

11.5 TRANSFER OF KNOWLEDGE TO COUNTERPARTS

11.5.1 GENERAL

Transfer of Knowledge and Technical Bringing-up for Counterparts of MIH/HPO are one of the scopes of the Study.

Transfer of Knowledge for the counterpart is being carried out as the supplement to the actual works of the respective member of the Study Team and especially the services had been made from the 1st to 5th Field Investigations at the sectors on environmental study, additional geographical survey, geological investigation and hydrological observation. On-The Job-Training is scheduled to execute each year and those for the 1st fiscal year and 2nd fiscal year were carried out for about one (1) month from the end of March 1999 and the end of October 1999 respectively for one staff of HPO.

11.5.2 NATURAL AND SOCIAL ENVIRONMENTAL SURVEY

During the 2nd Field Investigation from November to December 1998, a preparation meeting was held between Study Team and HPO to determine sub-contractor and scope of work on EIA.

The HPO counterpart personnel have assisted the site reconnaissance at the survey area and reviewed TOR of the survey. He also assisted the fishery survey and so on, and joined the preparation of the Workshop.

For the filed environmental survey on bio-diversity, vegetation, and habitat, one-counterpart personnel went with the survey team for one month.

11.5.3 GEOPHYSICAL SURVEY

The GPS survey was executed during the period of August ~ September 1998 within the 1st Field Investigation with the assistance of HPO counterpart personnel. Three counterpart personnel joined field works. Two (2) counterpart personnel participated in the GPS survey team as surveyor consisting of three (3) parties supervised by the Survey Expert of the Study Team. The leveling survey was performed by two (2) parties including two (2) surveyors for each party with participation of three (3) counterpart personnel as surveyor.

Main items of transfer of knowledge to the counterparts in the field works were selection of survey points, measurement, calculation, and so on. A seminar was held in MIH for counterpart personnel who could not participate in the field works of GPS and leveling surveys. In the seminar, explanations were made on operation of survey equipment such as GPS measurement tools and electronic levels, expected measurement accuracy, and applicable survey objectives. Transfer of knowledge was also made in operating actual equipment in accordance with

operation manuals for GPS equipment and electronic level prepared by the Study Team.

Additional geographic survey was carried out in cooperation with the HPO counterpart personnel and young engineers from National Geographic Department (NGD). The field survey was continued for 16 days from February 6 to 21, 1999.

The survey team was divided into two (2) parties for the areas upstream and downstream of B.Dong in the Thaviang Sub-District and the substantial work was performed by two (2) Surveyors. Chief Survey Engineer went and returned the two (2) sites and controlled the field activities under the direction of the Survey Expert of the Study Team and worked for compilation of the survey results.

11.5.4 GEOLOGICAL SURVEY

Geological information on the reservoir area and records on the filed reconnaissance are advised to be arranged and preserved, because the reservoir area is enormous and almost inaccessible due to the jungle. Also no easy access to the dam site is available. Transfer of knowledge aimed mainly at deepening the counterparts' understanding that each records and data for the applied field reconnaissance are assuredly important, and transportation and access in the site are crucial.

- (i) Field reconnaissance by helicopter provides us with important information on aerial views, so surface conditions, outcrops and landslides etc., which are to be recorded in videotapes and CDs etc. Field reconnaissance to the proposed dam site by boat and by land is also to be recorded.
- (ii) Records and data on outcrops especially for the proposed dam site are important because of big differences of water levels in dry and rainy seasons.
- (iii) Outcrops of conglomerate and sandstone are conspicuous. Evaluation of outcrops and weathering conditions at dam site is advised to be carefully studied, because there are not much outcrops of mudstone. Dam examples on the similar geological conditions will be beneficial.
- (iv) Key beds with distinguished characteristics, if available, will be helpful for geological correlation of sedimentary rocks on both banks, which will be used for analysis of geological structures and fault systems. Consequently geological formations below and on the conglomerate band will be separated with the conglomerate bandwidth.
- (v) It is very important to arrange roads, communication means, camps, etc. in the field geotechnical activities. Therefore, footpaths, river cross-points, available camp area at the dam site have been confirmed from the information given by local people with the assistance of the counterpart personnel. It was stressed to the counterpart personnel that investigation of difference of the site conditions between dry and wet seasons are important. Information was also collected together with the counterpart personnel on the methods for material transportation by helicopter and construction of labor camps, which should be determined prior to the full-scale survey.

