5. CONTRACT ON FIELD INVESTIGATION BY SUB-CONTRACTOR

5.1 INSTRUCTION TO TENDERERS (SECTION 1)

SECTION-1

INSTRUCTION TO TENDERERS

1.1 DEFINITIONS

Terms used in this document are described in Clause 2.1 of General Conditions.

1.2 GERNERAL

This Tender is called for the environmental assessment survey for the Nam Ngiep-I Hydroelectric Power Project (hereinafter referred to as "the works") in the Lao People's Democratic Republic. The works are composed of the following:

- Field survey and data collection
- Data analysis and process
- Reporting and mapping

All the above mentioned Works performed under this Contract shall be in conformity and accordance with and subject to the General Conditions, the Term of Reference, the Schedules and all other Contract Documents. Partial tender shall not be acceptable.

The JICA Study Team will make the payment of the Works to the Contractor upon approval of JICA/Tokyo.

1.3 SUBMISSION OF TENDER

The Tender shall be prepared according to the Form annexed to the Tender Document.

The Tender shall be submitted in sealed enveloped marked "PROPOSAL FOR ENVIRONMENTAL ASSESSMENT SURVEY FOR NAM NGIEP-I HEPP" in upper left hand corner, and one (1) original and two (2) copies shall be forward to:

JICA Study Team for Nam Ngiep-I HEPP
c/o Hydropower Office (HPO), MIH
Nippon Koei Nam Ngiep-I Office
Nong Bone Road, Vientiane, Lao PDR
TEL/FAX : 856 (21) 41 - 5036
E-mail : laonk@loxinfo.co.th

1.4 OPENING OF TENDER

The Tender, including supplementary data and information, shall be delivered by hand or registered mail so as to arrive before 10:00 a.m. (Lao Local Time) on the date stated in the Invitation to Tenderers (herein after called Tender Closing Time and Date).

If the Tender will be delivered by mail, the Tender shall be covered in double cover and the front cover shall only state the above-mentioned address. The original Tender shall have enough seal stamp.

Any Tender received after the Tender Closing Date and Time shall be rejected even though it is late because of events beyond the Tenderer's control such as delay in mail handling or traffic jam.

The JICA Study Team reserves the right to reject any tender submitted not in accordance with, or in a form other than that set forth in these instructions.

The Tender shall be signed in the handwriting of the Tenderer. In case of cooperation, the Tender shall be signed in handwriting of the proper officers with corporation seal affixed. In case of a consortium, the Tender shall be signed in the proper officers of each member of consortium.

1.5 COMPLETENESS OF TENDER

The Tender shall be completed with:

(i) Completed Form of Tender
(ii) Price Schedule by filling the form in the Form of Tender
(iii) Balance sheet issued for the latest fiscal year
(iv) List of share holders
(v) Board of directors
(vi) References and experience on the similar work as required under this Tender Document in the last five (5) years
(vii) Organization chart at site
(viii) List of required equipment
(ix) Work methodology
(x) Description of work execution (to be performed by himself or to be sub-contracted)
(xi) Curriculum vitae of major member of team
(xii) Unit price analysis

1.6 QUALIFICATION OF THE TENDERERS

The Tenderer shall submit written evidence, satisfactory to the JICA Study Team, of his qualifications to satisfactorily perform the specific Works. The Tenderer or subcontractor shall certify his qualifications by submitting evidence that:

(i) He does not anticipate change in ownership or major policy during the period of the proposed work.

(ii) He has adequate equipment and capability.

(iii) He has adequate financial status to meet the financial obligation incident to the work.

(iv) He is a well-established environmental survey company having adequate technical knowledge and practical experience.

If some part of the Works is to be sub-contracted, any such subcontractors shall comply with the above requirements. Besides the above requirements, the JICA Study Team reserves the right to request the Contractor to submit additional information.

1.7 EXECUTION AND EVALUATION OF THE TENDER

Tendering for the Works shall be executed according to the regulation of JICA and the conditions requested in the Tender Documents. Evaluation shall be executed as follows:

(i) Administration evaluation at the tender opening

(ii) Evaluation of the completeness in administration

(iii) Technical evaluation covering:

- Organization
- Expertise
- Work experience
- Performance method
- Time schedule
- Price analysis
- Equipment

(iv) Evaluation of the most reasonable and profitable price

The qualification of each tenderer as the Contractor for the Works will be examined through the above evaluation.

1.8 VALIDITY OF TENDER

Validity of Tender is thirty (30) calendar days starting from the date of tender opening, subject to extension according to requirement.

1.9 CONTRACT COST

Contract cost shall be estimated on US Dollars basis. Contract cost shall be fixed including transportation, risk, overhead, profit and all other costs related to the Works. The Contractor is not permitted to request to any additional cost, due to rise in price of equipment or services related to the Works under the Contract.

The Works will be carried out over a period which covers two (2) different fiscal years for JICA, Fiscal Years 1998 ending on March 31st 1999, and Fiscal Years 1999 starting on April 1st 1999. For that purpose, the Tenderer will present its costs separately in accordance with each fiscal period, and following the Cost Form presented in Appendix.

Each fiscal period will be the subject of a separate contract with the awarded Tenderer:

- A first Contract to be signed at the beginning of the Works and for the amount corresponding to the Works to be performed before the end of Fiscal Years 1998, (Firm Phase), and

- A second Contract to be signed at the beginning of the Fiscal Year 1999, and for the amount of work to be performed until the end of the Works, (Conditional Phase).

1.10 ACCEPTANCE AND REJECTION OF TENDERS

The JICA Study Team does not bind himself to accept the lowest Tender or any Tender, and also reserves the right to reject any Tenders without being liable to claims of any kind.

1.11 CORRESPONDENCE

All correspondences related to the Works, the Contract and all matters accompanying the Tender shall be in English language and shall be delivered to:

JICA Study Team for Nam Ngiep-I HEPP
c/o Hydropower Office (HPO), MIH
Nippon Koei Nam Ngiep-I Office
Nong Bone Road, Vientiane, Lao PDR
TEX/FAX : 856 (21) 41 - 5036
E-mail : laonk@loxinfo.co.th

All measurement and quantities are to be expressed in units of the metric system, unless otherwise prescribed in the Tender Documents.

1.12 EXPENSE IN PREPARATION OF TENDER

All the costs incurred directly or indirectly by the Tenderer in the preparation and submission of his Tender shall be at the Tenderer's expense.

1.13 SITE CONDITIONS

The Tenderer shall satisfy himself, by careful inspection as to the nature and the location of the Works and access hereto the actual conditions and requirements thereof, including labor conditions and labor rates and all other matters. The Tenderer shall not claim at any time after the submission of the Tender or in the subsequent execution of the Contract that there was any misunderstanding with regard to the conditions imposed by the Contract or prevailing at the Site.

1.14 TIME SCHEDULE

The Time Schedule for performing the specified Works will be basic consideration in evaluating the Tender. The Tender evaluation with the respect thereto shall be made based upon such drawings and engineering data submitted by the Tenderers in connection with the Time Schedule. The Tenderer is requested to satisfy the Study Team of his ability to complete the Work within the stipulated time.

1.15 AWARD OF CONTRACT

Following the opening an evaluation of the Tenders and after having received the approval from JICA, the JICA Study Team will communicate the selected Tenderer its intention to negotiate a Contract Agreement (hereinafter the notice of intent is called as "Letter of Intent").

As mentioned in Course 1.9 (Contract Cost), the awarded Tenderer will be invited to sign a first Contract related to works performed until March 31, 1999 (Firm Phase). Contract

for the following months and relying on Fiscal Year 1999 budget will be signed in late May 1999 (Conditional Phase).

After the JICA Study Team and the selected Tenderer reach to the agreement mutually, the successful Tenderer shall be invited for the signature of the Contract Agreement as stipulated in the relative Clauses of the General Conditions.

The Contract will be awarded to the best-qualified and responsive Tenderer offering the Tender in conformity with the terms of conditions of the Tender Documents.

1.16 CHANGE OF QUANTITIE

The JICA Study Team shall reserve the right to vary the quantities of items or groups of items as specified in the Price Schedule, as may be necessary.

1.17 CONTRACT DOCUMENTS

The successful Tenderer shall prepare a Contract Document in English language consisting of:

(i) Agreement
(ii) Summary of cost schedule
(iii) Letter of Intent
(iv) Evidence for payment of stamp duty
(v) Correspondences between the Engineer and the Tenderers
(vi) Tender at its enclosures
(vii) Tender Documents

The above documents shall be bound in one book and four (4) sets of the Contract Document and shall be prepared at the Contactor's expense.

5. CONTRACT ON FIELD INVESTIGATION BY SUB-CONTRACTOR

5.2 GENERAL CONDITIONS (SECTION 2)

SECTION-2

GENERAL CONDITIONS

2.1 DEFINITIONS

The following words and expressions shall have the meaning hereby assigned to them, expect where the context otherwise requires:

2.1.1 "JICA" shall mean the Japan International Cooperation Agency, the official agency responsible for the implementation of the technical cooperation of government of Japan, having and address of its head office at:

Shinjuku Maynds Tower Bldg. 8th Floor
1-1, Yoyogi, 2-Chome, Shibuya-Ku
Tokyo, 151-8558, JAPAN
TEL : 81-3-5352-5296
FAX : 81-3-5352-5326

2.1.2 The "JICA Study Team" shall mean a person or persons appointed by JICA to supervise the Works at the Site and/or in other places in Lao PDR where the Contract has to be carried out or is in progress to be carried out.

2.1.3 The" Engineer" shall mean the JICA Study Team having its Office, at an address of:

JICA Study Team for Nam Ngiep-I HEPP
c/o Hydropower Office (HPO), MIH
Nippon Koei Nam Ngiep-I Office
Nong Bone Road, Vientiane, Lao PDR
TEL/FAX : 856 (21) 41 - 5036
E-mail : laonk@loxinfo.co.th

2.1.4 The "Contractor" shall mean any person, firm or company whose tender has been accepted by the Engineer and approved by JICA and who signs the Contract, shall include the Contractor's personnel representative, its legal successors and assigns.

2.1.5 The "Sub-Contractor" shall mean any person, firm or company (other than the Contractor) nominated in the Contract for any part of the Works or any person to whom any part of the Contract has been sublet with the consent in writing of the Engineer, and the legal personal representatives, successors and assigns of such person.

2.1.6 The "Contract" shall mean the agreement between the Engineer and the Contractor for the execution of, and payment for the Works as defined in the Contract Documents.

2.1.7 The "Works" shall mean the Environmental Assessment Survey for the Nam Ngiep-I Hydroelectric Power Project to be done by the Contractor under the Contract.

2.1.8 The "Contract Price" shall mean the sum named in each of the Contract Documents as the contract price (Firm Phase and Conditional Phase).

2.1.9 The "Price Schedule" shall mean the price schedule annexed or issued under the Contract.

2.1.10 The "Unit Price" shall mean the unit price stated in the Price Schedule attached to the Contract Document.

2.1.11 The "Terms of Reference" shall mean the terms of reference annexed or issued under the Contract.

2.1.12 The "Project" shall mean the Nam Ngiep-I Hydroelectric Power Project in Lao PDR.

2.1.13 The "Site" shall mean the land and places in which the Works for the Project shall be executed.

2.1.14 "Day, Week, Month, Year" shall mean calendar day, calendar week, calendar month and calendar year, respectively.

2.1.15 "Approval" or "Approved" shall mean approval or approved in writing by the Engineer.

2.1.16 "Writing" shall mean any manuscript, typewritten or printed statement duly signed.

Words importing the singular only also include the plural and vice versa where the context requires. The fact that the words defined in this Clause are or are not capitalized in the Contract shall not affect their meaning.

2.2 CONTRACT TO INFORM HIMSELF FULLY

The Contractor by tendering shall be deemed to have satisfied himself as to all the conditions and circumstances affecting the Contract Price, and to have fixed these prices according to his own view for these as no additional allowances, except otherwise expressly provided, will afterwards be made beyond the Contract Price.

The Contractor shall be responsible for any misunderstanding or incorrect information obtained in connection with the Works except information given in writing by the Engineer.

2.3 EFFECTIVE DATE OF CONTRACT AND COMMENCEMENT OF THE WORKS

The Contract for Fiscal Year 1998 shall be effective on the date when the Contract has been approved by JICA. The Contractor shall commence the Works upon receipt of "Notice to Proceed" which will be issued by the Engineer.

The Contract for Fiscal Year 1999 shall be effective on the date when the Contract has been approved by JICA. It is intended to have it's approved before May 1, 1999, in order to avoid interruption in the field works.

2.4 MANNER OF EXECUTION

2.4.1 All the Works to be done under the Contract shall be executed in accordance with the Terms of Reference, or where not specified therein accordance with such instructions and orders as the Engineer may give.

2.4.2 If the Contractor shall, by written notice to the Engineer with seven (7) days after receiving any decision, instruction or order of the Engineer, intimate that he disputes or questions the decisions for so doing, either party shall be liberty to refer the matter to arbitration pursuant to the Clause 2.23 Arbitration of the General Condition, but such an intimation shall not relieve the Contractor of his obligation to proceed with the Works in accordance with the decision, instruction, or order in respect of which the intimation has been given.

2.5 INFORMATION AND OFFICAIL PERMISSION

2.5.1 The Engineer shall make available to the Contractor, at request of the Contractor, general information and site conditions related to the Works, but the Contractor shall be responsible for his own interpretation thereof.

2.5.2 The Engineer shall arrange office permission from the authorities for the execution of the Works at he Site.

2.5.3 The Engineer shall arrange so that the Contractor may have free access to land required in performing the Works, whether they may be under the ownership of the Government of Lao PDR or the third parties, and shall assume liability for damage to lands and associated properties due to such access, unless such damage caused by negligence or fault of the Contractor shall be indemnified by the Contractor.

2.6 CONTRACTOR'S REPRESENTATIVE AND PERSONS

2.6.1 The Contractor shall make his own arrangements for the engagement of all the professional experts, engineers, technicians and labors necessary for the execution for the Works. The Contractor shall submit to the Engineer for approval a complete list of principle staff showing names, functions, personal histories and periods of assignments prior to commencement of the Works.

2.6.2 The Contractor shall appoint one or more competent representatives from among the Contractor's engineers assigned to the Works to superintend the carrying-out of the Works of the Site. The names, training and experience of the Contractor's representatives shall be submitted to the Engineer for approval before they are appointed. The said representative, or if more than one shall be appointed, then one of such representatives shall be present on the Site during working hours, and any orders or instruction which the Engineer may give to the said representative of the Contractor shall be deemed to have been given to the Contractor by the Engineer.

