



# Report and Recommendation of the President to the Board of Directors

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Project Number: 33356  
September 2011

Proposed Loan for Additional Financing  
Lao People's Democratic Republic: Nam Ngum  
River Basin Development Sector Project

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 11 August 2011)

Currency Unit	–	kip (KN)
KN1.00	=	\$0.00012495
\$1.00	=	KN8,003

## ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Française de Développement
EIRR	–	economic internal rate of return
IWMU	–	Integrated Watershed Management Unit
IWRM	–	integrated water resources management
KESC	–	<i>khet</i> (village cluster) extension service center
LFNC	–	Lao Front for National Construction
LWU	–	Lao Women's Union
MAF	–	Ministry of Agriculture and Forestry
MoNRE	–	Ministry of Natural Resources and Environment
NNRB	–	Nam Ngum River Basin
NNRBCS	–	Nam Ngum River Basin Committee Secretariat
ONPM	–	Office of the National Project Manager
VDRF	–	village development revolving fund
WLCP	–	watershed landscape continuum plan
WREA	–	Water Resources and Environment Administration

## NOTE

The fiscal year (FY) of the Government of the Lao People's Democratic Republic ends on 30 September.

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## PROJECT AT A GLANCE

<b>1. Project Name:</b> Nam Ngum River Basin Development Sector Project Additional Financing						<b>2. Project Number:</b> 33356-014	
<b>3. Country:</b> Lao People's Democratic Republic			<b>4. Department/Division:</b>		Southeast Asia Department/Environment, Natural Resources and Agriculture Division		
<b>5. Sector Classification:</b>							
				<b>Sectors</b>	<b>Primary</b>	<b>Subsectors</b>	
				Agriculture and natural resources	√	Water-based natural resources management	
						Agricultural production and markets	
						Land-based natural resources management	
<b>6. Thematic Classification:</b>							
				<b>Themes</b>	<b>Primary</b>	<b>Subthemes</b>	
				Environmental sustainability	√	Natural resources conservation	
				Economic growth		Widening access to markets and economic opportunities	
<b>6a. Climate Change Impact</b>					<b>6b. Gender Mainstreaming</b>		
The capacity development of government agencies and communities for watershed and water resources management will improve farmers' adaptive capacity and resilience to climate change and extreme hydrological events.					Gender equity theme (GEN)		
					Effective gender mainstreaming (EGM)		
					Some gender benefits (SGB)		
					No gender elements (NGE)		
<b>7. Targeting Classification:</b>					<b>8. Location Impact:</b>		
<b>General Intervention</b>	<b>Targeted Intervention</b>			National	Medium		
	<b>Geographic dimensions of inclusive growth</b>	<b>Millennium Development Goals (MDGs)</b>	<b>Income poverty at household level</b>	Rural	High		
		√ MDGs1 and 7					
<b>9. Project Risk Categorization:</b> Low							
<b>10. Safeguards Categorization:</b>							
				Environment	B		
				Involuntary resettlement	C		
				Indigenous peoples	B		
<b>11. ADB Financing:</b>							
		<b>Sovereign/Nonsovereign</b>	<b>Modality</b>	<b>Source</b>	<b>Amount (\$ Million)</b>		
		Sovereign	Sector loan	Asian Development Fund	5.0		
		Total			5.0		
<b>12. Cofinancing:</b>							
No Cofinancing available.							
<b>13. Counterpart Financing:</b>							
<b>Source</b>				<b>Amount (\$ Million)</b>			
Government				0.08			
Total				0.08			
<b>14. Aid Effectiveness:</b>							
Parallel project implementation unit				No			
Program-based approach				No			

## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the Lao People's Democratic Republic (Lao PDR) for the additional financing of the Nam Ngum River Basin Development Sector Project.<sup>1</sup>

2. Water is the most vital natural resource in the Lao PDR as its sustainable management is indispensable for agriculture, energy, and mining sectors. These sectors are critical for delivering an annual gross domestic product (GDP) growth rate of about 8% during the 2011–2015 period. The government deems this rate of economic growth necessary for the country to graduate from least developed country status by 2020 as well as to achieve its poverty reduction targets. The water resources also have regional significance since about 35% of total Mekong river flow is generated in the country's watersheds. The country has abundant water resources per capita.<sup>2</sup> However, current storage capacity of large reservoirs is about 3% of annual surface water availability and hydropower generation is about 8% of potential. With the second largest annual flow and population, the Nam Ngum River Basin (NNRB) is one of the most important river basins in the Lao PDR where water resources have been utilized significantly for hydropower generation and irrigation. The current project promotes optimal use of water resources through integrated water resources management (IWRM)<sup>3</sup> in the NNRB, which includes 16 districts in Luangprabang, Vientiane, and Xiengkhouang provinces, and Vientiane Capital. To date, the current project has contributed significantly to improved water governance, information gathering and processing, and watershed management both within the NNRB and nationally. The additional financing will consolidate and enhance these achievements.

## II. THE PROJECT

### A. Rationale

3. In 2002, the Asian Development Bank (ADB) approved the Nam Ngum River Basin Development Sector Project<sup>4</sup> for \$15 million equivalent from the Asian Development Fund (ADF). The closing date is 30 September 2011 following three extensions.<sup>5</sup> The project was designed to institutionalize IWRM in the water sector planning and management at the central and provincial levels, and to provide sustainable livelihood opportunities for poor and ethnic people. It has three investment components: IWRM, reservoir modeling and management, and watershed management. The current project has (i) contributed to the establishment of the Water Resources and Environment Administration (WREA),<sup>6</sup> (ii) developed the national water resources profile and NNRB plan<sup>7</sup> which is the country's first IWRM plan, (iii) supported the

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<sup>1</sup> The revised design and monitoring framework is in Appendix 1.

<sup>2</sup> The total actual renewable water resources per capita is about 58,000 cubic meter per year, which is the highest among Southeast Asian countries. <http://www.fao.org/nr/water/aquastat/maps>

<sup>3</sup> IWRM is a process to improve the planning, conservation, development, and management of water, forest, land, and aquatic resources in a river basin context, to maximize economic benefits and social welfare in an equitable manner without compromising the sustainability of vital environmental systems. (ADB. 2001. *Water for All*. Manila.)

