed that the potential negative impacts could be mitigated through application of good construction practices and close supervision and monitoring. The implementing agencies for the civil works activities will include the specific good construction practices (to be included in the Project Implementation Plan) in the bidding and contract documents and ensure that the contractors are aware of this obligation. While *Physical Cultural Resources (OP. 4.11)* is not triggered, the contract will also include a specific clause on “*chance find procedures.*” Large scale civil works or small/medium scale that are likely to cause adverse impacts on local environment have been included in “*the negative list.*” Safeguard performance will be properly documented and reported as part of the Project progress report.

37. **Preparation of safeguard operation manual.** To facilitate effective implementation and monitoring of safeguard measures, a safeguard operation manual is being prepared as part of the project operation manual. The manual will include following items (as well as monitoring template, as needed): (a) List of Prohibited Activities; (b) Safeguard Screening Criteria; (c) Environmental Codes of Practice (ECOP); (d) EMDF; and (e) RPF. Activities which require a full Environmental Impact Assessment (EIA) will *not* be eligible for funding under the Project.

38. During the screening of safeguards, land acquisition, resource access restriction, potential impacts on ethnic minority, and nature and location of civil works are identified as key criteria for consideration with cross reference to the RPF, EMDF, and good engineering practices as appropriate.

Implementation and Monitoring Arrangements and Training

39. VNMCSO 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 Report and Annual Report.

40. Given limited knowledge on World Bank’s safeguards requirements and safeguard issues in general, a series of safeguard trainings will be provided during the first three to four years of the Project, and a budget of US\$30,000 has been allocated under Component 1-4. The safeguard training will include, but 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.

D. Monitoring & Evaluation

41. Data collection regarding the indicators in the results framework (Annex 1) will be carried out by MONRE and the implementing entity, namely VNMC. 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.

42. The VNMCSO will submit the information to the PCMU of the MRCS bi-annually. The PCMU will compile all information, make assessments, and report to the RPSC. During the first six months of the implementation, with the support of Phase I, the PCMU will develop a simple database for monitoring indicators for all the Components with the assistance of international/regional experts.

E. Role of Partners

43. The project will coordinate with relevant development partners and stakeholders throughout implementation of the project both at the regional and national levels. At the regional level, coordination with development partners will be made through the development partners' meetings to be organized by the MRC. At the national level, the coordination will be carried out through the thematic groups such as the Disaster Management Working Group and Climate Change Working Group. Furthermore, with the support of the Bank, the Government of Vietnam will establish a round-table meeting for the development partners active in the Mekong Delta.

Annex 4: Operational Risk Assessment Framework (ORAF)
Mekong Integrated Water Resources Management Project - Phase II

Project Stakeholder Risks	Rating	Low		
Description: The project's main stakeholders are: the overall population in the Vietnam part of the Mekong Delta and the Central Highland and overall population in the Vietnam parts of the 2S (Sesan-Srepok) Sub-basin. The proposed investments and technical assistance will empower local stakeholders and directly benefit them. Initial consultations revealed broad support from the stakeholders. Therefore, stakeholder risk is deemed to be low.	Risk Management: No action necessary			
	Resp:	Stage:	Due Date :	Status:
Implementing Agency Risks (including fiduciary)				
Capacity	Rating: Substantial			
<p>Description : Experience gained through implementation of the Vietnam Natural Disaster Risk management Program (NDRMP) suggests that the risks related to procurement of high-value equipment, especially hydromet equipment, are high.</p> <p>Furthermore, as the project involves various implementation agencies, capacity (particularly regarding procurement and financial management) could also be a major challenge. On procurement, major risks will be: (a) delay in the procurement process; and (b) failure to complete the International Competitive Bidding (ICB) process with quality documents and proper evaluation. Financial management risks will include: possible mismanagement and sub-optimal use of the funds resulting from actions of inadequately qualified staff.</p>	Risk Management :			
	<p>(a) More intensified monitoring on financial transactions and procurement, particularly high value contracts; (b) engagement of experienced procurement consultants for preparing tender documents for high value contracts; (c) undertaking of independent technical audit by MONRE to verify the quality and quantity of the works carried out; (d) engagement of independent environment and social safeguards monitoring consultants; and (e) conducting timely and adequate procurement post review and financial management by the Bank.</p> <p><i>Procurement.</i> The main actions include: (a) appointment of qualified procurement staff at all implementing units; (b) training for the procurement staff on Bank procurement procedure and documentation requirements; (c) preparation of a project operation manual with a dedicated procurement section; and (d) close supervision and assistance by the Bank procurement staff.</p> <p><i>Financial Management.</i> (a) TORs and CVs of the appointed/ recruited staff must be approved by the Bank; (b) The Bank's Task Team will check the availability of the staff by the time of negotiations; and (c) close supervision and assistance by the Bank financial management staff.</p>			

