

SUMMARY OF PROJECT PERFORMANCE

A. Background

1. The design of the current Nam Ngum River Basin Development Sector Project has been relevant and consistent with the rural and agricultural development strategy of both the government and the Asian Development Bank. The expected outcomes were integrated water sources management (IWRM) implemented in the Nam Ngum River Basin, and sustainable livelihood opportunities provided to upland poor and ethnic groups. The project has three components: IWRM, reservoir management and river basin modeling, and watershed management.

2. ADB approved the project in 2002. It took 15 months for the loan to become effective, which was beyond the control of the project, and another 4 months to mobilize loan consultants. Some organizational changes to the water-related agencies were also made during implementation. The newly established Water Resources and Environment Administration (WREA)¹ superseded the Water Resources Coordination Committee in May 2007 as the implementing agency for the IWRM component. The Department of Meteorology and Hydrology was also transferred from the Ministry of Agriculture and Forestry (MAF) to the WREA and received assistance under the project.

3. Agricultural extension activities under the watershed management component were reformulated in 2005 to align project activities with the government's Lao Extension Approach (LEA) being promoted by MAF's National Agriculture and Forestry Extension Service. In addition, village development funds were also provided to support (i) capacity building and infrastructure funds for rural infrastructure and village common assets, and (ii) village development revolving funds (VDRFs) to provide credit to farmers for agricultural and livelihood activities promoted by the project. Guidelines for the use of the village development funds were drawn up in 2006 to operationalize these activities. Through these reformulated activities, the project contributed to a broad range of institutional developments and the overall project design remained relevant.

B. Performance of the Project

4. Although there were start-up delays and changes in project implementation conditions, the current project has been successful in achieving its outcome through the coordination of the project steering committee and enhanced capacity of the MAF, the executing agency, as well as the modified project approach and methodologies. The performance of the project is summarized as follows:

- (i) **Delivery of expected outputs and outcome.** The early project completion review mission in March 2011 concluded that the project achieved major output indicators (as shown in the table) and key outcome targets. IWRM was adopted and reflected in the National Socio-Economic Development Plan. Effective coordination among water user agencies was improved through establishment of the WREA and Nam Ngum River Basin Committee. Coordination mechanisms between the WREA and the MAF were developed. A sample survey of 612 households in 68 villages undertaken in 2010 indicated an average income increased by 54% from 2004 to 2009, almost achieving the target increase of

¹ Originally the Water Resources Coordination Committee was the implementing agency for the IWRM component. The WREA was subsumed under the Ministry of Natural Resources and Environment established in June 2011.

- 60%-80%.² ADB's Independent Evaluation Department, which undertook a sector assessment in 2010, also considered that while the project was considered a doubtful success in 2005 it would likely be considered ultimately successful.³
- (ii) **Satisfactory implementation progress.** The project achieved 98% of cumulative physical progress. Although the project faced some difficulties during the initial stage of implementation, it successfully addressed them and has made good progress through reorganization of the project structure and reformation of the agriculture extension component. As the sector assessment (footnote 3) indicated, these issues did not ultimately affect the final outputs and outcome of the project. The project has progressed satisfactorily. Figures 1 and 2 show S-curves for cumulative contract awards and disbursements.
 - (iii) **Satisfactory compliance with safeguard policy requirements.** The project did not suffer from significant safeguard problems. The project completion review mission confirmed that safeguards requirements were satisfactorily met. Initial environmental examination study reports were completed for 19 subwatersheds. No resettlement was required during the implementation. Ethnic groups and women were mobilized and organized for training and livelihood development programs.
 - (iv) **Successful management of risks.** The report and recommendation of the President for the current project identified limited human resources and financial capacity of implementing agencies as the major risks. A mechanism to improve agency coordination was a key challenge identified at the early implementation stage, and focusing on watersheds rather than administrative boundaries was considered another challenge (SAPE 2005).⁴ The government contributed more to in-kind costs than was planned. A working group for central agency coordination, established early during project implementation, effectively promoted project activities. The project introduced an innovative concept of a "watershed landscape continuum planning approach" to resolve the dilemma between administrative and hydrological boundaries to avoid administrative issues at the district level. These potential risks did not threaten the delivery of outputs within the revised time frame.
 - (v) **On track rating.** The project is rated *on track* in the project performance rating.

Output Indicator and Achievements of the Nam Ngum River Basin Development Sector Project

Component	Indicator	Achievement	Remarks
IWRM	25 WRCCS staff trained to help the WRCC fulfill its mandate	446 WREA staff trained	Project Completion Report (NNRBDSP, September 2010): -NNRBCS established -National water resources profile prepared -Decree for the establishment of river
	Four on-the-job training workshops per year held to adopt IWRM	26 training programs conducted	
	NNRB management plan adopted	Nam Ngum River Basin profile prepared	

² ADB. 2010. *Project Benefit Monitoring Report, Nam Ngum River Basin Development Sector Project*. Manila. The project is expected to achieve the target increase through the consolidation and expansion of extension activities under the additional financing.