<sup>4</sup> ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Lao People's Democratic Republic for the Nam Ngum River Basin Development Sector Project*. Manila (approved on 11 November 2002).

<sup>5</sup> There were initial delays of 15 months in loan effectiveness and 4 months in consultant recruitment, but the overall project implementation period from effectiveness to completion remained at about 80 months (6 years and 8 months). This led to two initial extensions. The physical completion date is 30 September 2010. The third extension, for 6 months, is to examine the government's request for this additional financing (para. 6).

<sup>6</sup> WREA was established under the Decree No. 149/PM on 10 May 2007. Originally, the Water Resources Coordination Committee was the implementing agency for the IWRM component. WREA superseded the coordination committee as the implementing agency and was subsumed under the Ministry of Natural Resources and Environment (MoNRE) which was newly established in June 2011.

<sup>7</sup> WREA. 2009. *Nam Ngum River Basin Integrated Water Resources Management Plan*. Vientiane.

government in developing and adopting a decree for general establishment of river basin committees<sup>8</sup> which has enabled the establishment of two river basin committees, (iv) strengthened the capacity of the Department of Electricity of the Ministry of Energy and Mines for Nam Ngum 1 reservoir<sup>9</sup> management, (v) developed the capacity of the Integrated Watershed Management Unit (IWMU) of the Ministry of Agriculture and Forestry (MAF), and (vi) initiated decentralized agricultural support systems.

4. The current project is considered to be performing well according to ADB's additional financing policy.<sup>10</sup> In March 2011, an early project completion review mission was conducted by ADB to coincide with the final review of the Agence Française de Développement (AFD),<sup>11</sup> a cofinancier of the current project. The project completion review mission concluded that, although there were start-up delays and a need to reformulate the agricultural extension activities,<sup>12</sup> the current project has been *successful* in achieving its overall development objectives. The review mission reported that major output indicators exceeded their targets and key outcome targets were achieved.<sup>13</sup> The cumulative physical progress reached 98%. Planned contracts were fully awarded and \$17.38 million was disbursed out of the total allocation of \$17.39 million from the ADF. The rate of contract awards and disbursements showed much-improved performance in later years of implementation. The mission identified no major issues and noted that the applicable safeguards policies were complied with throughout the project implementation. No major risks threatened the successful implementation of the project and it is rated *on-track* in the project performance rating.

5. In particular, the current loan has successfully implemented the IWRM process in the NNRB by (i) supporting the establishment of the Nam Ngum River Basin Committee Secretariat (NNRBCS) and initial operations of the WREA, (ii) initiating the process of watershed management planning within IWMU, (iii) setting up 29 *khet* (village cluster) extension service centers (KESCs) for improved farming practices under the Lao Extension Approach, and (iv) initiating village development revolving funds (VDRFs) with detailed operational guidelines in the 16 districts. In addition to these institutional developments, the current project provided about 12,000 households with improved agricultural support services and more than 9,000 households had access to credits for agricultural inputs and materials. Sample surveys under the project show an average household income increase of 54% from 2004 to 2009. Average rice yields increased from 3.1 tons per hectare (t/ha) in 2004 to 3.6 t/ha in 2009 in 158 villages surveyed. Total number of livestock in the villages increased by about 40% from 2004 to 2009.<sup>14</sup> However, sustainability of some of these outputs and their impacts are uncertain since these activities have been in place for a short period coupled with the government constraints in providing sufficient human and financial resources to fully operationalize the new institutions. Key lessons

<sup>8</sup> Decree No. 293/PM on 15 June 2010.

<sup>9</sup> The Nam Ngum 1 reservoir is the largest reservoir in the country with a total storage capacity of almost 7,300 million cubic meter and an electricity generation capacity of 155 megawatt, generating approximately 966 gigawatt-hours per annum. The Nam Ngum 1 dam was completed in 1971.

<sup>10</sup> ADB. 2010. *Additional Financing: Enhancing Development Effectiveness*. Manila. Para. 41 of the policy paper describes measures to determine whether a project is performing well: (i) the delivery of expected outputs, (ii) satisfactory implementation progress, (iii) satisfactory compliance with safeguard policy requirements, (iv) successful management of risks, and (v) a rating of *highly satisfactory* or *satisfactory* in the project performance ratings. The required ratings are substituted with an *on-track* rating under the revised performance rating system.

<sup>11</sup> The AFD grant was approved by AFD's board on 24 April 2003, became effective in July 2003 and closed on 31 May 2009. AFD's final independent evaluation mission was required to be conducted within 24 months of AFD's grant closing date.

<sup>12</sup> The reformulation followed the then newly developed Lao Extension Approach in 2005. The approach consists of two sub-systems: the government extension services and the village extension system. The village system is jointly managed by villagers and village authorities. Activities are facilitated by village extension workers who are appointed and compensated by the community, while receiving technical support from government services.

<sup>13</sup> Summary of Project Performance (accessible from the list of linked documents in Appendix 2).

<sup>14</sup> Survey results are in the Summary of Project Performance (footnote 13).

learned include: (i) retaining experienced staff and strategic asset management consolidate KESC operations, and (ii) formalizing VDRF operations under the Bank of Lao PDR microfinance regulations improves their sustainability. The government also intends to initiate sub-basin management to address location-specific water-related issues through the process of sub-basin planning and monitoring.

6. Consequently, the government has requested ADB's consideration of additional financing to consolidate and expand the activities initiated under the current project.<sup>15</sup> In response to the request, the proposed additional financing project will modify and scale-up the well-performing operations, particularly participatory sub-basin management to strengthen IWRM capacity at the district level, consolidate KESC and VDRF operations, and expand promising agricultural support services to benefit additional villages in remote parts of the NNRB.

