

In addition to the stream of direct revenues to the government from the project, and the stream of incremental government expenditures directly related to the project, such as infrastructure expenditures, the macroeconomic analysis will take into account anticipated increases in tax revenues deriving from the project, and additional expenditures on such things as resettlement and long-term environmental protection. The analysis will highlight the extent to which such revenues and costs are covered within the project's budget, and if not they will be included within the estimates of impact over time on the national budget. The anticipated stream of debt-service payments on any government borrowing related to the project will be factored into the macroeconomic analysis of project impact as budgetary expenditures. Debt-service payments also will factor into the balance-of-payments accounting. It is anticipated that in addition to the information to be derived from the first two components of the Study, this task will require quite close co-ordination and exchange of information with responsible GOL authorities, including representatives of the Committee on Planning and Co-operation (CPC) and the Ministry of Finance (MOF).

Task 2: Assess government absorptive capacity. The second task of the macroeconomic analysis will be to assess the capacity of the central government to prioritize and direct net incremental revenues, assuming they are positive and substantial, toward activities designed to enhance sustainable economic development and contribute to poverty alleviation. This will involve a review of the government's Development Program and Public Investment Program, and of the Bank's Public Expenditure Review, as well as an assessment of the government's capacity to absorb and manage additional revenues effectively, including its co-ordination with regional authorities and entities. The Study also will examine the experience of other nations (e.g., Indonesia) in handling large increments in export revenue streams. As appropriate, the Study will offer guidance on principles and procedures that could be incorporated into government planning to enhance the contribution of the anticipated increase in revenues to achieving the government's development and poverty alleviation goals.

Close co-ordination with responsible GOL agencies and entities will be essential to completion of this task. Recommendations will be made, as appropriate, concerning the best use of the incremental revenues, institutional strengthening that may be needed to prioritize and utilize the revenues effectively (possibly financed by the use of the incremental revenues themselves), and policy reforms that would help the government to absorb and manage the incremental revenues effectively. One of the key questions is whether the GOL has the institutional capacity in place or planned to implement its undertakings in respect to environmental mitigation and protection, resettlement, and poverty alleviation. One of the aspects to be considered relates to the structure and incentives of the institutions that would carry out GOL undertakings. In particular, the LBII team will assess GOL institutional designs and undertakings in light of known best practices in the



use of economic instruments, including but not limited to fiscal instruments, charge systems, financial instruments, liability systems, property rights, and so on. The objective will be to assess what realistically can be done to increase the GOL's absorptive capacity over the next few years, in light of the experience of other countries.

Task 3: Analyze development implications of revenue stream. The third task under this component will be to analyze a number of aspects of the anticipated revenue stream deriving from the project in terms of development impact. For example, the anticipated long-term stream of incremental revenues could permit the partial funding of recurrent costs of critical investments such as health centers and schools, the initial investments in which could be financed by international institutions. This aspect will be examined, in addition to opportunities for new development projects financed directly from project revenues. The anticipated pattern of net revenues to the government over the life of the project also will be examined, in light of the trade-offs between receiving what may be a large windfall income now versus deferral of such income until it can be readily absorbed. In this respect, the Study will assess whether the expected flow is sufficient to bring substantial net benefits to Lao development efforts in the short-to-medium term. Recommendations will be made as appropriate to mitigate any potential risks that may be identified.

Task 4: Examine impact on external balances. The fourth task of the macroeconomic analysis will be to examine the impact of the project on external balances. The project is designed largely as an enclave, with most of the necessary goods and services imported in kind, producing a rising stream of foreign income to the Lao economy. Nonetheless, the project is bound to produce effects, both in capital flows and in trade flows, and consequently on the balance-of-payments. To the extent permitted by the data, the Study will analyze the likely economic impact of these effects in a consistent framework, and suggest policy changes to mitigate those which are potentially negative, as appropriate. There is also concern that the anticipated increase in net foreign exchange inflows attributable to the project will produce an appreciation of the exchange rate, thereby undermining the competitiveness of Lao exports in such sectors as manufacturing and agriculture — the "Dutch Disease" effect. The likelihood of serious problems arising along these lines, and their possible implications, will be examined carefully, taking into account experiences of other developing countries that have faced comparable situations. Measures that central banking authorities can take to limit (i.e., "sterilize") such impacts will be examined in light of realistic financial and exchange rate options in Laos. Close co-ordination with central government authorities, including CPC and MOF, as well as with central banking authorities, will be essential to completion of this task.



