

3.4 Activities

3.4.1 Stage A: TOT

The main objective of the training of trainers was further capacity building of Provincial and District personnel. Since the majority of the participants were the same as those who participated in the previous pilot study, the TOT for the pilot study extension was organized as a review course. Therefore, the training focused on analyzing the problems encountered during the previous pilot study so that the lessons learned can be applied to the implementation of the pilot study extension. In this respect, villagers of the already implemented pilot villages were invited to participate in the training to share their experiences. A total of 32 trainees participated in the TOT and their names are indicated in the Data Book.

The training was initiated, organized and coordinated by trainers who came from Nam Saat Central as listed below. These trainers have used their experience from the previous TOT as well as other similar training supported by other donor organizations.

Dr. Keo Oudom Namsena	Deputy Chief of Water Supply Division
Dr. Khonethip Phouangphet	Head of Planning and Statistics Section, Administration Division
Mr. Chantha Vongthavady	Engineer of Hygiene Inspection and Environmental Health Section Environmental Health Division

The TOTs were presided over by the chiefs of the Provincial Health Department of each Province as follows. JICA study team members were in attendance as observers.

In presence

Dr. Phouthone Vangkonevilay	Chief, Luang Namtha Prov. Health Depart.
Dr. Pheng Sy Viensavan	Chief of Bokeo Prov. Health Department
Dr. Keokham	Deputy Chief of Bokeo Prov. Health Depart.
Dr. Nounchanh	Deputy Chief of Bokeo Prov. Health Depart.

JICA Study Team Observers

Mr. Shoji Fujii	Team Leader
Mr. Akinori Miyoshi	Team Member
Mr. Manochit Panichit	JICA Team Contracted Facilitator

Similar to the previous TOT, the program included participatory techniques for sanitation promotion, community management and education on operation and maintenance of water supply and sanitation facilities. The topics used for the training are listed below.

Training Subjects for TOT
<ul style="list-style-type: none">• Problems analysis and needs identification for improvement• Review of project management and organization• Review of monitoring and evaluation• Review of sanitation education and hygiene promotion• Review of community management• Review of operation and maintenance• Review of gender• Review of village agreement• Review on role of water committee• Review of village participatory planning• Group discussions• Group presentations

The TOT was held in both of the target Provinces according to the following schedule.

Luang Namtha:	From 25 October to 27 October 2000
Bokeo:	From 31 October to 2 November 2000

The participants were even more active than the previous TOT, since they have accumulated experience. They have learned from the previous pilot study to be reflected onto the pilot study extension. The main topics identified during the sessions along with their responses as discussed by the participants are summarized below.

Topic	Problem	Measure
Community Dialogue	Many project planning come to village to ask many questions, but never implement.	Keep the dialogues short and easy to understand, and ask for their patience.
Construction Materials	Delay in delivery caused delay in construction	The suppliers should have learned from their previous experience to improve the delivery schedule.
	Not enough storage space.	The village should discuss more among themselves as well as neighboring villages.
GFS Design	Facilities are damaged by natural disasters such as floods during the rainy season.	The design should consider all year round conditions, also learn from previous experience.
Supervision	Responsibilities at each level (central, Province, District, village) are not clear.	Better coordination and in-depth discussions are needed.
Operation and Maintenance	Not enough feeling of ownership to properly operate and maintain the facilities.	The village volunteer (caretaker) should be given more responsibility.
	Not enough basic tools to make minor repairs.	The Province and District should distribute the necessary basic hand tools to the villages.
Monitoring	Monitoring needs to be continued.	Allocate more budget to continue the process.

3.4.2 Stage B/C: Participatory Preparation Activities

Soon after Stage A: TOT, the participants visited the target villages to conduct dialogue with the villagers. The main objective of the community dialogue procedures is participation and involvement of the villagers to invoke a sense of ownership. Some of the important subjects communicated during this stage are listed below.

- Confirmation of the chosen facilities of the village
- Formation of WATSAN committees
- Contributions from the village
- Storage of materials
- Construction scheduling
- Participatory planning
- Guidance on operation and maintenance
- Sanitation promotion
- Village agreement

During the community dialogue, some villages replied that they wanted to change their choice of facilities. Since the initial choice was made during the period from March to June 1999, about a year and a half have elapsed where changes in their living environment and habits have influenced their thinking. As a result, the following changes were made concerning the selected facilities and other predicaments.

- In Houayxai District, one of the 5 villages requesting GFS as one scheme using one source, H-26 Phibounthong, had constructed a number of hand dug wells on their own during the time from the first village survey until the community dialogue. At this time, they requested lining of 62 wells that they had hand dugged, but due to budget constraints, one well will be lined with installation of a handpump to serve as a model for the other villagers.
- The same village in Houayxai District, Phibounthong, also declined their request for latrines, because since then, they have received a sufficient number of latrines from an NGO.
- One village in Long District, L-11 Nam Ma, originally chose dug well, but they changed their mind to spring protection. The village is situated on top of a mountain, and if a dug well is to be constructed, it has to be drilled at the foot of the mountain. Therefore, in consideration of more convenience in fetching distance and time, the village decided on the spring protection which would be located along the mountain side. Also, this village was one of the villages planting poppy, and the District discussed with the village on abandoning the poppy garden. Consequently, the village agreed to clear a large portion of the garden, but since the aged villagers still had to rely on using opium for curing illnesses, they wanted to keep a small section. Then, in another incident the village had decided to resettle to a new area down the mountain. Now, if a spring protection is constructed on the mountainside, this would probably not be used after their resettlement. Therefore, with the consent of the village, the Province and District decided to cancel the implementation of this village, and it was agreed to keep the materials as spare materials for future use.

Although basic dialogues on sanitation and hygiene promotion were held during this stage, the visual presentation portion was conducted in the next stage. This visual presentation was conducted after a few latrines were constructed to apply better impact on sanitary environment. The promotion activities used equipment supplied through the Study.

All of the preliminary procedures were completed in November 2000. This stage was finalized upon agreement with the villages on the significant topics and signing of the Village Agreement. After the agreement was signed, the next stage of delivery of materials and construction works started.

3.4.3 Stage D: Construction Works

This stage began by confirming the village agreement, and upon confirmation of its appropriateness, the procurement of materials commenced. The materials were inspected before and after delivery to confirm their quality and quantity. After delivery of the materials to each village, and upon inspection, the materials were stored until needed. The procurement procedures started at the beginning of November 2000 and delivery started in the last week of November, and continued until the middle of December.

The preliminary construction works in some villages started before the materials have arrived. Clearing of forests along pipeline routes, trenching for pipeline laying and leveling of areas for structures are some of the activities done before the delivery.

The main construction works started in the middle of December 2000 and completion was scheduled for the end of January 2001. However, delays in commencement arose in some villages due to festivals and funerals. Also, more time than expected was needed for coordination of supervisors and village organization for construction. As a result, all of the construction works were finally completed in the middle of February 2001.

In consideration of the changes needed to be made before and during the implementation, the villages that were actually implemented and the facilities constructed for pilot study extension are listed below.

Final List of Villages and Constructed Facilities for Pilot Study Extension

Code No.	Village Name	Constructed Facility	
		Water Scheme	Latrine
<i>Houayxai District, Bokeo Province</i>			
H-2	Phokham	GFS/1 scheme 2 villages	Pour Flush
H-4	Hoai Makeo		Pour Flush
H-5	Done Phao	GFS	
H-8	Namphou	GFS	Pour Flush
H-26	Phibounthong	Dug Well	
H-27	Houakhoua	GFS 1 Scheme, 4 Villages	Pour Flush
H-28	Pakhaotay		
H-29	Thongbia		
H-30	Viengmay		Pour Flush
<i>Viengphoukha District, Luang Namtha Province</i>			
V-1	Nam Mai	GFS	Pour Flush
<i>Long District, Luang Namtha Province</i>			
L-6	Nong Kham	GFS	Pour Flush
L-7	Nam Bak	GFS 1 Scheme, 4 Villages	Pour Flush
L-8	Luang Phokham		Pour Flush
L-9	Phaya Luang		Pour Flush
L-14	Khok Hin		Pour Flush
L-23	Kang	GFS	Pour Flush
Total	16 Villages	9 Schemes (8 GFS, 1 Dug Well)	12 Latrine- Villages

Furthermore, the quantities of each component of the facilities actually constructed after the requested modifications are shown in the table below.

Particulars of Constructed Facilities for Pilot Study Extension

Code No.	Village Name	GFS		No. of Dug Wells	No. of Latrines
		Tank Capacity (m ³)	No. of Tapstands		
<i>Houayxai District, Bokeo Province</i>					
H-2	Phokham	6	6		41
H-4	Hoai Makeo				20
H-5	Done Phao	6	4		0
H-8	Namphou	6	5		49
H-26	Phibounthong			1	0
H-27	Houakhoua	27	21		20
H-28	Pakhaotay				0
H-29	Thongbia				0
H-30	Viengmay				20
<i>Viengphoukha District, Luang Namtha Province</i>					
V-1	Nam Mai	—	2		28
<i>Long District, Luang Namtha Province</i>					
L-6	Nong Kham	6	7		37
L-7	Nam Bak	—	21		46
L-8	Luang Phokham				6
L-9	Phaya Luang				36
L-14	Khok Hin				14
L-23	Kang	—	2		13

The completed facilities were handed over to the villages by the end of February 2001. One such hand-over ceremony was held in Houayxai District of Bokeo Province on 26 February for the 4 villages of Houakhoua, Pakhaotay, Thongbia and Viengmay. This ceremony was presided by Dr. Pheng Sy Viensavan, Director of Bokeo Provincial Health Department and Mr. Makoto Aoki, Resident Representative of JICA Laos Office. The list of attendants for this ceremony is shown below.

Attendants for Hand-Over Ceremony in 4 Villages of Houayxai

Bokeo Province	
Dr. Pheng Sy Viensavan	Director of Provincial Health Department
Dr. Keokham Selitham	Deputy Director of Provincial Health Department
Mr. Bounchanh Vannachomchan	Chief of Provincial Nam Saat
Mr. Xaiyaphone Bounsavanh	Deputy Chief of Provincial Nam Saat
Ministry of Foreign Affairs	
Mr. Souchay Philathivong	Deputy Director, Department, Asia-Pacific & Africa
Nam Saat Central	
Mr. Viensay Viravong	Engineer, Water Supply Division
JICA Laos Office	
Mr. Makoto Aoki	Resident Representative
Mr. Hiroshi Hidaka	Assistant Resident Representative
Mr. Masayuki Iwasa	JICA Expert, Chief Advisor, FORCAP (Forest Conservation and Afforestation Project)
Ms. Etsuko Harada	Research Consultant, Luang Prabang
Ms. Alounxay Oraboune	Program Officer
JICA Study Team	
Ms. Kiyoko Takamizawa	Team Member
Others	
Village chiefs, WATSAN committee members and villagers from Houakhoua, Pakhaotay, Thongbia and Viengmay villages	

3.5 Concluding Remarks

During the community dialogues, emphasize was placed on sustainable management, especially for water schemes supplying multiple villages with one source. Learning from the experiences encountered in the previous pilot study, one-source supplying multiple villages can create problems in management of the whole system, where one village may feel that they are not getting equal benefits as other villages within the same scheme. In order to avoid such situations, first, in-depth dialogues with each village were held, and then all of the concerned villages were gathered at one time to discuss among themselves the equality of using their system and how they can mutually share in the management activities. However, some schemes still had problems during the construction stage where the workload seemed to be unequal, with resultant Provincial and District interventions solving the situation.

The design of pilot study extension water supply facilities reflected the lessons learned from the previous pilot study. One significant modification is the height of the intake walls for the GFS schemes were constructed higher than those of the previous pilot study to handle extremely high water levels which were unexpectedly encountered during the rainy season. Furthermore, consideration was made even more than the previous pilot study on the siting of intake facilities for prevention of damage from intensive floods.

As mentioned before, monitoring of the pilot study extension villages could not be included in this Study due to the time framework. However, the Province and District should make every effort to monitor the socio-economic impacts and behavioral changes of the villages on a long-term basis, and sufficient budget should be allocated for this purpose.