2.6.3 The Contractor shall be responsible for observation of all regulation and safety precautions imposed by labor legislation and authorities.

2.6.4 The Engineer hall be at liberty by notice in writing to the Contractor to object to any representative or other or persons employed by the Contractor in the execution of the Works who shall, in the opinion of the Engineer, misconduct himself of be competent or negligent or be sick and the Contractor shall remove such person from the Works and provide an acceptable replacement for such person at the Contractor's expense.

2.7 WORKING DAYS AND HOURS

The Contractor shall carry out the Works on the Site continuously during the normal working hours generally recognized in Lao PDR. The Contractor may, with the arrangement of the Engineer, carry out work at other time if it shall be practicable in the circumstances for the Work to be so done.

2.8 MATERIALS, EQUIPMENT AND FACILITES TO BE PROVIDED BY THE CONTRACTOR

2.8.1 The Contractor shall at his own expense supply and provide all equipment, materials and labor and other things of every kind required for the execution and completion of the Works.

2.8.2 The Contractor shall at his own expense provide the following temporary facilities if necessary for the execution of the Works:

(i) Access to Site required in performing the Works
(ii) Field accommodation

2.9 PROGRAM TO BE FURNISHED

2.9.1 The Contractor shall be submit to the Engineer for his approval his proposed time schedule and field operation program for each section of the Works. After approval by the Engineer of such time schedule and field operation program, the completion time for the Works stipulated in the same time schedule shall be considered as "Guaranteed Time for Completion of the Works", and the Contractor shall adhere to the order of procedure, method and time schedule stated unless he obtains the written permission of the Engineer to vary such order or method or time schedule.

2.9.2 Such time schedule and field operation program shall be supplemented by the Contractor in weekly progress reports indicating the actual state of progress of all items during the course of the Works at the Site. The form and substance of such weekly report shall be satisfactory to the Engineer. In addition, the Contractor shall submit to the Engineer the monthly progress reports stating the actual state of the Works done at the Site during the preceding month. Such monthly reports shall be submitted to the Engineer within one (1) week after the end of preceding month.

2.9.3 In the course of the works, when the Engineer calls the Contractor for meeting, the Contractor and/or his representatives shall at any time and at his own expense attend the meeting and shall report all actual state of the Works.

2.10 INSURANCE

2.10.1 The Contractor at his expense effect accident and injury insurance for engineers, technicians and labors employed by the Contractor for the execution of the Works, and shall keep the Engineer free from any claim for the compensation of such accident and injury.

2.10.2 The Contractor shall at his expense insure the equipment, materials and facilities to be provided by the Contractor and keep each part thereof insured for its value against loss, damage and fire.

2.11 FORCE MAJEURE

2.11.1 If either party is temporarily unable by reason of fore majeure or the law or regulation of Lao PDR to meet any of its obligation under the Agreement, and if such party gives to the other party written notice of the event within fourteen (14) days after its occurrence, such obligations of the party as it is unable to perform by reason of the event shall be suspended for as long as the inability continues.

2.11.2 Neither party shall be liable to the other party for loss or damage sustained by such other party arising from any event referred to in Clause 2.11 (1) or delays arising from such event.

2.11.3 The term "Force Majeure" as employed herein shall mean Act of God, strikes, lock-outs or other industrial disturbance, acts of public enemy, war, blockades, earthquakes, storm, lightning, floods, washouts, civil disturbances, explosions, and any other similar events, beyond the control of either party and which by the exercise of due diligence neither party is able to overcome.

2.12 TERMS OF PAYMENT

2.12.1 The payment for the Works shall be made by the Engineer to the Contractor in the following manner:

(i) The Contractor shall submit their invoice approved by the Engineer for the actual work performed by the Contractor. The amount of such invoice shall be ascertained based on the lump sum and unit prices specified in the Price Schedule.

(ii) The amount of such invoice shall be paid by the Engineer to the Contractor within thirty (30) days after the Engineer's receipt of the Contractor's invoice or after JICA's payment to the Engineer whichever later in the following six (6) installment:

<u>For the 1st Contract in Fiscal Year 1998 (Firm Phase)</u>

- At completion of mobilization work, 40 % of the 1st Contract Price
- At submission of Draft Interim Report, 20 % of the 1st Contract Price
- At submission of Interim Report, 40 % of the 1st Contract Price

<u>For the 2nd Contract in Fiscal Year 1999 (Conditional Phase)</u>

- At signing on the 2nd Contract, 40 % of the 2nd Contract Price
- At submission of Draft Final Report, 20 % of the 2nd Contract Price
- At submission of Final Report, 40 % of the 2nd Contract Price

2.12.2 No extra payment in respect of overtime, holiday works, additional equipment, materials and facilities, or special conditions of hardship shall be claimed by the Contractor beyond the Contract Price, unless such payment shall have been authorized in writing by the Engineer prior to the extra cost concerned being encountered.

2.12.3 (i) If upon the completion of the Works, the actual total quantities of the Works have been finalized and the quantities so finalized differ from the estimated quantities set out the Contract, or if there should arise an increase or decrease in the Contract Price from any causes, then and in such a case an equitable adjustment shall be made to the Contract Price by mutual written agreement between the Engineer and the Contractor in accordance with the provision of the Contract.

(ii) Unit prices stated in the Price Schedule shall be fixed and shall be used in determining any adjustment to the Contract Price where applicable.

(iii) Any fluctuation in the prices of wages, materials or any other things shall not be the subject of any adjustment.

2.13 TAXES AND RELATED CHARGES

All the income and other taxes, levies, imposes, deductions, charges, fees and similar assessments whatsoever imposed, assessed, levied or collected by the Government of Lao PDR, or any sub-divisions thereof or any taxing authority therein, upon the Contractor and his staff be paid and/or borne by the Contractor.

2.14 VARIATIONS AND OMISSIONS

2.14.1 The Contractor shall not alter any of the Works except as directed in writing by the Engineer. The Engineer shall have full power, from time to time, during the execution of the Contract, to direct the Contractor to alter, amend, omit, add to or otherwise vary any of the Works, by notice in writing, and the Contractor shall carry out such variations. In case the Engineer directs, on the spot, the Contractor to change the areas to be investigated from the originally proposed areas, the Contractor shall at that instance obey such directions and alter obtain written confirmation from the Engineer.

2.14.2 If the Engineer orders decrease in the Works, such orders shall not constitute any grounds for claim for damage or loss of anticipated profits on the Works.

All extra additional Works shall be performed with the same materials and workmanship as employed for the Works of similar character in the in the original one as far as they are applicable thereto.

2.14.3 In any case where such a direction involves an increase or decrease in the Contract Price, the differences in cost to the Contract, if any, occasioned by such variations, shall be adjusted from the Contract Price as the case may require, unless otherwise specified. The amount of such difference shall be ascertained and determined in accordance with the unit prices specified in the Price Schedule, so far as the same may be applicable, and where the unit prices are not contained therein, such amount shall be reasonably agreed between the Engineer and the Contractor in writing.

2.15 CONTRACTOR'S DEFAULT

2.15.1 If the Contractor shall neglect to execute the Works with the diligence and expedition or shall refuse or neglect to comply with any reasonable instructions or orders given in writing by the Engineer in connection with the Works, or shall contravene the provisions of the Agreement, the Engineer may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of.

2.15.2 Should the Contract fail to comply with the notice within a reasonable time from the date thereof, then and in such case the Engineer shall be at liberty to employ other workmen and forthwith execute such part of the Works as the Contractor may have neglected to do, or, if the Engineer shall think fit, it shall be lawful for him, without prejudice to any other rights he may have under the Contract, to make the Works wholly or in part out of the Contractor's hands and re-contract with any other person or persons to complete the Works or any party thereof.

2.15.3 The Engineer shall be entitled to retain and apply any balance which may be otherwise due by him to the Contractor, or such part thereof as may be necessary, to payment of the cost of executing the said part of the Works or completing the Works as the case may be. If the cost of completing the Works or executing part thereof as aforesaid shall exceed the balance due to the Contractor, the Contractor shall pay such excess upon request in the writing from the Engineer.

2.16 REJECTION

If any time before the Works are accepted by the Engineer, the Engineer shall decide that any work done by the Contractor is defective or not in accordance wit the Contract or that the Works or any portion thereof are defective or do not fulfill the requirements of the Contract, then the Contractor shall with al speed and at his own expense make good defects so specified. In case the Contractor shall fail so to do, the Engineer may, provided he does so without undue delay, take at the cost of the Contractor, such steps as may in all the circumstances be reasonable to make good such defects.

2.17 TIME FOR COMPLETION

2.17.1 The whole of the Works shall be completed within the time guaranteed by the Contractor or such extended time as may be allowed under the following paragraph.

2.17.2 The Contractor shall not be held responsible for failure to carry out his obligation in case of force majeure, such as embargo, blockade, war, natural disasters or any disasters or any circumstances beyond his reasonable control. The Contractor shall notify the Engineer in writing within fourteen (14) days of the commencement of force majeure conditions. Depending on the production of satisfactory evidence and if the existence of force majeure conditions is accepted by the Engineer, the Engineer will grant extension of the Guaranteed Time for Completion of the Works sufficient to compensate for delay due to force majeure without penalty.

2.18 DELAY IN COMPLETION

If the Contractor fails to complete the Works in accordance with the Contract within the time fixed by the Contract, there shall be deducted from the Contract Price as and for

liquidated and ascertained damages a sum of money equal to half (1/2) % of the Contract Price for each day between the Guaranteed Time for Completion of the Works and actual date of completion but the amount so deducted shall not in any case exceed five (5) % of the Contract Price. Such deduction shall be in full satisfaction of the Contractor's liability for the said failure.

The Engineer may request the Contractor to employ additional labor or use additional equipment and materials and the Contractor will do so at his expense in case a delay in the completion of the Works has to be expected.

2.19 SUSPENSION OF THE WORKS

The Contractor shall, on the written order of the Engineer, suspend the progress of the Works or any part thereof for such times or time and in such manner as the Engineer may consider necessary and shall during such suspension properly protect and secure the Works so far as is necessary in the opinion of the Engineer. All expenses incurred by the Contractor by reason of the suspension of the Works by the Engineer will be at the sole responsibility of the Contractor if the suspension is:

(i) Otherwise provided for in the Contract, or

(ii) Necessary for the proper execution of the Works or by the reason of whether conditions affecting the safety or the quality of the Works or by some defaults on the part of the Contractor, or

(iii) Necessary for the safety of the Works or any part thereof.

2.20 CERTIFICATE OF COMPLETION OF THE WORKS

As soon as in the opinion of the Engineer, the whole of the works shall have been satisfactorily completed, the Engineer shall issue a Certificate of the Completion of Works after receiving a written application therefor. Upon issuance of such Certificate of Completion of the Works, the Contractor shall cease to be under further obligation under the Contract.

2.21 BANKRUPTCY

If the Contractor shall become bankrupt or insolvent or have a receiving order made against him, or compound with his creditors, or being a corporation, commence to be wound up, not being a member's voluntary winding up for the purpose of amalgamation or reconstruction, or carry out its business under a receive for the benefit of its creditors or any of them, the Engineer shall be at liberty:

(i) To terminate the Contract forthwith by notice in writing to the Contractor or to receiver, or liquidator, or to any person in whom the Contract may become vested, and to act in the manner provided in Clause 2.15 of the Contractor's Default, as through the last mentioned notice has been the notice referred to in such clause and the Works has been taken out of the Contractor's hand, or

(ii) To give such receiver, liquidator or other person the opinion of carry out the Contract subject to his providing a guarantee for the due and faithful performance of the Contract up to an amount to be agreed.

2.22 ASSIGNMENT AND SUB-LETTING OF THE CONTRACT

The Contractor shall not, without the prior consent in writing of the Engineer, assign or transfer the Works or the benefits or obligations thereof or any part thereof to any other persons. The Contractor shall not, without the prior consent in writing of the Engineer, which shall not be unreasonably withheld, sublet the Contract or any part thereof or make any sub-contract with any person or persons.

Any such consent if given shall not relieve the Contractor from his obligations under the Contract. The Sub-Contractor shall be regarded as employee of the Contractor. The Contractor shall be solely responsible for the performance of the Sub-Contractor and for all payments to the Sub-Contractor.

2.23 ARBITRATION

2.23.1 If any dispute or difference of any kind whatsoever shall arise between the Engineer and the Contractor in connection with the interpretation or application of the Contract, it shall be settled as much as possible by amicable arrangement between both parties. If such arrangement cannot be realized, the dispute or difference shall be settled by arbitration as provided herein.

2.23.2 All questions, disputes or differences arising out of or in related to the interpretation of the Contract which cannot be settled by mutual accord shall be submitted to a committee for arbitration consisting of three (3) arbitrators, one to be nominated by the Engineer, another by the Contractor and the third as chairman by the two (2) mentioned arbitrators above, and shall be finally settled in conformity to the rules and procedures or Conciliation and Arbitration of the International Chamber of Commerce. Any decision, opinion, direction, certificate or valuation given by the arbitrators shall be obeyed by both parties and be final.

2.24 NOTICE AND CORRESPONDENCE

Any notice to be given to the Contractor shall be served by sending the same by post to or leaving the same as the Contractor's principal place of business, or to the address of his representative at the Site. Any notice to be given to the Engineer shall be served by sending the same by post to or leaving the same at the Engineer's address as stated in the Contract.

2.25 DOCUMENTS

2.25.1 All the correspondences, figures, drawings and other documents shall be made in the English language.

2.25.2 The several document have to be taken as mutually explanatory of one another, but in case ambiguities or discrepancies the same shall be adjusted in accordance with the provisions of Clause 2.23 hereof.

2.26 INSPECTION OF WORK

The Engineer shall at all time have access to the Works wherever it is in preparation or progress and the Contractor shall provided necessary facilities for such access and for inspection.

In case the specifications are required as to any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of his readiness for inspection. If the inspection is by an authority other than the Engineer, the Contractor timely notify to the Engineer of the date fixed for such inspection.

