

# Southern Provincial Towns Water Supply Project

In 1991, only about 33 percent of the urban population and 15 percent of the rural population in the Lao People's Democratic Republic (Lao PDR) had access to treated water supplies. Reliable supplies of water were available in only 7 out of 17 provincial capitals. Water supply in Vientiane and Savannakhet was acceptable but, in other towns, it was poor and did not meet the recommended World Health Organization standards. Water supply systems were generally old, in poor

condition, and unable to provide for existing and future demand because investment was insufficient and there was a lack of planning and skilled personnel to manage them. No significant investment in urban water supply had been made since 1981.

The main objective of the Southern Provincial Towns Water Supply Project (Loan 1122-LAO[SF]) was to rehabilitate and upgrade the water supply systems in Pakse, Attapeu, and Saravane and to construct a new water supply system for Sekong, with a view





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to assisting the Government in meeting its water supply targets and thus improve the health of the population and support economic growth. Upon completion, the Project was to benefit 82,000 people in the four towns. ADB provided SDR7.05 million (\$9.6 million equivalent) from the Asian Development Fund to finance the entire foreign exchange cost of the Project and \$0.7 million of the local currency cost. The Government of the Lao PDR provided budgetary funds for the balance of the local currency cost. The actual project cost at completion amounted to \$11.0 million, with a foreign exchange cost of \$8.6 million (78 percent of the actual total

cost) and a local currency cost of \$2.4 million. The lower actual cost of the Project was primarily because gravity-operated infiltration galleries were used for the water treatment plants. The Project was expected to have been implemented over four years, from 1992 to 1995, with loan closing in 1996. However, some project delays were incurred and loan closing was postponed to 1997, about a year later.

The Project was generally consistent with ADB's country operational strategy. Moreover, it had a poverty-reducing dimension, even though this was not an explicit intention of the strategy. In terms of current ADB strategic priorities, the Project is relevant. The Project was also implemented satisfactorily in the main part, with only a small delay. However, there were several shortcomings. In two of the project towns, Attapeu and Sekong, the proposed conventional water treatment plant was replaced with a gravity-operated infiltration gallery without an adequate investigation of the hydrology at the water intake location. As a result, the infiltration galleries are either ineffective or not in use. In Pakse, the water treatment plant is underutilized because too few consumers are connected to the distribution system. The Project was also inadequately designed from an institutional perspective. The finance and accounting systems of Nam Papa Lao (Lao Water Supply Authority) were not upgraded to international standards and the accounting skills of the staff were not strengthened. The amount of consulting services provided under the Project was insufficient and contributed to the poor performance of the Project in Attapeu and Sekong.

The main objective of the Project of providing potable water supply to four provincial towns was only partly achieved. Only about half of the 82,000 intended beneficiaries benefited from the Project. In two of the four project towns (Attapeu and Sekong), the Project did not bring potable water to residents and there has been no improvement in water supply. In Pakse, more consumers could be served by the Project if additional households were connected. Only in Saravane did the Project successfully meet its ob-

jectives. However, the Project did have a substantial impact on the populations of Pakse and Saravane. The overall economic internal rate of return (EIRR) was estimated at 20 percent in real terms. The high EIRR is attributable to the large size of Pakse relative to the other three towns and the substantial economic benefits from the Project in Pakse.

The financial position of the water utilities in the four project towns is precarious. Revenue is insufficient to cover operating expenses, depreciation, and interest payments; the water utilities reported losses in 1998 and 1999 on the income statement. The lack of financial viability is already affecting the operation of the water supply systems through neglect of necessary maintenance. The water tariff in the four project towns is low and recovers only minimal costs. Consequently, water is provided virtually free, and as a result, the financial net present value of the Project is negative.

The sustainability of the Project at Pakse and Saravane is doubtful. The lack of resources to finance maintenance has already caused operational difficulties in Pakse and will likely shorten the life of the Project. Sustainability is also affected by shortcomings in the technical abilities of water utility staff that need upgrading to ensure proper operation and maintenance of the plants. Even though the EIRR is high, based on a shorter than expected economic life of the Project, the Project was rated as partly successful.

The evaluation identified several lessons. Although designs of water supply systems are relatively standard, they need to take into

account local conditions, particularly in developing countries where geological and environmental conditions vary greatly. Siltation of rivers is a well-known phenomenon in Asia and water supply designs need to incorporate data on water characteristics, such as turbidity, during project preparation or implementation when major design changes are being considered. The design should also include a thorough needs analysis of engineering design and supervision for project implementation.

In addition, the successful operation of a water utility depends on skilled and experienced staff. Therefore, project design needs to make adequate provision for staff training based on a thorough needs analysis. In certain developing countries, such as those in transition from central planning to a market orientation, relatively more institutional strengthening may be needed. In such cases, a relatively greater amount of technical assistance may be necessary in the initial projects in the sector to create a critical mass of skilled staff to ensure both the proper operation and maintenance, and the financial operations, of the project facilities. Institutional strengthening also needs to address the financial information issues of a water utility.

A key issue facing the Government is the nonperformance of project facilities in Atapeu and Sekong. The engineering firm that designed and constructed these facilities is likely to have a legal responsibility for rectifying the problems or providing some compensation.