7. The additional financing project meets ADB's four eligibility criteria for additional financing:<sup>16</sup> (i) the satisfactory implementation and performance of the current project (confirmed by the project completion review mission) supports technical, financial, and economic viability of the additional financing project as it will have no significant changes in approaches and methodologies from the current project; (ii) the government accords the additional financing project high priority through its request for additional financing; (iii) while project outputs will be scaled up and replicated in additional villages within the basin, the project retains the original overall objectives;<sup>17</sup> and (iv) the outcome is consistent with the current country strategy and program midterm review (2009),<sup>18</sup> which promotes natural and water resources management for sustainable economic growth.

8. The additional financing project has a high degree of project readiness. The capacity of the MAF (the executing agency) has significantly improved over the course of the current project implementation. Under the project, practical plans have been developed for self-sustaining KESC and VDRF operations based on experiences gained and lessons learned. Additional financing is considered to be a suitable instrument to promptly respond to the emerging needs and deepen the achievements of the current project. Building on the established arrangements and methodologies, the additional financing project will capture incremental poverty reduction and sustainable natural resources management benefits from the strengthened public sector institutions and communities for IWRM in the NNRB.

## **B. Impact and Outcome**

9. The expected impact of the overall project will be the optimal use of water resources,<sup>19</sup> especially within the NNRB. The outcome will be integrated watershed management improved in the NNRB. The additional financing project will ensure that significant institutional developments under the current project are embedded in central and local government as well as water and natural resources management systems. Enhanced district and community participation and interagency coordination will facilitate synergy between sub-basin

<sup>15</sup> In accordance with ADB's additional financing policy (footnote 10). Para. 40 describes that additional financing will support scale up of operations and scope changes or modifications of projects that are performing well.

<sup>16</sup> As per para. 4 of the Operations Manual (OM) Section H5/BP, additional financing will only support projects that (i) remain technically feasible, economically viable, and financially sound; (ii) are accorded high priority by the government; (iii) are consistent with the project's development objectives; and (iv) are consistent with the current country partnership strategy. This follows para. 40 of ADB's additional financing policy (footnote 10).

<sup>17</sup> The original goal is now the impact and the original objective is now the outcome. The original two outcomes are combined into one. The components under the current project are outputs under the additional financing project.

<sup>18</sup> ADB. 2009. *Country Strategy and Program Midterm Review: Lao PDR, 2007–2011*. Manila.

<sup>19</sup> The optimal use of water resources under the additional financing project envisions the sustainability of water- and land-based natural resources, which can partly be captured through observation of river flows. The goal of the government's NNRB plan aims also to facilitate the sustainable use of the water and related resources.



management and livelihood support services. These are necessary for effective IWRM within the NNRB. The reservoir management and modeling activities of the current project will not be continued as these activities have been completed. The additional financing project will, however, continue to monitor the reservoir modeling results.

### C. Outputs

10. Expected outputs will be (i) the NNRBCS strengthened for sub-basin management, (ii) district land use planning enhanced, (iii) agricultural support services improved, and (iv) institutional and human resource capacity strengthened for project implementation. The NNRBCS will initiate its operations for developing sub-basin plans to facilitate coordinated sub-basin management at the district level. Improved watershed planning will be incorporated in district land use plans to align local development programs with sustainable sub-basin and watershed management. Enhanced agricultural support services will promote the adoption of environmentally sustainable and profitable farming and forestry practices.

11. **Output 1: NNRBCS strengthened for sub-basin management.** The project activities will assist the newly established NNRBCS in initiating sub-basin management. These activities will include (i) selecting five priority sub-basins; (ii) undertaking multi-stakeholder consultations for sub-basin planning and monitoring in the selected sub-basins; (iii) establishing a working group for each of the priority sub-basins; (iv) training on sub-basin management; (v) developing and disseminating sub-basin management plans; and (vi) developing guidelines for the implementation and monitoring of the plans. The sub-basin plans will identify specific sub-basin issues to be addressed through a decentralized consultation process with beneficiaries. The key elements of these plans will be incorporated into district development plans.

12. **Output 2: District land use planning enhanced.** The project will assist in incorporating watershed landscape continuum plans (WLCPs)<sup>20</sup> developed under the current project in district development programs. The planned activities will (i) disseminate WLCPs to communities through the village development planning process, (ii) train district staff in preparing and/or revising district land use zoning in accordance with the WLCPs to promote environmentally sustainable land use, and (iii) update WLCPs based on the development process of district land use plans and sub-basin management plans.

13. **Output 3: Agricultural support services improved.** The project will assist in enhancing KESC operational capacity and sustainability, and increasing their beneficiaries. Intensive support will be provided to 23 KESCs in 10 districts<sup>21</sup> within the NNRB which are relatively poor and remote. The KESCs will cover 230 villages, which have been supported under the current project, and 50 additional villages. The project will transform existing VDRFs in 16 districts into sustainable financing institutions. The activities will (i) strengthen KESC capacity for the effective management of the centers by improving technical skills of staff, (ii) train farmer leaders and foster their networks, (iii) implement extension services with income-generating activities such as seed and seedling production and cattle fattening, and (iv) institutionalize the VDRFs as district savings and credit unions or other appropriate credit institutions by registering under the Bank of Lao PDR. The main aim of these activities is to enhance sustainability of KESC and VDRF operations through improved efficiency, staff

<sup>20</sup> WLCPs were developed for improved and coordinated watershed management. While sub-basin management under output 1 will focus on water-based natural resources such as quantity and quality of river flows and riverine ecosystems, WLCPs provide guidance for land use planning at the district and village levels with site-specific environmental information and coordinated zoning.

<sup>21</sup> Hinheup, Hom, Kasy, Pek, Phaxay, Phonhong, Phoukhoun, Phoukout, Vang Vieng, and Xaysomboum districts. The project will monitor and provide minimal support to six KESCs (86 villages) within the other six districts.

incentives, and income sources. Farmers' involvement will also be increased to reduce operational costs for these institutions.