5. CONTRACT ON FIELD INVESTIGATION BY SUB-CONTRACTOR

5.3 FORM OF AGREEMENT (SECTION 3)

SECTION-3

FORM OF AGREEMENT

AGREEMENT
FOR
ENVIRONMENTAL ASSESSMENT SURVEY

This Contract made entered into ____day of _____, 1998 by and between JICA Study Team represented by the Nippon Koei Co., Ltd. (hereinafter referred to as "the Engineer" which shall include its legal successors and assigns), having its address of:

JICA Study Team for Nam Ngiep- I HEPP
c/o Hydropower Office (HPO), MIH
Nippon Koei Nam Ngiep-I Office
Nong Bone Road, Vientiane, Lao PDR
TEL/FAX : (856-21) 415036
E-mail : laonk@loxinfo.co.th

and,

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OOOOOOOOOOO
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(hereinafter collectively referred to as "the Contractor" which shall include its legal successors and assigns).

WITNESS that parties covenant, promise and agree each with the other as follow:

(a) The Contractor agrees to do and complete all Environmental Assessment Survey (hereinafter referred to as "the works") in accordance with the terms, and requirements of this Contract

(b) The Engineer agrees to pay the Contractor in consideration of the fulfilment of the works the Contract Price of

US Dollar OOOOOOOOOOOOO (US$OOOOOOOOO)

in accordance with the terms and condition specified in clause 2.12 of General Condition.

It is agreed that the terms, conditions and requirements of the Contract shall prevail except to the extent that they are expressly modified or altered by this contract.

IN WITNESS WHEREOF, each of the parties hereto has caused this Contract to be signed by their duly authorized representatives of the date first above written.

FOR AND ON BEHALF OF OOOOOOOOOOOO	FOR AND ON BEHALF OF JICA STUDY TEAM
_____	_____
OOOOOOOO Director	Ichiro ARAKI Team Leader of JICA Study Team

5. CONTRACT ON FIELD INVESTIGATION BY SUB-CONTRACTOR

5.4 TERMS OF REFERENCED (SECTION 4)

TERMS OF REFERENCE FOR ENVIRONMENTAL SURVEYS

TABLE OF CONTENT

TERMS OF REFERENCE FOR ENVIRONMENTAL SURVEYS

1. BACKGROUND OF THE PROJECT

The prefeasibility study for Nam Ngiep1 Hydropower Project (NNHP) was carried out in 1989-1990 by Sogreah Ingenierie (France) and HEC (Lao PDR) under a grant from the French Government. The study aimed to determine the technical and economical viability of the Project in the energy market conditions prevailing in Laos and in the region.

In 1991-92, a revision of the prefeasibility study was undertaken. Additional geophysical investigations were carried out to provide more detailed information on the scheme, more especially on the most appropriate dam type and hence on the overall cost of the project.

In 1995, an updating study was performed. It included a revision of the initial hydrology, on the basis of data collected since 1990, an updating of unit rates for civil works and electromechanical equipment, of electricity tariffs and of the previous economic analysis.

Environmental and social impacts were briefly considered during the prefeasibility study stage, but limited to desk work, and were not the subject of further investigations during revision and updating stages.

JICA is presently funding the Feasibility study for the NNHP, the first stage of which concentrates on the Environmental Impact Assessment (EIA). The present Terms of Reference are related to survey works needed for the EIA.

2. CHARACTERISTICS OF PROJECT

Main characteristics of the NNHP are described in the table presented in Annex 1. Project location and reservoir delimitation at EL.360m for Full Supply Level (FSL) are provided on attached map in Annex 2. The EL.360 m FSL corresponds to the basic option selected at pre-feasibility stage. However, alternative options will be considered in the Feasibility, mainly lower dam option (to reduce impact on resettlement), run-of-river option and combination of both.

3. AVAILABLE DOCUMENTS

SOGREAH, HEC, Jan. 1991	Aménagement Hydroélectrique de Nam Ngiep-I, Etude de Préfaisabilité (Pre-F/S).
SOGREAH, HEC, Feb. 1992	Hydropower layout of Nam Ngiep-I, Complementary investigations and Pre-F/S review.
SOGREAH, Nov. 1995	Hydropower Development of Nam Ngiep-I, Updating of revised Pre-F/S.

Topographical maps 1:200,000 and 1:100,000 (based on aerial cover of 1982).

Topographical maps 1:50,000 (based on aerial cover 1965)

Topographical maps 1:25,000 (aerial cover 1993) are available for the dam site and downstream area.

Aerial photo cover from 1982.

4. BACKGROUND INFORMATION ON THE PROJECT AREA

The JICA Study Team, Natural and Social Environmental Experts made a reconnaissance field trip to the Project area in August 25-28, 1998. They collected demographic, socioeconomic and environmental data from Borikamxay Provincial and Bolikham District offices and visited by motor pirogue the several villages along the Nam Ngiep that would be affected by downstream dam impacts. Since access to the reservoir area was difficult during the rainy season, the sub-contractors made a reconnaissance of the upstream reservoir area by helicopter, spending two days at the upper reservoir area of Thaviang and visiting the lower reservoir area villages on both the incoming and outgoing trips.

Prior to this field reconnaissance, data on the reservoir area relied on 1981 census figures and on data extrapolated from 1:50,000 (1965) and 1:100,000 (1982) maps. These indicated about 1,400 people distributed in ten (10) villages located within the limits of the proposed reservoir. Although it was assumed that villages involved in shifting cultivation might have moved several times either inside or outside the reservoir area, a best guess estimate of the current situation was that the population might have increased by 50 % since 1981. This estimate, based on the Lao PDR population growth rate of 2.9 %, placed the current population at around 2,000, or about 400 households.

It was also assume that several of the concerned villages were of highland ethnic minorities categorized by the Government as *Lao Sung*, which include a number of Hmong peoples. Any development dealing with such peoples would require review of JICA policies on indigenous peoples in planning for project impact mitigation. These are consonant with those of the Asian Development Bank (ADB), which are attached.

The reconnaissance field visit found the reservoir area population to be more built up than anticipated. Instead of around 2,000 people, it found the overall reservoir area population to be more than double this figure, at around 5,000. While some highland *Lao Sung* in the lower reaches of the reservoir would be impacted by inundation, in the upper reservoir far more lowland Lao majority population categorized by the Government as *Lao Loum*, would be affected, as well as *Lao Theung*, a middle hills peoples.[1]

The reconnaissance team also found considerable government-supported irrigation development in the upper reservoir area. There may be somewhere 400-500 ha of irrigated rice paddy instead

[1] Laos is officially a multiethnic nation with more than forty ethnic groups, classified into three general families: *Lao Sung* (upland Lao) 10 percent of population in 1993; *Lao Theung* (midland Lao) 24 percent; and *Lao Loum* (lowland Lao), 66 percent. The term Laotian is usedfor the national population; Lao for the ethnic group. Andrea Matles Savada, ed. 1994. Laos: A Country Study. Washington, DC: Federal Research Division, Library of Congress.

of, as was originally assumed, only dry evergreen tropical forest, temporary or permanent agricultural areas, degraded forest, old re-growth and fallow resulting from shifting cultivation in the reservoir area.

Based on the reconnaissance visit, it is possible so far as socioeconomic aspect are concerned to see the Nam Ngiep as having three impact zones: (i) the Upper Reservoir; (ii) the Lower Reservoir; and (iii) the Downstream Villages. The following is a preliminary description of these impact zones based on the August 1998 reconnaissance visit to the Nam Ngiep project area and on data supplied by the district offices, as well as questions asked directly from village heads or through very brief questionnaires.

A more complete preliminary questionnaire survey was being carried out at the time of writing this TOR in conjunction with a GPS point survey being done by the JICA Study Team. This will pinpoint village locations and provide the basis for a base map of the project area. The socioeconomic survey will confirm and update the information presented here:

The Upper Reservoir, consists of twelve (12) mostly *Lao Leum* and *Lao Theung* villages in the Taviang Sub-District of Thathom District, Xaysomboon Special Zone. The villages and their populations are presented below:

Upper Reservoir Villages: HH & Population, August 1998

Village (Ban)	Households	Population
Xiangkhong	39	243
Viengthong	47	276
Naxay	22	123
Naxong	83	632
Phonyeng	66	349
Dong	82	506
Phiangta	50	324
Hatsamkhone	26	179
Pou	52	336
Nahong	79	466
Phonehom	67	366
Nakang	22	132
Total	635	3,932

With an assumed dam of 185 m located (18°39' N and 103°30' E) where the Nam Ngiep River leaves the highlands and descends to the Mekong River plains, it is expected that the impoundment of the reservoir will flood about 156 km² of land. The reservoir for a 185 m dam with FSL of EL.360 m should be up to 80-90 km long, reaching as far as B. Xiangkhong, the northern most village considered here as part of the upper reservoir.

All of the upper reservoir villages in Taviang Sub-District have *Lao Loeum* households, seven also with *Lao Theung* and only two have *Lao Sung*. B.Dong, the market and administrative center for Taviang Sub-District, is the second largest village in the area with 85 households and just over 500 people, all of whom are *Lao Loeum*. It has a market center with 20-25 shops where a market bazaar attended by surrounding villages is held mornings three times a week. B. Naxong is the largest village, with 83 households and 632 people. As seen below, these are two (2) of the three (3) oldest villages in the area.

Nine (9) of the twelve (12) upper reservoir villages are on the Nam Ngiep's left bank. B.Dong is on the left bank and is flanked on either side by three (3) villages. B.Phonyeng, B.Naxong, and B.Naxay lay to the north, roughly an hour and a half's walk (5-6 km) along a dirt motor road, with a fourth village, Xiangkhong, further up the road about 10 kim, at roughly the very top of the proposed reservoir. B.Phiangta, B.Hatsamkhone, and B.Pou are similarly spread along the Nam Ngiep's left bank to the south of B.Dong.

Some 12 ha of government sponsored paddy land development in 1996 are at B.Phiangta on the Nam Ngiep left bank, with a one kilometer canal bringing water from the Nam Theun tributary.

Most of the existing and planned irrigation development, however, is on the Nam Ngiep's right bank. Although B.Dong itself is on the left bank, the village has about 85 ha of 130 ha irrigation development[2] on the Nam Pong tributary, directly across the Nam Ngiep. B.Nahong and Phonehom are along a road leading diagonally away from the Nam Ngiep's right bank. B.Nahong has about 45 ha of the Nam Pong irrigation scheme, which was built in 1992. B.Nakong is further along the Nam Ngiep's right bank road about 17 km to the south and further away from the river along a tributary.

Upstream and also on the right bank of the Nam Ngiep an additional 142 ha irrigation paddy[3] for B.Vienthong, B.Naxay, and B.Naxong is being constructed on the Nam Theng tributary, due to be finished the end of 1999.

As part of Xaysomboon Special Zone, the area is administered by the Kiutsum Pathana (KP) using the armed police of the Ministry of Interior to provide security for the area. The KP also has a development role and has sponsored irrigation projects, schools, and local health centers in the area. B.Dong has a 3-class secondary school and 5-class primary school. All the Thaviang villages except for B.Naxay, B.Phongyeng, and B.Hatsakhone have primary schools. All of these are 3-class primary level except for three 1-class schools at B.Phianta, B.Nahong, and B.Nakang.

B.Dong, B.Vientgthong, and B.Phianta have health centers, the main one in the area being at B.Dong, since it is the administrative center. Health problems in the overall reservoir area appear, as reported by villagers, to be malaria and dysentery, although examination of health center records and the socioeconomic survey will provide more information.

Only four (4) of the twelve (12) villages in the upper reservoir area are 20 years or older. B.Dong, B.Xiangkhong and B.Naxong have been established for at least 30 years, in the late 1960s; and B.Pou was established at least 20 years ago, in the late 1970s. B.Phianta and

[2] Some 130 ha in the wet season and 20 ha in the dry season.
[3] 142 ha in the wet season and 40 ha in the dry season.

B.Nahong were established around 10-15 years ago. B.Phonyeng, B.Naxay, and B.Phonehom are 5-10 years old, while B.Nakang and B.Hatsamkhone are only 3-5 years respectively.

Access to the upper reservoir area is quite restricted during the rainy season, June through September. B.Dong and the other villages (with the possible exception of B.Nakang) are accessible during the dry season by motor road from Thathong District headquarters (B.Sibounhueng) some 32 km eastwards on the Nam Xan River and from B.Phonsavan, some 3-4 hours drive to the northwest.

Unlike downstream of the dam, the use of motor boats is less prevalent in the reservoir area. There are only 7 motor boats in the entire reservoir area, as opposed to some 200 motor pirogues in villages along the Nam Ngiep downstream of the dam. Passage downstream towards the damsite appears to be almost virtually restricted by rapids within the Nam Ngiep. The upper reservoir is isolated from the lower reservoir area by areas where the Nam Ngiep forms steep V shaped valleys and by dense secondary forest throughout the middle reaches of the reservoir area. There is evidence, however, of extensive slash and burn agriculture along the Nam Ngiep in the uninhabited middle area. These areas are probably reached by boat.

The Lower Reservoir contains four (4) largely *Lao Sung* Villages, belonging to Hom District of Xaysomboon Special Zone. These villages, all but one (1) of which are *Lao Sung* and all of which are located on the right bank of the Nam Ngiep, are presented in the table below:

Lower Reservoir Villages: HH & Population, August 1998

Village (Ban)	Households	Population
Houaypamon	21	128
Sopphouh	13	78*
Namyouk	73	438*
Sopyouk	67	415
Total	174	1,059

*Estimated population, assuming 6 persons per HH.

Of these villages, B.Houaypamon, a *Lao Loum* village established only about 3 years ago, is the most northerly and appears to be the most isolated of all villages in the reservoir. Village access appears to be mostly by its two motor boats, which can reach B.Sopphouh to the south in about an hour and B.Nakang to the north in about 1-2 hours. By foot this is takes about 4-5 times as long along the 10-15 km stretch of river to these villages. The team's impression was that the health and economic condition of this village was below that of others seen during the field visit.

B.Sopphouh is a *Lao Sung* village, B.Sopphouh is accessible from the *Lao Sung* villages of B.Namyouk and B.Sopyouk, about 7-8 km to the south, along a new dirt motor road built only this year. B.Namyouk and B.Sopyouk, established fifteen and ten years ago respectively, are the closest villages to the dam site. Although with smaller populations than B.Dong and B.Naxong in the upper reservoir, they nevertheless are relatively large, with over 400 people each. Villagers say they came to this area because of the Government's policy to limit slash and burn agriculture in the mountain areas.

Sopyouk reported having 11 ha of paddy. The reconnaissance survey could not confirm paddy hectares in the other villages, although this information will be available through the JICA team's GPS point survey.

