



Report and Recommendation of the President to the Board of Directors

Project Number: 40190
October 2012

Proposed Loans, Grant, and Administration of Grant
Lao People's Democratic Republic and Socialist
Republic of Viet Nam: Greater Mekong Subregion
Flood and Drought Risk Management and Mitigation
Project

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 12 September 2012)

Currency unit	–	Australian dollar/s (A\$)
A\$1.00	=	\$1.0384000
\$1.00	=	A\$0.963020
Currency unit	–	kip (KN)
KN1.00	=	\$0.00012473
\$1.00	=	KN8017.00
Currency unit	–	dong (D)
D1.00	=	\$0.00004805
\$1.00	=	D20,811.00

ABBREVIATIONS

ADB	–	Asian Development Bank
CBDRM	–	community-based disaster risk management
GMS	–	Greater Mekong Subregion
Lao PDR	–	Lao People's Democratic Republic
LMB	–	Lower Mekong Basin
MRC	–	Mekong River Commission
NEWC	–	National Early Warning Center

NOTE

In this report, "\$" refers to US dollars.

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CONTENTS

	Page
PROJECT AT A GLANCE	
I. THE PROPOSAL	1
II. THE PROJECT	1
A. Rationale	1
B. Impact and Outcome	4
C. Outputs	4
D. Investment and Financing Plans	5
E. Implementation Arrangements	6
III. DUE DILIGENCE	7
A. Technical	7
B. Economic and Financial	7
C. Governance	8
D. Poverty and Social	8
E. Safeguards	9
F. Risks and Mitigating Measures	9
IV. ASSURANCES	10
V. RECOMMENDATION	10
APPENDIXES	
1. Design and Monitoring Framework	11
2. List of Linked Documents	14

PROJECT AT A GLANCE

1. Project Name: Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project		2. Project Number: 40190-023	
3. Country: Lao People's Democratic Republic, Viet Nam, Socialist Republic of, Regional		4. Department/Division: Southeast Asia Department/Environment, Natural Resources & Agriculture Division	
5. Sector Classification:			
		Sectors	Primary
		Agriculture and natural resources	√
		Subsectors	
		Irrigation, drainage, and flood protection	
6. Thematic Classification:			
		Themes	Primary
		Economic growth	
		Social development	√
		Environmental sustainability	
		Regional cooperation and integration	
		Subthemes	
		Widening access to markets and economic opportunities	
		Disaster risk management	
		Urban environmental improvement	
		Other regional public goods	
6a. Climate Change Impact		6b. Gender Mainstreaming	
Adaptation		Gender equity theme (GEN)	
Mitigation		Effective gender mainstreaming (EGM)	
High	Low	√	
		Some gender benefits (SGB)	
		No gender elements (NGE)	
7. Targeting Classification:			
General Intervention		Targeted Intervention	
		Geographic dimensions of inclusive growth	Millennium development goals
√		Income poverty at household level	
8. Location Impact:			
Regional		High	
Rural		High	
Urban		Low	
9. Project Risk Categorization: Complex			
10. Safeguards Categorization:			
Environment		B	
Involuntary resettlement		A	
Indigenous peoples		C	
11. ADB Financing:			
Sovereign/Nonsovereign	Modality	Source	Amount (\$ Million)
Sovereign	Project grant	Asian Development Fund	12.5
Sovereign	Project loan	Asian Development Fund	69.0
Total			81.5
12. Cofinancing:			
Financier	Category	Amount (\$ Million)	Administration Type
Australian Agency for International Development	Official-Grant	5.9	Full
Total		5.9	
13. Counterpart Financing:			
Source		Amount (\$ Million)	
Government		14.1	
Total		14.1	
14. Aid Effectiveness:			
Parallel project implementation unit		No	
Program-based approach		No	

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan, and (ii) a proposed grant, both to the Lao People's Democratic Republic (Lao PDR); (iii) a proposed loan, and (iv) a proposed administration of a grant to be provided by the Government of Australia, both to the Socialist Republic of Viet Nam; all for the Greater Mekong Subregion (GMS) Flood and Drought Risk Management and Mitigation Project.¹

2. The regional project is designed to assist three Lower Mekong Basin (LMB) countries: Cambodia, the Lao PDR, and Viet Nam.² This report and recommendation covers the project interventions and proposed financing for the Lao PDR and Viet Nam. The report and recommendation covering project interventions and proposed financing for Cambodia will be presented to the Board separately upon confirmation of the availability of cofinancing. This two-step processing approach does not compromise the overall integrity of the regional project in general and the regional activities in particular.

3. The project will support the governments of the Lao PDR and Viet Nam to undertake structural and nonstructural measures to prepare for and manage disaster risks linked to floods and droughts.³ Project interventions will (i) enhance the regional data, information, and knowledge base for the management of floods and droughts; (ii) upgrade or develop water management infrastructure; and (iii) prepare communities to manage disasters such as floods and droughts and adapt to climate change. Improved drought management and irrigation water structures will benefit farmers on about 66,000 hectares of agricultural lands and at least 500,000 people will benefit from improved flood management.