In addition, the Study will look at the desirability of establishing a Development Fund, to which the incremental revenues to the GOL would flow. On the one hand, constitution of such a Fund could help smooth the utilization of the resources for poverty alleviation, given near-term absorptive-capacity and institutional constraints to their effective use. And re-investment of power export revenues abroad would certainly help to sterilize the impact of windfall foreign exchange inflows on the Lao economy. On the other hand, given the fungibility of money, and in particular, the ability to borrow against security, such a Fund might offer little, if any, protection.

Task 5: Assess economic strategy. Given its size, and the commitment of resources that it entails, this project represents a large part of the export development strategy of the Lao PDR. To date, it appears that most studies have determined that the major potential for increased exports and sustained growth in the Lao economy over the medium-term derives either from timber exports or hydro-power exports. This project is noteworthy in that it takes full advantage of both resources. The Study will attempt to evaluate whether there are additional possibilities for export growth, or whether sustaining reasonable growth rates will depend largely on using the available natural resources to fund more broadly based growth. To the extent that data are available to do so, the Study will examine the economic alternatives to timber and power development, and derive implications for the opportunity costs to be considered in execution of the Lao development strategy.

(4) Overall Economic Analysis

This component will make an assessment of the contribution of the project to the Lao economy as a whole, taking into account both the micro- and macro-economic analyses. The overall assessment will be developed around a unifying framework, a figure explaining how the Project Evaluation, Microeconomic Analysis, Macroeconomic Analysis and Risk Analysis components relate to each other — as well as how they relate to parallel studies undertaken to inform the GOL and the World Bank about the proposed Nam Theun 2 project

The Overall Analysis component will draw upon findings from the other components of the Study identifying to whom the project's benefits and costs will accrue. One means to do so will be to compare and contrast the results of the Project Evaluation component in respect to estimation of ERRs from the project entity perspective vis-a-vis the Lao economy perspective. In addition, the Study's analysis of the GOL's absorptive and institutional capacity to implement its environmental, social and poverty alleviation undertakings will be highlighted.

Special attention will be given throughout the Study to evaluation of the extent to which the Nam



Theun 2 dam project will contribute to poverty alleviation in Laos. The Overall Economic Analysis will draw together the different strains of this analysis from each of the Economic Study's components and make an overall judgement about the potential for poverty alleviation. The Project Evaluation, for example, will estimate costs and benefits attributable to the Nam Theun 2 dam project and its indirect effects. The extent to which these should contribute to poverty alleviation will be carefully assessed. Equally as important as the estimates themselves, however, will be the sensitivity of the results to small changes in assumptions, such as when they are projected to occur. The importance to the assessment of discounting future values to the present will be highlighted in the discussion of poverty alleviation potential.

Similarly, the Real Sector (or Microeconomic) Analysis will make an assessment of the probable impacts of the project on sustainable development and poverty alleviation in the surrounding region, including through its impacts on relative prices; as well as the longer-term opportunities for regional development and poverty alleviation offered by the project and utilization of net revenues expected to derive directly or indirectly from it. This component also will examine the institutional capacities of the BPKP and provincial authorities, in relation to implementation of environmental and social impact mitigation measures, as well as regional development or poverty alleviation plans.

The Macroeconomic Analysis will project the net revenues accruing to the GOL attributable to the impacts of the Nam Theun 2 project, based on the results derived from the Project Evaluation and Microeconomic Analysis components of the Study. These net revenues may be expected to reduce poverty by speeding up the overall rate of economic growth, and the Macroeconomic Analysis will assess the degree to which economic growth is projected to increase as a result of the project. It is also the case that the level and composition of GOL expenditures may be affected by project implementation in ways that may be considered poverty alleviating. In this respect, the macroeconomic Analysis component will assess the capacity of the central government to prioritize and direct net incremental revenues, assuming they are positive and substantial, toward activities designed to enhance sustainable economic development and contribute to poverty alleviation. For example, the anticipated long-term stream of incremental revenues could permit the partial funding of critical investments such as health centers and schools, the initial investments in which could be financed by international institutions.

Finally, given its size, and the commitment of resources that it entails, the Risk Analysis component will examine the overall economic strategy entailed by the Nam Theun 2 dam project, both in the context of its reliance on using natural resources to fund more broadly-based growth, and the financial risks entailed by the size of the project in relation to the Lao economy. The extent to which the opportunities for economic growth and poverty alleviation deriving from the



Nam Theun 2 project outweigh such risks will be carefully assessed.

(5) Risk Analysis

Under this component the Study will examine the financial exposure risks to the Laotian government arising from the project, including any implications for Laos's future borrowing capacity. Attention will be paid to the structure of the financing package, including envisioned contributions to equity; the allocation of the revenue stream between the NTEC and the Lao government; government guarantees to the private lenders; and the government's financial exposure or responsibility in respect to possible project delays or cost overruns. The nature and anticipated contribution of the requested World Bank guarantee of government undertakings to the NTEC will be highlighted.