Villagers questioned at B.Sopyouk had not heard of three villages found on the 1982 1/100,000 maps in this same area, B.Pomom Noi, B.Vang Naxai and B.Nagnao. Similarly, other villages listed on this and the earlier 1965 1:50,000 maps had been abandoned in the upper reservoir area and downstream from the dam.

B.Namyouk and B.Sopyouk and, as of this year, B.Sopphouh are relatively accessible during the dry season, when they can be reached by a 28 km motor road from the District headquarters at Mong Hom District. This takes approximately one hour. The area has been recipient to Japanese aide, with Japan Overseas Cooperation Volunteers (JOCVs) reportedly active in the area. B.Namyouk and B.Sopyouk both have new 5-class primary schools donated through the Japanese Government. B.Sopyouk also had a health center.

The Downstream Villages consist of six (6) villages located along the left bank of the Nam Ngiep River, within Bolikhanh District of Borikhamxay Province. More villages are located farther downstream in Pakxan District, also of Borikhamxay Province. However, the environmental/social team is still in the process of collecting data about these. The Bolikhanh District villages and their populations are:

Downstream Villages (Bolikhanh District): HH & Population, August 1998

Village (Ban)	Households	Population
Nampa	90	436
Houaykoun	260	1,684
Somseum	180	1,123
Hatieun	100	541
Tahua	50	251
Naxon	35	210*
Total	715	4,245

*Estimated population, assuming 6 persons per HH.

The reconnaissance field trip started from B.Somseum by motor pirogue and traveled approximately one hour upstream on the Nam Ngiep to B.Hatieun, the village farthest upstream towards the dam site. On the 1982 1:100,000 map, this village, which has been established well over fifty years, was called 'Hatkkan'. B.Somseum is 'B.NamiNgiep.'

While B.Hatieun, like all the other villages downstream of the dam, is *Lao Loum*, a small settlement of *Lao Sung* has been established at B.Hatsaikom for about four years. This is half an hour upstream and around 9-10 km downstream from the dam site. According to villagers, there are not any settlements upstream of B.Hatsaikom, and the Hatsaikom villagers say they may be resettled by the Government to a better more accessible location as part of its policy to restrict slash and burn agriculture.

B.Nampa and B.Somseum (and possibly other villages in Bolikhanh District) can be reached by dirt access roads leading off westward from Highway 4, linking Highway 13 to Bolikhanh District headquarters. Highway 13 runs about 100 km parallel with the Mekong River from Vientiane through Pakxanh. Highway 4, itself a dirt road for most of its distance to the district headquarters, leads off from Highway 13 northward just past the Nam Ngiep.

Highway 4 runs parallel to the left bank of the Nan Ngiep and between that river and the larger Nam Xan, which is just to the east of the Nam Ngiep. It then turns northeasterly towards Bolikhanh, which is situated on the right bank of the Nam Xan. Higway 4 appears to hence follow the Nam Xan northward to the Thatham District headquarters at B.Sibounhueng and may possibly provide road access during the dry season to the upper reservoir area at Thavian.

Possibly because of the access provided by Highway 4 and because the forest on the Nam Ngiep's right bank is protected, all of the villages in Bolikhanh District are situated on the Nam Ngiep's left bank. All are *Lao Laom*, although only B.Somseum appears to be exclusively *Lao Laom*. Four of the villages have *Lao Theung* populations and two have *Lao Sung* settlements associated with them. There appears to be a district resettlement program encouraging *Lao Sung* and other settlements (such as Nampa) to shift away from the river and closer to Highway 4.

Despite this policy, the villages along the Nam Ngiep in Bolikhanh District appear to maintain lifestyles in close association with the river. Most appear to take the larger part of their drinking water from the river, to rely on it for fishing and, very much in contrast to the villages within the reservoir area, all villages have large numbers of motor boats. These provide transport up and down the river and access to many fields observed by the team along both banks of the Nam Ngiep.

Overall, the material culture of these downstream villages appears much richer than that of the reservoir villages, with *tuk tuks* and television sets run by battery not found in these latter villages, and a larger number of small tractors, rice mills, and other assets.

The JICA environmental/social team expects to obtain more information for villages along the Nam Ngiep within Pakxanh District. Although a less extensive stretch of the Nam Ngiep, the Pakxanh villages may possibly account for a larger and denser population, and have a concentration of irrigation pumps not found as yet in the upstream villages.

Impacts of the Project on Downstream Villages. Water stored in the reservoir will be released downstream of the dam in the Nam Ngiep River. Downstream impacts may be variable according to eventual reservoir management: either a year long discharge regulation (250 to 300 m^3/s) in case of base load production, or a rapid variation of discharge in case peak load only is produced (at least during certain months). Regulation will induce a reduction of the wet season flow, which may affect flood plain management downstream for agriculture and fish spawning areas.

Regulation of flow and presence of a high dam will alter fish migration and fisheries in the river. This will be sensitive to the downstream villages, as fish is very likely the major source of animal protein. The average consumption in Laos is about 15-25 g/capita/day. If appropriately managed, the reservoir may provide much higher opportunities for fisheries than the river itself

(as observed since 15 years with the Nam Ngum reservoir). However, mitigation strategies will still be required for the downstream villages.

Regulation of flow year round may also provide an opportunity for dry season irrigation if suitable land occurs. A good example is given by irrigation development along the Nam Ngum River, regulated since more than 20 years by the Nam Ngum dam. On the other hand, if operation is limited to peak load production during certain periods of the year, the rapid change in the flow released in the riverbed may be dangerous for the downstream villages and harmful for bank stability and bed erosion. A mitigation system will be required to minimize the impact, as for example a re-regulating pond, or specific procedures for valve operation.

Water quality will also be a major issue with respect to the downstream villages. Impoundment of the 156 km² reservoir will release large amounts of organic matter in the water, the decay of which will consume most of the dissolved oxygen, at least during the first few years after impoundment. Impacts on downstream fisheries and water use by the population may vary considerably.

5. SCOPE OF WORK

5.1 General

Within the context of the Environmental Impact Assessment study, the Sub-contractor is requested to carry out preliminary field surveys in order to gather the base line data deemed necessary for the assessment of Project's impacts and the elaboration of appropriate mitigation measures.

The following surveys are requested:

1. Socio-economic survey
2. Water quality survey
3. Aquatic ecology and fishery survey
4. Wildlife, Habitats and Forestry survey
5. Land use survey

5.2 Socio-economic survey

5.2.1 Objectives

The main objective will be to conduct a socio-economic survey as a basis for assessing social impacts upstream and downstream of the proposed dam site. For upstream effects, the socio-economic survey will, as per the ADB resettlement policy, provide a basis for proposing viable design changes to minimize resettlement. It will also provide initial data for a preliminary draft Resettlement Plan that sets out mitigation strategies to assist those affected by land acquisition and any other resettlement effects in recovering and surpassing their pre-project standard of living.

For downstream effects, such as damage to water quality during the first years of the dam's operation, loss of fishing, and any impacts on the use of the river for transportation, the survey

will provide a basis for mitigation strategies. For this reason, it will be conducted in close association with the other planned surveys, in particular the fishing survey.

The sub-contractor will, under close supervision of the Study Team's Social Environmental Expert, plan, implement, analyze and report on a sample socio-economic survey consistent with good international practice. For both upstream and downstream impacts, the study will establish baseline data for incomes and expenditures, occupational and livelihood patterns, use of resources, arrangements for use of common property, arrangements for systems of production and local resource use, social organization, leadership patterns, community organizations, and cultural parameters. This data will provide a basis for eventual evaluation and monitoring of the project impacts, should the project be implemented. The study will be consonant with JICA (ADB) policies on Involuntary Resettlement (1995) and on Indigenous Peoples (1998).

5.2.2 Tasks

The following are suggested tasks for the sub-contractor undertaking the socio-economic study. They may provide a framework for designing the study. However, the actual details of the study design will be determined in consultation between the sub-contractor chosen to carry out the study and the Study Team's Social Environmental Expert.

- Review Lao Social And Environmental Strategies And Policies As Well As JICA (ADB) Policies On Involuntary Resettlement And Indigenous Peoples

  These policies will need to be complied with in the survey design. The sub-contractor will need to assess village infrastructure and production systems in a quantifiable way that will provide a basis for both assessing resettlement impacts and for providing a basis for resettlement planning. The collective categories of Lao *Loum, Lao Theung*, and *Lao Sung* will provide a useful way to describe the ethnic makeup of the affected communities. However, some ethnographic judgement will be required to more particularly identify how ethnic groups (more than forty recognized in Laos) identify themselves and whether or not any of the groups impacted qualify as especially vulnerable peoples under the ADB's Indigenous Peoples policy. Therefore, familiarity with these policies (attached) will be imperative.

- Reconnaissance Visit to Upper and Lower Reservoir Areas and to Downstream Villages

  Because of the relative inaccessibility of much of the project area, even during the dry season, it is highly recommended that the sub-contractor visit the survey areas to assess the logistics of fielding a survey team. This will also be necessary for reconfirming the village names and locations presented in this TOR. This information is based on a limited reconnaissance fieldtrip and may not be fully accurate. It is also recommended that heads and secretaries of villages to be surveyed be contacted in advance and informed of the survey dates, so that they may be present during the administration of village-level questionnaires. The preliminary site visit will also useful in determining appropriate questions for inclusion in the survey questionnaires and sampling design.

  Note: It is *imperative* that on initial contact with the villages to be surveyed, the villagers and their leadership be counseled that the socio-economic survey is only part of a feasibility study

for the project. The survey does not in any way signal that the project is going to actually be implemented. The information collected will assist decision-makers on whether or not to go ahead with the project and in determining its final design to minimize environmental and social impacts should a decision to implement the project be made.

- Preparation of Survey Questionnaires

The sub-contractor will, in close consultation with the Study Team's Social Environmental Expert, prepare two questionnaires. The first one, a village-level questionnaire, will be filled in with the assistance of village heads and secretaries. The objective will be to understand the general social, economic, and land use situation of the village, as well as the community assets threatened by the project. These may be, for instance, bridges, tracks, schools, dispensaries, and communal forest or pasture lands.

The second questionnaire will be the household-level questionnaire. It will be filled out with representatives of those households directly threatened by the project activities. This will cover aspects related to, *inter alia*, household ethnic identification, demography and family structure; health and education; income, expenditures and indebtedness; land and natural resource usage; household-level production systems and assets such as land and built-up properties; and knowledge and opinions about the project and possible resettlement.

The upstream and downstream questionnaires, at both village and household-levels may be different, with more questions respecting water use and fishing and fewer respecting built-up assets requiring compensation for the downstream villages.

- Preparation of Survey Sample.

The sub-contractor, with the Study Team's Social Environmental Expert, will need to prepare a sample design for covering 10-20 % of the people affected by the Project. It may be stratified. This could be 20 % of the reservoir households, perhaps 160 households of a total 800. Downstream or for other project components, the sample might be a 5 %, perhaps 75 households out of a population of around 1500 people.

The sample will require advance planning to assure an appropriate proportion of questionnaires are administered within or near the reservoir, or for households likely to be impacted by other of the project's structures, such as the dam, camps, access roads, borrowing and quarrying areas, and transmission lines. Information on, for instance, the number of villages affected according to reservoir water levels, or according to alternative routes for access road or transmission lines, will provide a basis for the selection of design alternatives.

A well thought out sample design will make optimum use of resources. If a sample frame can be obtained prior to the survey, for instance as village sketch maps, some form of random sampling may be possible. However, a likely approach will be to choose households within each surveyed village according to a predetermined set of criteria economic well being -- with high, middle, and low categories. This may possibly be combined with stratification based on the ethnic makeup of the community.

- Testing the Questionnaires.

  Draft questionnaires, preferably based on questionnaires already used in Lao PDR, will be prepared, translated into Laotian language if necessary and tested in the field in similar communities to those likely to be affected by the Project. A possible area for field testing the questionnaires could be just north of the Nam Leuk Hydropower Project in Xaysomboon Special Zone. This area is similar to that of the Nam Ngiep reservoir and is easily accessible from Vientiane. Similarly, the area downstream from the Nam Leuk might be an appropriate venue, since it is similar to villages downstream from the proposed Nam Ngiep damsite.

  According to the test results, the questionnaires will be modified, adjusted and finalized for the detailed survey. All the enumerators who will carry the survey will participate to the test survey for training purpose. This work will be done under the direct supervision of the Study Team's Social Environmental Expert.

- Survey Implementation.

  The survey will be organized and carried out taking into consideration the periods the farmers are the most available, i.e., periods of reduced agricultural activities. The likelihood of favorable weather conditions, i.e., during the dry season, will also be a major consideration in scheduling the survey. Village leaders will need to be informed, in advance of the survey, of the intended dates the team will visit their locale. Villagers should also be provided adequate information about the project and its feasibility study to insure they understand the purpose of the survey. Since the three identified impact zones are not easily accessible from one to the other, it may be preferable to carry out the survey in three or more phases, in the upper reservoir, the lower reservoir, and in the downstream villages.

- Survey Analysis and Reporting.

  Results from the survey will be tabulated and processed for reporting. As appropriate, the data will be disaggregated by ethnicity and gender to take ADB policies into account. The survey report will establish a baseline of incomes and expenditures, occupational and livelihood patterns, use of resources, arrangements for use of common property, arrangements for systems of production and local resource use, social organization, leadership patterns, community organizations, and cultural parameters.

  On the basis of the survey results, recommendations will be prepared for refining and finalizing the resettlement strategy for upstream villages, identifying, as appropriate, additional options which build upon the existing social, economic and cultural parameters both of the people affected and of any host populations. The survey results will provide a basis for any special recommendations for vulnerable groups, including minorities. The results will also provide a basis for recommendations for mitigation strategies for downstream effects of the dam, such as providing domestic water through hand pumps during the first years of operation or a re-regulating reservoir if the dam is used for Peak loads. Lastly, the survey results will also provide a basis for deciding on whether or not to advance to the next phase of project feasibility and design studies. The report findings will be presented in project workshop to be held in Vientiane attended by the project's various stakeholders.

5.2.3 Outputs

The socio-economic survey will result in a **survey report** and in a formal presentation to stakeholders at a public workshop to be organized in Vientiane in June/July 1999 and again revisited as part of the Environmental Impact Assessment (EIA) presentation in November of 1999. The sub-contractor will prepare a **database** of the survey results and provide this to JICA for future studies and as a baseline for possible monitoring and evaluation of the project, should it be implemented.