II. THE PROJECT

A. Rationale⁴

4. The Mekong River stretches from the eastern watershed of the Xizang⁵ Plateau to the Mekong Delta flowing over 4,909 kilometers (km) through the People's Republic of China, Myanmar, the Lao PDR, Thailand, Cambodia, and Viet Nam with a total basin area of 795,000 square kilometers (km²).⁶ The LMB is home to about 60 million people in Cambodia, the Lao PDR, Thailand, and Viet Nam. The Mekong River, while being one of the 20 largest rivers in the world, stands apart because of the large fluctuations in seasonal discharge—very low flows in the dry season yet extensive flooding in the wet season.⁷ River flow is largely unaffected by water control structures and follows the seasonal hydrological cycle.

¹ The design and monitoring framework is in Appendix 1.

² The Asian Development Bank (ADB) provided project preparatory technical assistance. ADB. 2008. *Technical Assistance to the Kingdom of Cambodia, the Lao People's Democratic Republic, Kingdom of Thailand, and Socialist Republic of Viet Nam for Preparing the Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project*. Manila.

³ "Structural measures refer to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. Nonstructural measures refer to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk and related impacts." Source: United Nations International Strategy for Disaster Reduction (UN/ISDR). 2009. *UN/ISDR Terminology on Disaster Risk Reduction*. Geneva. Available on the UNISDR website at: www.unisdr.org/publications and on Protection Web at: www.protectionweb.net.

⁴ This section describes the rationale for the regional GMS project, covering Cambodia, the Lao PDR, and Viet Nam.

⁵ Also known as Tibet Autonomous Region.

⁶ Mekong River Commission. <http://www.mrcmekong.org/the-mekong-basin/physiography/>

⁷ World Bank. 2007. *Strategy Note on World Bank Regional Support for the Greater Mekong Sub-Region*. <http://siteresources.worldbank.org/INTTHAILAND/Resources/333200-1211794042917/gms-wb-strategy.pdf>

5. **Climate change.** The anticipated impacts of climate change and sea level rise in the Mekong River Basin indicate the water-related vulnerability will be exacerbated.⁸ Global and regional climate change scenario analyses indicate that in the LMB, temperatures as well as annual rainfall and runoff will increase and sea level will rise, resulting in increased agriculture and economic losses in the Mekong Delta.⁹ Floods and droughts are projected to become more frequent and intense.

6. **Floods.** Annual floods in the LMB are beneficial, nourishing the wetlands and sustaining fisheries and biodiversity.¹⁰ Extreme floods, however, cause losses and damage to livelihoods, agriculture, and infrastructure. The average annual direct cost of flooding to agriculture, infrastructure, and buildings in the LMB is \$60 million–\$70 million, while the average annual value of flood benefit is estimated at \$8 billion–\$10 billion (footnote 10). The challenge for flood risk management is to reduce the costs and impacts of flooding while preserving its benefits.

7. Physical exposure to flood risks in the LMB is high and this is translated into economic exposure.¹¹ Damage in monetary terms is higher in Viet Nam, signifying the level of exposure resulting from higher development (agriculture and infrastructure) compared to Cambodia and the Lao PDR. Typhoon Ketsana in September 2009 resulted in damage and losses estimated at \$131 million in Cambodia, \$58 million in the Lao PDR, and \$800 million in Viet Nam.

8. **Droughts.**¹² Droughts, which occur as a result of periods of very low rainfall and river flow, cause disruption to the livelihoods of farmers and food supply chains. Droughts are considered disasters because they significantly affect poor and vulnerable communities, particularly by increasing household food insecurity.¹³ Water shortages, particularly during critical growth stages of crops, significantly reduce yields. Saline water intrusion in estuaries and coastal areas—exacerbated by the low flows, particularly in the delta area of Viet Nam—is another cause of concern that adversely impacts food production.

9. The direct costs of drought in the LMB relate to the impact of agricultural droughts—reduced yields or total loss of crops, especially rice, together with reduced livestock and fishery yields. The 2004–2005 drought was severe for all LMB countries, with losses estimated at \$42 million in the delta and localized food shortages. The extreme low flows in the Mekong River during March–April 2010 adversely impacted dry season crops along the Mekong River as pumping stations were not able to draw water.

10. **Insufficient disaster preparedness.** Countries in the LMB have varying levels of capacity to prepare for and manage flood- and drought-related disasters. Actions are mostly

⁸ United Nations Environment Programme. 2009. *Vulnerability Assessment of Freshwater Resources to Environment Change: Mekong River Basin*. Nairobi.

⁹ Asian Development Bank; Greater Mekong Subregion (GMS) Environment Operations Center. 2008. *GMS: Climate Makers or Climate Takers? Background paper for the 2nd GMS Development Dialogue*: Bangkok, 21 May.

¹⁰ Fishery in the LMB is considered among the largest inland fisheries in the world. Total economic value is estimated to be at least \$3.9 billion annually. Source: Mekong River Commission (MRC). 2010. *State of the Basin Report 2010 Summary*. Vientiane.

