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Country Laos

Project No. 439-11-290-074

Submission Date 5/9/69 Original x Revision No. _____

Project Title: Industry Development

U.S. Obligation Span: FY 69 through FY 76

Physical Implementation Span: FY 69 through FY 76

Gross life-of-project financial requirements:

U.S. U.S. dollar	\$ 4,768,100
U.S. -owned local currency..... (240:1 - Official Exchange Rate)	\$ 6,303,800
Cooperating country cash contribution	\$ 5,095,800
<u>[in \$ equivalent (240:1 - Official Exchange Rate)]</u>	
Other donor.....	\$ <u>438,000</u>
Totals	<u>\$16,605,700</u>

OTHER AGENCY

Handwritten list of agencies:
CIA
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I. SUMMARY DESCRIPTION

A. Necessity and Justification for Project

Within the present tenuous security situation in Laos the development of private sector industry will support RRG/USAID efforts toward economic stability and development. In support of stabilization the development of export producing or imports saving industries will increase the self sufficiency of the economy and make the kip less dependent on foreign backing for its value. Industrial development and expansion will tend to increase employment will raise the GNP and elevate the standard of living of affected people. Also, Lao production of commodities desired by the rural population and sold at acceptable price levels will influence monetization of the rural areas. These factors and others led the USAID Mission in FY 1966 to initiate the Project: Industry Development. Forest products industries were considered the first priority for development because the raw material was readily available and required less capital input than some other industries, a persuasive factor considering the uncertain security situation. The dense forests pointed up the need for the Lao Forest Survey which is one of the goals described below.

B. Project Goals and Targets

Under the three project goals are subsumed several targets.

The Goals for Industry Development will provide technical assistance to private sector industry, make pre investment surveys, technical and financial feasibility studies, assist in industry start plans and assist industries in the early operating stages. Targets under this goal propose development in the private sector over several years of a modern furniture factory, a veneer/plywood plant, metal working and fabricating industry, the logging industry, tire recapping plant, pilot sawmill to cut salvage timber from Nam Ngum Dam and elsewhere, a smelting foundry, battery manufacturing, Industrial Estates, Textile manufacturing, Sandal/footwear manufacturing, papain processing, mechanized farming, food processing, wood remanufacturing, and plastic extrusions.

The Goal for Forestry is to support the development and use of the forest resources of Laos. The seven targets respectively:

- Improve the forestry capability of the responsible RRI Directorate,
- Complete the forest inventory for 4 areas by 6/30/70,
- Minimize illegal lumber cutting and maximize cutting license fees,
- Improve use utilization on timber sales,
- Evaluate alternative long range forestry projects,
- Improve charcoal production,
- Improve serviceable life of native woods.

The Goal for Industrial Financing is to assist the development of priority private sector industry and to assure that adequate technical and financial feasibility studies are a precondition of each loan issued to private sector industry from the

Industry Loan Fund which is financed by USAID and administered by the Development Bank of Laos (DBL). Related targets are:

- to finance industrial and mechanized farming projects after ~~bank~~ feasibility clearance,
- develop capability of DBL to make careful technical and financial, feasibility appraisals of industrial and mechanized farm loan appraisals,
- administer the USIP (Commodity import) program within the established criteria and funding levels,
- administer the USIP Small Farmer Tractor Import Program,
- develop the DBL as an industrial financing intermediary.

C. Minimum Levels of Output or Achievement to be met as requisite for continued U.S. Contribution and Participation.

The principal threshold requirement for industry development is an adequate technical and financial feasibility study of industrial projects as a precondition of Industry Loan Fund support of industry projects. As USAID is providing technical assistance in making such studies and requires them as a precondition of loan support, fulfillment of this requirement may be assumed for this project.

In loan projects the private equity contribution should average 1/3 of total project cost, while Industry Loan Fund support may provide up to 2/3 of total project.

In institutional development through training, the requirement is that the RIG Department of Water and Forests and the Development Bank of Laos provide personnel qualified to receive the participant training that is offered.