5.2.4 Schedule

An indicative schedule, depending on the contract award date, might be:

1998

December: Review of Policies and Reconnaissance Visit to Project Site, Preparation and testing of questionnaires

December-January: Mobilization and Carrying out Survey

January-February: Data Analysis, Preparation of draft and final Report.

5.3 Water quality survey

5.3.1 Rationale

The construction of the Nam Ngiep-1 Hydropower Project and the eventual impoundment of the Nam Ngiep river will significantly change the water quality of the river system. Flooding of reservoir forested floor and decay of organic matter will at short term alter the quality of water discharged downstream. At longer term, the change from a river biotope to a lacustrine one will also alter the water quality. Baseline information on water quality is required to eventually assess potential changes.

As a part of the EIA studies, a water quality survey will be organized. It is expected to be carried 4 times during the study (every 3 months), thus providing an information representative of an annual cycle.

5.3.2 Objectives

This survey satisfies three objectives:

1. To set up a baseline information on the Nam Ngiep water quality,
2. To provide a basis for assessment of future water quality in the reservoir and downstream,
3. To provide a basis for the design and implementation of a water quality monitoring program: location of sampling sites, frequency of sampling, parameters to monitor.

5.3.3 Tasks

The survey is suggested to start in December 1998, and is scheduled to be carried out four times during the study period: in December 1998, in March 1999, in June 1999 and in September 1999.

The monitoring is proposed to be based at least on 4 sampling stations distributed as follows:

- Station 1: Nam Ngiep, at Pakxan bridge,
- Station 2 : Nam Ngiep at Ban Hatkham,
- Station 3 : Nam Xao, at least 200 m upstream its confluence with Nam Ngiep,
- Station 4 : Nam Ngiep at Ban Dong.

The list of analysis to be carried out at least for the first survey of November is given below. as follows:

1. In-situ measurements (to be cross-checked with laboratory controls)

    1. Temperature (°c)
    2. pH
    3. Electric Conductivity (µSiemens/cm)
    4. Total Dissolved Solids (mg/l)
    5. Dissolved Oxygen (mg/l and %saturation)
    6. Estimate of river discharge (m^3/s)

2. Laboratory analysis

    7. Calcium Ca^{++}
    8. Magnesium Mg^{++}
    9. Sodium Na^{+}
    10. Potassium K^{+}
    11. Chloride Cl^{-}
    12. Sulfate SO_4^{--}
    13. NO_3-N
    14. PO_4-P
    15. Hardness
    16. Alkalinity
    17. Total suspended solids
    18. Total IronP
    19. Silica
    20. COD

5.3.4 Outputs

At the end of each campaign, the Sub-contractor will submit to the JICA Team a short report presenting the results of the analysis. When applicable, results will be given in mg/l and in meq/l.

5.3.5 Organization and Schedule

In his proposal, the Sub-contractor will present his sampling methodology, describe the field equipment he will mobilize for in situ measurements and establish a detailed bill of quantity (type, number and unit cost for each analysis).

Analysis of samples should be carried out not later than one (1) week after sampling, with appropriate preservation measures for samples, and results of each sampling campaign will be submitted to JICA Team not later than two (2) weeks after sampling.

For the purpose of coherence with other existing data on water quality, it is suggested that the Sub-contractor follows analytical procedures of the Water Quality Laboratory of Vientiane, already in charge of the Mekong Water Quality Monitoring in the Lao region.

5.4 Aquatic Ecology and Fisheries survey

5.4.1 Rationale

There is an obvious lack of scientific knowledge about the aquatic ecology of streams throughout the upper Mekong catchment. The most well known rivers in Laos are those which are considered for hydropower development and where specific surveys have been carried out (Nam Leuk, Nam Theun for example). Also, still few reliable information is available on the fishery activities throughout Laos, while it is generally recognized that fish is the first source of animal proteins in rural areas.

It is evident that fish population and current fisheries will change along the Nam Ngiep, as the result of changes to the ecosystems caused by the construction and the operation of the dam. The collection of preliminary information on both aspects are deemed necessary to assess potential impacts and to elaborate preliminary mitigation plan.

5.4.2 Objectives

1. To provide baseline information on aquatic species prevailing in the Nam Ngiep river and major tributaries

2. To provide baseline information on fisheries along the Nam Ngiep, and mainly in its downstream stretch below the dam site

5.4.3 Tasks

5.4.3.1 Aquatic ecology investigations

The Sub-contractor will carry out a preliminary survey of aquatic fauna using various complementary approaches as:

1. Direct collection of samples in the river using push-net, cast net or seine, in selected sites considered as representatives of the river ecosystems,

2. Interview of villagers, using photographic references,

3. Inspection of fishermen's catches and local markets.

The investigations should cover the river stretch in the future reservoir area as well as major tributaries of the Nam Ngiep, and the lower Nam Ngiep downstream the dam site. Information collected from the subsistence fishery, and related to fish species and distribution, will also be considered to complement field observations.

Information expected from investigations concerns:

1. fish species observed with appropriate identification (common, scientific and local names)
2. their distribution in the river system (main river, rapids, still water, small streams,...)
3. their abundance depending the season, their possible migration pattern.

Reference fish specimens collected will be preserved for eventual check or identification.

5.4.3.2 Subsistence fishery investigations upstream the dam site

For areas upstream of the dam site, investigations will be carried out **as a part of the socio-economic survey.** Information on fishing activities, fishing equipment and catches will be gathered through interviews of villagers. The Sub-contractor will prepare a questionnaire to be tested on the field with the socio-economic questionnaire prior to survey.

Interviews will be carried in all villages located within the future reservoir area, over a sample of villagers to be determined together with the sample selected for the socio-economic purpose.

5.4.3.3 Subsistence fishery investigations downstream the dam site

The downstream area must receive a very special attention. Indeed, fisheries in the lower Nam Ngiep are likely to be affected by the proposed Project, at least for several years. It is necessary to get a reasonable idea on the actual importance of this activity, in order to assess and quantify the potential impact the Project may represent for fishermen, and to elaborate appropriate long term monitoring and mitigation measures.

The Sub-contractor will develop a methodology and prepare a questionnaire. Methodology and questionnaire will be presented and discussed with JICA Team prior to implementation on the field. At this stage, it is recommended the Sub-contractor to take benefit of previous similar experiences in Laos (Nam Theun, Nam Leuk).

Interviews of villagers based on the questionnaire will be performed **as a part of the socio-economic survey** to be carried out in the downstream villages.

In addition, few households in each concerned downstream villages will be then selected in order to investigate **in the dry and in the wet seasons** their actual subsistence fishery activities. For that purpose, it is suggested to organize during each season **a one week long monitoring survey** during which all their activities related to subsistence fishery will be recorded: Location and timing of fishing activity, equipment used, species caught (number, length, weight), total weight

of catches and any other information deemed relevant. These observations may eventually become the basis for a longer term monitoring of subsistence fisheries, as already implemented by Electricite du Laos (EDL) in some villages of the Nam Leuk Hydropower Project.

The Sub-contractor will also investigate on private or public, existing or planned aquaculture projects (fish ponds, fry production farms) in the Pakxan area. During preliminary visits, the presence of small production ponds and a fry farm developed by the Fisheries Department in Pakxan has been identified.

5.4.4 Outputs

The Sub-contractor is requested to submit the following outputs:

1. A report presenting the results of the aquatic ecology survey.
2. The fishery questionnaire for upstream villages (to be presented and discussed with the socio-economic questionnaire).
3. A note presenting the proposed methodology and questionnaire for the fishery survey in the downstream villages
4. A report with interpreted results on upstream and downstream area fishery survey carried out with the socio-economic survey
5. A report with interpreted results at the end of each of the two subsistence fishery monitoring surveys carried out in the downstream area (second report will integrate also results from first survey and provide interpreted comparison dry-wet seasons).

All reports will be submitted in English, and will be fully documented with maps and photographs.

5.4.5 Organization and Schedule

The aquatic ecology survey could be carried out around April-May 1999.

For the upstream and downstream fishery survey, the work should be associated with the socio-economic survey in December 1998 to January 1999.

The fishery monitoring surveys in the downstream villages is suggested to be organized in March 1999 (dry season) and June 1999 (wet season).

5.5 Wildlife, Habitats and Forestry survey

5.5.1 Rationale

The future reservoir may flood up to 156 km² of land, a large part of which is still covered by forest. Surrounding areas are still densely forested, with most probably significant animal and vegetal biodiversity. The Project site is located between two decreted National Parks (called National Biodiversity Conservation Area - NBCA - in Laos), the Phou Khao Khouay (PKK-NBCA) on the West and the Nam Khading (NK-NBCA) on the South-East. During preliminary

visits, significant wildlife including elephant, tiger, bear, deer, monkeys has been reported by villagers.

Flooding of the reservoir floor may have impacts on the wildlife, but also on the water quality of the system: The impoundment of the reservoir will flood huge volumes of organic matter, which will decay and alter the water quality of the reservoir with serious impacts for the downstream areas.

In order to mitigate these impacts, logging of commercial trees and clearing and burning the remaining vegetation is generally considered as the most suitable option. This option has been selected for the Nam Leuk Hydropower Project, presently under construction.

Preliminary investigations on commercial wood stands and vegetation biomass are thus also required to assess the feasibility of such option and to eventually estimate its costs and benefits.

Preliminary visits by helicopter over the reservoir area lead to the impression that most of the reservoir original forest has been already seriously altered by shifting cultivation over the last decades. Canopy is generally clear, with clusters of taller trees separated by wide areas occupied by bamboo cover.

5.5.2 Objectives

The survey intends to satisfy the following objectives:

1. To establish the ecological importance of the proposed inundation zone and of its surrounding areas, based on a preliminary identification of biodiversity focusing mainly on those species (mammals and birds) having a special conservation status.

2. To identify major habitats types and ecotypes within and around the future reservoir and establish the list of key vegetation species,

3. To establish a preliminary estimate of commercial woodstands and vegetation biomass on the reservoir floor.

5.5.3 Tasks

5.5.3.1 Wildlife and Habitats

The Sub-contractor will carry out a rapid ecological survey in the Project area in order to:

- To identify the main habitat types prevailing in the project area,

- To characterize these habitats by their most representative vegetation types in terms of species and structure; (identified flora species will be presented with scientific name and local name, and with their common usage by the villagers).

- To identify the existence of major terrestrial fauna species (mainly mammals and birds) and their preferences in terms of habitat types,

- To identify the presence of any key species of environmental concern (endangered, protected or rare),
- To identify preferential migration routes for wildlife across or along the Nam Ngiep.

The Sub-contractor will transfer the information obtained on a 1/100,000 scale map of the Project area.

Based on his experience in the region, the Sub-contractor will formulate his views on the potential impacts the Project may have on biodiversity and he will suggest appropriate mitigation measures and ToR for subsequent studies.

5.5.3.2 Forestry

The Sub-contractor will carry out the following tasks:

- Based on the results of the Habitat survey, and on his own experience, the Sub-contractor will identify areas where significant commercial woodstands are observed. For those areas, he will provide a rapid and preliminary estimate of the commercial wood volume which may be reasonably expected.
- Also based on the results of the Habitat survey, and on previous investigations carried out for similar projects, the Sub-contractor will make a preliminary assessment of vegetation biomass in the reservoir area, according to spatial distribution (area) and type distribution (soft or hard biomass).
- All results regarding woodstands and biomass will be depicted on 1/50,000 map, and then presented at a 1/100,000 scale.
- Based on his own experience or on previous experience in the country, the Sub-contractor will formulate recommendations regarding logging and clearing requirements.

5.5.4 Outputs

The Sub-contractor will submit the following reports:

- A Wildlife and Habitats report, in English,
- A Forestry report, in English.
- Both reports will be well documented with maps, drawings and photographs.

5.5.5 Organization and Schedule

The Wildlife and Habitat report could be submitted mid February 1999.

The Forestry report could be submitted late February.

5.6 Land use survey

5.6.1 Rationale

This survey is more a synthesis of information collected through other field surveys rather than a specific survey itself. However, it may require some additional field visits in areas not investigated previously, as, for example, the transmission line route to Pakxan and the access road to dam site.

5.6.2 Objective

Objective is to prepare a preliminary land use map of project sites, identifying major land use and land cover pattern.

5.6.3 Tasks

The Sub-contractor will prepare a land use map of the Project area, covering the reservoir area (below EL.380 m), the area around the dam site (where camps and workshops will probably be installed) and along the transmission line route to Paksan (35 km long, following existing road).

For natural land cover, the Sub-contractor will refer to data gathered during the Wildlife, Habitat and Forestry survey. For cultivated area, information may be gathered during socio-economic survey, and then complemented by recent photographs taken from plane or helicopter (see "Recommendations for surveys" below). Some additional field visit will be carried out along the proposed transmission line route and access road to dam site.

5.6.4 Outputs

The Sub-contractor will prepare a land use report including:

A land use map, prepared on 1/50,000 topographical maps and presented at a 1/100,000 scale.

Related tabulations of areas for each land use type, according to 3 elevation levels (for example 360 m, 340m, 320 m, but subject to modification by design team from JICA).

6. GENERAL RECOMMENDATIONS FOR SURVEYS

As it is not anticipated to have a new aerial cover of the Project area available for the field surveys, it is strongly recommended that the Sub-contractor makes a rapid aerial reconnaissance of the reservoir area and along the transmission line route and the downstream Nam Ngiep at the early stage of field work. It may be done either using a light plane or an helicopter. This will provide the opportunity to locate precisely villages and access, and to identify quickly the most appropriate areas for ecological field investigations. It will also provide the possibility to take photographs to be used eventually for field work.

The field work has been split into various surveys in these Terms of Reference for practical reasons. However, the data collection has to be considered as a highly integrated work, where the specific surveys have very deep inter-relations: The Sub-contractor has to consider it for the elaboration of his methodology and to optimize the organization of his team on the field.

For mapping purpose, the working scale will be the 1/50,000. Reporting and presentation scale will be 1/100,000.