¹¹ Economic exposure is estimated by mapping physical exposure onto the distribution of economic output to estimate the gross domestic product at risk. Source: United Nations Economic and Social Commission for Asia and the Pacific and United Nations International Strategy for Disaster Reduction. 2010. *Asia-Pacific Disaster Report 2010*. Bangkok.

¹² Meteorological droughts, defined by low rainfall over the wet season (May–November), reduce yields of rain-fed rice and other crops. The agricultural impacts of hydrological droughts are most severe during the dry season, when less than normal stream flows reduce irrigation and the yield of dry season crops. Hydrological droughts may also occur during the wet season, for example, when less than normal stream flows reduce the volume and extent of flood waters stored in the Tonle Sap Lake in Cambodia and the yield of its fishery.

¹³ Indirect costs that are difficult to assess are those of perpetuating structural poverty through early childhood stunting, ultimately resulting in loss of productivity.

reactive, rather than proactive, and are uncoordinated. Better flood and drought disaster preparedness requires (i) knowledge availability and sharing of potential changes to the spatial and temporal distribution of climate and hydrological variables over the basin as a whole; (ii) capacity for timely flood and drought forecasting and dissemination of warnings to communities at risk; (iii) engagement of at-risk communities in the identification, analysis, treatment, monitoring, and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their coping capacities; and (iv) improved condition of water control infrastructure.

11. Solutions and opportunities. Improving the disaster preparedness of countries and communities to manage and mitigate the potential impacts of extreme floods and droughts requires structural and nonstructural initiatives. In terms of nonstructural measures, institutional and technical capacity building activities can strengthen regional information and knowledge generation and sharing with regard to water resources management in general and flood and drought management in particular. Community-based disaster risk management (CBDRM) can equip communities, especially women, to access information on disaster risks and enhance their preparedness.¹⁴ Two-way channels for information sharing between local communities, river basin management systems, national level early warning centers, and disaster forecasting centers are necessary. Structural measures include rehabilitation of flood control embankments, water control structures, and rehabilitation of irrigation and drainage structures.

12. Regional initiatives. The project is one of the flagship programs of the 2002 GMS Economic Cooperation Program Strategic Framework as well as 2008 Vientiane Plan of Action. On the regional level, the Mekong River Commission (MRC) provides a framework for sustainable development of the LMB.¹⁵ The MRC secretariat plays an important role in supporting national agencies and nongovernment organizations with technical services that have regional relevance and also on transboundary issues. ADB and development partners are also supporting natural resource management and climate change adaptation through subregional initiatives including the GMS Core Environment Program and its Biodiversity Conservation Initiative and the GMS Core Agriculture Support Program.¹⁶

13. Relevance to national priorities. The project is aligned with the relevant policies, strategies, and programs such as the following: (i) Lao PDR: Disaster Management Action Frameworks, 2003–2020; (ii) Viet Nam: National Strategy for Natural Disaster Prevention, Response and Mitigation approved by the Prime Minister in 2007 (Decision No. 172/2007), National Targeted Program to Respond to Climate Change, Strategic Direction of Water Resources Development (to 2020 and toward 2050), the Mekong Delta Master Plan; and (iii) Cambodia: Ministry of Water Resources and Meteorology's Rectangular Strategy and National Water Resources Policy for Cambodia.¹⁷

14. ADB support. The project is aligned with ADB's Water Operational Plan, 2011–2020, which identifies flood and drought mitigation (as part of disaster risk management) as one of the two urgent challenges to be addressed in the integrated water resource management process.¹⁸ The project is also aligned with the ADB's Disaster and Emergency Assistance Policy (2004) as

¹⁴ CBDRM is a process in which at-risk communities are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities. CBDRM seeks to strengthen community resilience to disaster-related shocks.

¹⁵ The MRC was formed on 5 April 1995 by an agreement between the governments of Cambodia, the Lao PDR, Thailand, and Viet Nam. The MRC secretariat is based in Vientiane, Lao PDR.

¹⁶ The GMS initiatives are supported by several development partners, such as the Government of Finland (Core Environment Program Biodiversity Corridors Initiative pilot and second phases) and the Government of Sweden (Implementing the Core Agriculture Support Program Phase 2).

¹⁷ Approved by the Council of Ministers on 16 January 2004.

¹⁸ ADB. 2011. *Water Operational Plan, 2011–2020*. Manila.

it will support the governments and local communities to identify and manage risks from natural hazards. The project benefits from lessons from past ADB assistance on irrigation development and flood management in the region.¹⁹

B. Impact and Outcome

15. The impact will be reduced economic losses resulting from floods and droughts. The outcome will be improved capacity and preparedness to manage and mitigate the impacts of flood and drought events.²⁰