11.5.5 HYDROLOGICAL SURVEY

Main items of transfer of knowledge were measurement procedures and maintenance method of rain gauges and water level gauging stations including newly installed observation equipment. The Study Team made a practical training to the counterpart personnel method of discharge measurement by using current meter handed over to MIH/HPO.

Knowledge of discharge measurement was transferred to the counterpart personnel through the actual measurement carried out at B.Hatkham and B.Thahua gauge stations during the 1st Field Investigation in August 1998. Current measurement lines for velocity measurement were set near the water-level staff installed, in river-crossing directions where river streams were almost straight. For both points measuring works on velocity and river cross section were done by small boats using a current meter. Discharge measurement using float was also transferred to the counterparts through preparation of several floating devices made of bamboo, which was normally adopted for flood discharge measurement. The counterpart personnel have also mastered data compilation by using computers without foreign engineer's assistance.

MIH/HPO carried out non-regular observations three (3) times in September and December 1998 and in February 1999 in accordance with JICA's S/W. Upon request from the Study Team, the counterpart personnel had carried out monthly discharge measurement from June 1999 after the 2nd Field Investigation.

11.5.6 JICA COUNTERPART TRAINING

The 1st On-The Job-Training, which was scheduled in January 1999 at first, has been postponed in March 1999 after submission of the Interim Report, because the original schedule was just before the 3rd Field Investigation. For Mr.Chansaveng of MIH, the training was performed in Japan for 26 days from March 29 to April 23, 1999 as shown in Supporting Report (V)6.1 with the program prepared for dam development plan and environmental study.

The 2nd On-The Job-Training for Mr.Seumkham of MIH was performed in Japan for 28 days from October 23 to November 19, 1999 as shown in Supporting Report (V)6.2 with the same program.

11.6 SITE PHOTOGRAPHS (1/5)



Photo-1

Signing Ceremony for Inception Report
(Lang Xane Hotel, Vientiane)

1st Field Investigation

Date : August 1998



Photo-2

GPS Geographic Survey

1st Field Investigation

Date : August 1998



Photo-3

Geological Site Reconnaissance of Damsite

1st Field Investigation

Date : August 1998

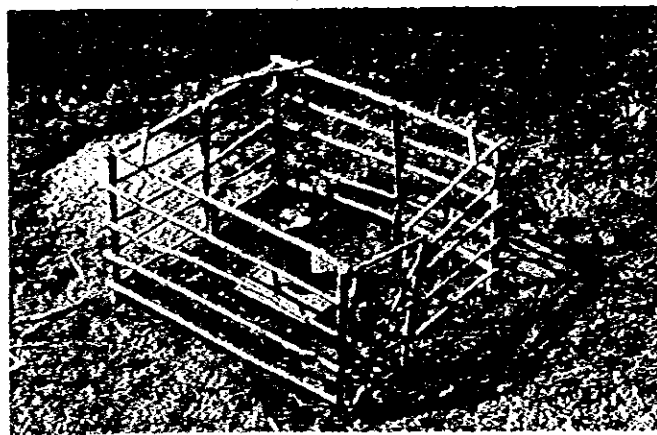


Photo-4

Installation of Rainfall Gauge Station
(B.Dong, Thavian Sub-District)

1st Field Investigation

Date : August 1998

11.6 SITE PHOTOGRAPHS (2/5)



Photo-5

Installation of Water Level Gauge Station
(Nam Xao River at B.Tahua)

1st Field Investigation

Date : August 1998



Photo-6

1st Environmental Assessment Committee
(Joint Site Visit by Helicopter)

2nd Field Investigation

Date : November 1998



Photo-7

1st General Workshop
(Lan Xane Hotel in Vientiane)

2nd Field Investigation

Date : November 1998



Photo-8

1st Site Workshop (1st Place)
(B.Dong, Thaviang Sub-District)

3rd Field Investigation

Date : March 1999

11.6 SITE PHOTOGRAPHS (3/5)



Photo-9

1st Site Workshop (2nd Place)
(B.Sopyouk, Hom District)

3rd Field Investigation

Date : March 1999

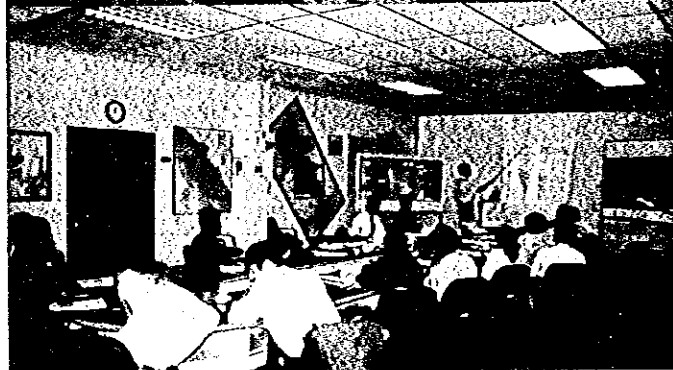


Photo-10

2nd Environmental Assessment Committee
(Presentation by Study Team)