In fair share support the RIG institutions and private sector entities must provide counterpart personnel for USAID technical and staff personnel engaged in a project activity, and also provide adequate numbers of staff to perform agreed project activities. RIG has provided office space. As the RIG is under restrictive budget control due to the large annual budget deficit, it is often not possible to require RIG financial support of costs for foreign technicians. Although no minimum level can be set, USAID will continue to search for possibilities where RIG can assume an increasing share of the local support costs of joint project activities.

D. Description of Nature of Essential Inputs

USAID provides technical and financial inputs for industrial development. The technical inputs are directed to identification of priority industries, preparation of technical and financial feasibility studies of priority industries selected for development and assistance in the start up period and early operation of a new industrial plant. The main financial input is applied in Kip through the Industrial Loan Fund to support up to 2/3 of an approved industrial loan project. Procurement of U.S. commodities under CIP (USIP) is required to extent of at least 70% of the loan. Training of Lao personnel is generally arranged in Thailand where the language variation is minor and cultural difference is minimal.

The U.S. Forestry program involves technical advice, aerial photographic services and commodity support for the overall forestry program, including coordination, with emphasis on developing industry for utilization of timber resources.

Primary inputs by other participating countries are outlined as follows:

Canada is providing technical advisory services and direction for the Forest inventory.

Australia's contribution will be toward developing techniques for establishment of forest nurseries, plantations and regeneration of forests following harvesting.

The RIG Dept. of Water and Forests is developing expertise in all phases of Forest management. Supervisory officials and technicians are receiving training from counterparts in preparation for assuming long range responsibility for the development of renewable natural resources.

Essential inputs are based on actual budgets submitted for U.S., Canada and Australia.

The FY 69 RIG input is based on published budget for appropriated funds, and estimated income from royalties retained for support of Dept. of Water and Forests. These two figures were projected for years ahead (FY 70-76) based on anticipated increases in both appropriated funds (legislative support) and royalties (increase in timber cut under permit).

The funding figures for Australian and Canadian inputs do not include amounts of prospective scholarships to be offered. RIG inputs include all support for Dept. of Water and Forests.

I. A. TABULATING PLANNED INPUTS

Financial Inputs for Life of Project

1. Annual Magnitudes by United States	FY 69	FY 70	FY 71	FY 72	FY 73	FY 74-76
dollar budget - \$000's	\$358.0	\$789.8	\$749.6	\$614.1	\$586.6	\$1,670
Kip budget - K 000's (total trust fund)	K202,000	K475,191	K378,275	K305,341	K305,407	K916,700
Less: Loan repayments	(3,400)	(15,000)	(64,200)	(119,400)	(173,400)	(594,600)
ILF Attribution to MSIP	(156,600)	(322,600)	(243,100)	(235,200)	(235,000)	(945,000)
Return from Nam Ngum Timber Salvage (Contract)	-	-	(50,000)	(50,000)	-	-
Total Kip budget K 000's	K 42,000	K 77,591	K 20,975	(K 99,259)	(K102,993)	(K622,900)
2. Annual Magnitudes by RIG						
budget K 000's (appropriated funds)	33,000	40,000	50,000	60,000	70,000	210,000
royalties K 000's (improvement funds)	50,000	55,000	75,000	100,000	120,000	360,000
3. Annual Magnitudes by Other Donors						
Australia (\$688,000)	\$152,000	\$50,000	\$43,000			
Canada (\$688,000)	\$ 73,000	\$85,000	\$35,000			

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II. SETTING OF ENVIRONMENT

A. Underlying Economic and Socio-cultural Factors affecting Industrialization

In Laos about 90% of the population live in rural areas, engaging mainly in farming and animal husbandry, in a subsistence economy where monetization is slight. Infrastructure (roads, urban water and electric power) and social overhead capital (schools, medical facilities) inputs have commenced forming a base for industrial development in the capital city of Vientiane and to a lesser degree in four other cities.

The low level of exports of both raw materials and fabricated products, and a heavy reliance on imports in the present situation in Laos cause a heavy balance of payments deficit which currently is financed by foreign donations. Import substitution by domestic production and export expansion are two means of reducing the Lao payments deficit. Domestic processing of agricultural products are means of import substitution that will particularly benefit the agricultural sector. Industrial demand for agricultural raw materials for industrial processing will tend to increase the cash income of rural residents, which in turn will tend to increase rural effective demand for industrial products. This demand can be satisfied by domestic industry if products useful to or desired by the rural resident are provided at acceptable price levels. Thus industrial and agricultural development will progress more rapidly as the two sectors tend to develop an interplay of supply and demand factors each for the raw materials or products of the other. This will simultaneously increase the "monetization" of the rural economy.