4. WORKSHOPS

4.1 Workshop on Phase I Results

With the main objective of "idea sharing", this workshop was conducted on 25 October 1999 at the beginning of Phase II in Luang Namtha to explain the results of the Phase I activities as well as introduce the activities scheduled for Phase II. The workshop was held in order to exchange views with the participants for mutual understanding of the JICA study activities. The attendants were government personnel, water supply/sanitation related personnel, community activity group representatives, NGO's and other relevant persons from Provincial and District levels as well as central (Vientiane) offices. Dr. Phouthone Vangkonevilay, Chief of the Public Health Department of Luang Namtha Province presided the workshop. The list of attendants is given in the Data Book. The contents of the workshop are shown below.

AGENDA FOR WORKSHOP "Idea Sharing on Phase I Study Results"
Opening
Introduction to the JICA Study
Explanation of the Training, OJT and Village Survey
Results of Socio-Economic Survey
Results of Technical Survey
Preparation for Pilot Study
Discussion Session
Closing

Questions and comments were made, and ideas were exchanged during the workshop. These were raised during the discussion session, but the topics for discussion focused mainly on following three subjects.

(1) Appropriateness of Village Cash Contribution Plan

The participants argued that the village contribution plan for cash cited in the report was too high for the villagers to pay. According to an experience by one of the attendants, a village in Oudomxay was willing to pay 6,000 kips for construction of a latrine. The JICA Study Team explained that only an example was given in the report and that the final amount should be decided upon dialogue with the villagers in consideration of their willingness-to-pay in relation to their ability-to-pay. Then as a result of the actual contributions by the villagers of the pilot study villages, an appropriate range of the amount could be formed as a reference for future projects.

(2) Facility Design Consideration

Some participants raised questions concerning the design of the water supply facilities. The taps recommended by ACF, an NGO, is durable and long lasting, so why is this type not considered in the design? Nam Saat and the JICA Team agreed that the taps recommended by ACF is longer lasting due to no mechanical parts, but at the present time, these are not readily available in the local markets of the targeted remote areas and also the cost is very high for these villagers. Therefore, in consideration of easy procurement at an affordable cost by the villagers in case of replacement, the most durable taps found in the local market should be used. Another point was the location of the valve on top of the communal tap, where rainwater and debris can easily settle and accumulate in the opening around the valve handle. The standard design of Nam Saat places the valve at the top of the post, but for the JICA pilot study, since water meters will be installed, the valve will be installed in line with the water meter in a valve box to be located to the side at the foot of the communal tap, which will alleviate the problem in question.

(3) Pha Oudom Service Area Limitation

The representative from Bokeo Province questioned on the selection of villages to receive water at Pha Oudom District. Originally, one water source was planned to supply water to nine villages in Pha Oudom District. However, according to the water source field survey results from Phase I, the flow rate was not sufficient to supply all nine villages and the topography of some villages revealed difficulty in supplying water by gravity. Therefore, using the selection criteria, three villages were selected as appropriate for the pilot study. However, the water source needs to be confirmed at the beginning of the pilot study. Incidentally, during the Pilot study, eventually all nine villages will be supplied, with consequent reduced per capita supply rate and increased number of persons per tap.

4.2 Workshop on Pilot Study Implementation

This workshop was originally scheduled to be held just after the Workshop on Phase I Results, but due to the request by the Lao side for consideration of a wider range of participants, the second workshop was postponed until the middle of November. As a result, this second workshop was held at the end of the training of trainers (TOT) program on 19 November, where the participants in the training also attended the workshop. This workshop was presided by Dr. Pheng Sy, Chief of the Public Health Department of Bokeo Province. The list of attendants is presented in the Data Book.

The agenda for this workshop was as follows.

AGENDA FOR WORKSHOP "Idea Sharing on Pilot Study Implementation"
Opening
Review of the JICA Study
Pilot Study Villages
Facilitating Team Composition
Staging of Pilot Study
Schedule for Pilot Study
Pilot Study Implementation Strategy
Discussion Session
Closing

The participants were very active in addressing their points of view, sharing their experiences and asking questions during this workshop. However, the comments centered around the following two topics.

(1) Detailed Pilot Study Schedule

The participants requested a detailed schedule of the pilot study since implementation would start just after the workshop. The JICA Study Team explained that Stage B, the participatory village activities, is scheduled to start at two sites from 25 November. The two sites are (1) Xiengkok Mai and Xiengkok Kao in Long District of Luang Namtha Province, and (2) Poug in Houayxai District of Bokeo Province. The JICA Team also noted that the construction materials are scheduled to arrive at the villages at the beginning of December.

(2) Setting a Limit to Cash Contribution

In continuation to the discussion made during the first workshop concerning the amount of cash contribution by the villagers, the participants suggested setting a ceiling to the amount the villagers should contribute. Some suggested one amount, while another recommended another amount; some said the amount is too high, and others argued that it's too low. However, the JICA Team and the Health Department replied that a ceiling should not be set before the pilot study starts. Since this is a pilot study, the results of the community dialogue should be considered and a feasible range of contribution rates should be set as a basis for future projects. However, in order to implant a sense of ownership to the villagers, an amount a little bit higher than the amount willing to be contributed by the villagers should be set with consideration of the ability of the villagers for paying this amount. Then, this situation should be monitored and evaluated for its appropriateness.

4.3 Workshop on Phase II Results

A workshop was held to present the results of Phase II Study with "idea sharing" as the main objective. The differences in the field of work and working locations of the attendants gave a wider range of experience backgrounds to enhance the discussions. This workshop was held on 9 June 2000 at the beginning of Phase III in Houayxai of Bokeo Province with focus on the results of the pilot study. The contents of the workshop presentation are shown below. The presentation was organized and handled by the staff of Nam Saat central and Bokeo Province, with some assistance from the JICA Study Team members.

Agenda for Workshop

Program	Presenter
Opening: Mr. Phahon Phompanya, Honorable Vice Governor of Bokeo Province	Dr. Bounyok
Introduction to JICA Study	Mr. Fujii
Results of Pilot Study Stages	Dr. Keo Oudom
First Monitoring Results	Dr. Bounphone
Sanitation Promotion Activities	Dr. Bouakeo
Social Aspects	Ms. Aoki, Mr. Sybounheung
Implementation of Non-Pilot Villages	Mr. Fujii
Discussion Session	Dr. Keo Oudom
Closing: Mr. Visaikone, Dr. Nouanta	Dr. Bounyok

The workshop was presided by the honorable vice governor of Bokeo Province, Mr. Phahon Phompanya. The attendants were government personnel, water supply/sanitation related personnel, community activity group representatives, NGO's and other relevant persons from Provincial and District levels as well as central (Vientiane) offices, as listed in the Data Book.

Questions and comments were made, and ideas were exchanged throughout the workshop. The main topics were raised during the discussion session, and the important items discussed during the session are described below.

(1) Improvements needed in Communication and Coordination

The planning is not always discussed at all levels. Reporting does not reach all level staff. These and other similar problems evolve from poor communication and coordination. Strengthening of communication and better coordination are required between central, Province, District and villages. Central should guide the Province and District, and the Province and District should assist the villages.

(2) Importance of Continuing the Monitoring

Monitoring of village activities can ensure sustainability of the system. Therefore, continuation of monitoring on a long-term basis is very important. However, the concerned bodies are lacking in budget and resources to carry out continuous monitoring. Requests for allocation of the budget for this purpose must be made.

(3) Village Level Fund Management is Required

The villages are the ones to initiate the collection of water fees and they must participate and contribute to managing of the funds. Forming a village committee and proper functioning of the committee are important actions for solving these problems.

(4) Importance of Selecting the Well Point

The water quality of groundwater from boreholes are causing problems. The water has a smell unacceptable to the villagers even though the other water quality indicators are in accordance with drinking water quality standards. This area in general is a very difficult area for groundwater development, and therefore, selection of the well point becomes very crucial.

(5) Visual Methods of Hygiene Promotion Proved to be Successful

Using a visual method to promote hygiene was successful because the villagers can actually see the situation so they can relate and remember the message. Visual equipment used during the pilot study was easily maneuvered by district and Provincial staff. Therefore, they want to request these equipment for further activities.

(6) Non-pilot Study Villages need to be Implemented

The villages which were not selected for pilot study need to be implemented. Various alternatives for implementing the non-pilot villages were explained and discussed during the workshop. District, Province and central will discuss and decide on the most appropriate method to implement these villages.

(7) Technicians should Exchange Experiences

The technicians who supervised the construction works should hold workshops to exchange their experiences acquired during the pilot study. These experiences and lessons learned should be shared with other Provinces as well for future similar studies and projects.

4.4 Workshop on Study Results

As the final workshop for this development study, the results and findings of the entire Study was presented aiming at exchanging ideas and experiences with the participants. This workshop was held in Vientiane on 6 February 2001. The scheduling and presentation of the workshop were initiated, organized and handled by the staff of Nam Saat central, with necessary assistance from the JICA Study Team members.

This workshop was presided over by Dr. Chanthanome Manotham, Chief of Cabinet of the Ministry of Health; Dr. Nouanta Maniphousay, Director of Nam Saat; Mr. Makoto Aoki, Resident Representative of JICA Laos Office; Dr. Phouthone Vangkonevilay, Director of Luang Namtha Provincial Health Department; and Dr. Keokham Selitham, Deputy Director of Bokeo Provincial Health Department. The attendants were concerned government personnel, water supply/sanitation related personnel, donor organization representatives, NGO's and other relevant persons from Vientiane, Provincial and District levels. Dr. Soutsakhone Chanthaphone, Deputy Director of Nam Saat, was the master of ceremony for the workshop. (See Data Book for the list of participants)

The contents of the workshop are shown below.

AGENDA FOR FINAL WORKSHOP <i>"Sharing Views and Experiences on Results of Study"</i>	
Opening	Dr. Soutsakhone Chanthaphone Dr. Chanthanome Manotham Mr. Makoto Aoki Dr. Nouanta Maniphousay
Introduction to Study	Mr. Shoji Fujii
Explanation of Study Activities	Dr. Keo Oudom Namsena
Discussion Session	Dr. Soutsakhone Chanthaphone
Sanitation/Hygiene Promotion Activities	Dr. Bouakeo Souvanthong
Results of Study	Mr. Shoji Fujii
Final Discussion Session	Dr. Soutsakhone Chanthaphone
Closing	Dr. Soutsakhone Chanthaphone Dr. Nouanta Maniphousay

The participants were very active to share and exchange views and ideas. The significant topics discussed and comments received during the discussion sessions are described below.

(1) Sector Strategy Concepts Fully Applied

The JICA study was the first time the concept of the Sector Strategy was tested on a full cycle from planning through survey, implementation, monitoring and evaluation. The lessons learned from this study can serve as model for other Provinces.

(2) Involvement of School Teachers and Others in Sanitation Promotion

Primary school teachers and other community representatives, such as the Lao Youth Union, should be trained and educated to become involved in sanitation and hygiene promotion as well as other animation activities. Hygiene promotion should start from school children.

(3) Ownership is Key to Sustainable Development

A strong sense of ownership of the facilities is the key to proper operation and maintenance and sustainable development. However, there is concern that the villagers cannot continue by themselves after the study is completed. Therefore, the villagers need further counseling and awareness building on this matter.

(4) Need Support to Train WATSAN Committees

WATSAN committees need further training on management, operation and maintenance of the facilities. Support is needed for further capacity building for this purpose.

(5) Should Monitor Handpump Use

The handpumps, especially the Rope Lao Pump-99, installed at the pilot study villages should be further monitored on a long-term basis to confirm their actual feasibility.

(6) Latrines Requested at Pilot Villages

Some of the pilot villages which did not receive latrines are requesting assistance to construct latrines at their village.

(7) Comments on Sanitation Promotion

The visual presentation method developed for this study was very effective and functioned as an excellent IEC tool. However, some matters such as use of local language and level of education of villagers need to be considered. Use of video was also suggested for more actuality.

(8) Implementation of Remaining Villages

The target villages remaining after implementation of the pilot study and pilot study extension need to be implemented. Nam Saat has already submitted a request for the remaining villages.

(9) Consideration of Other Provinces

The original request for this study from the Lao side included five Provinces. However, the Preliminary Study concluded that two Provinces would be appropriate for effective study of sufficient detail in consideration of time constraints. The Lao side now requests implementation of the remaining Provinces of Oudomsay, Xaiyaboury and Luang Prabang.