C. Outputs

16. The project will have four key outputs:

- (i) **Output 1: Enhanced regional data, information, and knowledge base for the management of floods and droughts.** The project will support (a) development of design criteria for water control infrastructure such as flood and drought risk mitigation schemes in the Mekong Delta for Viet Nam; (b) assessment of cross-border flood management options in Viet Nam and Cambodia; and (c) establishment of the National Early Warning Center in the Lao PDR.²¹
- (ii) **Output 2: Upgraded water management infrastructure.** The project will support (a) rehabilitation of flood control embankments, associated water control structures, and access roads; (b) rehabilitation of drainage canals, including increasing flow capacity and improving water control infrastructure; and (c) rehabilitation and extension of canals, water control structures, and irrigation distribution networks. The subprojects in the Lao PDR are the Vientiane capital flood protection subproject and the Vientiane capital irrigation development subproject. They include approximately 30 km of flood protection embankment, 8 pumped irrigation schemes, 2 flood drainage pumps, and approximately 30 km of flood-proof road (about 4 km of single lane all-weather road and 26.4 km of double lane, black topped). In Viet Nam, four subprojects will be implemented in the two southern provinces of Dong Thap and Tien Giang: (a) upgrading the main canal system to drain and irrigate Plain of Reeds area (Dong Thap) to rehabilitate four canals by dredging about 80 km of canals; (b) Thuong Thoi Tien bank protection (Dong Thap) to upgrade and strengthen about 3 km of flood embankments to stabilize the left bank of the Tien River in the vicinity of Thuong Thoi Tien town; (c) control and mitigation of flood risk for the Ba Rai-Phu An area (Tien Giang) to upgrade the flood control system by constructing approximately 24 sluice gates to mitigate flood risks; and (d) upgrading the salinity intrusion system for the Go-Cong area (Tien Giang) to construct approximately three sluice gates to enhance control of tidal and brackish water movement from urban areas permitting flushing while retaining additional fresh water resources in paddy growing areas.²²
- (iii) **Output 3: Enhanced capacity for community-based disaster risk management.** CBDRM activities will be implemented to ensure that communities are able to obtain the full benefit from improved water control infrastructure and

¹⁹ ADB. 2003. *Technical Assistance for Support for the Mekong River Commission Flood Management and Mitigation Program*. Manila (TA 6149-REG); ADB. 2005. *Technical Assistance to the Kingdom of Cambodia for Community Self-Reliance and Flood Risk Reduction*. Manila (TA 4574-CAM).

²⁰ The planned support to Cambodia will have the same project impact and outcome.

²¹ The planned support to Cambodia will include a study to complement this assessment of cross-border flood management options and support to develop and strengthen the national flood forecasting institution.

²² The planned support to Cambodia includes the Dhamnak Chheukrom irrigation system rehabilitation for improved drought management and increased flood protection of Pursat township.

improved flood warnings. Community-driven flood and drought risk reduction measures will be implemented based on participatory local level flood and drought risk assessment and analysis and disaster risk reduction and management plans. The project will also support training on exposure to flood risks, and road safety training for communities near the road to be constructed (for Lao PDR) and assistance for flood and drought risk assessment and analysis.²³

- (iv) **Output 4: Effective project implementation.** The project will support the executing agencies to undertake overall project supervision and strengthen the planning, implementation, and management capacities of implementing agencies. The support includes: improved office facilities; vehicles, office equipment and technical equipment, capacity development of the staff, and consulting services.

D. Investment and Financing Plans

17. The project is estimated to cost \$101.45 million (Table 1).

Table 1: Project Investment Plan

Item	Amount (\$ million) ^a		
	Lao PDR	Viet Nam	Total
A. Base Costs^b			
1. Regional data and knowledge for the management of floods and droughts enhanced	3.02	1.17	4.19
2. Water management infrastructure upgraded	21.19	42.71	63.90
3. Capacity for CBDRM enhanced	2.00	3.97	5.97
4. Effective project implementation	4.63	4.67	9.30
Subtotal (A)	30.84	52.52	83.36
B. Contingencies^c	5.56	10.12	15.68
C. Financing Charges During Implementation^d	0.69	1.71	2.40
Total (A+B+C)	37.09	64.36	101.45

Note: Figures may not add up due to rounding

CBDRM = community-based disaster risk management, Lao PDR = Lao People's Democratic Republic.

^a Includes taxes and duties of \$8.03 million to be financed by the Asian Development Bank loans and grant and the Government of Viet Nam resources.

^b Updated to June 2012 prices.

^c Physical contingencies at 10% for most expenditure categories. Price contingencies computed using Asian Development Bank cost escalation factors.

^d Includes Asian Development Fund interest at 1% per annum.

Source: Asian Development Bank estimates.

18. The Government of the Lao PDR has requested a loan in various currencies equivalent to SDR15,912,000 from ADB's Special Funds resources to finance works, survey design and supervision, equipment, operations and maintenance during implementation and land acquisition and resettlement. The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft financing agreement. Interest during implementation will be capitalized. The government has also requested a grant not exceeding \$12.5 million from ADB's Special Funds resources to finance consulting services,

²³ The planned support for Cambodia includes similar support, which will benefit from the training material developed under ADB technical assistance for Community Self-Reliance and Flood Risk Reduction (footnote 20).

capacity development, monitoring and evaluation, and nonstructural project components.²⁴ The government will finance \$0.59 million for staff salaries.