7. GENERAL RECOMMENDATIONS FOR REPORTS

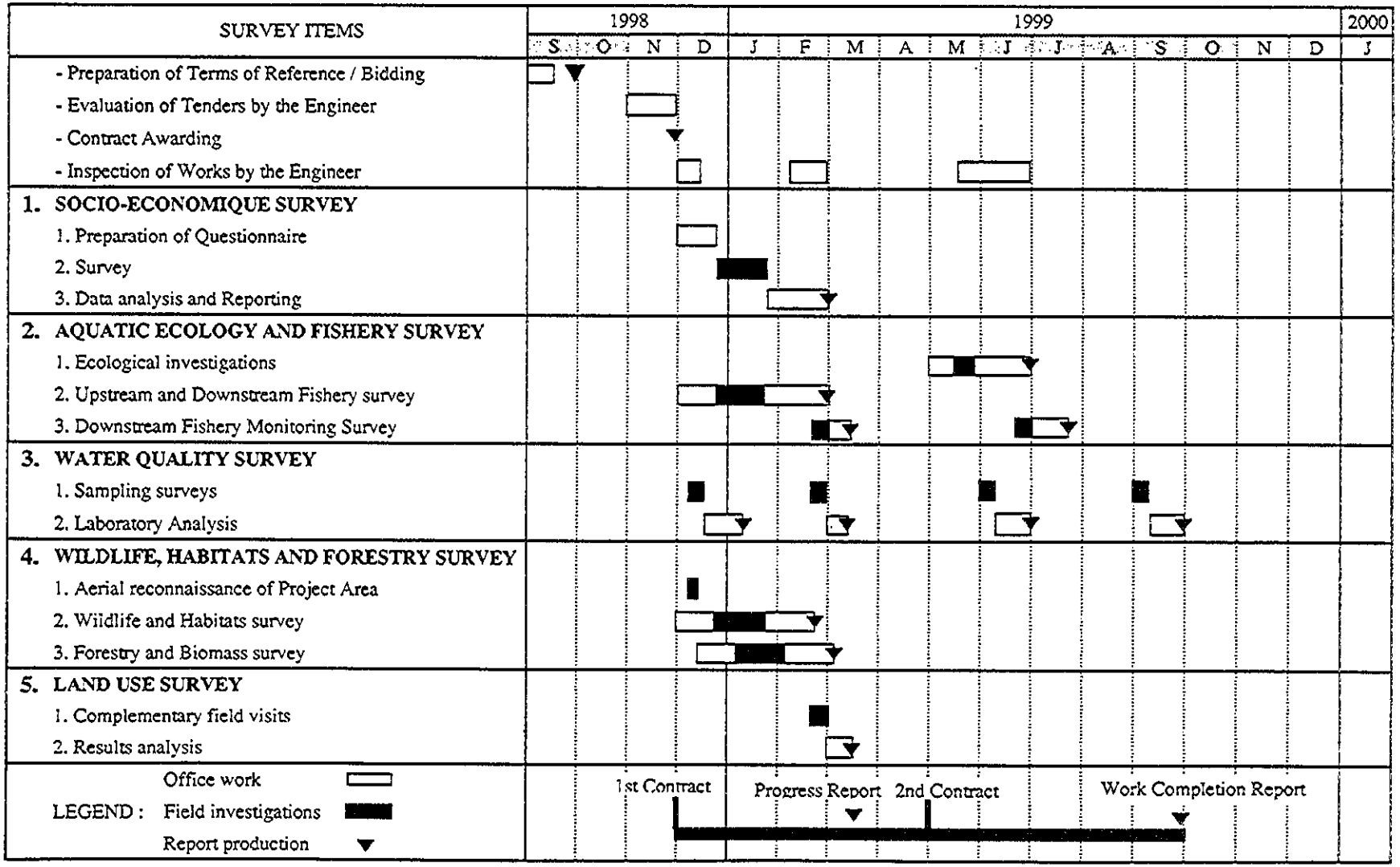
All reports will be prepared according to JICA's formatting standards, and submitted in 4 bound copies plus 1 non-bound copy for duplication. The report's files will be also presented to JICA in Windows 95, using Word 97 and Excel 97 formats, on 1.44 MB floppy disks.

All maps and drawings to be submitted will be in a form which can be easily reproduced. All photos presented in the reports will also be submitted in one original for eventual reproduction purpose.

8. OVERALL SCHEDULE FOR SURVEY WORKS

The overall schedule proposed is depicted on the following page

OVERALL SCHEDULE FOR ENVIRONMENTAL ASSESSMENT SURVEYS



ANNEX 1

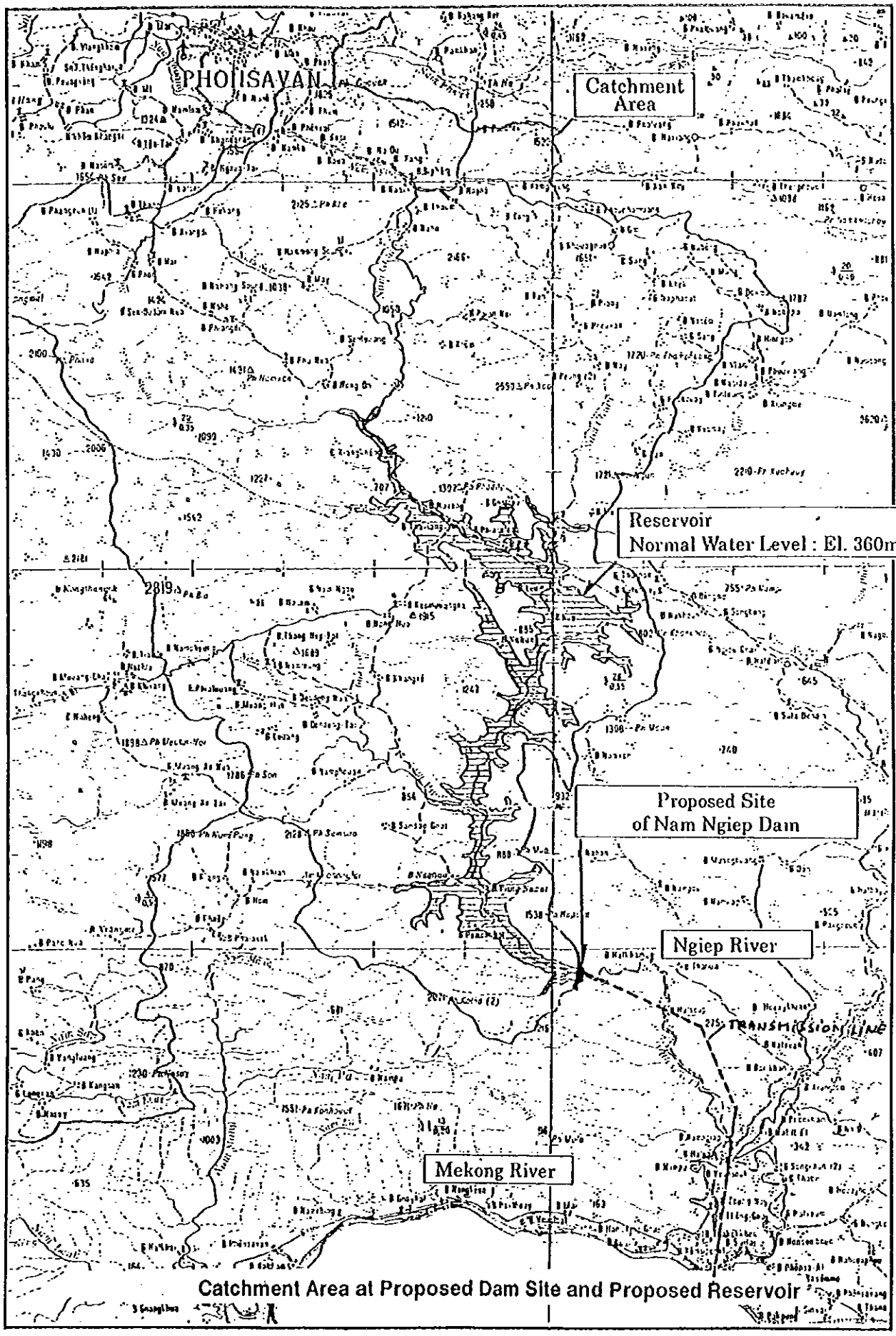
MAIN CHARACTERISTICS OF THE PROJECT

PROJECT FEATURES OF NAM NGIEP-I HYDROELECTRIC POWER PROJCT

Present Power Market	
Hydropower potential in Laos:	18,000 MW
Present total installed capacity in Laos:	202 MW (as of 1998)
Hydropower:	Nam Ngum 150 MW plus others
Diesel power:	23 MW
Others	3 MW
Annual energy consumption	
In 1995 (actual):	337GWh
In 2005 (forecast):	214 MW, 818 GWh
In 2010 (forecast):	329 MW,1,213 GWh
In 2015 (forecast):	506 MW,1,783 GWh
Earning from sales of power to Thailand	
In 1994 (actual):	29 million US$
In 1995 (actual):	24 million US$
Export power tariff to Thailand	Unit: cent/kWh for Nam Ngum updated
Peak 3hrs:	5.80 (?)
Partial peak 10.5 Hrs:	3.80 (?)
Off peak 10.5 hrs:	3.00 (?)
Flat rate tariff (for 24-hrs)	4.30 (?)
Basin Conditions	
Length of Nam Ngiep river	160 km long
Total catchment area of Nam Ngietp river	4,510 km^2
Catchment area at dam site	3,700 m^2
Annual average basin rainfall	2,960 mm (SGR), 3,912.5 mm (LMR)
Annual mean runoff	210 m^3/s (SGR), 149 m^3/s 87-93 (LMR)
Average runoff coefficient	0.59 to 0.60
Recorded maximum discharge	1,640 m^3/s
Recorded minimum discharge	<20 m^3/s (SGR), 15.4 m^3/s (LMR)
Probable maximum flood	15,900 m^3/s (SG)
Mean annual sediment flow	374 t/km^2/year (SGR)
Seismic activity over 20-years	Magnitude of less than 5, practically nil
Dam and Reservoir for H=185M	
Reservoir	
Reservoir area	160 km^2
Gross reservoir capacity	7,200 million m^3
Effective storage capacity	4,000 million m^3
Full supply level:	EL.360.0 m
Minimum operation level:	EL.330.0 m
Spillway crest level:	EL.346.5 m
Dam	
Location of dam site	18°39' N and 103°30' E
Geology at dam site	conglomerates, sandstones with mudstones of Jurassic and Cretaceous (Secondary)
Faults	no active faults were known
Dam crest level	EL.365.0m
Dam height	185m
Dam volume	13.9 million m^3
Power Generation	
Gross head	180.0 m
Tail water level	EL.188.4m to EL.183.4m
Head loss in power conduit	1.1m at 340 m^3/s
Rated capacity	440 MW
Maximum discharge	340 m^3/s
Station losses	2%

ANNEX 2

PROJECT LOCATION MAP



Catchment Area at Proposed Dam Site and Proposed Reservoir

5. CONTRACT ON FIELD INVESTIGATION BY SUB-CONTRACTOR

5.5 MINUTES OF CONTRACT DISCUSSION (SECTION 7)

MEMORANDUM OF MEETING

Title : First Contract Discussion Meeting for EIA Survey

Date : November 30,1998, 9:20-10:50

Place : HPO's Meeting Room

Participants of Study Team :

1. Mr. I. Araki : Team Leader
2. Mr. H. Ikeda : Deputy Team Leader
3. Mr. B. Yon : Natural Environmentalist
4. Mr. T.Ragsdale : Social Environmentalist

Participants of STS Consultants & RMR :

1. Mr. Choung Phanrajsavong : Chairman
2. Mr. Khamthan Vathanetham : Fishery Biologist
3. Mr. Choulamany Xaypladeth : Fishery Economist
4. Mr. Kongpheng Bouakhamvongsa : Fishery Taxonomist
5. Mr. Phoumy Soukphilanouvong : Socio-Economist
6. Mr. Liko Solangkoun : Socio Economist
7. Mr. Murray Watson : Ecologist RMR
8. Mr. Sean Watson : Biologist RMR

No.	Subject	Description	Action
1.	Contract	Mr. Araki remind that 2 contracts will be signed for periods before and after 31 March 99 (end of JICA fiscal year). 1st Contract will be signed between Study Team and STS Consultants on December 1, 1998, if the Contract Discussion would be finalized successfully.	S/Team, STS
2.	Water Quality	Necessary to revise schedule and cost for 4 sampling periods in 4 sites. Proposed monitoring is not required. 1 sampling every 3 months starting late Dec.'98. Consultant is requested to submit a method statement on sampling procedures and organization	STS
3.	Aquatic Ecology & Fisheries	• Fish sampling to be transferred into the Habitats/Ecology working Group. • Mr.Khamthan is the best profile to be in charge of fish sampling. • The Consultant is requested to organize an alert network in 3 villages of the downstream area for the occurrence of any fish migration observed from May to August. • Dry season fish sampling to be organized jointly with habitats study. • Additional fish sampling to organize in wet season (July or August). • Fish survey report should include photo catalog of all species identified. • Fishery survey to be organized within the socio-economic survey. • Consultant is required to produce a method statement for the fisheries activities.	STS
4.	Wildlife, habitats & land use	Studies in reservoir area to be done up to EL.380 m.	-
5.	Socio-Economic survey	• Study Team available to discuss on questionnaire during week 30/11-4/12. • Consultant is requested to organise survey in upper and lower reservoir with same team. • Downstream survey can be postponed to April 1999. • For D/S area, TOR and proposal underestimate villages number (6 instead of 16). Number of questionnaire in this area to be adjusted according to budget availability. • Who will analyze the data resulting from survey on Consultant side?	STS

No. Subject	Description	Action
6. General Issues	• Contract with sub-contractor (RMR) to be attached to contract between STS and Nippon Koei. • Consultant to discuss with Sub-contractor to find acceptable delays for payment of sub-contracted services. • Consultant to prepare a manning schedule for each participant to the study. • Consultant to ensure availability of staff during study.	STS, RMR
7. Site Inspection	Consultant is invited to join Study Team on a trip to the Sysomboun Special District and the Thavieng area from 7 to 11/12.	S/Team, STS
8. Kick-off Meeting	The kick-off meeting for the Environmental Assessment Survey will be held on December 4, 1998.	S/Team, STS
9. Contract Overall Schedule	After discussion, STS shall prepare the revised actual overall work schedule. This schedule shall prevail that attached with TST's proposal.	-
10. Contract Price Schedule	The Contract Price for the 1st one shall be US$86,550 as same as the proposal. However, price schedule (allotment) shall be revised so as to conform to the above overall schedule as per attached.	-

6. JICA COUNTERPARETS TRAINING

Project	: The Nam Ngiep-I Hydroelectric Power Project (1st Year)
Trainee	: Mr.Chansaveng BOUNGNONG, Male , 30 Years Old
Position	: Lao People's Democratic Republic(Lao PDR),Ministry of Industry and Handicrafts(MIH) Department of Electricity, Hydropower Project Office(HPO)
Period	: March 29 to April 23, 1999 for 26 days