4.5 Workshop Materials

The workshops were initiated and organized mainly by the staff of Nam Saat central. The preparations for the presentation materials were assisted by the JICA Study Team members. The earlier workshops were presented using OHP (over-head projector) and handouts. Then gradually, higher technology was employed with the help of personal computers. The software used was the "Power Point" program to facilitate presentation procedures. The following pages show some examples of the materials used during the "workshop on study results".

WORKSHOP ON STUDY RESULTS

THE STUDY ON RURAL WATER SUPPLY AND SANITATION IMPROVEMENT IN NORTH-WEST REGION OF LAO PDR

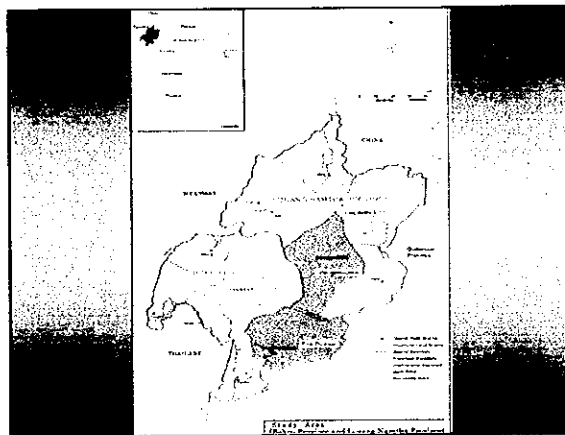
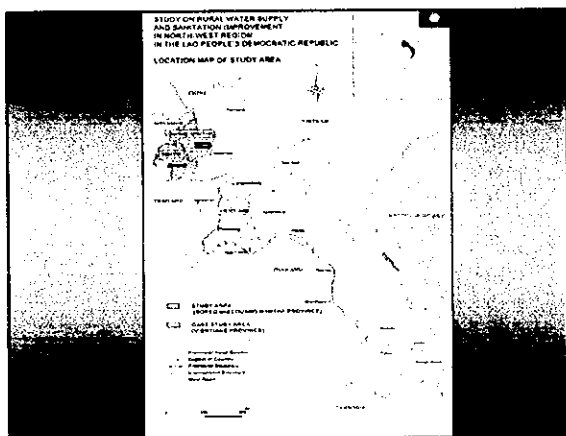
AGENDA

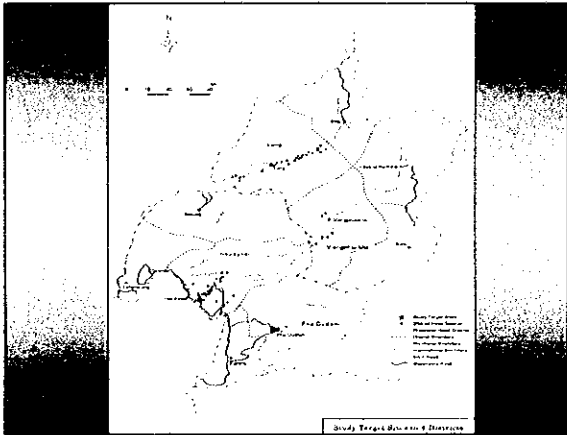
- 8:30 Opening
- 9:00 *Coffee Break*
- 9:15 Introduction of Study
- 9:45 Explanation of Phase I, II
- 11:45 *Lunch Break*
- 13:30 Sanitation Promotion
- 14:30 Results of Study
- 15:00 *Coffee Break*
- 15:15 Discussion Session
- 15:45 Closing

THE STUDY ON RURAL WATER SUPPLY AND SANITATION IMPROVEMENT IN NORTH-WEST REGION OF LAO PDR

OBJECTIVES

- to formulate a suitable water supply and sanitation improvement plan in the target villages with mutual consent of the villagers
- to build capacity of Lao counterpart personnel, especially on the Provincial and District levels, on management of water schemes and sanitation promotion for a sustainable development







STUDY PHASING

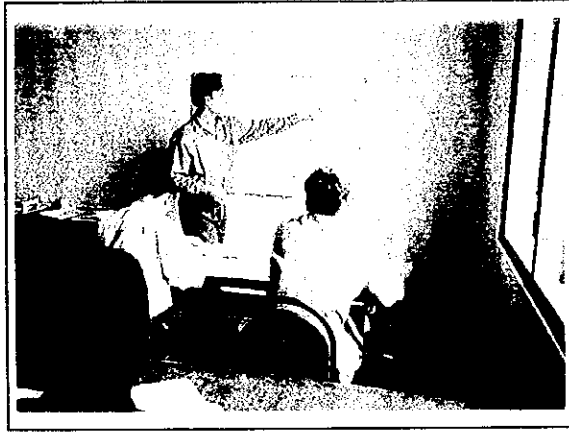
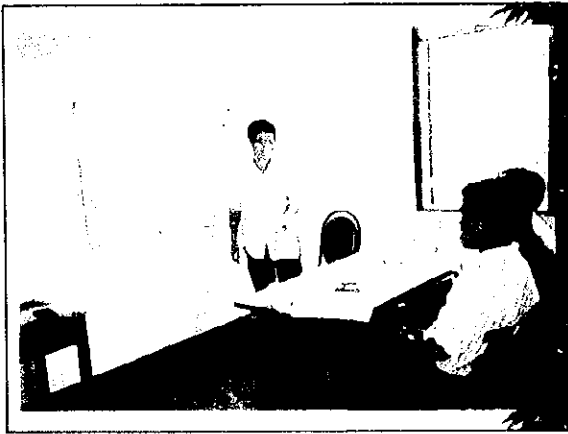
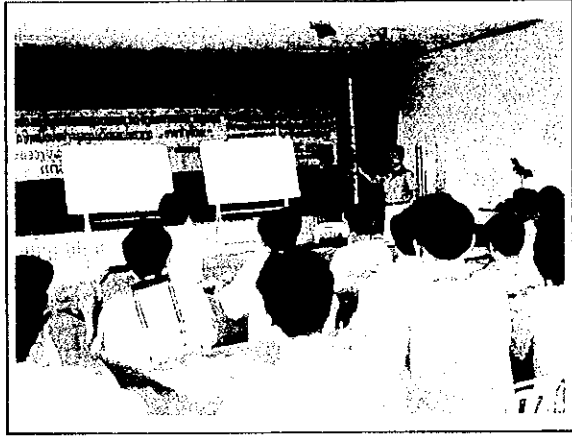
PHASE I : BASELINE SURVEY

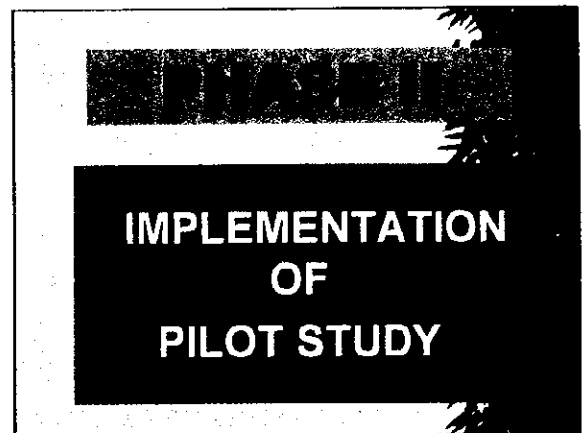
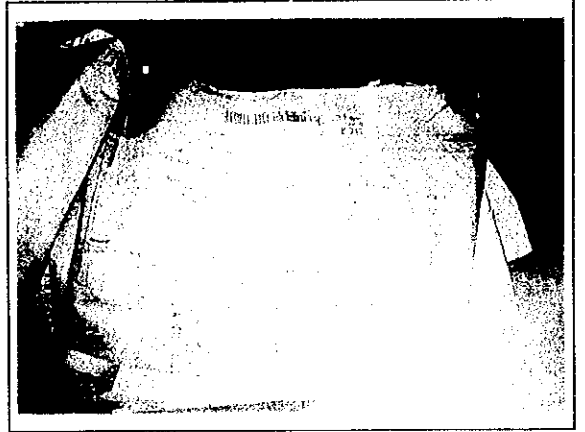
PHASE II : IMPLEMENTATION OF PILOT STUDY

PHASE III : MONITORING & EVALUATION,
PILOT STUDY EXTENSION,
DEVELOPMENT PLAN FORMULATION

PHASE I

**TRAINING AND
VILLAGE SURVEY**





**IMPLEMENTATION
OF
PILOT STUDY**

STAGE A

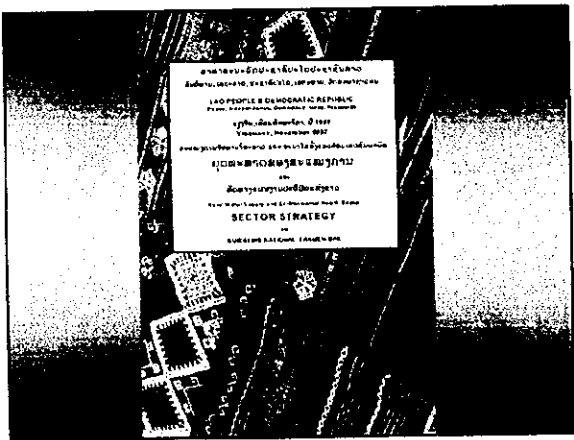
T O T (TRAINING OF TRAINERS)

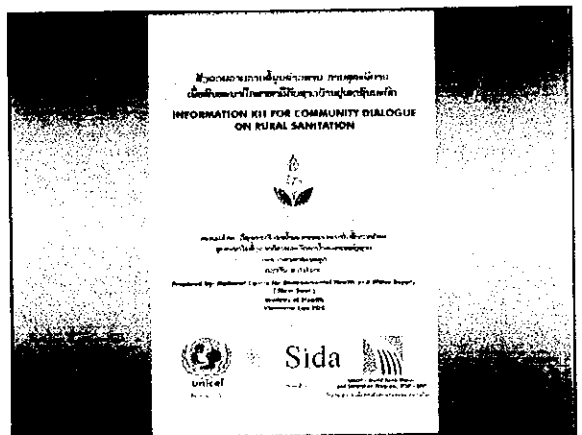
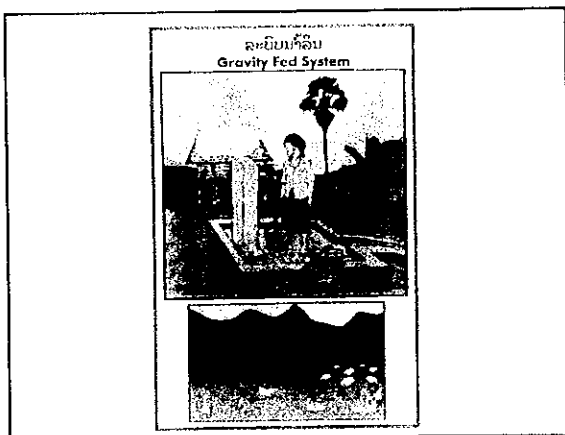
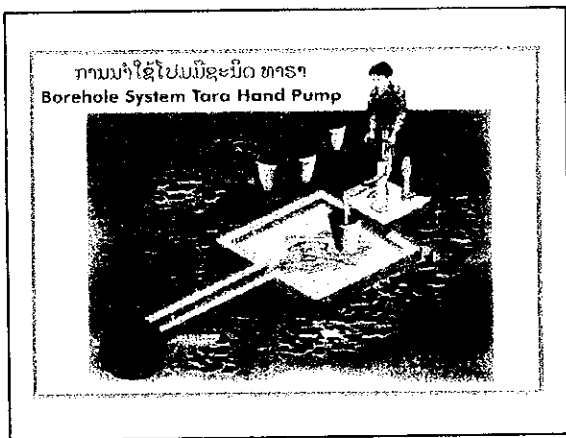
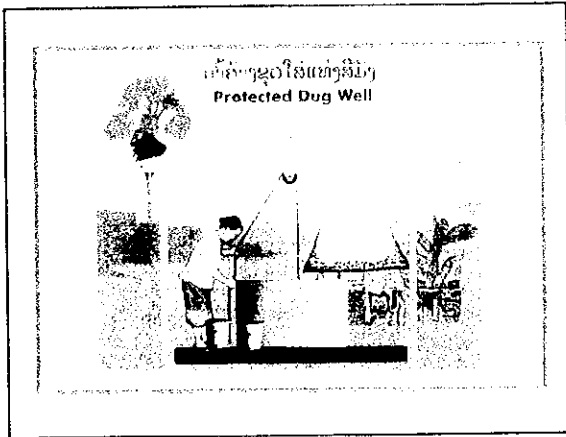
- ### TRAINING OF TRAINERS
- Sanitation and Health Promotion
 - Project and Community Management
 - Operation and Maintenance