**14. Output 4: Institutional and human resource capacity strengthened for project implementation.** The additional financing project will increase project implementation and natural resources management capacity of NNRB staff to intensify interagency coordination and enhance district and community participation. The project will (i) support coordination across outputs; (ii) facilitate cross-sector information sharing on natural resources management such as hydro-meteorological data, watershed profiling, and consultation and training programs for local governments and communities; and (iii) initiate formalized planning and review processes.

#### D. Investment and Financing Plans

**15.** The additional financing project is estimated to cost \$5.08 million (Table 1). As of July 2011, the cost of the current project was \$29.06 million equivalent,<sup>22</sup> reflecting higher than estimated in-kind contributions by the government and increased funds availability due to appreciation of the special drawing right. The overall project with additional financing is estimated to cost \$34.14 million.

**Table 1: Project Investment Plan**  
(\$ million)

Item	Amount <sup>a</sup>		Total
	Original Project	Additional Financing	
<b>A. Base Cost<sup>b</sup></b>			
1. Integrated Water Resources Management	5.37	0.75	<b>6.11</b>
2. Reservoir Management and Modeling	1.86		<b>1.86</b>
3. Watershed Management	15.21	3.29	<b>18.49</b>
4. Capacity Development <sup>c</sup>	6.16	0.70	<b>6.86</b>
<b>Subtotal (A)</b>	<b>28.60</b>	<b>4.73</b>	<b>33.33</b>
<b>B. Contingencies<sup>d</sup></b>	<b>0.00</b>	<b>0.28</b>	<b>0.28</b>
<b>C. Interest During Implementation<sup>e</sup></b>	<b>0.46</b>	<b>0.07</b>	<b>0.52</b>
<b>Total (A+B+C)</b>	<b>29.06</b>	<b>5.08</b>	<b>34.14</b>

ADB = Asian Development Bank.

Note: Numbers may not sum precisely because of rounding.

<sup>a</sup> Taxes and duties will be financed from the proposed loan. This is justified because (i) it will not represent an excessive share of the project investment plan, (ii) taxes and duties apply only with respect to ADB-financed expenditures, and (iii) financing of the taxes and duties is material and relevant to the success of the additional financing project. The ADB loan may finance transportation and insurance costs related to additional financing project expenditures.

<sup>b</sup> In mid-2011 prices for additional financing. The integrated water resources management component of the current project refers to output 1 of the additional financing project. The watershed management component of the current project refers to outputs 2 and 3 of the additional financing project. The capacity development refers to output 4 of the additional financing project.

<sup>c</sup> The cost of the current project under this item was for project management.

<sup>d</sup> For additional financing, physical contingencies are computed at 5% for civil works, and vehicles and equipment; and 0% for consulting services. Price contingencies computed at 2.4% on foreign exchange costs and 4.5% on local currency costs include provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>e</sup> Interest during implementation under Asian Development Fund regular terms is computed at 1.0% during the grace period and 1.5% thereafter.

Source: ADB estimates.

<sup>22</sup> The current project cost was initially estimated at \$23 million equivalent, financed by an Asian Development Fund loan of \$15 million equivalent (denominated in special drawing rights) and a parallel grant of \$3.8 million equivalent from AFD, with the government to finance the balance of \$4.2 million equivalent.

16. The government has requested a loan in various currencies equivalent to SDR3,119,000 (\$5 million equivalent) from ADB's Special Funds resources to help finance the additional financing project. The loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the loan agreement. This will be used for civil works, vehicles and equipment, training and workshops, community development,<sup>23</sup> consulting services, incremental operating costs, interest during implementation, contingencies, and taxes and duties.

17. The financing plan is in Table 2. For the additional financing project, the government will finance about \$0.08 million equivalent in kind for its staff salaries and office space. Parallel cofinancing from AFD was concluded for the original IWRM component, and no further cofinancing is required for the additional financing project.

**Table 2: Financing Plan**

Source	Original Project		Additional Financing		Total	
	Actual Amount <sup>b</sup> (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
ADF loan	17.39	59.84	5.00	98.43	22.39	65.58
AFD grant <sup>a</sup>	5.25	18.07	0.00	0.00	5.25	15.38
Government	6.42	22.09	0.08	1.57	6.50	19.04
<b>Total</b>	<b>29.06</b>	<b>100.00</b>	<b>5.08</b>	<b>100.00</b>	<b>34.14</b>	<b>100.00</b>

ADF = Asian Development Fund, AFD = Agence Francaise de Developpement.

<sup>a</sup> Not administered by the Asian Development Bank.

<sup>b</sup> As of July 2011.

Source: Asian Development Bank

## E. Implementation Arrangements

18. The implementation arrangements are described in detail in Table 3. The existing arrangements for the current project will be retained with minor adjustments to further facilitate village level activities as stated in this paragraph. The MAF will continue to be the executing agency, and implementing agencies will be the MoNRE (through the NNRBCS),<sup>24</sup> IWMU, National Agricultural and Forestry Extension Service, and Office of the National Project Manager (ONPM) of the MAF. The current project steering committee will provide overall guidance for the project implementation. The ONPM will continue to provide overall coordination among the additional financing project outputs. Other existing organizations, which will be retained for the project implementation, are as follows: (i) provincial project facilitators within the provincial agriculture and forestry offices in Vientiane and Xiengkhouang provinces for coordination between districts, and (ii) district implementation units within 10 district agricultural and forestry offices in Luangprabang, Vientiane, and Xiengkhouang provinces under district steering committees. The project staff in each district will include an environment officer and a social safeguard officer.<sup>25</sup>

<sup>23</sup> The category includes VDRFs, capacity building and infrastructure funds for rural infrastructure and village common assets, and demonstration materials and supplies for community mobilization.

<sup>24</sup> Footnote 6.

<sup>25</sup> District steering committees will coordinate project activities within the respective district governments, including the assignment of staff with special expertise such as environment and social safeguards to the district implementation units, as required.

