

Vietnam: Water Supply in Viet Tri

Ex-post evaluation

OECD sector	14020 / Water supply and sanitation– large systems	
BMZ project ID	1996 65 258 and 1996 70 118	
Project-executing agency	Phu Tho Water Supply Company	
Consultant	CES Salzgitter	
Year of ex-post evaluation	2005	
	Project appraisal (planned)	Ex-post evaluation (actual)
Start of implementation	Q1 1997	Q3 1998
Period of implementation	34 months	30 months
Investment costs	EUR 20.1 million	EUR 12.6 million
Counterpart contribution	EUR 4.9 million	EUR 2.6 million
Financing, of which Financial Cooperation (FC) funds	15.2	10.0
Other institutions/donors involved	–	–
Performance rating	2	
• Significance / relevance	2	
• Effectiveness	2	
• Efficiency	3	

Brief Description, Overall Objectives and Project Objective with Indicators

The project comprised the comprehensive rehabilitation and expansion of the existing water supply facilities in Viet Tri (approx. 140,000 inhabitants). Viet Tri is the capital of Phu Tho province and located along the Red River some 80 km northwest of Hanoi. The overall objectives of the project were to contribute to reducing the health risks to the population resulting from water-borne disease and to help ensure the city's possibilities for economic growth. The project objective was to provide the population, industry, commerce and public institutions with sustainable and continuous water supply that meets their needs.

Under a complementary measure the water supply company's accounting and financial management were improved. In addition, an awareness campaign was carried out to encourage hygiene and cleanliness in connection with water use, sewage disposal and waste disposal, to increase the connection rate to the public drinking water supply network and to help protect the environment.

The objectives defined for the project were as follows:

Overall objectives	Indicators	Status at the time of the final evaluation
Reduction in the health risks for the inhabitants of Viet Tri and assurance of possibilities for the city's economic growth	None defined	Achieved: Health agency reports a marked decrease in the prevalence of diarrheal and eye disease; expansion of the commercial center
Project objective		
Need-oriented, sustainable and continuous supply of hygienically safe drinking water to the population, industry, commerce and public-sector consumers.	<p>a) Need-oriented and continuous provision (approx. 22,500 m³/d in the year 2005) in accordance with national quality standards.</p> <p>b) Successive increase in the connection rate for private consumers (67% in the year 2005; approx. 106,500 inhabitants) and for commercial / industrial consumers.</p> <p>c) Reduction in the amount of unaccounted for water (UFW) to 23% in the year 2005.</p> <p>d) Introduction of a tariff structure that offers full coverage once the project begins operating.</p>	<p>a) Achieved: 2005: On average approx. 16,000 m³/d, in the summer 18,300 m³/d, projection for 2006: approx. 2,000-3,000 m³/d more; the target volume was not achieved, yet customer needs are met in full. 24-hour supply is assured (via 16-hour operation and supply via reserve tanks). The quality standards are fulfilled.</p> <p>b) Achieved: 2005: 77% urban connection rate, projection for the end of 2006: approx. 100% urban or 83% urban and rural connection rate. All commercial and industrial customers are connected.</p> <p>c) Almost achieved: Losses through August 2005 reduced to 26%.</p> <p>d) Not achieved: Dynamical full costs of VND 4,555/m³, average tariff in 2004: VND 2,820/m³, thus full coverage of 62% of the costs.</p> <p>Average tariff/m³ as of January 1, 2006: VND 3,359/m³, thus full coverage of 74% of the costs.</p>

The objectives defined at the time of the project appraisal are appropriate, yet the indicators do not cover the entire spectrum of the objectives. An expressive indicator of commercial development was not defined; the indicator 'unaccounted for water' is more of an indicator of management quality, which is not directly mentioned in the objectives. The indicator 'cost recovery ratio' is adequate for measuring the efficiency (and sustainability) of the achievement of the goals, but not for measuring the actual attainment of the project and overall objectives.

Project Design / Major Deviations from the original Project Planning and their main Causes

The project comprised measures aiming for the comprehensive rehabilitation and expansion of the water supply facilities in the city of Viet Tri in order to meet drinking water needs through the year 2005. Key individual components are a raw water pumping station, a water treatment facility, a pure water pumping station, a primary and a secondary distribution network, house connections and consulting services. Following the initial completion of the project, an inappropriate transformer that had been installed at the water treatment facility was exchanged due to persistent, strong power fluctuations (April 2003). Under a complementary measure, hygiene awareness measures were carried out for the population, as were measures to improve the financial accounting and the management information system of the project-executing agency.

Changes in urban development planning made it necessary to relocate the distribution system. This reduced the supply radius of transmission mains by some 50 km compared to the plans at the time of the project appraisal. The replanning and the additional approval procedures that became necessary as a result mainly caused considerable delays in the installation of the pipes.

The planning criteria were met (capacity of all system components 36,000 m³/d, based on a seasonal peak load of 1.3 of the average requirements of 27,600 m³/d and a loss rate of 26% incl. 5% own requirements). Owing to the extremely short planning horizon of only six years, approx. 77-91% of the capacity will probably be utilized after six years.

The investments are adequate. The result of the project is the provision of sufficient capacity to supply the population of Viet Tri with hygienically safe drinking water. Hygiene awareness (complementary measure) has been carried out, and the connection rate rose as a result. Thanks to improved financial accounting and the introduction of a management information system, the project-executing agency PTWSC can now find out more about key operational processes (water production, customer development, costs, revenues), providing a solid basis for well-founded business decisions.