Change in the industrial sector and exports may be expected to occur somewhat in proportion as additional inputs to social overhead capital and to infrastructure are achieved. For example, industrialization must be supported by development of human resources, improved transportation facilities, additional power, and water facilities. Improved security is also a prerequisite for the realization of industrial opportunities.

Legislation and administrative procedures exist for the authorization of industrial investment starts. These require approval among others by the Commission for Plan and the Direction of Industry and Handicrafts in the Ministry of National Economy. However, the capacity for industrial expansion in Laos is naturally tempered by the degree of political and administrative support provided for the creation of a favorable investment climate. The Investment Code is currently under revision.

In 1969, the level of industrial development is relatively low in Laos. Existing industries relating to natural resource development are logging and sawmill operations, tin mines, and salt extraction. In the area of transportation, there are trucking services, barging services, gas stations and auto repair facilities. The construction industry has contractors, brick makers, well ring makers, metal working shops. Existing agro-industries include rice mills and custom plowing services. The list of industries producing consumer items or services for consumers is long: furniture factories, key makers, cigarette factories, rubber-sandal factories, match factory, soft drink plants, ice plants, print shops, clothes cleaners, alcohol distilleries, dye works, bakeries, slaughter houses, silver smelting shops, golden jewelry craft shops.

shops, clothing manufacturers, watch repair shops, radio repair shops, movie theaters. Also there are machine shops and tanneries.

The foregoing list does not indicate the quality or scale of production. Many of the noted industries will require considerable improvement or replacement. However, the preponderance of industries presently produce consumer goods or provide services to consumers. Most rely on imported commodities for processing.

B. Relation of Project Goals to Country Development and Program Strategy

The three Goals for the Project Industry Development are addressed to objectives considered achievable under the present circumscribed security situation. At the same time, they will have either an optimum or a maximum effect in reducing the deficit in the Lao balance of payments, in increasing the productivity of labor, in raising the standard of living of rural and urban working class, in increasing employment, and in increasing the gross national product.

A frequently encountered investment problem in less developed countries is the commitment of private investment funds to poorly planned industrial projects. Sometimes this is abetted by foreign machinery salesmen who do not assist the investor in careful planning and assessment of risk and profitability. The first goal is designed to preclude this problem.

The goal for industry development (IV A below) will provide technical assistance in identifying industrial sectors for current development, will provide technical and planning assistance in the development of particular private sector industrial plants assuring that projects are carefully conceived and that adequate pre-investment and intensive feasibility studies are made before capital funds are committed. Furthermore, technical advisory assistance is planned to be provided to private industries during the post feasibility stage in producing industry-start plans as well as in providing guidance in the critical formative and initial operating stages of the assisted industry.

In the selection of priorities for industrial development, consideration was given to the fact that industries utilizing indigenous natural resources are generally responsive to relatively low commitment of capital funds, with early expectations of profitability. This factor, plus abundance of the forest resource in Laos, resulted in identification of the logging/sawmilling industry as a key area.

Accurate information on volume and location of merchantable timber was essential to reduce the cost of road building to permit egress for timber. Consequently, the need for the Lao Forest Survey and the requirement to pursue it through the good services of the Directorate of Water and Forests led to the ~~second~~ second goal.

The Nam Ngum Dam is now under construction and completion is expected in 1971. The area above the dam, which will be inundated, contains several million dollars worth of merchantable timber.

This timber, being a national resource which Laos can ill afford to squander, should be salvaged, manufactured into marketable lumber products and sold at a price which is attractive but does not unduly depress existing local markets.

It appears unlikely, however, that the AID and/or private enterprises will be able to harvest this timber before inundation occurs without assistance from either the U.S. or another donor. US AID is currently studying the feasibility of the salvage operation; under the assumption that the feasibility finding will be positive, \$200,000 is programmed in FY 1970 under this project for construction of the main access roads to the salvage area; it is envisaged that US AID would be repaid this amount in kip from the proceeds of timber sales. US AID assistance in the salvage operation will be contingent on this repayment as well as the determination that the salvage will bring appreciable revenues to the AID and benefits to the private sector.