4th Field Investigation

Date : June 1999



Photo-11

2nd General Workshop
(Pakxan, Bolikhamsay Province)

4th Field Investigation

Date : June 1999

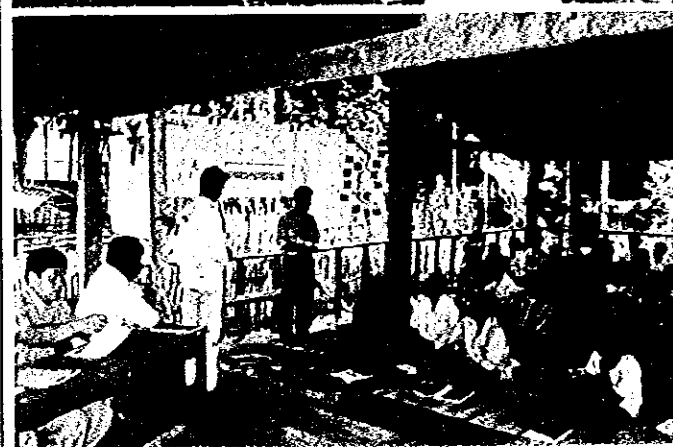


Photo-12

2nd Site Workshop
(B.Somseun, Bolikhan District)

4th Field Investigation

Date : June 1999

11.6 SITE PHOTOGRAPHS (4/5)

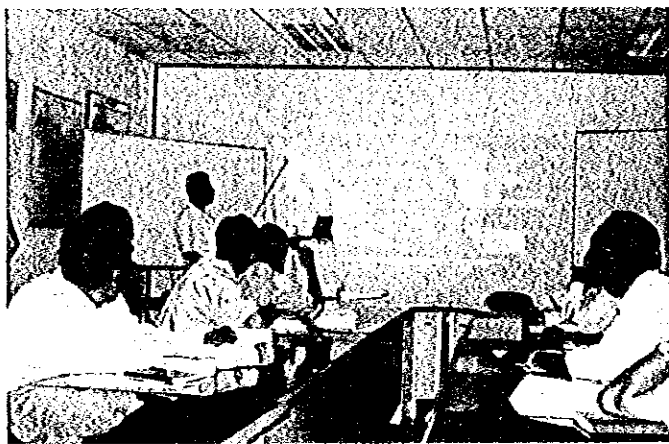


Photo-13

Technical Seminar for HPO Counterparts
(HPO/MIH Meeting Room)

4th Field Investigation

Date : June 1999



Photo-14

Site Reconnaissance to Proposed Damsite

5th Field Investigation

Date : October 1999



Photo-15

Discharge Measurement by HPO Staff
(Nam Ngiep River near B.Hatkham)

5th Field Investigation

Date : October 1999

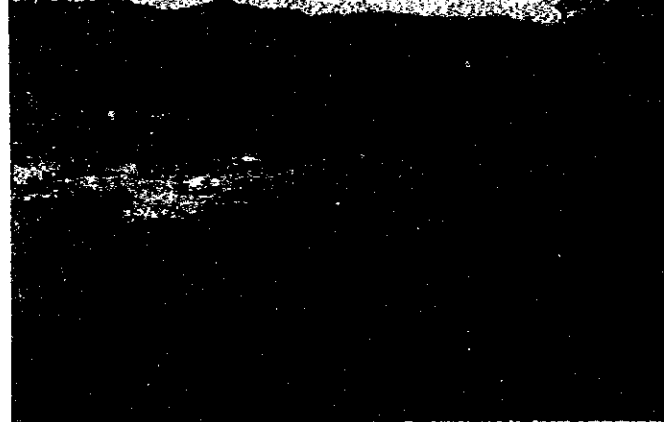


Photo-16

Aero-Site Reconnaissance
for Possible Resettlement Area

5th Field Investigation

Date : October 1999

11.6 SITE PHOTOGRAPHS (5/5)



Photo-17

3rd General Workshop
(Lan Xane Hotel, Vientiane)

6th Field Investigation

Date : December 1999



Photo-18

3rd Site Workshop (1st Place)
(B.Dong, Thaviang Sub-District)