Task 1: Identify and assess government risk. The objective of the first task under the Risk Analysis component will be to identify and assess the nature of the financial risks undertaken by the government through its sponsorship of the Nam Theun 2 dam project. This comes in the context of the potential for World Bank to extend partial guarantees relating to Nam Theun 2 against the political risks of government interference on the project, government non-performance of obligations to the project and, possibly, war or civil disturbance. One of the first steps in the analysis will be to determine the nature and scope of the guarantee(s) contemplated by the Bank, in the context of the financing package currently under negotiation and the contractual agreements among the joint-venture team members.

Financial risks to the government can arise from unanticipated additional expenditures or reduced revenues, in any given year or over the life of the project. Unanticipated expenditures might be necessitated by project cost overruns; or from a delay in project completion which requires financing debt payments from export earnings rather than from project revenues. Lower revenues than anticipated might occur, for example, if the quantity and/or price per unit of electricity did not reach projected levels, either because of problems or delays in supply or a reduction in final demand.

Given debt-service obligations that would result from the GOL's borrowing for equity, and the possibility of calls on the partial risk guarantee(s) provided by the Bank, the Risk Analysis will determine what is the actual capacity of Laos to service such obligations. This assessment must begin with a review of the GOL's current borrowing (including levels of debt exposure, annual debt-service payments and contingent liabilities), from either commercial sources or the IMF, the World Bank, ADB or other multilateral or bilateral lenders. One of the questions to be examined



is whether there may be changes that can be recommended in the Nam Theun 2 financing plan that would make the GOL's potential burden more bearable. Although there may be advantages to the envisioned financial structure, for example, the back-loaded nature of the revenues anticipated to accrue to the government would make the construction phase the most vulnerable one in terms of any debt payment obligations that it might undertake. Inability to meet GOL debt obligations will entail derivative costs in terms of higher interest rates or inability to procure needed financing for other projects. On the other hand, the latter ten or twelve years will offer the least risk in the sense that projected revenues should clearly outweigh potential costs. During this phase, the main risk to be considered is that the project will still be facing a single purchaser who may be in a position to change the terms of sale.

Identification and analysis of potential risks to the government of the Lao PDR will require close co-operation with responsible central government authorities, including meetings with the government's legal and financial advisers, and access to relevant information about financial and institutional relationships; as well as meetings with NTEC representatives and financial sponsors, and EGAT representatives. Full access to the basic assumptions and figures, contracts and legal agreements, underlying the proposed investment will be essential.

Task 2: Assess implications of government risks for the economy. The second task will be to assess the implications of the government's financial exposure under this project, in light of the project's size in relation to the Lao economy. For example, the amount of project-related external borrowing could reduce access by the Lao government to loans from bilateral and multilateral official sources as country exposure limits are reached. High debt exposure resulting from the Nam Theun 2 project may also reduce the interest of private foreign banks and investors in other Lao investments, and thus "crowd out" other possible projects, including power projects. Net GOL income from the project that is below projected levels, especially if combined with public expenditures predicated on the inflow of that revenue, could lead to loss of credit worthiness and increased inflationary pressures.

Even if GOL debt obligations are met, and Bank guarantees are never invoked, if the project turns out less successfully than anticipated, and the NTEC experiences difficulty servicing its debt obligations, this could have a negative impact on the GOL's future external commercial borrowing capacity. Of course, there is also the corollary that successful completion of this project on terms satisfactory to all parties will enhance the ability of the Lao government significantly to raise investment financing in the future. The Study will present the issues involved for due consideration by central government authorities. To the extent that any of these risks can be hedged or mitigated, the Study will provide guidance as to how this might be done.



B. Public Consultation Program

The purpose of the public consultation program is to strengthen the Economic Impact Study's outcome by incorporating information on the projected costs and benefits of the proposed Nam Theun 2 project, as defined by stakeholder groups, into the Study's analysis, findings and conclusions. The specific objective of the consultation process outlined below is to create an explicit, systematic, and value-neutral process which will allow:

- information on the objectives, activities, and findings of the study team to be successfully communicated to key stakeholders; and
- the observations of key stakeholders regarding project costs and benefits to be communicated effectively to members of the study team.

To accomplish this, the following process will be followed:

Task 1: Identify, segment, and prioritize stakeholder groups. The first task will be to identify key stakeholders of the project as they pertain to the Economic Study. In addition to the NTEC, these would include, for example, affected groups among the Lao population, including families to be resettled, as well as local, regional, national and (potentially) international governmental and public agencies, private industry concerns, academic and research institutes, consumer groups and NGO's. The World Bank is also considered to be a stakeholder in this process.