19. The Government of Viet Nam has requested a loan in various currencies equivalent to SDR29,650,000 from ADB's Special Funds resources to finance land acquisition and resettlement, works, operation and maintenance, vehicles and equipment, consultants, and project management costs. The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft loan agreement. Interest during implementation will be capitalized. The Government of Australia will provide grant cofinancing equivalent to \$5.89 million (to be administered by ADB) to support nonstructural activities (outputs 1 and 3 and costs related to the CBDRM consultant under output 4).²⁵ The central government of Viet Nam will finance 100% of mine clearing, if and where mine clearing is found to be required, and will contribute toward civil works, CBDRM activities at provincial level, and project management. The provincial governments have committed counterpart funds equivalent to \$4.02 million (Tien Giang) and \$6.63 million (Dong Thap) to finance the four proposed structural subprojects.

20. ADB's total financing of the project will be \$81.5 million, or 80% of the project cost.²⁶ The financing plan is in Table 2. The ADB loans and grant will finance taxes and duties (\$8.03 million).²⁷ Land acquisition and resettlement expenditures are eligible for ADB financing as they will be incurred in compliance with all applicable requirements under ADB's Safeguard Policy Statement (2009) and the ADB-approved resettlement planning.

Table 2: Financing Plan

Source	Lao PDR		Viet Nam		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
ADB ADF (loan)	24.00	65	45.00	70	69.00	68
ADB ADF (grant)	12.50	33			12.50	12
Government of Australia ^a			5.89	9	5.89	6
Government	0.59	2	13.47	21	14.06	14
Total	37.09	100	64.36	100	101.45	100

ADB = Asian Development Bank, ADF = Asian Development Fund, Lao PDR = Lao People's Democratic Republic.

^a Through the Australian Agency for International Development. Administered by ADB.

Source: Asian Development Bank estimates.

E. Implementation Arrangements

21. In the Lao PDR, the Ministry of Agriculture and Forestry will be the executing agency and will delegate responsibility to its Department of Irrigation. The ministry will set up a national project coordination office. Project implementation offices will be established at the Department of Meteorology and Hydrology, Department of Waterways, and the Vientiane Capital Provincial Agriculture and Forestry Office. In Viet Nam, the Ministry of Agriculture and Rural Development

²⁴ A country's eligibility for ADF grants under the revised grant framework is determined by its risk of debt distress. The latest debt sustainability analysis determined that the Lao PDR had a moderate risk of debt distress and was therefore eligible to receive 50% of its ADF allocation as grants.

²⁵ Financing confirmed on 5 June 2012. Equivalent to A\$5.85 million (conversion as of 27 June 2012).

²⁶ Transportation and insurance costs may be financed by ADB. See ADB. 2008. Cost Sharing and Eligibility of Expenditures for ADB Financing. *Operations Manual*. OM H3. Manila.

²⁷ The following principles were followed in determining the amount of taxes and duties to be financed by ADB: (i) the amount does not represent an excessive share of the project, (ii) the taxes and duties apply only to ADB-financed expenditures, (iii) the amount is within the thresholds identified during the country partnership strategy preparation process, and (iv) financing of taxes and duties is material and relevant to the success of the project.

will be the executing agency and will delegate responsibility to its central project office, which will set up a central project management unit in Can Tho City, to be close to the subproject sites. Provincial project management units will be established within the departments of agriculture and rural development of the two participating provinces.

22. The implementation arrangements are summarized in Table 3 and described in detail in the project administration manuals.²⁸

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	April 2013–March 2019 (6 years)		
Management			
(i) Oversight body	National Steering Committee (Lao PDR)		
(ii) Executing agencies	Ministry of Agriculture and Forestry (Lao PDR) Ministry of Agriculture and Rural Development (Viet Nam)		
(iii) Key implementing agencies	Department of Meteorology and Hydrology, Department of Waterways, Vientiane Capital Provincial Agriculture and Forestry Office (Lao PDR); provincial departments of agriculture and rural development in Tien Giang and Dong Thap (Viet Nam)		
(iv) Implementation units	National project coordination office and three project implementation offices (Lao PDR); central project management unit and two provincial project management units (Viet Nam)		
Procurement		Lao PDR	Viet Nam
	International competitive bidding	multiple contracts \$18.36 million	multiple contracts \$38.70 million
	National competitive bidding	multiple contracts \$1.08 million	multiple contracts \$0.26 million
Consulting services	Shopping	multiple contracts \$ 0.09 million	multiple contracts \$0.32 million
	Quality- and cost-based selection (80:20)	166 person-months \$1.94 million	229 person-months \$2.46 million
	Quality-based selection	\$4.14 million	\$5.22 million
	Consultants' qualifications selection	\$0.10 million	\$0.13 million
Advance contracting	Approved for the recruitment of the project implementation consultants.		
Disbursement	The ADB loans and grant and Government of Australia grant proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2012, as amended from time to time) and detailed arrangements agreed upon by the governments and ADB.		

ADB = Asian Development Bank, Lao PDR = Lao People's Democratic Republic.

Source: ADB estimates.