**Table 3: Implementation Arrangements**

Aspects		Arrangements	
Implementation period		March 2012–February 2015	
Estimated completion date		February 2015	
Management			
(i) Oversight body		Project steering committee Vice-minister of MAF (chair); senior staff at the director general level from the MAF, MoNRE, MOF, MPI, LWU, and LFNC, and vice-governors representing NNRBC (members)	
(ii) Executing agency		MAF through ONPM of DOP	
(iii) Key implementing agencies		MoNRE through NNRBCS for output 1, IWMU for output 2, NAFES for output 3, and ONPM for output 4	
(iv) Implementation unit		ONPM (6 staff), NNRBCS (5 staff), IWMU (5 staff), NAFES (21 staff), and 10 DAFOs (10 each)	
Procurement <sup>a</sup>		Shopping/Community Contracting	Multiple contracts \$1,549,000
Consulting services		CQS	Multiple contracts \$ 50,000
		Individual consultants	161 person-months \$ 693,000
Retroactive financing and advance contracting		Retroactive financing, if approved, will apply to expenditures incurred prior to loan effectiveness but not earlier than 12 months before signing of the loan agreement subject to a maximum amount of \$80,000.	
Disbursement		The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2007, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.	

ADB = Asian Development Bank, CQS = consultants qualifications selection, DAFO = District Agriculture and Forestry Office, DOP = Department of Planning, IWMU = Integrated Watershed Management Unit, LFNC = Lao Front for National Construction, LWU = Lao Women's Union, MAF = Ministry of Agriculture and Forestry, MoNRE = Ministry of Natural Resources and Environment, MOF = Ministry of Finance, MPI = Ministry of Planning and Investment, NAFES = National Agriculture and Forestry Extension Service, NNRBC = Nam Ngum River Basin Committee, NNRBCS = Nam Ngum River Basin Committee Secretariat, ONPM = Office of National Project Manager.

<sup>a</sup> All procurement will be undertaken in conformity with ADB's Procurement Guidelines (2010, as amended from time to time) and all engagement of consultants shall be undertaken in conformity with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time). Should there be any discrepancy between the government's procedures and ADB's guidelines, ADB's guidelines shall prevail.

Source: ADB estimates.

### III. DUE DILIGENCE

19. The nature of the additional financing project impacts will be similar to that of the current project, following similar village selection procedure and methodologies established under the current project. Therefore, technical feasibility, economic benefits, financial viability, and project sustainability for the proposed investments were analyzed based on the demonstrated performance of the current project.

#### A. Technical

20. The additional financing project, like the current project, will adopt a sector approach to allow for decentralized and participatory project implementation. Additional villages will be screened and selected during implementation following a set of criteria developed under the current project. The current project has developed a participatory village development and land use planning process which has been accepted by villagers. This facilitates community participation and coordination among project stakeholders. Major livelihood activities proposed under the additional financing project have proved to be implementable in the local context. These activities include improved rice cropping, livestock-raising, and nontimber forest product management. The project will follow programs and guidelines for KESC and VDRF operations prepared under the current project. The additional financing project will utilize and build on these

established approaches as they have been proven to be operationally sound and technically feasible. Therefore, if properly and efficiently implemented, the achievement of the project outcome and outputs should face no serious risks.

## **B. Economic and Financial**

21. The benefits of the current project were verified by the project completion review mission. Benefits that were readily quantifiable include incremental benefits from increased farm and forestry productivity through integrated agriculture extension and enhanced watershed management. A sample survey shows increased rice yields, livestock productivity, and household income. The project completion review mission estimated that the economic internal rate of return (EIRR) of the current project is 25.8%.<sup>26</sup> The benefits of the additional financing project will be (i) effective sub-basin management, (ii) sustainable agriculture support services, and (iii) increased rice and livestock production and livelihood opportunities from sustainable and improved natural resources productivity, forest and water in particular. The EIRR of the additional financing project is estimated at 28.7% based on major quantifiable benefits from increased productivity in rice, livestock, and forestry. This compares well with that of the current project which includes benefits from improved hydropower generation. The additional financing project is viable, relying on proven activities of the current project. The EIRR of the overall project is estimated at 27.4%. This demonstrates that the additional financing project will add significant economic value to the benefits realized under the current project.

22. Through the implementation of the current project, the proposed executing agency and implementing agencies have demonstrated their capacity to implement the current project. The procurement capacity of the executing agency was assessed to be acceptable during preparation of the additional financing project. Project staff in the ONPM have also demonstrated sufficient financial management capacity to implement the additional financing project. The fund flow mechanism has been refined through experience gained under the current project. Experienced staff will be retained and external technical support will further improve the financial management and procurement of the project.

## **C. Governance**

23. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government for the additional financing project activities. The specific policy requirements and supplementary measures are described in the project administration manual.<sup>27</sup> The additional financing project will assist with decentralized project implementation by district governments. Promoting involvement of local communities is expected to increase transparency of project-related decision making and accountability of the public sector. External specialists in financial management, procurement and environmental and social safeguards will be engaged by the ONPM to support project staff. Representatives from the Lao Front for National Construction (LFNC) and the Lao Women's Union (LWU) will continue to support project activities in the field through supervision. This will improve project-related governance.

## **D. Poverty and Social**

24. The additional financing project will focus on communities in upland areas where significant numbers of ethnic people live and where poor people depend almost solely on farming and forestry for their livelihoods. The selection procedure will target villages with higher poverty levels and ethnic population ratios to enhance the positive social impact of the project.

<sup>26</sup> Economic and Financial Analysis (accessible from the list of linked documents in Appendix 2).

<sup>27</sup> Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Participatory village development and land use planning will promote inclusive, gender, and ethnic group sensitive development and resources allocation. Improved watershed management will promote sustainable natural resources use, which improves food security for the poorest. The current project has improved the access of women to rural credits through VDRFs and to clean water through improved water supply systems. These activities were well appreciated by female villagers and will be continued under the additional financing project.<sup>28</sup> The key gender design features are (i) at least 30% female participation in training sessions for government staff and villagers; and (ii) promotion of joint land use certificates issued in the names of both husband and wife, to support women's access to land.