To accomplish this task, members of the Study team will carry out a series of expert interviews, to identify key organizations, structures, and individuals who are stakeholders in the project. These interviews will occur both in person and by phone, and will be carried out both in Washington before the team's departure as well immediately upon arrival in Laos. The purpose of these interviews is to make as complete an identification as possible of the universe of potential stakeholders who will need to be involved in the consultation process. These interviews will also be used to assess and understand the objectives and concerns of the stakeholder groups, the areas of likely perceived impact of the project on their constituents, and leadership and available contact/entry points for the group.

Based on the findings of these interviews, key stakeholders will be identified and prioritized for involvement in the consultation process, and grouped according to likely common concerns and type of outreach needed.

Task 2: Initiate contact and establish dialogue. Using the results of the interviews, team



members will establish contact with the targeted stakeholder groups and initiate a dialogue regarding the planned consultation process. The team will explain the purpose of the planned consultation process and how it will work, and solicit input and suggestions regarding ways to make it more responsive to the needs of the stakeholders. Based on the suggestions received, aspects of the consultation process or the planned schedule may be revised as needed.

Task 3: Disseminate information. In conjunction with steps one and two above, the team will begin to disseminate information about the team's activities and schedule, including specifically the release of the TOR and the Inception Report for the Economic Impact Study. This dissemination process will begin as soon as a significant set of key stakeholder groups and access points are identified, and will continue through the process of making initial contacts (since personal contact may be needed, in selected cases, to transmit the information.) Information dissemination will continue during the course of this process, as additional stakeholder groups are identified.

Task 4: Hold first consultation workshop. A group forum will be held at a Laotian location to be determined, bringing together the members of the Economic Study team and stakeholders or representatives of key stakeholder groups. The purpose of the workshop will be:

- to explain and expand on the information contained in the inception report, and to discuss questions, comments, and potential additions to the team's objectives, planned activities, and schedule;
- to collect input from each stakeholder or key stakeholder group on the project's cost and benefits for their constituents; and
- to communicate the subsequent steps planned for the public consultation process, and to identify additional avenues for ensuring an effective ongoing communications process.

The logistical arrangements for this consultation workshop will be determined after the necessary discussions with the GOL and the Bank. It is understood that the Science, Technology and Engineering Office (STENO) attached to the Prime Minister's cabinet intends to host the proceedings. It is anticipated that this workshop would occur in Week 3 following initiation of the assignment (see Chart I)

Task 5. Maintain communication with stakeholder groups. During the course of the Study team's activities, contact will be maintained with stakeholder groups to ensure that the team remains available for the transmission of stakeholder concerns, and maintains access to additional



information from stakeholders, as needed. This will include involvement of Study team members in "ad hoc" consultative meetings with stakeholders, as appropriate.

Task 6: Hold second consultation workshop. A second group forum will be held, also at a Laotian location to be determined in collaboration with the GOL and Bank staff. The purpose of this second consultation workshop will be:

- to present the preliminary findings of the Study team and discuss them with stakeholders and representatives of key stakeholder groups;
- to collect additional input and reaction from key stakeholders on the preliminary findings; and
- to identify the next steps on the part of the team in finalizing and submitting the Study's conclusions and recommendations.

It is anticipated that this workshop would be held in Week 11 following initiation of the assignment (see Chart I).

Task 7: Dissemination of information. Congruent with, or immediately following, the second consultation workshop, the preliminary findings of the study team will be disseminated to key stakeholders

Task 8: Documentation. At the conclusion of the above communication process, the outcomes of the public consultation program will be documented and disseminated to all participating parties, as well as to any additional stakeholders not directly part of the communications process. Key results of the consultation process will be identified and incorporated into the final report of the Economic Impact Study team

Task 9: Media relations. Given the high level of international attention given to this project, LBII anticipates that there is likely to be interest on the part of international media in the results of the public consultation process, or in directly observing the public consultation process itself. The Study team will be prepared to respond to inquiries from the international media regarding the objectives, activities, schedule, and preliminary findings of the study team. However, it will be necessary for the Bank to provide access to a Bank representative (preferably on-site) to address questions regarding project background, Bank policies and positions, further steps in the Bank's decision process for the project, etc



In addition, we assume that GOL authorities (STENO) will be available to handle inquiries from the media regarding GOL policies and decision-making.