Key Results of the Impact Analysis and Performance Rating

The project ensures drinking water supply for the inhabitants, institutions and commercial enterprises of the city of Viet Tri, both quantitatively and qualitatively. Despite an extremely brief planning horizon, it will be able to meet needs for several more years as the industrial settlements are expanding more slowly than expected. The city administration considers the health impacts to be clearly positive. The burden of the water tariffs on private households is minimal. Apart from the fact that there are no indications of non-acceptance of the tariffs, given monthly income near the poverty line (VND 260,000 per capita in urban areas) for a mere 2% of income water needs of 50 l/d can be met. The connection fees did not keep the connection rate from increasing, either.

As women are usually responsible for family health and for caring for sick family members, they benefit directly from the decline in water-borne disease.

As it reaches the entire urban population, this project was to have a direct poverty impact on a limited, directly accessible target group. The share of poor people matches the regional figure (23%), and the project is integrated into a poverty-oriented environment.

A covenant in the loan and project agreement obliged the project-executing agency to submit a concept for sewage disposal in inner-city areas including a proposal for the financing prior to the conclusion of the supply and service contracts. This covenant was adhered to and the

preparation of the sanitation project progressed all the way to the tender for the consulting services for detailed planning and monitoring of implementation. Then, however, it was cancelled by the Vietnamese government due to financing difficulties. The high water consumption goes hand in hand with a greater quantity of sewage. In order to protect the environment and downstream population, optimally the sewage should be treated thoroughly at treatment plants instead of only superficially via cesspools. As cesspools exist, however, currently there are no serious health risks nor environmental risks due to the relatively small amount of sewage and the capability of the environment to absorb the sewage. Thus far, treatment plants have not been used in Vietnam. Yet, German FC and other donors are currently developing sanitation programmes.

In a summarized assessment of all the above impacts of the project, we have arrived at the following rating of its developmental effectiveness:

- The project achieved or exceeded the indicators of achievement of the project objectives in terms of the connection rate and water quality. The project helped ensure continuous and qualitatively safe drinking water that meets consumer needs. Although the water losses were reduced significantly, the project misses the target by a very small margin, which has to do with its efficiency (see below). Therefore, we judge the project's effectiveness as satisfactory (rating: 2).
- The project contributed to the achievement of the overall objectives (to reduce health risks and to ensure development possibilities for the city's economy), which are priorities from today's point of view. Its impacts can be adequately felt in the area of intervention. Altogether the project's significance and relevance are satisfactory (rating: 2)
- Production efficiency: The project's specific investment costs are appropriate; the volume of funds used was even 40% lower than expected. The full cost coverage targeted six years after the project began operating has been achieved to around 64% in its fifth year of operation and will (definitely) rise to at least 77% in 2006. The operating costs are covered. Allocation efficiency: Full cost coverage via tariff revenues has not been achieved, though. The water losses are 26%, higher than the target stated in the BMZ sector concept of 20%. Yet, the project's efficiency is still sufficient overall (rating 3).

6.11 In view of the above, we consider the project to have satisfactory environmental effectiveness and assign it a rating of 2.

General Conclusions and Recommendations

On-lending conditions in loan or financing agreements should be stated in such a way that they do not stand in the way of an adjustment to changed, near-market conditions and do not weaken the liquidity of the executing agency to such a degree that the debt service jeopardizes sustainable operation.

Loan agreements concluded for projects for which the project-executing agency assumes basic social functions on behalf of the state without being allowed to charge tariffs that fully cover the costs (and without receiving any other compensation) ought to assign the exchange rate risk to the state to prevent external influence from placing an additional burden on the finances of the project-executing agency, which are already in a critical state.

Legend

Developmentally successful: Ratings 1 to 3	
Rating 1	Very high or high degree of developmental effectiveness
Rating 2	Satisfactory degree of developmental effectiveness:
Rating 3	Overall sufficient degree of developmental effectiveness
Developmental failures: Ratings 4 to 6	
Rating 4	Overall slightly insufficient degree of developmental effectiveness
Rating 5	Clearly insufficient degree of developmental effectiveness
Rating 6	The project is a total failure

Criteria for the Evaluation of Project Success

The evaluation of the "developmental effectiveness" of a project and its classification during the ex-post evaluation into one of the various levels of success described in more detail below concentrate on the following fundamental questions:

- Are the project objectives reached to a sufficient degree (aspect of project **effectiveness**)?
- Does the project generate sufficient significant developmental effects (project **relevance** and **significance** measured by the achievement of the overall development-policy objective defined beforehand and its effects in political, institutional, socio-economic and socio-cultural as well as ecological terms)?
- Are the funds/expenses that were and are being employed/incurred to reach the objectives appropriate and how can the project's microeconomic and macroeconomic impact be measured (aspect of **efficiency** of the project design)?
- To the extent that undesired (side) effects occur, are these tolerable?

We do not treat **sustainability**, a key aspect to consider for project evaluation, as a separate category of evaluation but instead as a cross-cutting element of all four fundamental questions on project success. A project is sustainable if the project-executing agency and/or the target group are able to continue to use the project facilities that have been built for a period of time that is, overall, adequate in economic terms, or to carry on with the project activities on their own and generate positive results after the financial, organizational and/or technical support has come to an end.