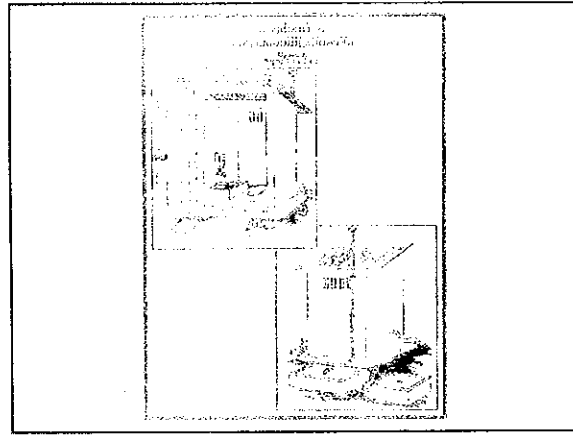
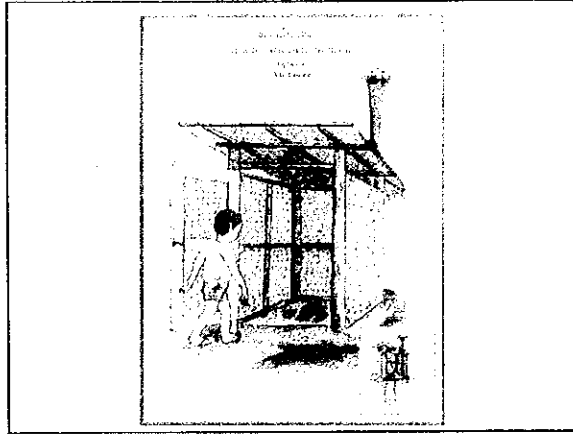
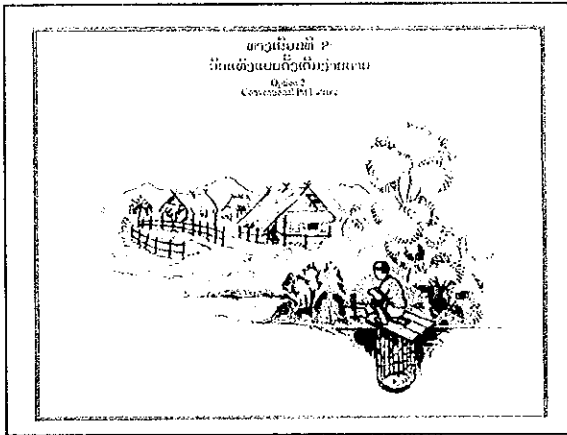
STAGE B

PARTICIPATORY PREPARATION ACTIVITIES

- ### PARTICIPATORY VILLAGE ACTIVITIES
- Community Dialogue
 - Socio-Economic Assessment
 - Participation Analysis
 - Community Organization
 - Sanitation Education and Health Promotion



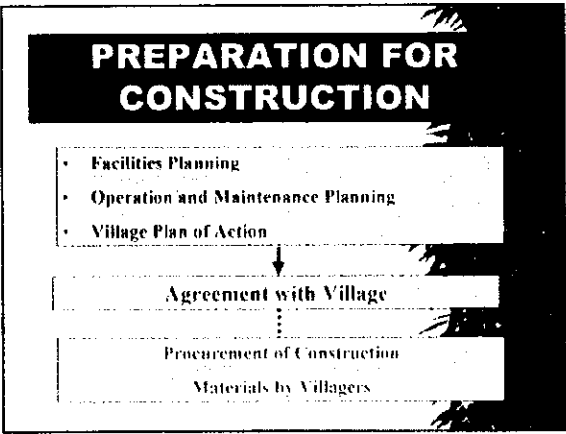






STAGE C

PREPARATION FOR CONSTRUCTION



No.	Item Name	Unit	Quantity	Estimated Cost	Actual Cost	Remarks
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

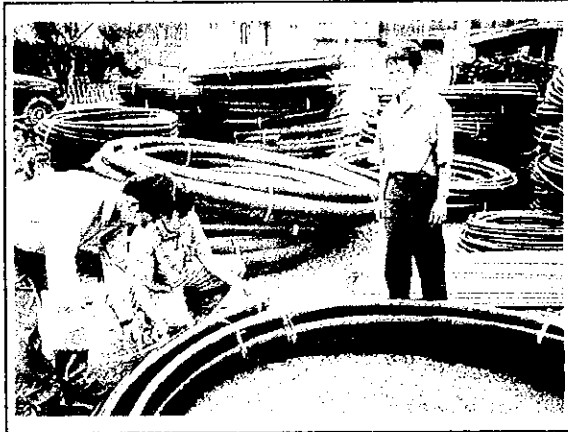
No.	Item Name	Unit	Quantity	Estimated Cost	Actual Cost	Remarks
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50

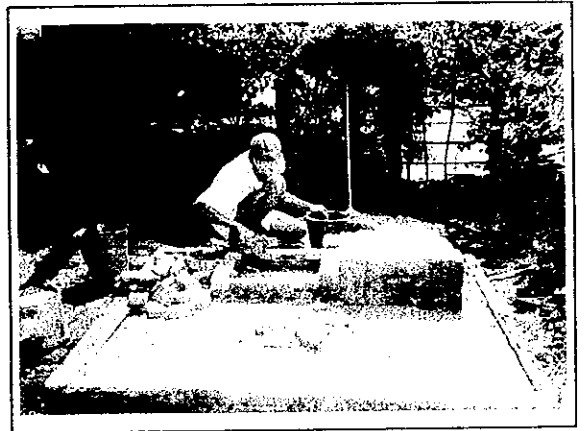
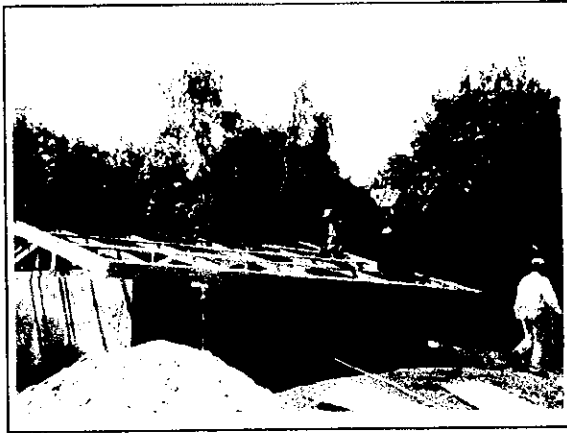
STAGE D

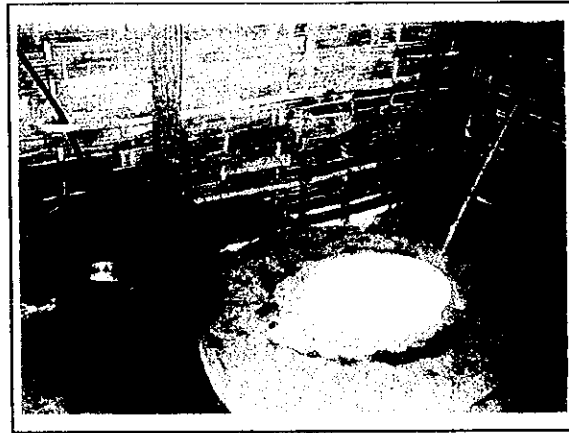
CONSTRUCTION WORKS

CONSTRUCTION WORKS

- Water Supply Facilities Construction
- Latrine Construction
- Labor Contribution by Village









STAGE E

MONITORING

MONITORING

- Water Use Activities Monitoring
- Sanitation Awareness and Behavior Change
- Socio-Economic Impacts

MONITORING RESULTS

- Over 85% are satisfied with their new conveniences
- Over 75% think their facilities are appropriate to their living conditions
- Over 60% of villagers thought construction works were a little difficult but they are satisfied with their endeavors
- About 70% reported a decrease in water related diseases
- About 91% reported a reduction in time in water fetching with an average reduction of 20 min

MONITORING OBSERVATIONS

Strong Points

- Coordination was good at all levels
- Village had good participation
- Village actively contributed to local materials and labors
- Villages committee were set up for operation and maintenance

MONITORING OBSERVATIONS

Weak Points

- Communication had difficulties
- Construction works were affected by delays in procurement
- Some villages had difficulty to contribute due to unavailability of local materials
- Scale of some schemes was large to cause difficulty in management
- Some designs needed to be modified



PHASE III

**MONITORING &
EVALUATION, PILOT STUDY
EXTENSION,
FORMULATION OF
DEVELOPMENT PLANS**

Sanitation Promotion in Cambodia

Facio epidemic information
with eight pictures


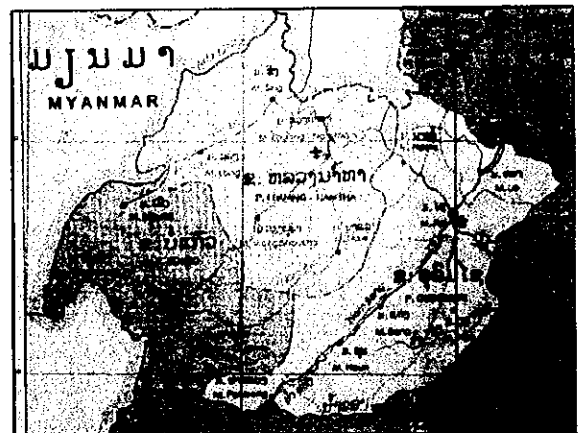
Environmental health division, Namsat
Dr. Bouakeo SUVANTHONG

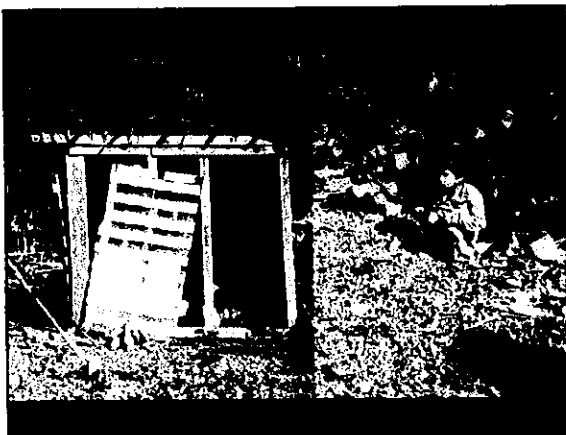
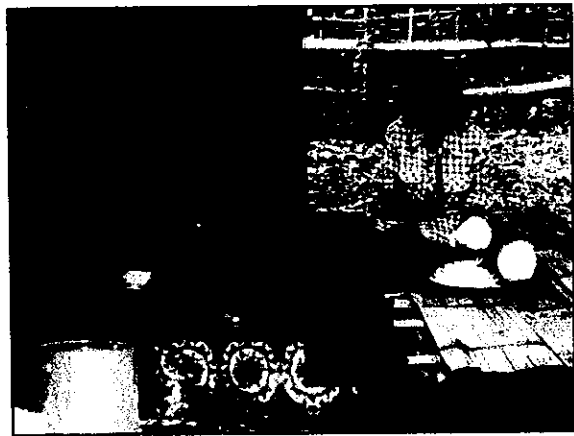
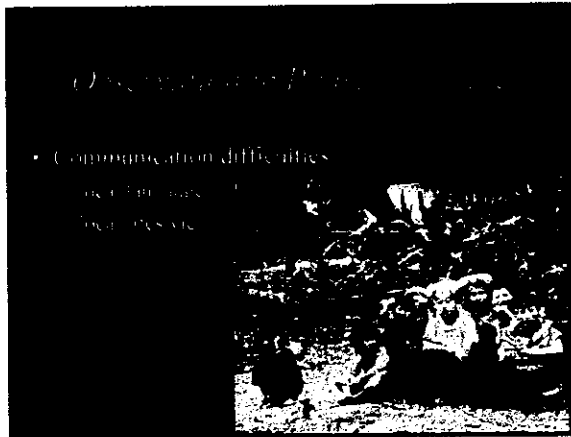
*Rural WS & Sanitation:
HCA Development Study*