III. DUE DILIGENCE

A. Technical

23. The structural subprojects involve the rehabilitation and upgrading of the existing water control infrastructure. They were selected from sector road maps following these subproject selection criteria: alignment with the national strategy; adherence to integrated water resource management principles of efficiency, equity, and sustainability; and status of investment preparation. The implementing agencies have the capacity to supervise and coordinate the construction of such infrastructure. The design capacities of flood control gates, drainage pumps, and irrigation canals are based on international norms, hydrological and hydraulic analyses, and hydrographic and topographical surveys of the project areas, and are suited to local conditions.

B. Economic and Financial

24. For irrigation subprojects, incremental production was estimated and production valued at derived economic prices for internationally traded goods (in the case of rice). For flood protection initiatives, the prevention of loss to personal property, public infrastructure,

²⁸ Project Administration Manuals (accessible from the list of linked documents in Appendix 2).

commercial activities, and temporary household relocation was estimated based on current levels of economic activity. The economic internal rate of return estimates range from 12% for the Thuong Thoi Tien embankment subproject to 24% for the Go Cong subproject. In general, subprojects with impacts relating to flood prevention have a higher internal rate of return than those with benefits dominated by irrigated agricultural production. The greatest sensitivity to economic internal rate of return is from development cost escalations (Ba Rai-Phu An and Plain of Reeds subprojects) and reductions in flood benefits (Thuong Thoi Tien subproject).²⁹

C. Governance

25. All procurement to be financed by ADB loan and grant funds will be carried out in accordance with ADB's Procurement Guidelines (2010, as amended from time to time). Project implementation, procurement, and financial management will be aligned with the governments' standard operating procedures. The Ministry of Agriculture and Forestry (Lao PDR) and the Ministry of Agriculture and Rural Development (Viet Nam) have given assurance that all accounts administered by the implementation units are consolidated and audited annually by auditors acceptable to ADB. Financial management assessments concluded that the existing organizational structures of the executing and implementing agencies are generally suitable for the implementation of the project and fund flow arrangements are clear. There are shortfalls such as the lack of experience with ADB project management for some implementing agencies; however, this will be addressed through training. The project will strengthen staff capacities in the implementation units, particularly in financial management procedures, to allow the efficient operation of advance accounts and the reporting of financial performance to the governments and ADB. The project will establish or use existing ministerial websites to (i) disclose implementation progress and bid notifications and their results, and (ii) provide a grievance mechanism against any corrupt practice.

26. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the governments of the Lao PDR and Viet Nam. The specific policy requirements and supplementary measures are described in the project administration manuals (footnote 28).

D. Poverty and Social

27. **Benefits.** The mitigation and improved management of the risks related to flood and drought events will enable communities to benefit substantially from (i) avoiding loss of property and reducing casualties, (ii) increased agricultural productivity and incomes caused by the improved management and availability of water, (iii) improved access through improved rural roads and canals, and (iv) reduction of economic losses from disruption of livelihoods.³⁰

28. **Gender impacts.** The project is classified effective gender mainstreaming. The key gender impacts of the project include increased women's engagement in (i) management of data and information on floods and droughts, (ii) local disaster risk management activities, and (iii) employment generated through civil works and other project activities. The gender action plan contains the following gender design features to ensure that (i) at least 40% of trainees in disaster risk assessment and analysis, prioritization, and implementation of locally appropriate risk management measures will be women; (ii) at least 40% of participants in all public consultations for the development of safer village and commune plans will be women; (iii) at least 40% of community facilitators of the public consultation will be women; (iv) at least 50% of the implementers of the CBDRM measures will be women; (v) at least 40% of commune CBDRM coordination committee members will be women; (vi) contractors will prioritize the use of local unskilled labor for civil works and at least 30% of unskilled laborers (20% in the Lao PDR) will be women and equal pay for equal work will be ensured; (vii) at least 30% of

²⁹ Economic and Financial Analysis (accessible from the list of linked documents in Appendix 2).

³⁰ Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

project staff will be women; and (viii) gender-related performance indicators are included in the project monitoring and evaluation framework.³¹

E. Safeguards

29. **Environment (category B).** The governments will ensure that all subprojects are implemented in strict conformity with relevant laws and regulations, the requirements of ADB's Safeguard Policy Statement, and all measures and requirements set forth in the initial environmental examinations (IEE) and environmental management plans that have been prepared for each subproject and endorsed by the governments. The IEEs will be posted on ADB's website upon Board approval of the Project.³² All identified adverse impacts resulting from the location, design, construction, and operation of the water management infrastructure are expected to be small to moderate and can be mitigated by adoption of specific measures. Special environment-related assurances are prepared to mitigate any project impact on adjacent wetlands.³³ Further updating of the environmental management plans for individual subprojects will be undertaken prior to the commencement of site-specific construction activities.

30. **Involuntary resettlement (category A).** It is initially estimated that about 1,814 households (11,065 people) will be affected by the project, including 1,537 households (9,222 people) in Viet Nam and 277 households (1,843 people) in the Lao PDR. In both countries, severely affected households are estimated at about 248 households (1,221 people), potentially losing more than 10% of their productive land and/or assets. The total land take is estimated at 75 hectares. Six resettlement plans, one for each subproject, have been endorsed by the governments and disclosed on ADB's website.³⁴ The resettlement plans and their implementation are designed to ensure that the affected persons will be no worse off as a result of the project. The governments have shown commitment to manage social risks, but institutional capacity building is still necessary and is included in the project.