Extremely high interest rates and scarcity of investment capital willing to accept the risk of committing funds for terms of 5 years in the tenuous security situation of Laos made it clear that US AID or other donor funding would be essential if carefully conceived and executed industrial investments were to be made. Therefore, the third goal was evolved, originally as an ancillary element of the first goal.

III. STRATEGY

Because security conditions remain relatively uncertain, there is a natural reluctance among entrepreneurs to pursue long term business investments. Consequently, the initial approach to industrial development has been to support the development of industries or improvement of industries which show promise of early return — principally those using locally available raw materials for which either a local or an export market exists or can be developed.

In FY 1966 with the initiation of this project, attention was first directed to the development of forestry and development of wood products industries. Based on a study prepared for USAID/Laos by a Contractor, Continental Allied Inc., in CY 1966, it was concluded that among the various natural resources in Laos available under current security situations, the forest resources could probably provide the quickest economic returns with the minimum development input. The study noted that lumber market possibilities in northeast Thailand were excellent, and with moderate transport costs. The volume and value of lumber exports to Thailand in recent years have been:

CY 1966	3,657 CB	\$ 79,236
CY 1967	26,805 CB	\$ 746,027
CY 1968	34,509 CB	\$ 1,014,702

Prospects for lumber export in the forward period are expected to expand at the rate of 15% to 25%.

*It was soon noted that inadequate development of the logging industry was frustrating the delivery of adequate numbers of logs to the approximately 76 sawmills existing in Laos in FY 1967. Consequently, the development of logging companies using modern logging equipment was required and was undertaken. The development

of the Lac Forest Survey was necessary to provide timber inventory information to the new forest products companies in order to protect both USAID and the investor's capital. The survey was also required to enable effective planning by logging companies and sawmills alike. This was commenced in 1967, by an initial planning survey by Mr. A. A. Hasel, whose services were provided by USAID from the U.S. Forest Service.

The private construction industry employing lumber was apparently able to generate its own financing and maintain momentum. However, the more sophisticated wood products industries, that were appropriate for development, required technical and financial assistance to assure correct starts. Consequently studies of technical and financial feasibility of a modern furniture factory and a veneer/plywood plant in the vicinity of Vientiane were considered desirable, and were authorized for USAID support. Both studies are expected to be completed by the close of FY 1969. Private equity is being readied for commitment to be paired with Industry Loan Fund loans, with the expectation that investment starts in both will be undertaken during CY 1969.

Referring to the proposed Nam Ngum timber salvage program, present information is that existing sawmills do not have sufficient capacity to handle the conversion of the salvage logs into lumber and that the national market cannot accept the additional production. Consequently, three-way feasibility studies must be made. They must consider these three interlocking parts:

- (1) The log salvage program.
- (2) Construction of a modern sawmill to process the logs.
- (3) Availability of foreign markets to absorb the major part of the sawmill production.

A number of the industries recommended by the Continental Allied study for first priority development have been incorporated in the RIG 5 Year Plan (Plan Cadre) as recommended for development. Following is the 5 Year Plan listing of priority industrial projects with the estimated capital cost of each. (Virtually all are expressed in the Continental Allied document). Sources of financing are as yet undetermined; USAID selection of industries for support from this list is appropriate.

5 YEAR PLAN INDUSTRIAL PROJECTS

List of Industrial projects to be promoted with first priority

<u>Projects</u>	<u>Fixed Investment in \$</u>
Brewery	\$ 400,000
Treatment of Coffee	100,000
Treatment of Tea	20,000
Transformation of papaya (Papain production from Papaya fruit)	8,000
Soluble coffee (use of non-exportable coffee)	275,000
Ginning of cotton and kapok	5,000
Spinning and treatment of silk	20,000
Transformation of livestock products	-
Enriched food for cattle	50,000

List of Industrial projects to be promoted with first priority (continued)

<u>Projects</u>	<u>Fixed Investment in \$</u>
By products of slaughtered animals (hides, horns)	Unstated
Transformation of forest products*	-
Salt production	15,000
Paint Manufacture	30,000
Recovery of used oils	160,000
Recovery of rubber	25,000
Tire Recapping	35,000
Plastics, pipes	50,000
Smelting works (foundry)	25,000
Metal joiners (metal windows)	15,000
Wire, lattice work barbed wire	20,000

The Ministry of Plan considers that One Thousand Million Kip of investment funds must be attracted to realize the foregoing priority industrial projects that are proposed for the 5 Year Plan.