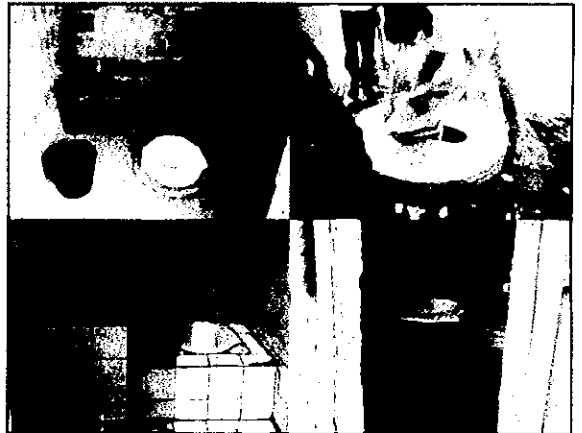
- Namsat: Sector Strategy
 - remote, ethnic minority, hard access, poor community dialogue
 - informed choice
 - WAISAN committee
 - people's contribution
 - local materials, labour, users, etc.
- Ownership, sustainability



- Ethnic minorities
- Living in the remote area, poor road access
- Small, scattered villages






1


Cholera outbreaks in Africa

- There are some endemic outbreaks everywhere
- ME Cholera 1997
- PE Cholera 1994
- PE Cholera 1994



Cholera


- make the local health staff get it in the village
- tailored-out for particular village
- both-way communication
- mass communication
- locally
- ethnic variety



2

Cholera

- Existing materials
 - UNICEF stories
 - posters
 - flip
- Village walk
 - scenes related to WASH
 - local village life

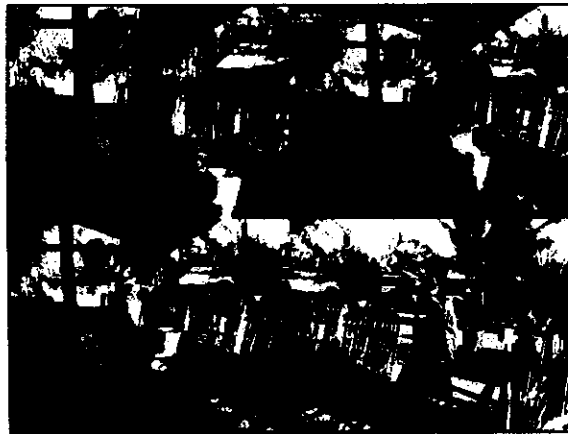


UNICEF stories




On-site material development process

- Local epidemic episodes
- Health message organization
- visualization
- rehearsal
- feedback




On-site material development process

- Village walk
- Getting notes into PC
- Editing
- Rehearsal
- Slide-show
- feedback




Health education

- Disseminate local epidemic episodes to the people
- On-site material development
- Make local health staff go into the village

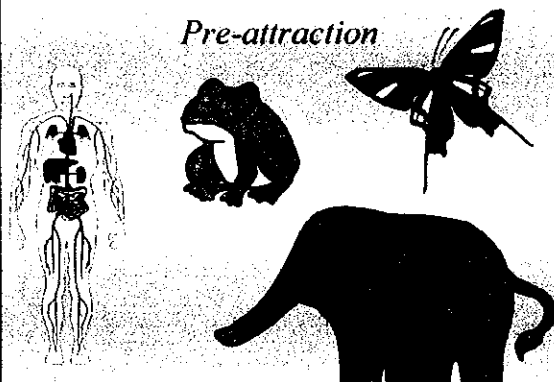
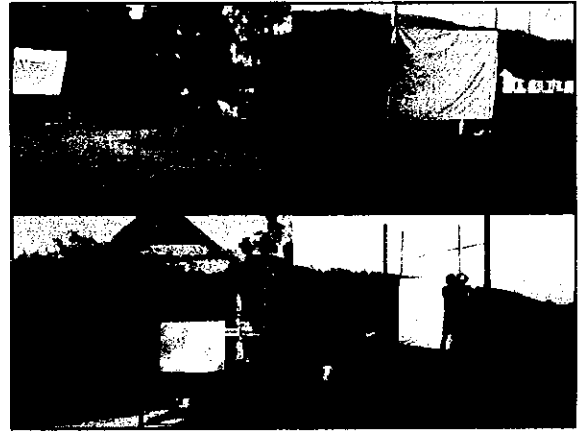


Slide show

- Pre-attraction
- Introduction
- Epidemic episodes
 - ENICEF - 6
 - ENICEF - 8
- Pictures of village life
- ENICEF - 7
- Project information




Pre-attraction

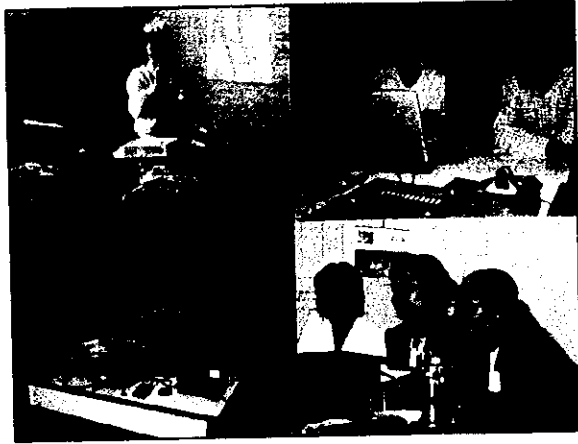
Introduction set

- Non-type PC
- Digital camera
- CCD Projector
- Generator (1.5kw)
- Stabilizer
- Screen (red street)
- Laser pointer
- Computer system, etc.



Start here

- digital pictures
- presentation along with appropriate health message
- LCD projector
- generator
- screen & venue setting



The End



Thank you for your attention

RESULTS OF STUDY

EVALUATION RESULTS

SOCIAL EVALUATION

- GFS ownership is excellent
- Borehole ownership is not as satisfactory
- Level of women's involvement does not reflect actual needs

TECHNICAL EVALUATION

- GFS is most feasible water scheme in conformance with village preference
- Pour flush latrine is most preferable sanitation facility

INSTITUTIONAL ANALYSIS

- Nam Saat responsibilities need strengthening
- Better coordination and collaboration needed between each level Nam Saat
- Should involve all levels in Sector Strategy

FINANCIAL PLAN

- Village contribution is 33% average
- Consider weighted subsidy
- No subsidy for operation and maintenance
- Collected water fee is average 100 kip/pers/mon

CONCLUSION

- Participatory planning encouraged sense of ownership
- Good cooperation and support contributed to success
- Participation level of villagers differ by type of scheme
- Facilities had impacts on community livelihood
- Contributions should be motivated

LESSONS LEARNED

- More needy, more motivated
- Good coordination and cooperation can contribute to success
- Sanitation promotion through latrines can serve as model
- OJT experiences are effective for capacity building

RECOMMENDATIONS

- Need enough time to use participatory methods
- Contribution level should consider a balance between willingness and ability
- Sector Strategy must be disseminated to District level
- Assistance needed for operation and maintenance follow-up to assure sustainability
- Exchange and sharing needed with other donors and NGOs

5. MONITORING

5.1 Methodology

The monitoring survey was conducted by District level facilitators with supervision and coordination by Provincial staff as well as Nam Saat central personnel. The procedures for the monitoring work are described below.

- (1) Key Elements: Village awareness, behavioral change, social enhancement, sanitation and hygiene improvement
- (2) Format: Information Form compiled by Nam Saat central and JICA Study Team
- (3) Facilitators: Monitoring teams consisting of District personnel with monitoring supervisors from each Province as well as coordinators from Nam Saat central
- (4) Frequency: Twice at each village
1st survey: during Phase II (March)
2nd survey: during Phase III (June)
- (5) Methodology:
 - Conduct community dialogue at each of the pilot villages.
 - Use the Monitoring Form as reference to proceed through with community dialogue.
 - Fill up the Form in line with the dialogue. Also note any comments received and opinions felt.
 - Take water samples for quality analysis.
 - Make water flow rate measurements and record results.
- (6) Data Handling: The monitoring results, which are in the Lao language, has to be translated into English for the understanding by the JICA Study Team. The results of the first and second monitoring surveys are compiled for evaluation.

5.2 Facilitators and Schedule

The first monitoring was conducted at the beginning of March 2000 for about a week, soon after completion of each scheme, in Phase II of the Study. The survey was conducted by 10 monitoring teams working almost in parallel. Then, the second

monitoring was held in June 2000 as part of Phase III. For the second survey, monitoring was held first at Bokeo Province, and then at Luang Namtha Province in succession. The team formation for the second monitoring was similar to that of the first monitoring. The schedule for the two monitoring surveys as well as the team formations are shown below followed by the list of members of the monitoring teams.

Schedule for First Monitoring Survey

Formation		Person in Charge	March						
			3	4	5	6	7	8	
Bokeo Team	Central Nam Saat	Dr. Soulinthone		Preparation	Supervision				
	Provincial Nam Saat	Mr. Bounchanh Mr. Xaiyaphone			Patrol				
	Houayxai Team #1	Mr. Khamdeng Ms. Soung		Preparation	Poung	Hat Phouan	Chomchouk	Nale	
	Houayxai Team #2	Mr. Phomsavath Ms. Manivone			Nam Ngao	Done Keo	Kieng nam	Paksang	
	Houayxai Team #3	Mr. Khamsin Ms. Khankeo			May Phattana	Leang	Nong neun	May phoukha	
	Houayxai Team #3	Mr. Khamsone Mr. Intha			Nam Ma	Maynignom	Thongsenchanchan	Namhotay	
	Pha Oudom Team #1	Mr. Xaiphone Ms. Manivanh			Phiengkham	Thinkeo Tay	Somsavang		
	Pha Oudom Team #2	Mr. Khamseng Mr. Thongkhan			Nathong	Thinkeo Neua	Phonexay		
	Pha Oudom Team #3	Mr. Phonsavanh Mr. Phonesavath			Thinkeo Kang	Pha Oudom	Sonexay		
Central Nam Saat	Dr. Bounphone				Preparation	Supervision			
Provincial Nam Saat	Mr. Somlith					Patrol			
Luang Namtha Team	Long Team #1	Mr. Phommasouk Ms. Feng		Preparation	Hoai Mo	Chakham ping	Luang		
	Long Team #2	Mr. Somchit Mr. Bounthieng			Daen Kang	Tin That	Xiengkok Mai / Xiengkok Kao		
	Viengphouka Team	Mr. Tomchang Ms. Manchanh	Preparation	Pangxai	Nam Seua				

Schedule for Second Monitoring Survey

Formation		Person in Charge	June				
			13	14	15	16	17
Bokeo Team	Central Nam Saat	Dr. Keo Oudom	Coordination				
	Provincial Nam Saat	Mr. Bounchanh	Supervision				
	Houayxai Team #1	Mr. Khamsim Mr. Khamdeng Ms. Soung	Poung	Nam Ngao	Nam Ma	May Phattana Leang	
	Houayxai Team #2	Mr. Phomsavath Ms. Manivone Mr. Intha	Maynignom	Thongsenchanchan Xiengnam	Nongneun	Nale	Chomchouk
	Houayxai Team #3	Mr. Phonekeo Mr. Somsouk Ms. Khankeo	Paksang	Mayphoukha	Namhotay	Done Keo	Hat Phouan
	Pha Oudom Team #1	Mr. Xaiphone Ms. Manivanh Mr. Thongkhan		Phiengkham	Thinkeoneua Thinkeokang	Thinkeotay	Phaoudom
	Pha Oudom Team #2	Mr. Khamseng Mr. Phonesavath Ms. Dala		Nathong	Phonexay	Somsavang	Sonexay

Formation	Person in Charge	June				
		25	26	27	28	
Luang Namtha Team	Central Nam Saat	Dr. Keo Oudom	Coordination			
	Provincial Nam Saat	Mr. Intha	Supervision			
	Long Team #1	Mr. Phommasouk Mr. Khamfeuag Ms. Feng	Luang	Chakhamping	Xiengkok Mai / Xiengkok Kao	
	Long Team#2	Mr. Somchit Mr. Vixai Mr. Bounthieng	Tin That	Hoai Mo	Daen Kang	
	Viengphouka Team	Mr. Kamdy Mr. Tomchang Ms. Manchanh			Nam Seua	Pangxai