31. **Indigenous peoples (category C).** No indigenous people maintaining distinct cultural identities or separate cultural traditions were found to reside in the project areas.

F. Risks and Mitigating Measures

32. Major risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.³⁵

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Current climate change predictions on rainfall and temperature increase are exceeded.	Robust designs, including adaptation for predicted climate change impacts and quality control to reduce vulnerability of infrastructure.
Insufficient government interagency coordination leads to incohesive implementation of structural and nonstructural measures.	Project implementation consultants to raise awareness on the linkages between the structural and nonstructural measures. Studies in Viet Nam on hydraulic design standards will demonstrate these linkages and can be used to advocate for better coordination.
Inadequate regional coordination of disaster risk management.	The National Early Warning Center will adopt Mekong River Commission data exchange procedures.
Ineffective mobilization of community support.	Community-based disaster risk management specialists and selected nongovernment organizations will work with existing institutions, community groups, and local government to engage the community.

Source: Asian Development Bank.

³¹ Gender Action Plan (accessible from the list of linked documents in Appendix 2).

³² Initial Environmental Examinations: Summary (accessible from the list of linked documents in Appendix 2)

³³ Tram Chin National Park in the Plain of Reeds (Viet Nam) and That Luang Wetland (Lao PDR).

³⁴ Resettlement Plans (accessible from the list of linked documents in Appendix 2).

³⁵ Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

IV. ASSURANCES

33. The governments and their respective executing agencies have assured ADB that implementation of the project shall conform to all applicable ADB policies including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the project administration manuals and legal documents. The governments have agreed with ADB on certain covenants for the project, which are set forth in the loan, grant and financing agreements.³⁶

V. RECOMMENDATION

34. I am satisfied that the proposed loans would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

- (i) the loan in various currencies equivalent to SDR15,912,000 to the Lao People's Democratic Republic for the Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project, from ADB's Special Funds resources, with an interest charge at the rate of 1.0% per annum during the grace period and 1.5% per annum thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft financing agreement presented to the Board;
- (ii) the grant not exceeding \$12,500,000 to the Lao People's Democratic Republic, from ADB's Special Funds resources for the Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project, on terms and conditions that are substantially in accordance with those set forth in the draft financing agreement presented to the Board;
- (iii) the loan in various currencies equivalent to SDR29,650,000 to the Socialist Republic of Viet Nam for the Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project, from ADB's Special Funds resources, with an interest charge at the rate of 1.0% per annum during the grace period and 1.5% per annum thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan agreement presented to the Board; and
- (iv) the administration by ADB of the grant not exceeding the equivalent of \$5,887,400 to the Socialist Republic of Viet Nam for the Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project, to be provided by the Government of Australia.

Haruhiko Kuroda
President

15 October 2012

³⁶ Loan Agreement; Financing Agreement (accessible from the list of linked documents in Appendix 2).

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Reduced economic losses resulting from floods and droughts	By 2020, average annual economic losses reduced by 50% in project areas from the baseline 2000–2010 average (\$40 million)	National and provincial monitoring statistics	Risk Current climate change predictions on rainfall and temperature increase are exceeded.
Outcome Improved capacity and preparedness to manage and mitigate the impacts of flood and drought events	Lao PDR By 2017, NEWC operational and providing timely data to the MRC Flood Management and Mitigation Programme (2012 baseline: NEWC not established) 20,000 ha of irrigation and drainage upgraded and operational (2012 baseline = no dry season production) Viet Nam 46,000 ha of irrigation and drainage upgraded and operational (2012 baseline = 0)	MRC annual flood report National disaster management organization reports Executing agencies' project completion reports	Assumption Other flood and drought initiatives are coordinated with the project interventions.
Outputs 1. Enhanced regional data, information, and knowledge base for the management of floods and droughts	Lao PDR NEWC forecasting models calibrated and operational by 2016 Viet Nam Design criteria for flood and drought mitigation schemes in the Mekong Delta developed and disseminated by mid-2014 Transboundary flood management options approved by end of 2015	MRC and national flood management organization reports Design criteria as agreed by the governments of Cambodia and Viet Nam	Assumption MRC procedures for data exchange are fully accepted and adopted. Risk Regional coordination of flood management is inadequate.
2. Upgraded water management infrastructure	Lao PDR 30.4 km of riverbank flood protection built or rehabilitated At least 20% of unskilled laborers in civil works are women O&M plans for each unit of upgraded infrastructure adopted and implemented	Project monitoring and evaluation reporting Midterm review Executing agencies' quarterly and annual progress reports Report from loan implementation consultants	Assumption O&M budgets allocated are sufficient to maintain infrastructure