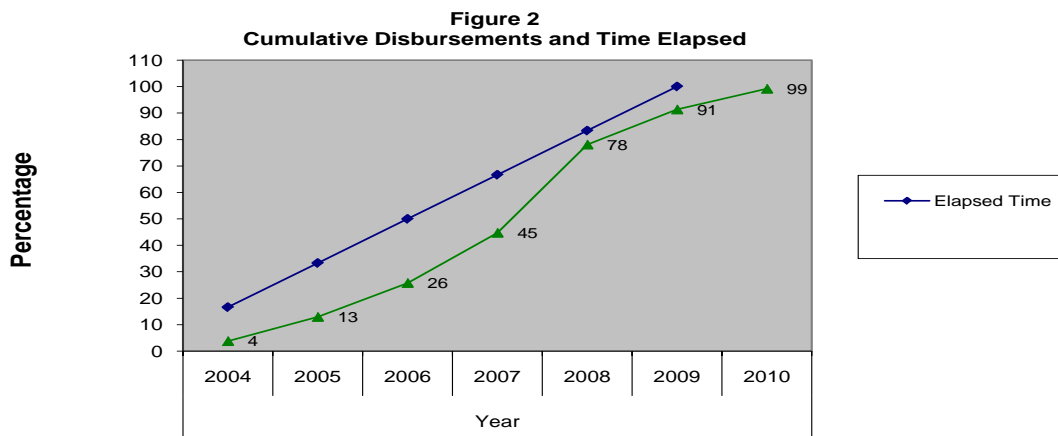
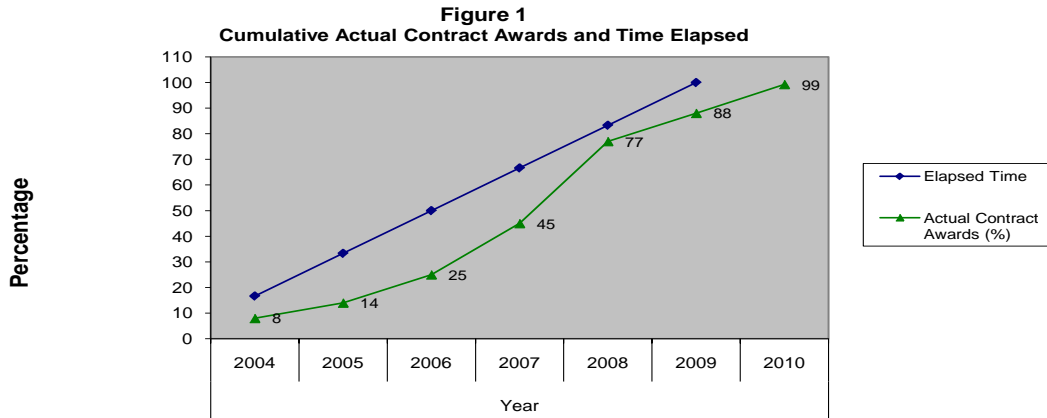
³ ADB. 2010. *Evaluation Study: Agriculture and Rural Development Sector in the Lao People's Democratic Republic*. Manila.

⁴ ADB. 2005. *Sector Assistance Program Evaluation (SAPE) for the Agriculture and Natural Resources Sector in the Lao People's Democratic Republic*. Manila.

Component	Indicator	Achievement	Remarks
		NNRB IWRM plan developed	basin committees approved
	Water rights allocated	Water rights incorporated in the law and decree of water and water resources	
Reservoir Management and River Basin Modeling	Additional hydropower generation of about 20 gigawatt-hours per year (worth \$600,000)	PARSIFAL model was applied for hydro-power production optimization and basin water resources optimization for Nam Ngum 1 reservoir	PARSIFAL model showed the possibility to increase power production from \$3.1 to \$7.3 million per year and potential flood mitigation on about 2,000 ha
	Availability of water in shortage areas increased	The model together with the strengthened agency's capacity was expected to improve availability of water and reduce flood hazards	
	Modest flood mitigation on about 2,000 hectares (ha)		
Watershed Management	16 subwatershed plans adopted	17 subwatershed plans developed	Three consolidated watershed landscape continuum plans prepared
	Rice yields increased by 33% (1.5 t/ha to 2.0 t/ha)	Rainy season rice yields increased by 17% (from 3.06 t/ha to 3.57 t/ha)	Survey in 158 villages in 9 districts (10,223 ha in 2009)
	Livestock mortality reduced by 40% for poultry, pigs, cattle, and buffaloes	Mortality reduced by 43% for poultry, 20% for pigs, 13% for cattle, and 32% for buffaloes	Survey in 158 villages in 9 districts (total number: cattle 45,131, buffalo 18,084, pigs 24,091, goats 2,837, and poultry 283,292 in 2009)
	Growth rate increased by 20% for cattle and buffaloes, and increased number of pigs sold per sow per year by 50%	Increased numbers by 39% for poultry, 70% for goats, 36% for pigs, 20% for cattle, and 58% for buffaloes	
	Income of about 10,000 households increased by 60%–80%	54% increase in farm income (from 2004 to 2010)	
	Degraded forest area reduced by 9,000 ha and shifting cultivation reduced on 25,000 ha	Tree planting on 13,853 ha in 264 target villages; land use allocation conducted in 90 villages; shifting cultivation reduced from 3,638 ha to 431 ha in target villages	
	KESC and VDRF	29 KESCs established; 564 village workers trained	
		16 district financial teams strengthened for village revolving fund operation with 534 village groups	