List of Participants in Monitoring Survey

Name	Function / Affiliation	Participation	
		1 st Survey	2 nd Survey
<i>Central</i>			
Dr. Keo Oudom	Deputy Chief, Water Supply Div., Nam Saat		○
Dr. Soulinthone	Chief, Administration Division, Nam Saat	○	
Dr. Bounphone	Planning & Statistics Section, Nam Saat	○	
<i>Bokeo Province</i>			
Mr. Bounchanh	Chief, Provincial Nam Saat	○	○
Mr. Xaiyaphone	Deputy Chief, Provincial Nam Saat	○	
Mr. Intha	Provincial Nam Saat	○	○
Mr. Somsouk	Provincial Nam Saat		○
Mr. Phonekeo	Provincial Nam Saat		○
Ms. Khankeo	Provincial Lao Women's Union	○	○
<i>Houayxai District</i>			
Mr. Khamdeng	Chief, District Lao Youth	○	○
Ms. Soung	District Lao Women's Union	○	○
Mr. Phomsavath	District Nam Saat	○	○
Ms. Manivone	District Lao Women's Union	○	○
Mr. Khamsin	District Nam Saat	○	○
Mr. Khamstone	District Education	○	○
<i>Pha Oudom District</i>			
Mr. Xaiphone	District Nam Saat	○	○
Ms. Manivanh	Deputy Chief, District Lao Women's Union	○	○
Mr. Khamseng	Deputy Chief, District Lao Youth	○	○
Mr. Thongkhan	District Nam Saat	○	○
Mr. Phonsavanh	Chief, District Nam Saat	○	○
Mr. Phonesavath	District Education	○	○
Ms. Dala	District Lao Women's Union		○
<i>Luang Namtha Province</i>			
Mr. Somlith	Chief, Provincial Nam Saat	○	
Mr. Intha	Provincial Nam Saat		○
Mr. Kamdy	Provincial Nam Saat		○
<i>Long District</i>			
Mr. Phommasouk	Chief, District Lao Youth	○	○
Mr. Khamfeuag	District Nam Saat		○
Ms. Feng	District Lao Women's Union	○	○
Mr. Somchit	District Nam Saat	○	○
Mr. Vixai	District Health Department		○
Mr. Bounthieng	District Education	○	○
<i>Viengphoukha District</i>			
Mr. Tomchang	Chief, District Lao Youth	○	○
Ms. Manchanh	District Lao Women's Union	○	○

5.3 Results

The results of the monitoring surveys are tabulated below as percentages of the responses. These results are summarized thereafter.

Results of Monitoring Surveys

Unit: %

Parameter	Survey	Yes	No	No Reply	Total	Comments
<i>Awareness towards Changed Living Environment</i>						
Villagers are satisfied with new water scheme	1 st	94	3	3	100	Dissatisfaction due to odor or irregular supply.
	2 nd	85	15	0	100	
All villagers are receiving water	1 st	59	12	29	100	During 1 st survey, some facilities were not completed
	2 nd	82	15	3	100	
<i>Behavioral Change</i>						
Decrease in water related diseases	2 nd	71	29	0	100	This parameter was irrelevant in 1 st survey
Time is saved by using improved facilities	1 st	68	0	32	100	Average time spent before was 30 min. as compared to 10 min. after
	2 nd	91	9	0	100	
Number of trips to fetch water	1 st	Average of responses: 3 trips				Increased usage due to increased convenience
	2 nd	Average of responses: 5 trips				
<i>Water Usage (from 2nd survey)</i>						
Used for drinking		85	15	—	100	Non-use due to poor quality or fluctuating supply
Used for bathing and washing		94	6	—	100	One village uses water only for drinking and cooking to avoid contamination.
<i>Consciousness on Maintenance (Response for 2nd survey only)</i>						
Village caretakers are available		85	15	0	100	Negative response from those not yet trained.
Village caretakers are trained in operation and maintenance		38	59	3	100	Need training. Some learned by doing.
Village caretakers are capable of using basic tools		79	18	3	100	Caretakers not yet in full operation
Presently collecting maintenance fees		53	23.5	23.5	100	Some not collecting due to irregular usage. Some will collect soon.
Maintenance fee is appropriate		79	3	18	100	One village wants to raise amount.
Repairs done within reasonable time		47	9	44	100	Many villages replied that they have no damages yet
<i>Understanding towards Water and Sanitation Committee</i>						
Committee is organized and initiated change	1 st	56	3	41	100	Not all committees are functioning yet
	2 nd	76	18	6	100	
Members are aware of changed water and sanitation situation	1 st	47	0	53	100	Awareness almost doubled from 1 st to 2 nd .
	2 nd	88	6	6	100	
Committee members know how committee functions and the rules	1 st	41	3	56	100	Doubled understanding from 1 st to 2 nd .
	2 nd	84	4	12	100	
Members have required technical skills	1 st	20	18	62	100	Tripled knowledge from 1 st to 2 nd .
	2 nd	65	24	11	100	
Capable of taking corrective actions to solve problems	1 st	29	3	68	100	Advanced almost triple from 1 st to 2 nd .
	2 nd	79	9	12	100	
Members can explain how to procure spares and how to handle repairs	1 st	76	24	0	100	No remarkable change from 1 st to 2 nd .
	2 nd	79	21	0	100	
Members can explain about bookkeeping and accounting	1 st	94	6	0	100	In actuality, villagers are having difficulty with bookkeeping and accounting.
	2 nd	94	6	0	100	
Water fees are set in consultation with users	1 st	94	3	3	100	Shows some understanding of participatory concepts
	2 nd	97	0	3	100	
Women are members	2 nd	53	44	3	100	Low gender awareness

Parameter	Survey	Yes	No	No Reply	Total	Comments
<i>Awareness on Village Hygiene and Sanitation</i>						
Children know how to wash their hands	1 st	9	0	91	100	Children have good adaptation
	2 nd	85	12	3	100	
Garbage and/or fecal matter found on ground	1 st	59	38	3	100	Need sanitation education
	2 nd	68	29	3	100	
Domestic animals are kept outside of the house	1 st	62	38	0	100	Need sanitation education
	2 nd	59	32	9	100	
Cooked food is stored in a closed container	1 st	91	9	0	100	Need sanitation education
	2 nd	79	9	12	100	
Areas around water points, latrines and houses are excreta-free	1 st	68	18	14	100	Need sanitation education
	2 nd	62	32	6	100	
Wastewater is properly disposed	1 st	79	9	12	100	Need sanitation education
	2 nd	68	32	0	100	
<i>(Situation of Villages who received Latrines: as percentage of pilot study latrine villages)</i>						
Satisfied with new latrine	2 nd	100	0	0	100	All villages are aware of need for sanitation
Everybody is using latrine	1 st	92	8	0	100	Some villagers, especially old people, cannot use latrine yet
	2 nd	92	8	0	100	
Raw human fecal matter is not found in the field	1 st	83	17	0	100	Improvement from 1 st to 2 nd survey
	2 nd	100	0	0	100	
Water is stored in latrine	1 st	83	8	9	100	Need education
	2 nd	83	8	9	100	
Brush for cleaning latrine bowl is available	1 st	50	42	8	100	Need education
	2 nd	75	17	8	100	
Children are also using latrines	1 st	50	8	42	100	Good adaptation
	2 nd	100	0	0	100	

The monitoring results reveal reactions to a living pattern in the changing process, first just after completion of the facilities and then, after the water supply and sanitation conveniences were used for a few months. While the first survey revealed that over 90% were satisfied with their new water schemes, the situation for the second survey has somewhat changed after actual usage of the facilities for a few months. That is, the second survey results showed that about 85% responded as satisfied with their facilities. The negative responses came from those using groundwater having odor, or those getting water from GFS with highly fluctuating supply rates.

During the second survey, about 85% of the pilot villages were using the water for drinking. Those that are not drinking the water are those with problems in quality and irregular supply which are the same reasons given for not being satisfied with their facilities as mentioned above. On the other hand, 94% are using the water for bathing and washing purposes. Due to the odor in their water, the two villages with boreholes are using the water not for drinking, but only for bathing and washing. One village, which received dug wells, claims they are using water from the stream for bathing and washing because they want to keep the dug well clean for a long time so they use the well only for drinking.

Positive behavioral changes can be seen in the villagers' response towards decrease in water related diseases such as diarrhea, and time reduction in water fetching. Although confirmation of the actual decrease in diseases is very difficult to quantify, the villagers are realizing some changes in the occurrence pattern of diarrhea and fever of their children. While the frequency of water fetching has increased due to improved convenience, the time for water fetching has decreased by three-fold as compared to before construction of the new water schemes.

Furthermore, the villagers are showing advancements in their awareness on maintenance. Still, only about half of the villages are collecting maintenance fees to sustain their systems. The average collected fee is about 100 kip per person per month. However, many, especially the poorer villages, are expressing their willingness to maintain their facilities, but lack the knowledge and experience. Also, even though water and sanitation committees are not yet functioning at all villages, the villagers have shown high consciousness towards the importance of the committees. Therefore, some points which need to be surfaced for improvement are, (1) necessity for training of village caretakers on maintenance, (2) lack of basic hand tools to make simple repairs, (3) low knowledge of bookkeeping and accounting, and (4) gender balance requirements.

The concept of sanitation and hygiene is fairly new to many villagers, so they need time to adapt and understand its importance. Children seem to be more adaptable to new ideas, where they have learned to clean their hands and are not reluctant to using latrines. However, for the villagers in general, they need further education on sanitation and greater promotion of hygiene.

5.4 Evaluation

5.4.1 Social Assessment

1) Objectives and Methodology

To promote a more effective demand-oriented sustainable water supply system in accordance with the Sector Strategy, the results and lessons learned have to be shared among all the parties involved. Lessons learned through the monitoring need to be drawn not only from successful cases, but also from the less successful ones as well. The reasons for their outcomes have to be pursued in objective

ways for the review of the study. These outputs should be disseminated and shared with all concerned organizations for the interest of those implementing similar programs with intentions of giving benefits to communities.

Before the survey, all collected information on the villages were reviewed among the team. Then interviews were held to examine the consequences and results by a triangulation of reasoning. Sampling was carefully conducted to reflect upon economic and ethnic differences. The village headman, water committee, villagers were interviewed to monitor the actual situation. If the situation allowed, staying overnight in the village was also attempted to grasp first hand experience of their daily life cycle. The actual monitored items are presented in the following table.

Social Items Monitored

I. Satisfaction with the Scheme	
(1) Water Use Situation	(3) Coverage of Household
(2) Tap and Pump Use Reaction	(4) Other Topics of Importance
II. Social Economic Impact and Changes Brought by the Project	
(1) Reduced Time and Its Usage	(4) Relationship with Neighbor Villages
(2) Population Dynamism	(5) Social Power Relationship
(3) Land Use	(6) Productive Activities
III. Viability of Contributions and Affordability	
(1) Physical Labor	(3) Maintenance Cost Affordability
(2) Local Materials	(4) Cash Contribution
IV. Capability Building by Participation	
(1) Solidarity	(3) Sense of Ownership
(2) Accomplishment	(4) Gender Empowerment
V. Issues to be Closed up	
(1) Fund Management	(2) Other Issues

2) Water Use

The situation of water use in each pilot village at the time of the monitoring survey is shown in the table in the following page. The number of villages out of the total of 34 pilot villages which responded as being satisfied with the scheme on the average or better is summarized below.