Task 10: Electronic media. In order to provide additional access to the public consultation process, an electronic mail-box will be established for the receipt of public comment on the project. This address will be identified to stakeholders when the TOR and inception report are released, and monitored on a regular basis by LBII staff.

C. Preliminary Information Requirement List

As noted in the Introduction to this proposal, cooperation among the various institutions and study teams in terms of data collection and sharing will be extremely important to the performance of the Economic Impact Study. In brief, the first component, the Project Evaluation, will draw on data to be provided by the Nam Theun Electricity Consortium (NTEC), including documentation prepared for the NTEC's proposed Environmental Assessment and Resettlement Program, from the Environmental and Social Action Plan for the Nakai Plateau watershed area, and from the Alternatives Study. The other four components will draw on information collected by the LBII team in cooperation with the NTEC; the GOL (e.g. Statistics Department, Ministry of Finance, Committee on Planning and Cooperation); regional and local authorities, including BPKP, a state-owned enterprise established to promote economic development in the Center Region, and the World Bank. Other study efforts supported by the World Bank with which it will be important to coordinate include the Public Expenditure Review; the Laos Forestry Project; the Hydropower Sector Strategy; and project identification activities relating to the Social and Environmental Project for the broader impact area of Nam Theun 2.

The Comments on the Proposal submitted on October 15, 1996 requested that LBII prepare a table outlining what data and other information will be needed from the various institutions and study teams relating to Nam Theun 2. In the table that follows, these needs are outlined in preliminary form, alongside anticipated data sources, recognizing that not all of the information that will be required can be ascertained at this time. It is envisioned that the data will be needed shortly following project initiation, which will occur within one month of contract signature.

The attached data list is preliminary. LBII understands that data may not be available from some of the sources as listed. Where information is not available, LBII will attempt to identify an alternative source or make an estimate based on reasonable assumptions.



DATA DESCRIPTION/CONCEPT	SOURCE
PROJECT EVALUATION	
Capital Costs	Alternatives Study/ NTEC
Labor Costs Skilled Unskilled	Alternatives Study/ NTEC
Operations & Maintenance Fixed Variable	Alternatives Study/ NTEC
Finance Principal Interest	Alternatives Study/ NTEC
Infrastructure	Alternatives Study/ NTEC/GOL
Indirect Impacts Secondary Employment Tourism Ancillary Infrastructure	TBD
Incremental Logging Costs Revenues/Sales	Alternatives Study/ NTEC/KPBP/ Forestry Project
Resettlement/Social	Alternatives Study/ NTEC/Nakai Plateau ESAP and TBD



Environmental Mitigated Costs Unmitigated Costs Flooding Siltation Hunting Watershed Protection	Alternatives Study/ NTEC/ Nakai Plateau ESAP and TBD
Irrigation Development/Maintenance Costs Incremental Revenue from crops	Alternatives Study/ NTEC/TBD
Power Sales Agreements	EGAT/GOL/ Alternatives Study/NTEC
Foreign Exchange Restrictions, Non-market wage rates and taxes or subsidies	TBD
Anticipated power revenues from the Thai Perspective	World Bank Staff
Thailand's power demand forecast, price forecasts and current and planned resources	EGAT
MICROECONOMIC ANALYSIS	
POPULATION Population density, total population to be relocated, ethnicity of the population, availability of suitable areas for the migrants	Statistics Dept., GOL
SOCIAL/ANTHROPOLOGICAL CONSIDERATIONS Historical artifacts and significance of the area to be flooded	BPKP
INFRASTRUCTURE Availability of infrastructure in the dam area	STENO
IRRIGATION Current irrigation systems in the area (areas irrigated by season, type of systems, etc)	BPKP
CROPPING PATTERNS Crops grown (type and quantity), marketing situation	BPKP



FOREST ECOLOGY. Type and condition of forests where the dam will be built, potential fragmentation of territory for, e.g., tigers, elephants, gibbons. Location of proposed new access roads, etc. Types and quantities of forest products gathered by local residents.	BPKP, STENO, Forestry Project
AQUATIC ECOLOGY. Current quantities and types of fish and other resources taken from the river, river flow rates (vis a vis needs of fish and other aquatic organisms), current water quality and flow rate by season.	BPKP, National Office for Nature Conservancy and Waterways Mgmt.
SOURCING OF MATERIALS AND LABOR. Planned payments procedures to immigrant laborers, including offshore payments	NTEC
TOURISM. Current rates of tourism in the dam area and principal attractions.	BPKP, MIH
MACROECONOMIC ANALYSIS	
Information on the 4 sectors: (foreign sector (BoP), government, monetary sector, private sector). 2 modules: the debt module (incl. all data on external loans) and the RMLAO module (containing all behavioral relationships and accounting identities)	GOL/World Bank
Appendices. Printout of the worksheets of Assumptions (ASU, with underlying reasoning) and the following	GOL/World Bank
Original Data Requirements (ORD)	GOL/World Bank
National Accounts (SNA- at constant and current prices)	GOL/World Bank
Gapfill Grant (GAP)	GOL/World Bank
Government Balance (GOV) - Government Budget	GOL/World Bank
Trade (TRA) External Trade Structure (with detailed sectoral breakdown in current and constant prices)	GOL/World Bank