No.	Date		Lecture	Agency	Trip	Lodging
1	3/29	M	Leave Vientiane BKK	—	VTE→BKK	Bangkok
2	3/30	T	Arrival in Tokyo	—	BKK→Tokyo	Tokyo
3	3/31	W	JICA Brief Orientation	JICA(TIC)	—	〃
4	4/1	T	General Orientation (Lecture of ODA)	〃	—	〃
5	4/2	F	〃	〃	—	〃
6	4/3	S	Morning Tokyo City Tour	〃	Free in Afternoon	〃
7	4/4	S	Holiday	—	Free all day	〃
8	4/5	M	Lecture at NK (1)	NK	—	〃
9	4/6	T	NK Central Institute	〃	Tokyo⇔Ushiku	〃
10	4/7	W	NK Hydro-Factory	NK/Yokohama	Tokyo⇔Tsunashima	〃
11	4/8	T	Trip to Kochi/Sukumo	—	Tokyo→Kochi→Sukumo	Sukumo
12	4/9	F	Site Visit : Sakamoto Dam	Dam Office	Sukumo/Dam→Kochi	Kochi
13	4/10	S	Site Visit : Hon-shi Over	NK	Kochi→Over Bridge→Osaka	Osaka
14	4/11	S	Kyoto City Tour	—	Osaka→Kyoto→Tokyo	Tokyo
15	4/12	M	Lecture at NK (1)	NK	—	〃
16	4/13	T	Trip to Asahikawa	—	Tokyo→Asahikawa	Asahikawa
17	4/14	W	Site Visit : Chuubetsu Dam	Dam Office	—	〃
18	4/15	T	Site Visit : Takisato Dam	〃	Asahikawa→Ashibetsu→Dam→ Sapporo	Sapporo
19	4/16	F	Site Visit : Tappi Wind Park	—	Sapporo→Hakodate→Tappi→ Kanita→Aomori	Aomori
20	4/17	S	Trip to Tokyo	—	Aomori→Tokyo	Tokyo
21	4/18	S	Holiday	—	Free	〃
22	4/19	M	Site Visit : Miyagase Dam	Dam Office	Tokyo⇔Honnatsugi	〃
23	4/20	T	Reporting by Trainee	NK	—	〃
24	4/21	W	Evaluation Meeting	JICA(TIC)	—	〃
25	4/22	T	Leave Tokyo via Bangkok	—	TYO→BKK	Bangkok
26	4/23	F	Arrival in Vientiane	—	BKK→VTE	—

Date	Time	Programme	Subject	Lecturer/Attendance
April 5 (Mon)	10:00 - 10:30	Introduction	Lectures & Site Trips	Messrs. Araki & Hirata
	10:30 - 11:30	Lecture (1)	Environmental Issues (1) < General/Approach of EIA>	Mr. Iwai
	11:30 - 11:50	Discussion	-	-
	11:50 - 13:00	Lunch	-	Mr. Hirata
	13:00 - 14:00	Lecture (2)	Environmental Issues (2) <Dam View Design>	Mr. Araki
	14:00 - 14:30	Discussion	-	-
	14:30 - 15:00	Coffee Break	-	Mr. Hirata
	15:00 - 16:00	Lecture (3)	Dam Construction <Dam Structure of CFRD>	Mr. Ikeda
	16:00 - 16:30	Discussion	-	-
April 12 (Mon)	10:00 - 11:30	Lecture (4)	Power Development <Hydropower in Japan>	Mr. Nonaka
	11:30 - 11:50	Discussion	-	-
	11:50 - 13:00	Lunch	-	Mr. Hirata
	13:00 - 14:00	Lecture (5)	Environmental Issues (4) <Resettlements>	Mr. Iwai
	14:00 - 14:30	Discussion	-	-
	14:30 - 15:00	Coffee Break	-	Mr. Hirata
	15:00 - 16:00	Lecture (6)	Study of Nam Ngiep-1 HEPP <Draft Interim Repot>	Messrs. Araki & Ikeda
	16:00 - 16:30	Discussion	-	-
April 20 (Tue)	10:00 - 10:30	Guidance	Preparation of Training Report	Messrs. Araki & Hirata
	10:30 - 11:50	Reporting (1)	-	-
	11:50 - 13:00	Lunch	-	Mr. Hirata
	13:00 - 14:30	Reporting (2)	-	-
	14:30 - 15:00	Coffee Break	-	Mr. Hirata
	15:00 - 15:30	Review (1)	Review of Report	Messrs. Araki & Hirata
	15:30 - 16:30	Reporting (3)	-	-
	16:30 - 17:00	Review (2)	Finalization of Report	Messrs. Araki & Hirata

Project	: The Nam Ngiep-I Hydroelectric Power Project (2nd Year)
Trainee	: Mr. Seumkham THOUMMAVONGSA
Position	: Lao People's Democratic Republic(Lao PDR), Ministry of Industry and Handicrafts(MIH) Department of Electricity, Hydropower Project Office (HPO)
Period	: October 23, 1999(Sat.)~November14, 1999(Fri.)

No.	Date		Lecture	Agency	Trip	Lodging
1	10/23	S	Departure from Laos	-	Vientiane-Bangkok	Bangkok
2	10/24	S	Arrival in Tokyo	-	Bangkok-Tokyo	Tokyo
3	10/25	M	JICA(Briefing Session/Programme Orientation)	JICA(TIC)	-	ditto
4	10/26	T	Lecture(1)	Nippon Koei	-	ditto
5	10/27	W	Obs.: Central Research Institute of Electric Power Industry, CIEPI	CIEPI	-	ditto
6	10/28	T	Lecture(2)/Transfering to Nagoya	Nippon Koei	Tokyo-[train]-Nagoya	Nagoya
7	10/29	F	Obs.: Fujimae-higata tide land	Fujimae-higata tide land	Nagoya-[train]-Tokyo	Tokyo
8	10/30	S	General Orientation	-	-	Ditto
9	10/31	S	Holiday	-	Free	Ditto
10	11/1	M	Obs.: Kannagawa Pumped Storage Power Plant, KPSPP(Upper: rock-fill dam, Lower: concrete gravity dam, under const.: TEPCO)	KPSPP	Tokyo-[train]-Sakudaira-Kannnagawa Dam	Sakudaira
11	11/2	T	Obs.: KPSPP	KPSPP	Kannagawa Dam-Takasaki-[train]-Tokyo	Tokyo
12	11/3	W	Holiday	-	Free	Ditto
13	11/4	T	General Orientation	JICA(TIC)	-	Ditto
14	11/5	F	General Orientation	JICA(TIC)	-	Ditto
15	11/6	S	Holiday	-	Free	Ditto
16	11/7	S	Holiday	-	Free	Ditto
17	11/8	M	Obs.: Miyagase Dam(concrete gravity dam /F,N,W,P/ construction done: Ministry of Construction)	Kanagawa Pref., Miyagase Dam	Sinjuku-[train]-Honatsugi-[bus]-Miyagase	Ditto
18	11/9	T	Obs.: NK Research and Development Center	NK R&D Center	Tokyo-[train]-Ushiku-Tokyo	Ditto
19	11/10	W	Lecture(3)	Nippon Koei	-	Ditto
20	11/11	T	Transfering: Tokyo-[train]-Toyama-Unazuki Onsen	-	Tokyo-[train or airplane]-Toyama	Unazuki Onsen
21	11/12	F	Obs.: Unazuki Dam(concrete gravity dam /F,W,P/ under construction: Ministry of Construction	Unazuki Dam	Toyama-[train]-Unazuki Onsen-[walk]-Unazuki Dam-Toyama	Toyama
22	11/13	S	Transfering: Toyama-[train]-Kyoto	-	Toyama-[train]-Kyoto	Kyoto
23	11/14	S	Holiday	-	Free	Ditto
24	11/15	M	Obs.: Hiyoshi Dam(concrete gravity dam /F,N,P/ construction done: Water Resources Development Public Corporation	Hiyoshi Dam	Toyama-[train]-Sonobe-[taxi]-Hiyoshi Dam-[train]-Kyoto	Ditto
25	11/16	T	Transfering: Kyoto-[train]-Tokyo	-	Kyoto-[train]-Tokyo	Tokyo
26	11/17	W	Morning session: Report Making, Question and Answer Afternoon session: Evaluation Meeting	Nippon Koei	-	Ditto
27	11/18	T	Departure from Tokyo	JICA (TIC)	Tokyo-Bangkok	Bangkok
28	11/19	F	Arrival in Laos	JICA (TIC)	Bangkok-Vientiane	-

Date	Time	Programme	Subject	Lecturer/Attendance
October 26 (Tue)	10:00 - 10:30	Introduction	Lectures & Site Trips	Messrs. Hino
3rd Floor Conference Room	10:30 - 11:30	Lecture (1)	Environmental Issues (1) < General/Approach of EIA >	Mr. Inoue
	11:30 - 11:50	Discussion	-	-
	11:50 - 13:00	Lunch	-	
	13:00 - 14:00	Lecture (2)	Environmental Issues (2) < Watershed Management >	Mr. Arai
	14:00 - 14:30	Discussion	-	-
	14:30 - 15:00	Coffee Break	-	
	15:00 - 16:00	Lecture (3)	Environmental Issues (3) <River Improvement & Social Environmental>	Ms. Totsuka
	16:00 - 16:30	Discussion	-	-
October 28 (Thurs) 3rd Floor Conference Room	10:00 - 11:30	Lecture (4)	Power Development (1) <Dam Structure of CFRD>	Mr. Ikeda
	11:30 - 11:50	Discussion	-	-
	11:50 - 13:00	Lunch	-	
November 10 (Wed)	10:00 - 11:20	Lecture (5)	Power Development (2) <Hydropower in Japan>	Mr. Nonaka
9th Floor Conference Room	11:20 - 11:50	Discussion	-	-
	11:50 - 13:00	Lunch	-	
	13:00 - 14:00	Lecture (6)	Environmental Issues (4) <Dam View Design>	Mr. Araki
	14:00 - 14:30	Discussion	-	-
	14:30 - 15:00	Coffee Break	-	
	15:00 - 16:00	Lecture (7)	Power Development (3) <Hydropower Planning>	Mr. Hino
	16:00 - 16:30	Discussion	-	-

7. REPORT ON GENDER ISSUES

FEASIBILITY STUDY
ON
THE NAM NGIEP-I HYDROELECTRIC POWER PROJECT
IN
LAO PEOPLE'S DEMOCRATIC REPUBLIC

Report
on
Gender Issues

prepared by

Ms. Kesone SAYASANE	Gender Consultant
Ms. Kham One PHETDAOHUEANG	LWU Saysomboun Special Zone
Mr. Phonekeo	Deputy Chief & Security Chief, Thavieng Area

Contents

7.1 Summary

(1) This report provides the result of an impact assessment of gender issues study in Thaviang Focal Zone of project site.

It is noted that specific data on women's participation and their role in agriculture are limited because of the short time duration of this study did not allow for extensive primary data gathering. Except for a brief questionnaire among a sample of 9 villages 2 households each village, findings are based on available secondary sources and interviews with key informants.

(2) Women have an important role in farming system in Lao P.D.R. Besides their household tasks there is a high participation of women in farm work. They are engaged in almost equal numbers as men.

In addition women are contributing to the family's livelihood through vegetable growing, animal production (mainly poultry, gathering of available natural products and craft production). The products of these activities are used for their household consumption and/or sold thus adding to a regular cash inflow to meet daily family expenses.

(3) Rural women in Lao P.D.R have diverse sources of livelihood and income. Typically Lao women's work activity each day is spread over several different, but vital tasks :

- Raising pigs and small livestock such as chickens, ducks, turkeys etc.,
- Weaving,
- Sale of vegetables and herbs,
- In some villages, is earned through the sale of surplus rice, and
- Many women distil the traditional Lao rice whisky and sell it as a source of income locally often being their second major income.

Gender as a Concept

The concept of gender should be understood as the social relationship between women and men. The relation as expressed in social roles is not decided by nature and differs between cultures. Above all the roles can be changed and are changing over time. This is different from the biological definition of women and men which normally does not change.

Women Benefiting from the Project

If gender considerations deal with both women and men, why is the role of women often more emphasized than that of the men ?.

In the society of Laos today, if women are not emphasized like the Nam Ngiep-I Hydroelectric Power Project, women will be left out of the benefit produced.

In this case the benefits are training, work/employment, raised income, vegetables, fish as saving account/security, increased decision making role. Also credit taking leads to management at different levels and to decision making.

Women's Participation

The participants witnessed the following experience when women are involved :

- Higher repayment rate credit taking,
- Women take more care for trees and children, and
- Women are better in book-keeping; they keep track of moneyand figures
- Women have a strong hold at the grass root level,
- Women have experience from that are good at marketing,
- Women study more attentively (training and extension)

Terms of Reference

Gender Consultant will be contracted for a period of 15 days in all under conditions as specified in special service agreement between gender consultant and JICA Nam Ngiep-I HEPP Team Leader Mr. Araki.

Gender Consultant carry out a field study of gender issues and organize the local people to participate in national and site workshop especially women.

7.2 Recommendations

- Special attention fields for support to female farmers are :
  - guidance informal credit operations
  - high quality crop cultivation for the market
  - business communication, marketing operations and marketing research.
- Support on irrigation system and from irrigation water for domestic use including vegetable gardens, fish ponds and livestocks as well as new crops which could be used as raw materials for female operated cottage industry e.g. mulberry cultivation for silk production.
- Need the roads access to village
- with regard to meetings and training it is recommended to facilitate and stimulate participation of all women and men actually involved in agriculture.
- Raise awareness among field staff about gender aspects of their work

- Needs of various technical training
- Need support for health, education and water sanitation
- Recruiting technical women in project site
- Supporting for developing income generating activities
- Funds for upland sustainable agriculture and livestock programs.
- Need gender development training awareness
- Need rural development project
- Need institutional strengthening for rural development

7.3 Introduction

The rationale for considering gender aspects in the Nam Ngiep-I Hydroelectric Power Project is twofold when both men and women are involved it will benefit the project. It is also a question of equity and human rights; whenever input is provided by men and women, the benefits should be given according to the provided input: increased income, improved skills and right to decision making. This is the key to avoid adverse effects on both men and women and their livelihood.