Parameter	No. of Villages which Responded as above Average (Percentage)
Quantity	27 (79%)
Quality	32 (94%)
Satisfaction	29 (85%)
Ownership	31 (91%)

Results of Monitoring on Water Use Situation

No.	Village Name	Water Scheme	No. of Water Taps	Households	Ethnicity ¹	Water Use Situation	Level of Satisfaction	Present Level of Ownership ²	Survey Date
H-1	Poung*	GFS	14	87	Lue	Water fetching time greatly reduced	high	high	6/19
H-3	Nam Ngao	Dug Well	-	36	Samtao	Water fetching time reduced	high	high	6/13
H-7	Namma*	GFS	8	67	Samtao	Water fetching time reduced	high	high	6/16
H-9	May Phatthana	Borehole	-	28	Lamae	Water not used for drinking due to odor	low	low	6/19
H-17	Maynignom*	GFS/ 1 Scheme 9 Villages	2	20	Lao,Leu	Can get water only in morning	middle	middle	6/15
H-18	Thongsengcan		8	136	Lamae	Cannot get water for last month or so	low	low	6/17
H-19	Xiengnam		5	32	Leu	Can get water only in morning	low	low	6/14
H-20	Nongneun		5	43	Leu	Can get water only in morning	middle	middle	6/14
H-21	Nale*		7	54	Leu	Can get water only in morning	low	middle	6/19
H-22	Chomchouk		7	51	Hmong	Water fetching time reduced	high	middle	6/16
H-23	Paksang*		4	39	Leu	All households except 2HHs are using	high	middle	6/15
H-24	Mayphoukha*		9	76	Leu	Water fetching time reduced	high	middle	6/15
H-25	Namhotay*		9	117	Thaidam	Can get water all day.	high	middle	6/15
H-31	Done Keo*	GFS	5	36	Lue,Doi	Water fetching time reduced	high	high	6/12
H-32	Hat Phouan	GFS	4	33	Yuan	Water fetching time greatly reduced. Good maintenance	high	high	6/14
H-37	Leang	Borehole	-	47	Samtao	Water not used for drinking due to odor	low	middle	6/12
P-1	Phiengkham	GFS/ 1 Scheme 9 Villages	2	84	Khmu	22 HHs do not use water from the scheme	middle	high	6/12
P-2	Thinkeonuea		2	60	Khmu	Water fetching time greatly reduced	high	high	6/12
P-3	Thienkeokang		2	54	Leu	Water fetching time reduced	high	high	6/13
P-4	Thinkeotay		2	46	Lamae	Water fetching time reduced	middle	high	6/13
P-5	Phaoudom		2	128	Leu	Receiving water also from another village.	middle	high	6/13
P-6	Nathong		2	57	Khmu	Water fetching time reduced	high	high	6/13
P-7	Phonexay*		2	77	Khmu	Good solidarity. Water fetching time reduced	high	high	6/14
P-8	Somsavang		2	75	Thaidam, Leu	The tap located in the market is difficult to manage	middle	high	6/14
P-9	Sonexay		2	39	Khmu	Good maintenance with villagers' solidarity	high	high	6/14
V-6	Pangxai*	GFS	3	33	Yuan	Water fetching time reduced. Sufficient water even in dry season. High willingness to maintain	high	high	6/20
V-8	Namseua	GFS	5	84	Yuan		high	high	6/21
L-1	Xiengkong May*	GFS/ 1 Scheme 2 Villages	7	57	Leu	Sometimes turbid in rainy season. Water fetching time reduced	middle	high	6/22
L-2	Xiengkong Kao*		7	69	Leu		high	high	6/23
L-4	Luang	GFS	6	55	Leu	Sometimes turbid in rainy season. Can get water only intermittently	middle	high	6/24
L-13	Chakhamping	GFS	2	24	Akha	Sometimes turbid in rainy season	middle	high	6/25
L-15	Tinthat	GFS	7	47	Leu	Sometimes turbid in rainy season	middle	high	6/25
L-21	Daen Kang	GFS/ 1 Scheme 2 Villages	6	54	Hmong	Sometimes turbid in rainy season. Can get water only intermittently	middle	high	6/26
L-12	Hoai Mo		2	22	Akha		high	high	6/26

* Latrines also constructed

¹ Only the major ethnic group is described in this matrix.

² The level of ownership is related to 1) the extent of participation in planning, preparation and construction, and 2) the willingness to receive the benefits and to manage and maintain the facilities.

Almost all of the dissatisfaction resulted in the rainy season when the water flow increased, flooding the intake and the water became turbid, causing dirt and leaves to clog the pipeline at the intake. The villagers have cleaned the intake tank many times with only short period successes. Upon observation of the intake, the dam area behind the intake was filled almost completely with silt and sand which caused water to overflow from the top of the intake tank. Cleaning the intake itself will only temporarily solve the problem, but by dredging out the silt behind can prevent the continuous flow of sand into the intake. This can also help clear the pipeline from turbid water.

During the monitoring survey, some villages having GFS facilities replied that they were not using the water scheme because water does not come. This situation is only temporary during the rainy season when the intake clogs as mentioned in the previous paragraph. By inspecting the reading on the water meter, it can be realized that the villagers are actually using the tapstands at supply rates above the design rate.

The problem of quality in the water from boreholes is obviously undesirable. The water has odor unfavorable for drinking. The water itself is clear and meets the drinking water quality standards. Although the sulfate content was analyzed to be below the standard value, the value is higher than other sources. Therefore, analyses were made on sulfur ion, but results gave non-detection. This situation is believed to be caused by biological phenomena of the geology in this area. The odor can be removed by a filter unit, but the maintenance requirements does not merit its use as the villagers will probably resort back to their existing dug wells. Another possible solution is to store the water for a long period, maybe over a week to stabilize the biological effects, but again to the consequence of the villagers not wanting to wait this long has to be outweighed.

Another situation worth mentioning is seen at the nine villages in Houayxai which are being supplied from one intake point. The villagers are complaining that some cannot get water when other taps are being used at the same time. This situation requires strong leadership to coordinate and manage all the villages involved to set up a time schedule for using the taps at designated time periods and collecting fees in accordance with the amount used taking advantage of the water meter.

3) Potential Sustainability

The levels of potential sustainability of the facilities in H-32 Ban Hat Phouan, V-6 Ban Pangxai and V-8 Ban Namseua are considered the highest among the pilot villages. The common features and traits of these villages can be pointed out that 1) their water fetching times were reduced more than one hour; 2) they are considered to be one of the least affluent groups, heavily depending on shifting cultivation and subsistence economy, and not yet having income stratification inside their village; 3) they have a high level of communal cooperation to match the concept of the study for collaborative participation to maintain a jointly owned property; 4) they are the most remote villages in remote provinces and are difficult to access, especially in the rainy season; 5) they follow the directions of the facilitators and supervisors, and learn the methods for proper management and maintenance of the facilities.

The sustainability of a scheme can be affected by various factors. One of the main factors is that people with the highest needs are the ones who are the most motivated and possess the highest level of ownership to participate and sustain their properties. Moreover, solidarity, social structure, village history, lifestyle and income sources are also contributing factors to the level of village participation at different stages of a project. The sustainability also depends largely on how well village committees are trained and fulfilling their duties.

Another concern can be raised that rapid social economic changes could affect the sustainability of a scheme. For instance, since L-1 Xiengkok Mai is the famous border crossing point between Myanmar and Laos, the inflow of the population is evident and a resort development plan that just began this year, can affect village life and water demand in the near future. Furthermore, the Mekong basin regional development plan has reached the village recently, in which Lao and Chinese governments are preparing a plan to construct a bridge to cross the border. The large infrastructure development plan could bring a significant change to the livelihood of the community in the near future, which can jeopardize the sustainable use of the scheme.

4) Financial Aspects

Communal Taps in the Affluent Community and Need for a Fair Cost Sharing System

A phenomenon observed in the Lao Lum, Leu tribe villages, especially in Houayxai villages is that their livelihood is affluent enough to spend on a more individual lifestyle and can receive water directly to their household through hoses connected to the communal tap. This is causing differences in consumption rates of water for each household, which is causing resentment on the unfairness of maintenance fee cost sharing where the fee is fixed equally for all users. One solution would be to collect fees on a volumetric basis according to the amount used as read on the water meter. This however requires understanding by the users and training on proper fee collection.

Low Ownership due to Low Cost Benefits for the Case of Borehole Villages

Unfortunately the boreholes drilled for the pilot study at two villages did not completely satisfy the needs of the villagers because the water has an undesirable odor. They expected reduced water collection time and clean water as a substitute to their existing dug well. Nonetheless, the villagers have to revert to their existing dug wells. Their willingness for maintenance is considerably low because the expected benefits were not realized. Even though the community dialogue brought about agreement on each activity and they contributed sufficiently for the scheme, if the system is not highly satisfactory, it proved that the level of ownership by villagers becomes very low.

Guidance Required for Bookkeeping and Accounting

For most of the WATSAN committees of the pilot study villages, this was their first experience for accounting and bookkeeping. Poor transparency of accounting can lead to financial mishandling and resultant poor cooperation from the villagers. Many suggestions made by the village committees centered on the needs for technical support and backup from district and provincial Nam Saat and other concerned departments. Therefore, a training program and periodic interventions to support the committees should be carried out by concerned officials.

5) Community Participation and Ownership

The situation of village participation and their contributions to the study are summarized in the following page. The situation varies from village to village according to the type of the water scheme, the degree of villagers' agreement and the extent of demand by the villagers. Overall participation is excellent for GFS schemes which induce high ownership and responsibility of the facilities. This is especially true for villages of GFS schemes with individual water sources and not sharing the sources with other villages. In these villages, contributions in labor, local construction materials and cash have been sufficiently provided to the scheme.

In contrast to participation in GFS schemes, the level of participation of the villagers which received dug wells and boreholes were not as high as anticipated. This situation can be attributed to the fact that the villagers could not participate in the actual drilling work because handling the drilling rig requires highly technical skills and the drilling contractors could not take the risks. Also, the contractors did not fully understand the importance of community participation. On the other hand, interventions by supervisors were not sufficient enough to coordinate participatory activities. However, as the construction progressed, the contractors gradually began to understand the situation and the villagers progressively started to contribute materials and labor to construct the foundation for the handpumps and installation of the pumps. The protection fencing around the facilities were constructed completely by the villagers.

Then after the above predicament, the villages which received boreholes were unfortunate because the water contained odor to provoke them to avoid using the water for drinking. This gave reason for them to revert back to using their existing dug wells and lowered their willingness to maintain the borehole facilities. Treating the water to a favorable quality would probably not solve the problem easily due to maintenance constraints.

Evaluation of Community Participation and Ownership for Pilot Study Villages ¹⁾

No.	Village Name	Type of Water Scheme	Participation in Decision-making (1<2<3<4<5) ²⁾		Physical Participation (1<2<3<4<5) ²⁾		Contribution of Local Materials and Cash (%)	Present Level of Ownership
			male	female	male	female		
<input type="checkbox"/> Houayxai District, Bokeo Province								
H-1	Poung*	GFS	5	5	5	5	100	high
H-3	Nam Ngao	Dug Well	4	3	2	2	40	high
H-7	Namma*	GFS	4	4	5	5	40	high
H-9	May Phatthana	Borehole	4	4	2	2	40	low
H-17	Maynignom*	GFS 1 Scheme 9 Villages	5	5	5	5	100	middle
H-18	Thongsengchan		5	5	4	5	100	low
H-19	Xiengnam		5	5	5	5	100	middle
H-20	Nongneun		5	5	5	5	100	middle
H-21	Nale*		5	5	4	4	100	middle
H-22	Chomchouk		4	4	3	3	100	middle
H-23	Paksang*		4	4	4	4	100	middle
H-24	Mayphoukha*		5	5	3	3	40	middle
H-25	Namhotay*		3	3	4	4	100	middle
H-31	Done Keo*	GFS	4	4	4	4	100	high
H-32	Hat Phouan	GFS	4	4	4	4	100	high
H-37	Leang	Borehole	4	4	3	3	100	middle
<input type="checkbox"/> Pha Oudom District, Bokeo Province								
P-1	Phiengkham	GFS 1 Scheme 9 Villages	5	3	4	4	75	high
P-2	Thinkeoneua		5	4	4	5	100	high
P-3	Thinkeokang		4	4	3	4	100	high
P-4	Thinkeotay		4	4	3	4	100	high
P-5	Phaoudom		5	5	5	5	70	high
P-6	Nathong		4	4	4	5	100	high
P-7	Phonexay*		4	4	3	4	80	high
P-8	Somsavang		4	4	3	3	80	high
P-9	Sonexay		4	4	3	4	95	high
<input type="checkbox"/> Viengphoukha District, Luang Namtha Province								
V-6	Pangxai*	GFS	4	4	4	5	100	high
V-8	Namseua	GFS	4	4	4	5	100	high
<input type="checkbox"/> Long District, Luang Namtha Province								
L-1	Xiengkok May*	GFS/1 Scheme	5	5	4	4	100	high
L-2	Xiengkok Kao*	2 Villages	5	5	4	4	100	high
L-4	Luang	GFS	5	5	4	4	100	high
L-13	Chakhamping	GFS	5	4	4	5	75	high
L-15	Tinthat	GFS	5	5	5	5	100	high
L-21	Daen Kang	GFS/1 Scheme	4	4	4	5	90	high
L-12	Hoai Mo	2 Villages	4	4	4	5	100	high

*pour flush toilets also constructed

1) this table was summarized from the results of interviews with villagers and persons concerned during the survey from January to February 2000 and the results of monitoring in July 2000.

