

CHAPTER 1

INTRODUCTION

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1.1 Background of the Study

The development of a water supply system in Vientiane started with the construction of the Kaolieo Treatment Plant in 1964. The Kaolieo Treatment Plant was rehabilitated in 1983. The Chinaimo Treatment Plant was established in 1980 by the ADB and was expanded and rehabilitated from 1992 to 1996 by Japan's Grant Aid. Japan's assistance has provided not only facilities for the construction, expansion and rehabilitation works, but also for technical assistance through dispatching JICA experts, senior overseas volunteers and JICA overseas cooperation volunteers to Lao PDR.

The status and condition of the water supply in Vientiane has been aggravated by an increasing water demand as a result of population growth, increased living standards, and the expansion of industrial and housing areas. The two existing treatment plants have been obliged to operate at an overloaded condition to meet increasing water demand. At the same time, the existing water supply facilities are decrepit, and the problem of high unaccounted-for water ratio becomes more serious every year. Low pressure and unstable supply are common in the service area.

Vientiane as capital city of Lao PDR, has set a target that the water service ratio in urban area should be increased by 80 % by 2020. To help achieve this, the Government of the Lao PDR (hereinafter referred to as GOL) requested the Government of Japan (hereinafter referred to as GOJ) to conduct "The Study on Vientiane Water Supply Development Project". In response to the request of the GOL, the GOJ decided to conduct the study, and JICA, the official agency responsible for the implementation of the technical cooperation programs of the GOJ, dispatched the Preparatory Study Team to the Lao PDR in August, 2002. At this time, the purpose of the study and the scope of work were agreed to and confirmed between the JICA and GOL (refer to Annex 1).

In March 2003, the JICA Study Team of 10 study team members from Nihon Suido Consultants Co., Ltd, Tokyo, Japan, were dispatched to the Lao PDR and commenced its study work. After an inception meeting, the scope of work, schedule, methodology and undertakings of the GOL for the study were confirmed. Minutes of this meeting are included in Annex 1.

1.2 Objectives of the Study

The objectives of the Study are:

1. To prepare a long term master plan for the Vientiane water supply. Target year of the master plan is the year 2020; the target year for facility planning is 2015.
2. To conduct a feasibility study on the priority project(s) identified in the master plan
3. To pursue technology transfer to counterpart personnel throughout the course of the study.

1.3 Study Area

The study covers the present and planned serviced areas of the “Master Plan: Vientiane Water Supply Development Project, November 1999” (here in after referred to as the “NPVC Master Plan”).

1.4 Overall Framework of the Study

The Study was conducted in three phases as follows:

- Phase I: Reconnaissance Survey
- Phase II: Preparation of the Master Plan
- Phase III: Feasibility Study on the Priority Project/s

The overall work schedule of the Study is presented in Figure 14-1.

Figure 14-1 Study Schedule

Phasing of Study	Year 2003											2004
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
	First Field Investigation											
Phase I Reconnaissance Survey												
Inception Report	▲											
Progress Report		▲										
Phase II Preparation of Master Plan												
Interim Report				▲								
						Second Field Investigation						
Phase III Feasibility Study												
Draft Final Report										▲		
Work in Japan												
Final Report												▲

1.4.1 Phase I: Reconnaissance Survey

The Phase I of the Study was conducted during the first field investigation in Lao PDR from March to April in 2003. The scope of work during Phase I included the following:

- Collection and analysis of data/information
- Water quality analysis
- Investigation of the existing condition of water source and water supply system
- Transmission and distribution pipe network analysis
- UFW reduction program
- Questionnaire survey
- Investigation on planned and executing project related to water supply
- Evaluation of legal systems, organization, and water supply management
- Identification of current problems of water supply system
- Preparation and submission of progress report

1.4.2 Phase II: Preparation of the Master Plan

Phase II of the Study was also conducted during the first field investigation in Lao PDR from May to July in 2003. The scope of work under the Phase II included the following:

- Population and water demand forecast
- Establishment of a basic policy for water supply development plan
- Initial environmental examination (IEE)
- Comparative study of alternatives
- Formation of a water supply development plan
- Proposal of legal system, organization, and water supply management
- Preparation of human resource development plan
- Preliminary cost estimates for the master plan
- Staged development plan
- Evaluation of the master plan and identification of the priority projects
- Preparation and submission of the interim report

During Phase II, priority projects were identified and agreement was reached with Lao PDR side that the identified projects should be the subject of a subsequent feasibility study.