7.4 Methodology

(1) Timing of the Study

The gender study comprised two weeks, data collection from project site at Thaviang area, the study took place in from November 16 to December 15, 1999 and was carried out by Ms. Kesone Sayasane, gender specialist consultant, assisted by Mr. Phonekeo Deputy Chief of Thaviang Committee and also security chief, Mrs. Kham One Phetdaohueang LWU at Saysomboune special zone, used interpreter sometime by Hmong villager.

(2) Research Methodology

Given the research task the following methodology was applied. Key informants in the Province and District Administration for the area as well as senior staff were used as additional sources of information.

- At village, meeting with village committee and village farmers group women and men,
- Interviews individual, groups, 20 to 25 farmers group women and men, were made for probing and cross-checking on information obtained in group interviews. As the timing of the study coincided with the harvesting season in the area. The villages were notified in advance, and attendance was good.
- Used transect walk, observations, informal discussion

- Interpreter Hmong Language / Khmu language (Lao Theung) necessary for women.

7.5 Issues with Gender Implications

In the following issues will be presented with special relevance for the Nam Ngiep-I Hydroelectric Power Project.

(1) Demography

The relation high birth rate means that a woman get a child almost every second year. Lao PDR is one of the few countries in Asia where the national population policy has encouraged a population increase. According to the national census in 1985, the growth rate is 2.9% per year. With this rate the population will double each 30 years. Children under 15%, 45% of the population.

Family planning with birth spacing and other methods is a relatively new activity. The family with 6-7 children in the most common.

(2) Differentiation of Social Roles

There is no difference in attitude among the lowland Lao groups and some mid-land groups towards giving birth to sons or daughters. This is unlike the Hmong and some other up-land groups who have a strong preference for a son. This phenomena is related to kinship and inheritance rules where the daughters in the lowlands are likely to share the same rights with their brothers while the sons in the upper regions are a security for the survival of the male line. Furthermore, when the youngest daughters in the lowland marry they stay in the house of their parents and take over the land. The implications of this on the matrilocality on land tenure certificates are described below.

(3) Gender Division of Labor

In agriculture, women are mainly responsible for transplanting, weeding and the transport of paddy to threshing areas. Clearing, harvesting and hand threshing activities are shared by men and women. Men are mainly responsible for land preparation and ploughing frequent work is water carrying and fuel wood gathering. In many areas women take care of the family clothing from cotton crop to final suit which entails spinning, weaving and cloth making.

When it comes to marketing, especially the lowland women are the sellers and buyers of the household products. Some professional traders are women and village

entrepreneurs are frequently women.

In the lowland and midland women keep the family purse. A way for her to save the money for the future is to keep the household treasury in form of jewellery in stead of cash.

Although women are hard working farmers and responsible for economic matters this is not reflected in the responding influence management and in decision making opportunities. This is mainly to do with the traditional division of responsibilities. Men represent the household at the village level and take part in decision making bodies such as administrative, professional and political organizations at different levels.

There is evidence to suggest that when new technologies are introduced such as tractors, fertilizers, rice mill etc. men not only take over the use of the new technology but also decide how, when and for what it should be used.

Women seem to have a more subtle, indirect influence on decision making within the household.

Women earning income from a activities outside the household, usually keep and decide upon the use of it. Common expenditures are contribution to the household like food, schoolbooks for the children, repair of the house and wedding costs.

Women are generally not considering time consuming work as a constraint as long as their income is increasing. However, evidently time-saving technologies are welcomed like rice mills, water pumps etc.

Men generally do what is regarded heavy work such as the ploughing, harrowing, prepare rice seed beds and clear new fields. They are boat builders, carpenters, masons and metal workers.

It is said that women's workload is four times bigger than the men. When inviting women for new tasks it is often questioned (by men) whether they will have time perform more work. In reality many of the household tasks can easily done by men. Experience have shown that when women leave to work outside the home, other persons in the household, often their husbands, take over.

(4) Social Roles and Decision Making

Although women are hard working farmers and responsible for economic matters is not reflected in the corresponding influence management and in-decision making opportunities. This is mainly to do with the traditional division of responsibilities. Men represent the household at the village level and take part in decision making bodies such as administrative, professional and political organizations at different levels. Women seem to have a more subtle, indirect influence on decision making within the household.

This is especially the case with Lao-loum women. Their status in society is acknowledged and their views are considered. In group interviews women are not shy to speak out and provide an account of their experiences and opinions. Their status is related to the fact that Lao-loum women inherit their parent's house and land.

(5) Equal Rights

The Government policies promote equal participation of women and men in all spheres. Women's representation is however very low in decision making activities with the Government. Within 59 member National Assembly, there are only 6 females.

The country's new constitution, enacted in August 1991, ensures equal rights for both sexes in the political, economic, cultural, social fields, and family affairs. The role of the Lao Women's Union (LWU) is also recognized in the constitution with an information gathering and service delivery role. Among the 21 other laws which have been enacted since January 1992, some are related to gender issues. Among these are Property Law, Inheritance Law, Insurance Law, Labour Law, Family Law and Election Law.

The LWU has over 600,000 members. This means that about 50% of all Lao females, 17 years and over are LWU members (Country Gender Analysis 1995). Any woman can apply for membership. After doing so, they must be nominated to the LWU by village and district women. The Union has forty years of experience in political mobilization. During the past ten years it has added socio-economic development to its activities particularly in rural areas. Training is an extensive part to mobilize both men and women in improving the livelihood system. According to one evaluation (Chagnon, 1994) "the LWU is the Lao institution which is penetrating into the rural areas better than any other. " With the presence of the Union down to the village level it has both a local knowledge and a mobilizing experience that is valuable when inviting women to take part in a project like the Nam Ngiep Hydroelectric Power Project.

Other organizations for social mobilization are the Lao Front for National Construction,

Neo Lao Sang Sat (also sometimes translated as the Ethnic Organization or the Fatherland front), the Lao People's Revolutionary Youth Organization, the Lao Trade Union Federation and religious organizations dominated by the Buddhists.

(6) Land Tenure

In traditional Lao there was an abundance of land with arrangements and exchange systems between the farmers. Except in the lowlands, land use rights were not clearly defined. Speculation came with the irrigated lowland rice fields being reinforced by the New Economic Mechanism which acknowledges private usufruct rights of land. With the increasing economic value of both agricultural and forest land there is a need for land tenure systems, and for protection of forests and environment.

(7) Main Activities and Major Achievements

Gender consultant looked at the three main issues to assess the impact on women.

a) Male and female farmers role in farming system
b) Female participation in farm work
c) Problems and needs of village farmers women and men.

Limited of time and village people were quite busy with harvesting and weeding.

The results of gender study in Saysomboun special zone and Thaviang area was quite successful.

The local population, officials as well as administrative committees at all levels get a better perception on gender and role.
The team have been excellent cooperation with local leaders and community as a whole. This helps people in the community understand and participate in the meetings.

The Team used some participatory techniques which people enjoyed such as many short stories and case studies were used during the meetings in order to encourage discussion and participation.

Informal discussion, interviews individual, women farmers group.

(8) Main Constraints

- No access road
- Transportation and Communications very difficult
- Low level of institutional capacity

- High incidence of health and water sanitation problems
- There is only 2 dispensaries in Thaviang area / lack of resources persons (e.g. nurse, medical doctor medicine, equipment).
- Lack of educated and technical persons
- The main diseases found in Thaviang area are malaria, dysentery and respiratory infections.
- Lack of extension workers women and men
- Lack of women participation in rural area.

7.6 Public Consultation

(1) Public Participation

The study comprised one week of field work and three days of complementary information collection from the project staff and local staff, discussion with Lao women Union Central in Vientiane.

Discussion with representative of LWU provincial, district authorities and village level, senior district and staffs of Thaviang area.

We brief them on general objective of the project. We point to the urgent situation in the village. We talk on cooperation between the project and local committies.

The local communities are very interested to conduct us study in the villages to explore what can be done in the field.

- At the household level sitting in the main room, on the veranda.
- When we go to each village, village farmers women and men tell us who does what ? from morning to evening daily work.
- We have meeting one hour with separate group of peoples.
- Village people enjoyed discussion on women issues.
- Women village said that first time for them to see gender specialist visits their village and discussed with both women and men.

(2) People's Expectations

1. Strong hopes of local people is to bring electricity to the community
2. Improving quality of life in rural area
3. High needs of transportation and communication
4. Vocational training with various technical aimed to the ethnic groups and women.
5. Gender and Development program to rural community ethnic groups.

(3) Gender Consideration in Nam Ngiep-I HEPP Strategy

A strategy on the national level has to consider the biological and ethnic diversity of livelihood systems. To ensure this diversity a bottom-up and participatory approach must permeate all activities. Thus the village should be the centre of the activities and take a responsibility for surveys and monitoring and evaluation. At this level women are should naturally take part.

Normally, existing institutions should be used in a changing process. In Lao P.D.R there are a well spread network of political, professional, social and administrative organizations, down to the village level. Women are found in all these institutions but in a varied degree except for the Women's Union evidently.

Planning is likely to be most successful when it starts at the village level with the participation of farmers both women and men. This is to say that the planning process should start with the village where all knowledge and experience is concentrated with regard to possibilities and constraints of hydropower activities and how these could fit into the existing farming and livelihood systems. Inputs from district and provincial levels will be necessary to favour a mutual learning process.

(4) General Workshop in Vientiane

The JICA Study Team was held a meeting from 3 to 8 December 1999 with Environmental Assessment Committee (EAC) on the progress of final report.

During the meeting, the EAC Committee valuable comments were provided for the JICA Study Team to improve the final report 15 participants/2 women, representatives from JICA Tokyo, Consultants and gender consultant.

General workshop for the final report of the feasibility study on Nam Ngiep I Hydroelectric was held in Vientiane, during 9-11 December 110 participants / 8 women which representative from JICA Tokyo / Laos, Mekong River Commission, Authorities from provincial district and village levels, different ministries attended the workshop. The opening workshop was presided over by Mr. Somboune Ratsasombath Vice Minister of Industrial Ministry.

The workshop underlined the importance issues of creating a consolidated basis for further progress in understanding and promoting the next deepest study.

The key note presentation was on Environment and Social resettlement impacts by Feasibility Study Team.

(5) Site Workshops in 3 Projects Site

1. in Thavieng rural development focal zone
2. in Sobjourk village Home district
3. in Somseun village Bolikhan district.

It is a challenge for the Nam Ngiep-I Hydroelectric Power Project to break through the traditional public participation and consultation with men and women.

It was found that the workshop in B.Dong total relatively 257 people higher percentage 127 of women in Thaviang.

125 of women in B.Sopyouk and in B.Someseun total 54/26 were women attended in the site workshop as compared to previous site workshop, now more women participation.

The indicates that reaching women for meeting consultation and agriculture activities is possible. When it takes place in the village.

Several interventions are recomments such as stimulation of women participation in the project meeting.

The are very much concern on the impact of environmental and social/resettlement. There are strong comments and strength opinion from local community both women and men.

Women from Thaviang proposed two points.

1. Prefered FSL.320m. She wants to safe Thaviang area because Thaviang is rural development local zone, good for agriculture land production. There is also safe forty thousand people survive.
2. If no choice, she agreed with project for FSL.360m but the Project should compensate appropriate way and be fair and well cooperation with local organization, ethnic minority and women.

Comments from Hmong Women at B.Sopyouk village very much.

1. She don't want to have project
2. If can not avoided she proposed for the deepest study. The Study Team should

well consultation with local community women and men how to solve the problems.

Especially bring better life, built school, hospital, medicine, education, health care, irrigation system, vocational training for ethnic group and women.

7.7 Appendix

(1) Gender Consultant Schedule

10 November	:	Meeting with Project staff project information
11 November	:	Meeting with Central Leader LWU in Vientiane Information network with LWU in Saysomboun and Thaviang.
12 November	:	Preparing Questionnaires for fieldwork.
16 November	:	Travel to Saysomboun. Travel from Saysomboun to Thaviang overnight in Thaviang.
17 November	:	Meeting on scheduling with Thaviang staff informed discussion travelled for B.Dong to B.Pou, B.Hatsaikham overnight continuation working, at village meeting.
18 November	:	Returned to B.Dong. Travel to B.Phiangta, B.Na Hong. Village meeting. Short visit in field, transect walk and interviews.
19 November	:	Travel to B.Viengthong and B.Nasai discussion with women group men group. Discussions on gender issues in the village.
20 November	:	Travel to B.Naxay and B.Phonheng, B.Phonhome, overnight interviews farmers group.
21 November	:	Meeting with governor district, Thaviang committee report back to the Team. Planning for next workshop in VT and site workshop.
22 November	:	Return to Saysomboun de-briefing meeting with LWU at Saysomboun and provincial authorities.
23 November	:	Return to Vientiane.
30 Nov.- 2 Dec.	:	Gender consultant brainstorming on report contents. Report writing
3 December	:	Meeting with EAC committee and briefing presentation of study on the impact of the environment and social study.
6 December	:	Continuation presentation of Study Team. Presentation on gender issues by gender consultant.
7 December	:	Working paper gender consultant provided draft report on gender issues.
8 December	:	Finalized the final report.

9-11 December : Attending general workshop for final report of feasibility on Nam Ngiep Hydroelectric in Vientiane 3 days 9-11 December.

- Facilitator
- Collecting a lot of comments from participants and other ministries, authorities provincial district and village level.

13 December : Travel to Thaviang area. Site workshop 13 villages attended workshop.

14 December : Travel to B.Sopyouk, Hom District is Hmong community ethnic group 4 villages attended in the site workshop.

15 December : Travel to B.Somseun, Bolikhamsay District 12 villages attended in the site workshop. Back to Vientiane.

16-17 December : Writing Report.

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(3) List of Key Information and Interviews

Village	Name	Position
B.Pou	Mr. Outhien	Village Security Chief
	Mr. Bounthai	Village Chief
	Mrs. Bounmi	LWU
B.Hatsamkhone	Mr. Bounhom	Village head
	Mrs. Seng	LWU head
B.Phengta	Mr. Tanali	Village head
	Mrs. Thanh	LWU head
B.Nahoong	Mr. Nouansy	Village head
	Mrs. Bounta	LWU Chief
B.Dong	Mr. Khammanh	Village head
	Mrs. Amphone	LWU head
B.Viengthong	Mr. Bouali	Village head
	Mrs. Phone	LWU
B.Naxai	Mr. Bounsouk	Village head
	Mrs.Vilayphone	LWU head
	Mr. Vet	Youth Org.
B.Nasong	Mr.Thitphomma	Village Chief
	Mrs. Vankham	LWU head