## **E. Safeguards**

25. **Environmental safeguard (category B).** The additional financing project will have limited site-specific environmental and social impacts. The current project has had no significant adverse environmental and social impact. Initial environmental examinations for 19 subwatersheds within the NNRB were prepared under the current project.<sup>29</sup> The additional financing project will continue to support livelihood activities initiated under the current project in 230 villages and initiate similar activities in 50 additional villages in the same subwatersheds. Following the procedures set forth in the environmental assessment and review framework,<sup>30</sup> a screening process will be established to categorize the activities of each target village according to its environmental sensitivity and, where needed, existing initial environmental examinations and environmental management plans will be updated to address site-specific issues consistent with government requirements and ADB's Safeguard Policy Statement (2009). Mitigation measures will be closely monitored based on the environmental management plans. An environmental safeguard specialist will assist project staff in complying with the requirements and monitoring these procedures.

26. **Involuntary resettlement (category C) and indigenous peoples (category B).** The additional financing project activities will not involve any involuntary acquisition of land or other assets. Community-based small-scale infrastructure will, in principle, be designed on existing rights-of-way or public land. Any acquisition of land and other assets will be based on voluntary contribution. The procedural guidelines for voluntary land contribution have been prepared.<sup>31</sup> Ethnic people will benefit from the project through increased agricultural and forestry productivity and improved access to infrastructure and credits for better livelihood opportunities. Participatory village development planning, supplemented by focus group discussions, will facilitate the participation of ethnic people in project activities in a socially acceptable manner. A social safeguard specialist, in collaboration with representatives of the LFNC and LWU, will assist project staff to comply with the requirements and to monitor the procedures.

## **F. Risks and Mitigating Measures**

27. Key risks and mitigating measures<sup>32</sup> are summarized in Table 4. The integrated benefits and impacts are expected to outweigh the costs.

<sup>28</sup> Gender categorization for this project is effective gender mainstreaming. The gender action plan is accessible from the list of linked documents in Appendix 2. The plan will ensure that women have full and equitable access to the additional financing project's resources and benefits.

<sup>29</sup> Nineteen initial environmental examinations were approved by the Science Technology and Environment Agency.

<sup>30</sup> Environmental Assessment and Review Framework (accessible from the list of linked documents in Appendix 2).

<sup>31</sup> Procedural Guidelines for Voluntary Land Contribution (accessible from the list of linked documents in Appendix 2).

<sup>32</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

**Table 4: Summary of Risks and Mitigating Measures**

<b>Risks</b>	<b>Mitigating Measures</b>
Limited capacity at the district level to meet project implementation requirements	(i) Well-trained staff from the current project will mentor and support the district level staff, and (ii) loan implementation support consultants will train and support project staff through on-the-job training and monitor implementation procedures and status.
Lack of operation and maintenance of developed rural infrastructure	Civil works will be designed considering the capacity of the community to manage. The project will support capacity development of users' groups for operation and maintenance.
Insufficient counterpart fund allocation	The financial obligations of participating government agencies will be minimized by using loan proceeds to finance taxes and duties associated with project expenditure.
Limited government resources for continuing project-supported operations	The additional financing project will focus on the sustainable operation of newly initiated institutions through improved efficiency and income-generation activities.

Source: ADB assessments.

#### **IV. ASSURANCES**

28. The government has 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 manual and loan documents. The government has agreed with ADB on certain covenants for the project, which are set forth in the loan agreement.

29. The government has assured that no civil works contract will be awarded until (i) relevant provisions from the environmental management plan have been incorporated into the civil works contract, (ii) the said civil works contract is screened to ensure that it does not involve involuntary resettlement impacts, and (iii) the final ethnic groups development plan is prepared by the government and cleared by ADB.

#### **V. RECOMMENDATION**

30. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan in various currencies equivalent to SDR3,119,000 to the Lao People's Democratic Republic for the additional financing of the Nam Ngum River Basin Development Sector 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.

Haruhiko Kuroda  
President

2 September 2011

## REVISED DESIGN AND MONITORING FRAMEWORK

Design Summary (Current Project)	Design Summary (Overall Project)	Performance Targets and Indicators with Baselines (Current Project) <sup>a</sup>	Performance Targets and Indicators with Baselines <sup>b</sup> (Overall Project)	Data Sources and Reporting Mechanisms (Overall Project)	Assumptions and Risks (Overall Project)
<b>Impact</b> Optimal use of water resources, especially in the Nam Ngum River Basin (NNRB)	(unchanged)	Mean annual discharge in and out of Nam Ngum reservoir better managed	By 2018, seasonal discharges in Nam Ngum River better managed <sup>c</sup> (changed)	Annual reports on discharge data by the Ministry of Natural Resources and Environment (MoNRE)	<b>Assumption</b> High-level government support for integrated water resources management (IWRM)
<b>Outcome</b> IWRM implemented in NNRB  Sustainable livelihood opportunities provided to upland poor and ethnic groups	Integrated watershed management improved in NNRB (combined)	IWRM adopted and reflected in the National 2006–2010 Five-Year Socioeconomic Development Plan (SEDP) (achieved)  Effective coordination among water user agencies established by 2008 (achieved)  Income of about 10,000 households increased by 60%–80% (by 2011) (achieved)	(unchanged)  By 2015, district development plans <sup>d</sup> updated to incorporate sub-basin management concept (added)  By 2015, average income of beneficiary households increased by 60% from 2012 levels in 50 additional villages (added)	Quarterly project progress and final reports  Bi-annual project review missions  Development plans of target districts  Adoptees' sample survey by districts	<b>Assumptions</b> IWRM retained as a priority in SEDP (2011–2015)  District governments are willing to adopt a sub-basin management concept  Commodity prices are stable to maintain improved income  <b>Risk</b> Economic conditions change villagers' priorities and incentives
<b>Outputs</b> <b>IWRM</b>					
1. Water Resources Coordination Committee Secretariat (WRCCS) <sup>e</sup> strengthened	(unchanged)	25 WRCCS staff trained to help WRCC fulfill its mandate by 2005 (achieved)	(completed)	Quarterly project progress and final reports	<b>Assumptions</b> Concerned agencies closely work together
2. NNRB Committee (NNRBC) strengthened to support WRCC	2. NNRBC Secretariat (NNRBCS) strengthened for sub-basin management	Four on-the-job training workshops per year held to adopt IWRM by 2010 (achieved)	Annual workshops held to adopt a sub-basin management approach, of which 30% of the participants are female (added).	Bi-annual project review missions	MoNRE, and provincial and district governments pursue IWRM and support NNRBCS activities  NNRBC sustains