	In addition, training will be provided by the Bank's Fiduciary Management Specialists and Disbursement Specialist to staff at all implementing agencies. An Operations Manual will be prepared and approved by the Bank, providing detailed implementation guidelines to the Project staff.			
	Resp: Client	Stage: preparation	Due Date : December 2013	Status: preparation
Governance	Rating: Substantial			
Description : (a) Lack of clear accountability in project implementation given the involvement of multiple agencies. (b) Suboptimal use of funds (e.g., abuse of the operation costs, inefficient procurement arrangement, etc.). (c) Errors or financial misstatements at the implementing agencies might not be detected in a timely manner for corrective actions. (d) INT investigations have identified the use of local Vietnamese agents by international firms to make corrupt payments to project and government officials in order to be considered for and paid for projects in this sector. The firms fraudulently hide their true relationship with the local agent and the nature of the corrupt payments through claims for services purportedly rendered by local companies.	Risk Management : Clear mandate has been defined for the VNMCSO and other participating agencies (DWRM, NHMS, and NAWAPI) will be designated as the overall executing agency responsible for implementation of the project for their respective part. The implementation plan will be prepared for the first 18 months activities for each implementing agency. The plan will stipulate the overall incremental operating cost and procurement arrangement. During the first year, intensive monitoring will be carried out to reassess the risk rating and develop further mitigation measures. Internal audit will also be carried out by the auditor appointed by and the VNMC to perform review of financial management and expenditures incurred.			
	Resp: Client	Stage: Preparation	Due Date : Recurrent	Status: Preparation
	Resp: Client	Stage: preparation	Due Date : Recurrent	Status: Preparation
Project Risks				
Design	Rating:	Medium		
Description : (a) Possible inadequate political and technical commitment to collaboration (e.g., coordination on river basin management in the Sesan-Sekong-Srepok Basin). (b) Lack of integration among the regional, national and sub-national activities resulting from inadequate coordination, which would lead to failure to achieve the overall regional objective of the project.	Risk Management : A Regional Project Steering Committee established at MRC in conjunction with the Phase I will be used to monitor the overall progress in implementation of the project, with attention to the trans-boundary cooperation facilitated by the MRC. Utilization of Phase I's Component 1-4 (Project Oversight and Facilitation) (implemented by the MRC) to proactively coordinate various activities. The MRC has participated in the pre-appraisal and appraisal of the project and it is expected that the MRC will continue to participate in the Bank's implementation support missions for the project.			
	Resp: MRC	Stage: on-going	Due Date : Recurrent	Status: under implementation
Social & Environmental	Rating: Medium			
Description : Adverse impacts might not be adequately	Risk Management : Preparation (completed in October 2013) and implementation of the			