Prices, Interest and Exchange Rates and Tariffs (PIT)	GOL/World Bank
Derived Indicator Table (DIT)	GOL/World Bank
Development Program and Public Investment Program	GOL
Public Expenditure Review	World Bank
Experience of other nations in handling large increments in export revenue streams	World Bank
Timber Exports	GOL
Hydro-Power Exports	GOL
RISK ANALYSIS	
Summary of terms and conditions of the project development agreement. Specifically, the contractual basis for the Government of Laos' (GOL) undertaking with the project sponsors.	World Bank, NTEC
Copy of the agreement (or summary) which details the GOL's equity participation within the project's financing package	World Bank, NTEC
All other equity participation agreements between the project sponsors	World Bank, NTEC
Summary (or list) of any other contractual undertakings with respect to the project development.	World Bank, NTEC
Summary of contractual agreements between the sponsor joint venture team members	World Bank, NTEC
Complete summary of the financing package currently under negotiation with the bank lender group	World Bank, NTEC
Complete summary of the World Bank's contemplated guarantee(s) of the GOL's undertakings in the project (as currently envisioned)	World Bank, NTEC



Description of the GOL's involvement in other major infrastructure projects (previous or currently ongoing).	World Bank, NTEC
Summary of the GOL's current borrowing program (including levels of debt exposure, annual debt service and contingent liabilities) with IMF, World Bank, Asian Development Bank and other bilateral or multilateral lenders as appropriate.	World Bank, NTEC
To the extent the GOL borrows from private sources, summaries of the obligations.	World Bank, NTEC



LAO PEOPLE'S DEMOCRATIC REPUBLIC

TERMS OF REFERENCE

ECONOMIC IMPACT STUDY

RELEVANT TO PROPOSED NAM THEUN HYDRO-ELECTRIC PROJECT

Terms of Reference

Introduction

The U.S. \$1.2 billion, 600 MW Nam Theun 2 hydropower project proposed for Laos is large relative to the size of that country's economy and its development costs are the equivalent of about 75% of 1994 GDP.

The Project, as proposed, will, essentially, be an enclave which sells most, if not all, of its power output to neighboring Thailand. It offers an opportunity to support the country's development by securing a substantial stream of income (in foreign exchange) to the budget of the Government of the Lao PDR (GOL) in the form of dividends (from the GOL's equity stake), royalties, and taxes and by positively contributing to environmental conservation.

From an economic point of view, the Nam Theun 2 Project has much promise: the prospective output unit costs are exceptionally low, reflecting the favorable site, head (350 meters) and catchment area and the potential gross revenues to the GOL rise from about \$10 million annually to well over \$100 million per year (in constant 1994 U.S. \$) during the 25 years of the concession.

In the Lao PDR, electric power demand is small although the potential for hydroelectric power development is great. Thailand has been negotiating with the Government of the Lao PDR (GOL) to purchase power as a means of strengthening economic cooperation with the GOL and also as an alternative to further expansion of its own power generation capacity which, in view of its own more limited hydropower potential, would likely be by means of imported gas and coal, lignite fired generating stations or nuclear energy.

An agreement has been entered into between the respective countries which provides a window of opportunity for Laos to provide Thailand's EGAT with up to 3,000 MW of hydropower energy from new capacity by Year 2006. It is understood that 1,500 MW of this commitment will be delivered to Thailand by the end of Year 2001.

As a result of the government to government agreement, the PDG entered into an agreement with the GOL to construct the Project on a build, own, operate and transfer basis and entered into a letter of intent with EGAT.

The GOL considers agreements for bulk sales of electricity to Thailand are important for significant growth in exports on which to base economic development and increased living standards and, hence, overall poverty alleviation.

Background

The GOL has requested the Bank to support the Project:

In response, the Bank has requested that the GOL undertake a number of further studies required by the Bank's own operational policies and official guidelines before it can fully assess whether it is prepared to give the Project its support. In this context, it has been indicated by the Bank to the GOL that the likelihood of the Project's acceptance by the Bank will be enhanced by the GOL undertaking an economic impact study of the micro and macro economic impacts of the Project on the local and greater Lao populace through a consultant appointed by the GOL under these Terms of Reference (TORs).