6th Field Investigation

Date : December 1999



Photo-19

3rd Site Workshop (2nd Place)
(B.Sopyouk, Hom District)

6th Field Investigation

Date : December 1999



Photo-20





3rd Site Workshop (3rd Place)
(B.Somseun, Bolikhan District)

6th Field Investigation

Date : December 1999

11.7 JICA STUDY TEAM MEMBERS

Table 11.7.1 Description of Work for Team Members by Position

Name	Position	Description of Tasks
1. Ichiro ARAKI 	Team Leader : Dam Environmental Expert	<ul style="list-style-type: none"> • Manage overall investigation team in all respects • Meet with Laotian governmental officials • Manage overall technology transfer program • Supervise and coordinate work progress • Advise and guide team members • Supervise environmental assessment survey • Evaluate overall environmental assessment result • Take responsibility for compilation, submission, explanation / discussion of all reports • Take responsibility for explanation, discussion at General and Site Workshops • Take responsibility for explanation to, discussion with Environmental Assessment Committee • Compilation of gender issues
2. Hiroshi IKEDA 	Sub-Team Leader : Hydropower Planner	<ul style="list-style-type: none"> • Assist in management of overall investigation team • Review Pre-F/S report • Prepare and compare alternative development plans • Study optimum reservoir operation • Prepare all reports • Advise for safety, sanitary, accidental aspects • Review of hydrological data
3. Bernard YON 	Natural Environmental Expert	<ul style="list-style-type: none"> • Confirm organization of Lao PDR on environmental administration • Prepare draft investigation plan for environmental assessment • Carry out initial environmental survey • Prepare and adjust specifications for environmental assessment survey contract • Supervise environmental assessment survey (natural environment) • Enforce environmental impact analysis (natural environment) • Prepare all reports related to environmental impact analysis survey (natural environment) prepare, explain, discuss for General and Site Workshop • Preparation of preliminary resettlement plan • Explain and discuss at environmental assessment committee
4. Tod A. RANGSDALE 	Social Environmental Expert	<ul style="list-style-type: none"> • Confirm organization of Lao PDR on environmental administration • Carry out initial environmental survey • Prepare and adjust specifications for environmental assessment survey contract • Supervise environmental assessment survey social environment) • Enforce environmental impact analysis (social environment) • Prepare all reports related to environmental impact analysis • Preparation of preliminary resettlement plan • Prepare, explain, discuss for each General and Site Workshop • Explain and discuss at environmental assessment committee

Name	Position	Description of Tasks
5. Yunsi Wang	Socio-Economist	<ul style="list-style-type: none"> • Investigate macro-economic situation in Lao PDR • Conduct economic and financial evaluation of the proposed projects • Recommend funding plan for the selected project • Survey on CO2 reduction • Make market survey for selling electric power to Thailand • Prepare report on responsible tasks
6. Nobuhiro MORI	Socio-Economist	<ul style="list-style-type: none"> • Economy and Power market field survey in Thailand • Economy and Power market field survey in Vietnam • Reporting on Economy and Power market field survey results
7. Daikichi NAKAJIMA	Geophysical Survey Expert	<ul style="list-style-type: none"> • Collect existing aerial and satellite photographs and topographic maps • Confirm elevations by GPS spot-survey in and around reservoir area for resettlement plan • Prepare river profile and cross sections along the Ngiep river
8. Mitsuhiro ASAI	Geophysical Survey Expert	<ul style="list-style-type: none"> • Preparation of ground survey by satellite image SPOT • Execution of ground survey at Thaviang
9. Kiyoshi YAMADA	Geologist	<ul style="list-style-type: none"> • Collect and analyze the existing geological data • Carry out site reconnaissance and mapping study on site geology • Prepare specifications and supervise for local contract of geological investigation • Analyze geological investigation results • Summarize results of geological reconnaissance • Prepare all geology-related reports • Collect and analyze seismological record and data • Prepare report on responsible tasks
10. Kiyoshi HIRATA	Hydrologist	<ul style="list-style-type: none"> • Collect and analyze the existing hydrological data, information and reports • Procure hydrological observation equipment • Prepare plan and guide hydrological investigation • Prepare report on responsible tasks
11. Yoshiyuki MATSUI	Civil Engineer	<ul style="list-style-type: none"> • Assistant for Members Field Investigation

11.8 CONTENTS OF SUPPORTING REPORTS (1/5)

Volume 3 Supporting Report (I) : First Environmental Impact Assessment Report

VOLUME 3 : SUPPORTING REPORT (I) FIRST ENVIRONMENTAL IMPACT ASSESSMENT REPORT

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JICA