mitigated. The risks will be modest, as the investments proposed under the project (village level rural infrastructure or construction of water resource monitoring network stations) would be of small scale and adverse impacts could be mitigated through enforcement of agreed measures.	safeguard measures.			
	Resp: Client	Stage: Preparation	Due Date : December 31, 2014	Status: under preparation
Program & Donor	Rating: Low			
Description : No major issues. Coordination with concerned development partners through periodical joint development partner meeting organized by the MRC is ongoing	Risk Management : No action necessary			
	Resp:	Stage:	Due Date :	Status:
Delivery Monitoring & Sustainability	Rating: Substantial			
Description : Failure to monitor the delivery quality and timing because of the engagement of multiple implementation agencies. Failure to achieve long term sustainability due to inadequate financial and resources allocated to operate and manage the investment supported by the project	Risk Management : Preparation of a management plan as part of the Feasibility Study (FS) for the project, indicating the required manpower and resources (completed in August, 2013). Assurance provided by mid-term review of the project (September 2015) that identified staff and resources will be allocated to manage the project investments.			
	Resp: Client	Stage: Preparation	Due Date : September 30, 2015	Status: under preparation
Other	Rating: Substantial			
Description : As a result of the accelerated development in the mainstream Mekong River, the four countries may pursue unilateral development or negotiations outside of MRC. As a result the MRC could be marginalized in terms of its coordinating role for water resources management in the Mekong.	Risk Management : Participation in the key development partner meetings for the MRC and monitoring of MRC's role and function regarding water resources management in the Lower Mekong Basin.			
	Resp: Bank	Stage: In Progress	Due Date : Recurrent	Status: Implementation
Overall Risk				
Implementation Risk Rating : Substantial				
Risk Description : The major risks during implementation are: (a) integrity of the various Components activities to maintain the regional nature of the project; (b) fiduciary management, including governance, fraud and corruption concerns inherited from the country and sector environment; and (c) delivery monitoring and sustainability of the investment. The following mitigation measures have been incorporated: (a) engagement of the MRC to facilitate the implementation of the activities at the national level; (b) use of a Regional Project Steering Committee which will oversee the entire program activities; (c) training on procurement and safeguards; (d) monitoring the pledged allocation of the human and financial resources for operation and maintenance (O&M) of the equipment purchased; and (e) engagement of international experts to guide procurement of high value equipment.				

Annex 5: Implementation Support Plan

Mekong Integrated Water Resources Management Project - Phase II

Strategy and Approach for Implementation Support

1. The strategy for the Bank's implementation support for the project has been developed based on the nature of the project and its risk profile. The Operational Risk Assessment Framework (ORAF, Annex 4) rates the overall implementation risk substantial, with the following elements of the risk considered to be substantial: (a) implementation capacity, (b) project design risks, (c) governance, (d) delivery monitoring and sustainability, and (e) risks associated with the MRC's role for the overall WRM in the Mekong. The project is a regional operation involving Vietnam -- following Phase I involving Lao PDR and the MRC -- and the implementation support strategy incorporates this aspect.

Implementation Support Plan

2. During the first 18 months of the project implementation, Bank implementation support missions will be fielded every three to four months, including short follow-up missions in order to proactively provide the NEA and the implementing entities with technical guidance and fiduciary oversight to facilitate project implementation and efficient use of the financial resources. Implementation support missions will also focus on technical issues such as development of salinity and sediment models, selection of suitable water quality monitoring equipment, through the participation of the experts. It is expected that for certain technical issues the MRC will also mobilize experts through the Phase I.

3. In parallel, for the core project administration issues (i.e., fiduciary and safeguards aspects), training courses will be carried out during the earliest implementation period for the VNMCSO and the other participating entities 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 also maintain regular contact with the MRC to inform them on the major findings of the implementation support missions, and request for the follow up, as necessary.

4. In addition, it is also envisaged that the Bank will continue to participate in the key MRC management meetings such as Joint Committee meetings and the Council Meetings to monitor the overall governance of the MRC (which is processing the 'riparianization'⁷) and nurture the regional collaboration with other development partners. If necessary, the Bank may also engage itself in reviewing the outcome of the discussions and studies on the mainstream dams together with other development partners in order to encourage the MRC member countries to take full consideration on the environmental and social aspects before making their own decisions.

⁷ This refers to an institutional transition process that aims to strengthen riparian ownership of the organization by ensuring citizens of member countries have key leadership positions. Full riparianization would imply that all permanent staff are citizens of riparian countries.

5. 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 that will be needed from the Bank to provide implementation support for the project. 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
Task Team Leader and Co-Leader (water resources management specialist)	10 (in total)	2
Environmental Specialist	2	2
Social Development Specialist	5	2
Hydromet Specialist	4	2
Procurement Specialist	4	2
Financial Management Specialist	4	2
Water Quality Monitoring Specialist	4	2
Hydropower specialist	2	2