The Bank has also requested that the GOL also undertake a study (Alternatives Study) on the alternative power projects, potential and proposed, for the Lao PDR and establish a panel to review dam safety issues and an environmental and social impacts panel to independently review the treatment of environmental and social issues generated by the Project.

As this analysis will be carried out in parallel with the Alternatives Study and an environmental and social impacts studies, the consultant is required to coordinate closely, through the GOL, with these other efforts to avoid duplication of effort, delay and unnecessary cost.

Economic Impacts of the Project

The Bank has indicated to the GOL that a number of economic impacts will arise from the Project which need to be addressed in the Economic Impacts Study the subject of these TORs. These impacts include:

- the Project's construction period, in particular, will subject the economy to a number of pressures due to the increased demand for goods, services, and labor from the Project. Substantial amounts of labor are expected to be imported (from Thailand and Vietnam);
- the regional development program is expected to benefit the GOL owned Mountain Region Development Corporation (BPKP) based in part, on expected benefits from activities that will follow from the Project, such as tourism;
- the GOL will receive substantial revenues from the Project. It may also incur costs due to infrastructure requirements and borrowing for equity, etc.;
- the Project is designed largely as an enclave with most of the necessary imported goods and services paid for externally. However, there are likely to be some associated or induced capital flows. There will also be an increase in trade flows associated with the Project;
- the bulk of the financing for the Project is expected to be from external private sources, but the GOL is planning to borrow for its equity contribution. It will also be asked to provide some guarantees to the lenders.

Objectives of the study

The study should place its analysis of the Project and its perceived economic impacts in the context of the GOL's medium-term power development program (including its agreement to provide Thailand with 3,000 MW of hydro-power by Year 2006) relate it to the GOL's public development program in terms of financing, crowding out, and prioritization.

A major objective of this analysis is to provide a rational basis for determining the overall costs and benefits of this Project to Laos over its expected life. To the extent possible, recommendations concerning ways to enhance Project benefits or limit its negative impacts should be included as the report will help the GOL and the Bank determine whether the Project will, on balance, provide substantial net benefits to the Lao economy, through enhanced development and poverty alleviation efforts, which will be sufficient to justify Bank support for the Project.

Since the Project is expected to be one of several electricity export projects developed in Laos, the methodology should be set out in such a way as to enable the GOL to use the report to help it analyze future projects. A simple model of the impacts would be useful.

Scope of Work

The Economic Impact Study needs to analyze the potential benefits and risks of the Project from several angles.

(i) *Project Evaluation:*

- The Study should evaluate the economic rate of return ("ERR") of the Project. The ERR should be calculated from the point of view of the Project and from the point of view of the GOL, taking account of any additional direct costs and benefits generated specifically by the Project itself.
- A sensitivity analysis to various rates of production, pricing assumptions, and other factors should be undertaken as part of the Project's ERR calculation.
- To the extent other cost factors (e.g., environmental mitigation, resettlement, ancillary infrastructure) and benefits can be quantified, a broader estimate of the Project's ERR should also be made.
- Comparison should be made with the ERRs of other similar projects in Laos and with alternative designs of this Project, if adequate data are available.

(ii) *Real Sector (Micro-economic) Analysis:*

- The Study should look at the direct impacts of the Project on the real sector of the Lao economy, especially in the Project area, in the context of the cost of the Project. The construction period, in particular, will subject the economy to a number of pressures due to the increased demand for goods, services, and labor from the project. Substantial amounts of labor are expected to be imported (from Thailand and Vietnam). The impact of these demands and labor flows should be considered.
- The direct benefits from the Project and other activities that will directly flow from the Project, such as tourism, any associated costs, and any other significant effects on the population around the project site should be analyzed, particularly in the context of the BPKP.
- The Study should examine the effects of the Project on the real sector of the economy at large, including increased demand for Lao goods and the impacts of the Project activity on transport, communications and other service sectors. The extent to which the Project will distort prices locally or nationally should also be analyzed. This would include estimation of any "Dutch Disease" effects from goods markets.

- An important factor in the country's ability to deal with the impacts of the Project and create positive development results will be the capacity of the GOL institutions, particularly those in the Project area, to cooperate with each other and the project developers. The economic impact analysis should examine the institutional capacity of the BPKP, the provincial governments, and the GOL to manage the impacts of the Project.

(iii) *Macro-economic Analysis:*

The Study should look at the indirect impacts of the Project through the effects on the GOL budget, the balance of payments, and the exchange rate.