Design Summary (Current Project)	Design Summary (Overall Project)	Performance Targets and Indicators with Baselines (Current Project) <sup>a</sup>	Performance Targets and Indicators with Baselines <sup>b</sup> (Overall Project)	Data Sources and Reporting Mechanisms (Overall Project)	Assumptions and Risks (Overall Project)
3. NNRB management plan adopted and implemented	(changed) (additional financing output 1)		By 2013, five sub-basin management plans developed, which include gender mainstreaming elements (added)		incentives for sub-basin management
	(unchanged)	NNRB management plan adopted by 2006 (achieved)	(completed)		The government maintains the NNRB plan and hydro-meteorological data stations
4. Hydro-meteorological data management improved	(unchanged)	Water rights allocated by 2008 (achieved)	(completed)		<b>Risk</b> Limited participation of districts and communities in planning processes leads to less effective sub-basin management plans
		Hydro-meteorological data stations operational (achieved)	(completed)		
		The capacity of the Department of Meteorology and Hydrology (DMH) <sup>f</sup> improved for more timely and accurate hydro-meteorological data provision (achieved)	(completed)		
<b>Reservoir Management and River Basin Modeling</b>					
5. Hydropower Office (HPO) of the Ministry of Industry and Handicrafts (MIH) <sup>g</sup> strengthened	(unchanged)	Additional hydropower generation of about 20 gigawatt-hours per year (worth \$600,000) (by 2008) (achieved)	(completed)		<b>Assumptions</b> The government retains developed models for reservoir management
6. Reservoir management plan developed and implemented by HPO	(unchanged)	Availability of water in shortage areas increased (by 2008)	(completed)		The government continues staff training for reservoir management
7. NNRB model developed and executed by HPO	(unchanged)	Modest flood mitigation on about 2,000 hectares (ha) (by 2008)	(completed)		<b>Risk</b> Trained staff leave the Department of Energy (DOE) of the Ministry of Energy and Mines (MEM)

Design Summary (Current Project)	Design Summary (Overall Project)	Performance Targets and Indicators with Baselines (Current Project) <sup>a</sup>	Performance Targets and Indicators with Baselines <sup>b</sup> (Overall Project)	Data Sources and Reporting Mechanisms (Overall Project)	Assumptions and Risks (Overall Project)
<b>Watershed Management</b>					
8. The Integrated Watershed Management Unit (IWMU) in the Ministry of Agriculture and Forestry (MAF) strengthened	8. District land use planning enhanced (changed) (additional financing output 2)	-	By 2015, 10 district land use plans developed and/or revised in accordance with the zoning of the watershed landscape continuum plan (WLCP) (added)	Quarterly project progress and final reports  Bi-annual project review missions	<b>Assumption</b> District governments support WLCPs
9. 16 subwatershed plans prepared and adopted	(unchanged)	16 sub-watershed plans adopted by 2008 (achieved)	(completed)		
10. Agricultural extension system strengthened in selected subprojects to improve crop, livestock, and forest productivity and sustainability	10. Agricultural support services improved (changed) (additional financing output 3)	<p>Following farm and/or forest productivity targets achieved in staggered manner in 2005–2011:</p> <ul style="list-style-type: none"> <li>- rice yields increased by 33%;</li> <li>- livestock mortality reduced by 40% for poultry, pigs, cattle and buffaloes (achieved);</li> <li>- 20% increase in growth rates for cattle and buffaloes (achieved);</li> <li>- 50% increase in the number of piglets sold per sow per year (achieved); and</li> <li>- degraded forest area reduced by 9,000 ha and shifting cultivation reduced on 25,000 ha.</li> </ul>	<p>By 2015, farm productivity increased in additional target villages (added):</p> <ul style="list-style-type: none"> <li>-rice yield increased from 3.0 to 3.5 ton per hectare (t/ha)</li> <li>-numbers of livestock increased by 20% for buffaloes, 40% for pigs and poultry, and 60% for cattle</li> </ul> <p>By 2013, 30 village land use plans developed. At least 30% of participants in the planning processes are women. At least 50% of participants are ethnic people (added)</p> <p>By 2015, 80% of farmers obtain joint land use certificates (both male and female) in 30 additional villages (added)</p> <p>By 2015, 70% of <i>khet</i> (village cluster) extension service centers (KESCs) are sustainable (added)</p>	<p>Sample survey for adoptee farmers in additional villages.</p> <p>Quarterly project progress and final reports</p> <p>Bi-annual project review missions</p>	<p><b>Assumptions</b> Project beneficiaries are willing to adopt new technologies</p> <p>Land and water resources are sufficient to implement project activities.</p> <p><b>Risk</b> Quality inputs are not available at reasonable prices</p>

Design Summary (Current Project)	Design Summary (Overall Project)	Performance Targets and Indicators with Baselines (Current Project) <sup>a</sup>	Performance Targets and Indicators with Baselines <sup>b</sup> (Overall Project)	Data Sources and Reporting Mechanisms (Overall Project)	Assumptions and Risks (Overall Project)
			<p>By 2015, 16 savings and credit institutions registered (added)</p> <p>By 2015, 900 new borrowers (50% female) receive credit from newly registered institutions (added)</p> <p>By 2015, average operational self-sufficiency rate of registered village development revolving fund (VDRF) institutions reaches 110% (added)</p>		
<b>Capacity Development</b>					
11. Project management	11. Institutional and human resource capacity strengthened for project implementation (changed) (additional financing output 4)	-	<p>By 2015, planning and review workshops conducted as scheduled, and timely annual work plans prepared</p> <p>No cost overrun</p>	<p>Quarterly project progress and final reports</p> <p>Bi-annual project review missions</p> <p>Project completion report</p>	<p><b>Assumptions</b> Villagers are willing to participate in project</p> <p>Government staff maintain their incentives to participate in the project</p> <p><b>Risk</b> Extreme weather events</p>