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	by 2018 Viet Nam 80 km of flood channel upgraded At least 30% unskilled laborers in civil works are women O&M plans for each unit of upgraded infrastructure adopted and implemented by 2018	Project implementation consultants' progress reports	
3. Enhanced capacity for CBDRM	Lao PDR 54 communes have disaster risk management plans and organizations to coordinate response Viet Nam 50 communes have disaster risk management plans and organizations to coordinate response to disasters At least 1,500 women are trained in CBDRM and at least 40% of CBDRM committee members are women	Commune and provincial reporting Post-training assessment reports Monitoring of project gender action plan	Risk Ineffective mobilization of community support
4. Effective project implementation	Project implementation consultants recruited on time Timely contract awards and disbursement Project implementation is completed within 6.0 years and all accounts are closed within 6.5 years Gender awareness training provided to all management and staff	Grant and loan disbursement reports Executing agency and ADB project completion reports	Assumption Project implementation consultants are mobilized within 6 months of loan and grant effectiveness.
Activities with Milestones		Inputs	
1. Enhanced regional data, information, and knowledge base for the management of floods and droughts		ADB ADF Loan: \$69.00 million	
		Item Amount (\$ million)	
1.1 Prepare design criteria and guidelines for flood and drought risk management and mitigation by end of 2014.		For the Lao PDR project:	
		Civil Works 14.07	
		Land acquisition and resettlement 2.55	
		Equipment 1.80	
		O&M during implementation 0.66	
		Contingencies 4.23	
		Interest during implementation 0.69	
1.2 Assess flood situation and propose nonstructural and structural interventions for flood mitigation and management of transboundary flooding in the Plain of Reeds (Viet Nam–Cambodia border) by			

Activities with Milestones	Inputs
2015.	For the Viet Nam project:
1.3 Equip NEWC by end of 2014.	Civil works 28.68
1.4 Calibrate and test forecasts in flood seasons (2014–2016).	Land acquisition and resettlement 2.47
	Vehicles and equipment 0.28
	O&M during implementation 1.03
	Consulting services 1.92
	Project implementation 1.79
	Contingencies 7.12
	Interest during implementation 1.71
	Government of the Lao PDR: \$0.59 million
	Item Amount (\$ million)
	Government staff 0.48
	Contingencies 0.11
	Government of Viet Nam: \$13.47 million
	Item Amount (\$ million)
	Civil works 6.99
	Land acquisition and resettlement 2.79
	UXO clearance 0.21
	O&M during implementation 0.11
	Vehicles and equipment 0.04
	CBDRM 0.31
	Services 0.32
	Consulting services 0.03
	CPMU salaries 1.02
	Contingencies 1.65
	ADB ADF Grant: \$12.50 million
	Item Amount (\$ million)
	For the Lao PDR project
	Civil works (for NEWC) 0.16
	Environment 0.36
	Vehicles and equipment 1.01
	Consulting services 1.88
	Training 2.20
	Service contracts 2.60
	Implementation and supervision 3.08
	Contingencies 1.21
	Government of Australia Grant \$5.89 million
	Item Amount (\$ million)
	For the Viet Nam project:
	Civil works 0.23
	CBDRM implementation 3.28
	Equipment and vehicles 0.11
	Workshops 0.17
	Consulting services 1.01
	Project implementation 0.05
	Contingencies and administration fee 1.04

ADB = Asian Development Bank, CBDRM = community-based disaster risk management, CPMU = central project management unit, ha = hectare, km = kilometer, Lao PDR = Lao People's Democratic Republic, MRC = Mekong River Commission, NEWC = National Early Warning Center, O&M = operation and maintenance, Q = quarter, UXO = unexploded ordinance.

Source: ADB estimates.

LIST OF LINKED DOCUMENTS

<http://adb.org/Documents/RRPs/?id=40190-023-3>

1. Financing Agreement: Lao PDR
2. Loan Agreement: Viet Nam
3. Sector Assessment (Summary): Agriculture, Natural Resources and Environment
4. Project Administration Manual: Lao PDR
5. Project Administration Manual: Viet Nam
6. Contribution to the ADB Results Framework
7. Development Coordination
8. Economic and Financial Analysis
9. Country Economic Indicators: Lao PDR
10. Country Economic Indicators: Viet Nam
11. Summary Poverty Reduction and Social Strategy
12. Gender Action Plan
13. Initial Environmental Examination: Summary (Lao PDR)
14. Initial Environmental Examination: Summary (Viet Nam)
15. Resettlement Plan: (Lao PDR) Flood Protection and Drought Mitigation Project in Vientiane Capital
16. Resettlement Plan: (Lao PDR) Irrigation Development in Vientiane Capital
17. Resettlement Plan: (Viet Nam) Mekong River Delta Bank Protection Thuong Thoi Tien Town; Hong Ngu District – Dong Thap Province
18. Resettlement Plan: (Viet Nam) Upgrading and Rehabilitation of Four Primary Canals in Plain of Reeds, Dong Thap Province
19. Resettlement Plan: (Viet Nam) Upgrading the Flood Control System in Ba Rai – Phu An Area, Cai Lay District, Tien Giang Province
20. Resettlement Plan: (Viet Nam) Upgrading the Flood Control System in Go Cong, Tien Giang Province
21. Risk Assessment and Risk Management Plan

Supplementary Documents

22. Economic Analysis (Lao PDR)
23. Economic Analysis (Viet Nam)
24. Initial Environmental Examination (Lao PDR)
25. Initial Environmental Examination (Viet Nam)