2) the numbers are relative ratings: 5 indicates the highest (participation is very high), 4 (high), 3 (not very good), 2 (rather low) and 1 (very low or poor).

The existence of co-ownership between nine villages in Houayxai being supplied by one scheme is causing some friction between villages. Low cooperation and participation by some of the villages was feared before the start of the Pilot Study. When selecting the villages for implementation using the selection criteria, while some villages qualified for implementation, some other villages out of the nine villages had low ratings due to low willingness and satisfaction with their existing water supplies. At first, plans to supply only those villages with high ratings were discussed, but it was feared that the villages not included would thoughtlessly branch their own pipelines to the mainline going across their village. Therefore to alleviate the unfairness and avoid conflicts between villages, the decision was made to include all nine villages in the scheme. However unfortunately, the least desired but expected consequence occurred as feared. In the predicament that the outcome did not reflect upon their actual requirements in water demand, the difficulty of convincing them to sense ownership can be solved only through the intervention of a strong leader and creation of a demand. The important lesson to be learned from this is that demand orientated project formulation is a key to nurture preferable ownership and substantial sustainability.

6) Community Dialogue Analysis

During stage B in Phase II, community dialogue activities and project cycle management workshops were conducted. Although they were conducted in different ways, both techniques are effective and necessary to promote community understanding of the study and participation for sustainable use of water schemes and sanitation facilities. Necessary preparations for the study were made and rules and regulations on the use of the facilities were discussed. Especially, local Nam Saat officers took initiatives to guide the meetings and direct the necessary information with very good results.

One lesson learned was that the dialogues and workshops required more multidisciplinary involvement with further training on technical and financial matters. The villagers discretely follow what they agreed on and what they understood in the dialogue. However, some matters require more explanation, repeated dialogue and use of non-technical terms for them to fully understand their requirements. Some topics which require further time-adopted explanations include necessary arrangements for repairs, requirements for periodic maintenance, guidance on bookkeeping and accounting, and hygiene promotion.

In the following page, the elements of the community dialogue and project cycle management are compared.

Comparison between Community Dialogue and Project Cycle Management

Parameter	Community Dialogue	Project Cycle Management
Site	<ul style="list-style-type: none"> • 34 pilot villages 	<ul style="list-style-type: none"> • 3 pilot villages (L-13, L-21, L-12)
Period	<ul style="list-style-type: none"> • Stage B in Phase II 	<ul style="list-style-type: none"> • Stage B in Phase II
Duration	<ul style="list-style-type: none"> • 2 to 4 days for each village 	<ul style="list-style-type: none"> • 4 days for each scheme
Moderators	<ul style="list-style-type: none"> • Nam Saat officers and other participants trained during TOT led the dialogue 	<ul style="list-style-type: none"> • Lao consultants experienced in GTZ-ZOPP method conducted the workshop
Integration	<ul style="list-style-type: none"> • Both social and technical members participated 	<ul style="list-style-type: none"> • Technical members were not included.
Villagers' Participation	<ul style="list-style-type: none"> • Both men and women participated actively in the meeting 	<ul style="list-style-type: none"> • Both men and women participated actively in the workshop
Contents	<ul style="list-style-type: none"> • confirmation of village contribution • water committee and its role and responsibility • rule and regulation on water and latrine use • hygiene promotion • storage of construction materials • protection of water sources • sustainable use and maintenance 	<ul style="list-style-type: none"> • participation analysis and clarifying of potentials by villagers • problem analysis related to water and sanitation • objective analysis related with water and sanitation • action plan and project design matrix • group responsibilities • confirmation of village contribution
Positive Effects	<ul style="list-style-type: none"> • villagers could confirm the preparations necessary for the study and understand what they should do. • villagers could discuss the rule and regulation on use of facilities. • local Nam Saat officers took initiative to guide the meeting and direct necessary information. 	<ul style="list-style-type: none"> • villagers could determine the cause and effects relationship concerning water and sanitation. • villagers could confirm the necessary preparation for the study and understand what they can do. • villagers could make the action plan according to their analysis.
Lessons	<ul style="list-style-type: none"> • financial management for maintenance was not clearly directed. • periodic maintenance support system was not clear. • necessary arrangements for repairs was not directed • book keeping and accounting was not directed 	<ul style="list-style-type: none"> • financial management for maintenance was not clearly directed • necessary arrangements for repairs was not directed • technical information was not given. • technical members should join the workshop.

7) Gender Assessment from PCM Perspective

Whereas water fetching activities are mostly conducted by women, water supply schemes, if relevant arrangements are not considered, tend to be implemented without women's involvement, causing difficulties in reflecting the actual needs of the overall plan. The major purposes of female participation are not only the sustainability of a project and maximization of the benefits to the beneficiaries, but the enhancement of awareness on gender³ in daily life through the participation in the project, which would generate a similar type of gender balanced development of the community in the future.

Gender/WID evaluation on the whole process of this study is summarized into one matrix from the project cycle management perspective in the next page.

Throughout the three phases of the study, women were encouraged to participate in the study. A lecture on gender considerations was provided by the JICA team member during the training in Phase I. As for needs identification of the baseline survey, 32% of the participants in the training and those who joined the non-technical survey were female. During the community dialogue, they were the major promoters who also encouraged village women to participate in the survey and articulate their needs. As a result, women in the villages became aware of the necessity for participation in this study. However, female are still shy in public to express their opinions and feelings.

In Phase II, 23% of the participants in TOT on organization management and operation and maintenance were female from LWU. In the training course, a gender approach lecture was included as part of community management and organization that was conducted by Central Nam Saat officers. During the planning and construction preparation at the village level, 41% of the total attendants were female (average percentage of 34 pilot villages). During the actual preparation for construction, 53% of total participants were women. During stage D, that is the construction period, although local construction supervisors were all men, village women were well mobilized and in accordance with their capability, actively participated in digging trenches for the pipeline, and carrying sand and gravel in harmony with men.

³ Here, the word 'gender' means the socially made values and roles as well as the relative relationship between men and women, the features of which are different from biological sex.

Gender/WID Evaluation of Project Cycle Management

Project Cycling	Phase/ Stage	Conducted Training / Measures	Actual Situation	Effects / Lessons
<input type="checkbox"/> Identification of Needs	I	<ul style="list-style-type: none"> 32% of participants of the training who joined the non-technical survey was female from LWU. The lecture for gender analysis and consideration in the development planning was conducted in the training. 	<ul style="list-style-type: none"> During the community dialogue, women participants were the major promoters who also encouraged village women to attend the workshop and articulate their needs. 34% of participants in the village survey was female (average percentage of 81 target villages). 	<ul style="list-style-type: none"> It helped to involve women from the beginning of the study. Women also became aware of the necessity to participate in this study. Females are still shy in public to address their ideas and feelings, and likewise at the workshop.
<input type="checkbox"/> Planning & Construction Preparation	II B C	<ul style="list-style-type: none"> 23% of the participants in the TOT on organization management, and operation and maintenance were female who were all from LWU. In the training course there were gender approach lessons on community management and organization which were held by Central Nam Saat officers. 	<ul style="list-style-type: none"> 41% of the total attendants were female during the community dialogue (average percentage of 34 pilot villages). 53% of the total participants were women during the preparation for construction. (average percentage of 34 pilot villages). 	<ul style="list-style-type: none"> Both gender had strong willingness and understanding for the study and contributed very actively from the beginning to the end in labor, local materials and cash.
<input type="checkbox"/> Construction	II D	<ul style="list-style-type: none"> Women as well as men were also encouraged to participate in the construction works according to the ability and capability to contribute. 	<ul style="list-style-type: none"> 42% of the total participants were female during the construction stage. They were digging the trenches for pipelines and preparing food in accordance with their capability. (average percentage of 34 pilot villages). 	<ul style="list-style-type: none"> Nam Saat local construction teams and supervising teams were all men. However, village women were well mobilized and participated actively in the construction works.
<input type="checkbox"/> Monitoring	II III E	<ul style="list-style-type: none"> Female monitoring staffs were selected in order to facilitate interviews with women as major users of the scheme. 	<ul style="list-style-type: none"> 24% of the monitoring team was female in the first official monitoring right after construction. One out of three official monitoring staff was female from LWU and health dept. for the second monitoring 	<ul style="list-style-type: none"> In order to reflect users' reaction, numerous women as major users of the scheme were interviewed.
<input type="checkbox"/> Maintenance	III Post	<ul style="list-style-type: none"> In the training course there were gender approach lessons on community management, and operation and maintenance. 	<ul style="list-style-type: none"> Water committees of 29 villages among 34 pilot villages included female members. 	<ul style="list-style-type: none"> Efforts have to be made to involve women in maintenance activities in order to activate the committee function.

In Phase III, in order to reflect upon users' reactions, various women as the major users of the scheme were interviewed. Consequently, 24% of the monitoring team members were female in the first monitoring survey, and one female in three monitoring staff was from LWU and health department for the second monitoring survey.

Although the water committees of 29 villages among 34 pilot villages answered that they included female members as committee members according to the first monitoring results, the committees themselves in most of the villages, in reality, are not functioning so well in terms of full involvement of both gender at the time of the survey in the middle of June. Efforts have to be made to involve more women in maintenance activities in order to further activate the committee function.

8) Gender Issues of Study Related Staff

According to the results of an institutional management assessment of Nam Saat at each administrative level conducted during the monitoring period, insufficient gender balance in/among departments and units in Nam Saat was noticed. At district level, this situation is even more seriously weak, even though actual implementation needs local women's involvement.

In fact, only a few female staff at each level are assigned as technical supervisor or manager. In traditional Lao society, women have always been seen as office workers rather than technical field supervisors and/or managers even though most of the Lao women, especially ethnic minorities, are considered to be the major labor forces and mainly involved in the water usage and sanitation practices.

Therefore, some culturally and gender sensitive personnel are required to join Nam Saat at all levels in order to work effectively in addressing gender and cultural needs with the ethnic minorities and isolated rural communities in accordance with the fundamental concept of the Sector Strategy.

9) WID Considerations in Water Supply due to Biological Differences

Although both men and women have similar capabilities and potentials, the biological differences between them due to their reproductive differences have to be carefully considered in water supply issues. GFS communal taps are welcomed by all types of population in the pilot villages. However, the differences in hand pump type have different reactions from different users as shown in the table below.

Use Reaction Differences by Hand Pump Type

Hand Pump Type	Village Name(Well Type)	Appropriateness to Different Users
Rope Pump Lao-99	H-3 Nam Ngao (Dug Well)	All village population such as men, children, pregnant women, middle-aged women are able to use the pump.
Tara	H-3 Nam Ngao (Dug Well) H-9 May Phatthana (Borehole)	For pregnant women, middle-aged women as well as aged women who had experienced delivery many times, the pump handle should be installed at a higher position to relieve strain on lower belly muscles. But for others, this position is comfortable.
Afridev	H-37 Leang (Borehole)	All village population such as men, children, pregnant women, middle age women are able to use the pump.

In the pilot study villages, for pregnant women, middle-aged women as well as aged women having many delivery experiences, the position of the handle of the Tara pump is too low for them to conduct the pull and push action, and this can affect their lower belly muscles with consequences to their womb organs. This situation can be alleviated by installing the pump at a higher position, but to the consequence of inconveniences to other users. Therefore, the villagers pointed out that since pregnant women and middle-aged women unconsciously avoid using this type of pump, their daughters are fetching the water instead of the mothers. In contrast to the Tara pump, the Rope Pump Lao-99 and Afridev pumps do not apply this kind of physical burden to these specific women. All village population including men, children, pregnant women and middle-aged women are able to use the Rope Pump Lao-99 and Afridev pumps without much difficulty.