1.4.3 Phase III: Feasibility Study of the Priority Project/s

Phase III was conducted during the second field investigation in Lao PDR from August to November in 2003 and the subsequent work from that phase was conducted in Japan from December 2003 to January 2004. The scope of work during Phase III included the following:

- Topographic and geotechnical survey
- Water quality analysis (Wet Season)
- Preliminary design of facilities
- Preparation of an operation and maintenance plan and human resource development plan
- Construction and procurement plan
- Preliminary cost estimates
- Financial planning
- Environmental impact assessments (EIA)
- Comprehensive evaluation of the project and recommendations
- Preparation of an implementation plan
- Preparation of draft final report
- Submission of draft final report
- Organising a technology transfer seminar
- Preparation and submission of the final report

The scope of work during Phase III centred on the feasibility study of the priority projects and included an overall evaluation and recommendations concerning the project implementation.

1.4.4 Study Milestones

Various reports which have been produced by the JICA Study Team during Phases I, II, and III form key milestones of the study. These reports and their respective dates are as follows:

Inception Report:	March 2003
Progress Report:	April 2003
Interim Report:	July 2003
Draft Final Report:	November 2003
Final Report:	January 2004 (This report)

The first four reports have already been issued and discussed with the Lao PDR authorities during the following meetings:

Meeting on Inception Report:	March 4 th , 2003
Meeting on Progress Report:	May 2 nd , 2003
Meetings on Interim Report:	June 11 th and June 30 th , 2003
Meetings on Draft Final Report:	November 23 rd , 2003

The minutes of these meetings are compiled in Annex 1.

1.5 Composition of the Final Report

The Final Report comprises a total of five volumes. They are as follows:

Volume I:	Executive Summary
Volume II:	Main Report : Master Plan
Volume III:	Main Report : Feasibility Study
Volume IV:	Annex for Master Plan
Volume V:	Annex for Feasibility Study

The Executive Summary contained in Volume I summarises the conclusions and recommendations of the Study as a whole. Volumes II and III are self-contained so as to facilitate access by those concerned with only individual parts of the overall study. Volume IV compiles supporting and back-up information with respect to Volume II, and Volume V compiles information used in the preparation of Volume III.

This report forms Volume III of the final report and is concerned with the feasibility study for the priority projects, the proposed 1st Stage of the project.

1.6 Acknowledgements

Many organizations and agencies have extended excellent support to the study and contributed to the work of the study team. Whilst taking responsibility for this report, the study team wishes to acknowledge the help and support of the following:

- Ministry of Communication, Transport, Post and Construction
 - Department of Housing and Urban Planning
 - Water Supply Authority
 - Department of Roads
 - Department of Personnel
 - Division of International Relations
 - Urban Research Institute

- Ministry of Finance

- Nam Papa Vientiane Capital City (Water Supply Company of the Vientiane Capital City)

- Committee for Planning and Cooperation
 - Department of International Cooperation

- Vientiane Capital City
 - Department of Communication, Transport, Post and Construction
 - Department of Planning and Cooperation
 - Vientiane Urban Development and Administration

- National Statistic Centre

- French Development Agency (AFD)

- Asian Development Bank (ADB)

- Japanese Government Agencies/Organizations
 - Embassy of Japan in Lao PDR
 - JICA Headquarters in Tokyo, Japan
 - JICA Laos Office
 - JICA Advisory Committee
 - JICA Expert of Water Supply
 - JICA Expert, Advisor to the Cabinet Office in Infrastructure Development
 - Ministry of Foreign Affairs
 - Ministry of Health, Labour, and Welfare
 - Saitama Municipal Waterworks Bureau