IWRM = Integrated Water Resources Management, KESC = khet (village cluster) extension service centre, NNRB = Nam Ngum River Basin, NNRBCS = Nam Ngum River Basin Committee Secretariat, NNRBDSP = Nam Ngum River Basin Development Sector Project, WRCC = Water Resources Coordination Committee, WRCCS = Water Resources Coordination Committee Secretariat, WREA = Water Resources and Environment Administration, VDRF = village development revolving fund.

Sources: Government of Lao PDR, Ministry of Agriculture and Forestry. 2010. *Project Completion Report: Nam Ngum River Basin Development Sector Project*. Vientiane: Government of Lao PDR, Ministry of Agriculture and Forestry. 2010. *Project Benefit Monitoring Report: Nam Ngum River Basin Development Sector Project*. Vientiane.



5. It may still be too early to capture the whole picture of the project impact, yet there are several positive effects which will contribute to the impact. The government's adoption of a decree for the general establishment of river basin committees was a major institutional outcome which enabled the establishment of three river basin committees, including the Nam Ngum River Basin Committee. The establishment of the WREA and the subsequent formation of the Nam Ngum River Basin Committee are major organizational improvements.

6. Under the watershed management component, the introduction of the new LEA and the establishment of 29 *khet* (village cluster) agricultural extension centers (KESCs) were institutional innovations enabling public extension services to reach farmers in remote areas. Initiation of the VDRF with established guidelines is expected to make way for community-based production groups to be self-sustaining economic entities through improved access to much-needed financial resources.

7. The farm income of beneficiaries was raised and their food security was improved. The project improved the farming and forestry knowledge and techniques of beneficiary farmers, including in high-yielding rice production, livestock management, and improved management of nontimber forest products. A sample survey in 2010 showed the significant income increase of 54%. The number of households with rice shortage decreased from 22% in 2004 to 13% in 2009.

(sample household survey in 158 villages).⁵ The increase in farm income was mainly due to (i) increase in rice yields by 0.5 tons (t) per ha; (ii) a sharp decrease in livestock mortality rates following the implementation of an extensive animal vaccination program; and (iii) a significant increase in animal population with farmers being able to utilize village revolving fund loans for purchasing young animals, and improved livestock management and forage production. The project benefits reached about 34,000 households in 16 districts compared with a target of 10,000 in 9 districts at appraisal.

8. A financial management team was established in each district in 2007 and 2008 for VDRF operations, in collaboration with the Lao Women's Union. A computerized financial information system has been introduced. A total of 10,052 households have been organized into 534 groups in 183 villages as facilitators of the VDRF at the village level. The operational self-sufficiency ratios of 16 district financial management teams were still low and diverse, with an average of about 40% in 2009 due to their relatively short period of operation. However, the total amounts of loans disbursed have significantly increased, from KN7.8 billion in March 2009 to KN17.6 billion in August 2010, of which KN13.2 billion (75%) was from the loan proceeds and the remainder was financed from members' savings. VDRFs provided much-needed credit for livelihood production, including livestock (59%), petty trading (18%), and agriculture production (18%). The total interest generated was KN2.62 billion (15% of total amount disbursed). Conversion of the district VDRF operations into savings and credit unions under the additional financing project will significantly enhance the sustainability of these activities.

9. The project performed well in terms of mobilizing women—50% of production group members were female and 45% of participants in farmers' training were women. Village revolving fund activities were appreciated by female beneficiaries particularly, and more than 75% of participants in training sessions for VDRF operations were female. Women also appreciated the improvement of village water supply systems to reduce work hours for fetching water. While 23.5% of extension staff under the project were women, 32% of participants in training for government staff were women.

C. Conclusion

10. The project successfully addressed changes in project conditions and has progressed satisfactorily. Although it required additional administrative effort, the adjustments to government organizational structures and reformulation of the project contributed to the institutional transformation of the government. These are also considered to be important project outcomes. The project also improved the capacity of the MAF, the executing agency, and implementing agencies and expanded models for upland development, such as livestock and fodder crop development. Therefore, the project is considered to be performing well.

11. Maintaining the current momentum of the well-performing operations is crucial. The government intends to consolidate and replicate well-performing operations of the project within the Nam Ngum River Basin. A need for more decentralized water resources management is emerging. It is also expected that the sustainability of the extension services introduced under the current project will be improved through consolidation of project outputs and ongoing support to the KESCs. The proposed additional financing is expected to capture these opportunities, building on established project implementation arrangements and local networks for project implementation. Lessons identified during implementation will further improve the performance of the project and sector. Therefore, the additional financing project is warranted.

⁵ Footnote 2.