The GOL will receive substantial revenues from the Project. It may also incur costs due to physical and social infrastructure requirements, borrowing for equity, etc. The amount and profile over time of the net revenues to the GOL should be estimated. Assuming that there are net incremental revenues, the capacity of the GOL, in light of competing national priorities, to direct these revenues to poverty alleviation projects and activities, or save them until they can be absorbed, will have a major effect on the contribution of the Project to overall national well being. The Study should therefore assess the GOL's development priorities and capacity to allocate the increased revenues effectively. This will involve a review of the development budget for the next few years and an assessment of the impact that the incremental revenues, translated into nominated development expenditures, will have on income growth and poverty alleviation in Laos.

Notwithstanding the Project's likely nature as an enclave with most of the necessary goods and services imported in kind, there are likely to be some associated or induced capital flows. There will also be an increases in trade flows associated with the Project. The Study should look at the effects of these flows on the economy, the balance of payments, and the exchange rate. This analysis should also look for any possible "Dutch Disease" impacts at a macro level.

(iv) *Overall Economic Analysis:*

The Study should make an assessment of the overall contribution of the Project to the Lao economy as a whole, taking account of both the macro and macro economic analyses.

This section of the study should be able to draw some conclusions about the direct impacts of the Project on Lao development potential and poverty alleviation prospects.

(v) *Risk Analysis:*

The Study should look at the financial risks to the GOL resulting from its exposure to the Project and the circumstances under which, consequently, that exposure might arise.

Having identified possible risks to the Project in its sensitivity analysis, the consultants should examine the nature of the financial and exposure risks faced by the GOL in this Project arising from likely equity contributions obligations and the need to provide guarantees to lenders. It should make clear the potential amount of financial exposure of the GOL and the implications of this exposure for the GOL's medium- and longer-term objectives. This would take into account the concentration of exposure in NT2, the country's current external debt situation, and the GOL's ability to raise funds externally from private or official sources in the future for priority development purposes.

Public Consultation Program

Objectives:

Public consultation on the economic impact study will help strengthen the study's findings and conclusions. In particular, the identification and evaluation of the social and environmental costs and benefits of Nam Theun 2 for Lao PDR will be improved through public consultation.

Public involvement activities designed to elicit views of various concerned groups and to begin building consensus on the overall contribution of the Project to Lao PDR would include: (i) identification of key stakeholders, including government (agencies involved in both the energy sector and agencies that would be involved in planning and implementation of environmental and social impact mitigation measures), affected groups, private industry, academic and research institutes, consumer groups, NGOs, and the news media; (ii) making information available to the stakeholders; and (iii) devising and implementing a method to incorporate stakeholder views into the final decision-making system.

Key Stakeholders

The first step would be to identify key stakeholders at the local/regional and national levels and then decide which stakeholders would be consulted at which step in the process. (See (ii) below).

Of particular importance will be consultation at the local and regional levels as local communities and provincial officials possess a knowledge and understanding of the potential social and environmental impacts which needs to be incorporated into the overall assessment of the Project.

It is envisaged that the results of the Economic Impact Study would provide inputs to the consultations taken at the international level by the Advisory Group

The Bank is also to be considered a stakeholder in this process.

Process

The consultation procedures that should be undertaken to comply with World Bank guidelines and operational directives include: (i) *information dissemination* including a) release of the TOR and subsequent inception report including a description of the methodology and consultation process, and b) release of preliminary findings for subsequent discussions with key stakeholders; and (ii) *consultation* consisting of 2 workshops in Vientiane to a) discuss the inception report and obtain information on the social and environmental costs and benefits for each group at the local, regional, and national levels, and b) discuss preliminary findings of the study.

The results of the consultation process should be communicated to key stakeholders and documented.

General Considerations

Additional discussion of issues to be covered is attached for reference in preparing the Inception Report.

Staffing

It is expected that the task will be carried out by a team of five: a Macro Economist, a Fiscal/Public Investment Program Specialist, a Micro Economist with expertise in Rural Development, an Institutional Expert, and a Financial Expert.

The Inception Report should not take more than two (2) weeks to prepare and the Main Study and report to more than twelve (12) weeks to prepare, plus two (2) weeks for final revisions and discussion, for a total of no more than sixteen (16) weeks overall. Given the time constraints, this would involve nearly full time from the team members over a period of approximately 2-3 months and an additional part time engagement of the team leader before and after the main effort.

The team would visit the Laos for 2-3 weeks early in the preparation cycle and the Team Leader would attend the subsequent discussion of all the reports.

Time allowed for each particular task has been set-out in light of time constraints facing the GOL in respect of the Nam Theun 2 Project. These must be adhered to if at all possible.