Activities with Milestones (Overall Project)	Inputs (Additional Financing)							
<b>IWRM</b> 1. WRCCS strengthened (completed) 2. NNRBCS strengthened for sub-basin management (changed) 2.1. Conduct consultation for sub-basin management plans within 6 months 2.2. Upgrade facilities and equipment of NNRBCS by 2012 2.3. Conduct training for government staff and workshops, and develop and disseminate plans, guidelines, and procedures. Training includes gender-related subjects by 2015 3. NNRB management plan adopted and implemented (completed) 4. Hydro-meteorological data management improved (completed)	<b>ADB: \$5.00 million</b>							
	<table> <tr> <td>Civil works</td><td>\$0.15 million</td></tr> <tr> <td>Vehicles and equipment</td><td>\$0.30 million</td></tr> <tr> <td>Training and workshops</td><td>\$0.87 million</td></tr> <tr> <td>Community</td><td>\$2.16 million</td></tr> </table>	Civil works	\$0.15 million	Vehicles and equipment	\$0.30 million	Training and workshops	\$0.87 million	Community
Civil works	\$0.15 million							
Vehicles and equipment	\$0.30 million							
Training and workshops	\$0.87 million							
Community	\$2.16 million							

<b>Reservoir Management and River Basin Modeling</b> 5. HPO of MIH strengthened (completed) 6. Reservoir management plan developed and implemented by HPO (completed) 7. NNRB model developed and executed by HPO (completed) <b>Watershed Management</b> 8. District land use planning enhanced (changed) 8.1. Conduct consultation and workshop for disseminating WLCPs by 2015 8.2. Train district staff in preparing and/or revising district land use zoning in accordance with the WLCPs by 2015 8.3. Conduct specialized survey (by year 2) and update WLCPs by 2015 9. 16 sub-watershed plans adopted (completed) 10. Agricultural support services improved (changed) 10.1 Upgrade facilities/equipment of KESCs and district financial management teams (DFMTs) by 2012 10.2 Conduct training and workshops for rural livelihood activities by 2015 10.3 Assist village development committees (VDCs) with village development plans, village land use plans, and land allocation, which include gender-friendly participatory planning elements by 2015 10.4 Assist (i) KESCs to provide improved agricultural and forestry extension services, (ii) DFMTs to provide and manage credits, and (iii) VDCs to develop and manage small-scale rural infrastructure by 2015 <b>Capacity Development</b> 11. Institutional and human resource capacity strengthened for project implementation (changed) 11.1 Conduct training and provide technical assistance for (i) facilitating project activities including financial management and procurement, and safeguards; (ii) coordination among agencies; and (iii) intersector information sharing on natural resources management by 2015 11.2 Implement planning, monitoring, and evaluation activities, including semi-annual planning and review workshops, and monitor the implementation of the project gender action plan as per schedule 11.3 Prepare annual budget and work plans and deliver progress and audit reports as per schedule	development Consulting services \$0.74 million Incremental operating costs \$0.43 million Interest during implementation \$0.07 million Contingencies \$0.28 million	
	<b>Government \$0.08 million</b> Staff salaries and office space \$0.08 million	

DOE = Department of Energy, DFMT = district financial management team, DMH = Department of Meteorology and Hydrology, HPO = Hydropower Office, IWMU = Integrated Water Management Unit, IWRM = Integrated Water Resources Management, KESC = Khet Extension Service Office, MAF = Ministry of Agriculture and Forestry, MEM = Ministry of Energy and Mines, MIH = Ministry of Industry and Handicrafts, MoNRE = Ministry of Natural Resources and Environment, NNRB = Nam Ngum River Basin, NNRBC = Nam Ngum River Basin Committee, NNRBCS = Nam Ngum River Basin Committee Secretariat, SEDP = socioeconomic development plan, VDC = village development committee, WLCP = Watershed Landscape Continuum Plan, WRCC = Water Resources Coordination Committee, WRCCS = Water Resources Coordination Committee Secretariat.

<sup>a</sup> Performance targets and indicators modified at the Mid-term Review in 2007 to reflect the reformulation of the Watershed Management Component. The achievements of the original project are detailed in Summary of Project Performance which is accessible from the list of linked documents in Appendix 2.

<sup>b</sup> Project Benefit Monitoring Report (Nam Ngum River Basin Development Sector Project [NNRBDSP], October 2010) provides baseline data for socio-economic indicators in ongoing villages. Baseline data for additional villages will be collected from other selected villages. Project Completion Reports (NNRBDSP, 2010) provides baseline data for farm and/or forestry productivity performance.

<sup>c</sup> Monitoring points of discharges will be decided after the selection of target sub-basins for planning.

<sup>d</sup> Target number of districts will be decided after the selection of target sub-basins.

<sup>e</sup> Water Resources Coordination Committee (WRCC) was superseded by the Water Resources and Environment Administration (WREA) in 2007, which was subsumed under the Ministry of Natural Resources and Environment (MoNRE) in June 2011.

<sup>f</sup> DMH was transferred from MAF to WREA in 2007.

<sup>g</sup> MIH evolved to become the MEM and HPO became a part of the DOE of MEM.

### **LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/RRPs/?id=33356-014-3>

1. Loan Agreement
2. Sector Assessment (Summary): Water Resources Management in Nam Ngum River Basin
3. Project Administration Manual
4. Summary of Project Performance
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Economic and Financial Analysis
8. Country Economic Indicators
9. Summary Poverty Reduction and Social Strategy
10. Gender Action Plan
11. Environmental Assessment and Review Framework
12. Ethnic Groups Development Plan
13. Risk Assessment and Risk Management Plan

### **Supplementary Document**

14. Procedural Guidelines for Voluntary Land Contribution