* The Continental Allied Inc. report: "Industrial Progress for Laos" completed on February 16, 1966 under Contract AID/fe 150, recommends the following industrial projects for development in Laos within priority groupings as noted below:

<u>First Priority (Additional to above)</u>	<u>Fixed Investment</u>
Pumps for Artisan miners	\$ 10,000
Bonang and Nongsun tin mines	50,000
Brown Sugar Mill	21,000
Hydrogenation and refining of peanut oil	250,000
Monosodium glutamate	60,000

* Please refer to undernoted items in Continental Allied category of First ~~Priority~~ industrial projects which are presumed to be authorized by this general category of project with an open funding amount.

Alimentary pastes	3,500
Pineapple and vegetable cannery	60,000
Poultry Factory	30,000
Milk reconstituting plant	13,000
Logging Equipment*	175,000
Sawmills (expansion)*	325,000
Planning and Millwork*	50,000
Woodworking*	25,000
Modernization of brick manufacture	15,000
Dishes and pottery	1,000
Concrete products	100,000
Cement (expansion and improvement)	250,000

First Priority (Additional to above)

Fixed Investment

Asbestos Cement	\$185,000
Storage batteries	30,000
Foam plastic ice chests	1,000
Machine Shop	50,000
Foundry	25,000
Well drilling, expansion	10,000
Metal windows	15,000

(Continental Allied's first priority = \$3,020,000)

* May be considered an element of 5 Year Plan Priority One
Project: Transformation of Forest Products

Second Priority

Fixed Investment

Petroleum	unstated
Coal Mining	\$ 50,000
Tin mining (Bonang and Nongsun)	450,000
Other tin and other metal mining	500,000
Lao Lao distillery	100,000
Peanut oil Mill	45,000
Cassava starch	20,000
Pineapple juice concentrate	200,000
Pork Processing	40,000
Charcoal	4,700
Cotton spinning and weaving	600,000
Kenaf bag mill	750,000
Tannery	50,000
Shoe Manufacture	50,000
Detergent mixing	15,000

(Continental Allied total 2nd priority = \$3,349,700)

Third Priority (Possible Regional Market Industries)

Fixed Capital

Petroleum Refinery	Unstated
Coal Mining	\$ 800,000
Iron mining	400,000
Iron and Steel industry	16,000,000
Khong falls fishing and fish products	Unstated
Oxygen	40,000

(Continental Allied total 3rd priority = \$17,240,000)

(Continental Allied total of Priorities 1, 2, and 3 = \$23,609,700)

Private Sector Emphasis

Within the frame of the identified first priority projects of the Five Year Plan, USAID has a variety of options. Some of them have already been excluded from consideration by policy determinations, as for example the "Brewery". Others had been commenced based on the Continental Allied recommendations or had been authorized for USAID action before the Five Year Plan was articulated.

~~However, support for the construction of the USAID for technical assistance (February 1969) program
looked at industrial projects could be considered as possible in the context of the
Year plan. Industry development projects could be considered as possible in the context of the
would be considered as possible in the context of the USAID program. The
tion of industrial projects could be considered as possible in the context of the
industrial projects for USAID support could be considered as possible in the context of the
that are not yet specifically designated in the Five Year Plan.~~

Although the Industry Loan Fund limits USAID financial support to private sector industry, this has not been expressed as a preclusive requirement for USAID support of industry in general. However, it is a general principle of this project that support of private sector industry development is the central effort.

The U.S. Commodity Import Program (USIP) makes available U.S. manufactured industrial machinery at the official rate of exchange (240:1). The USIP Program and the Industry Loan Fund, paired together, form the main inducement for private entrepreneurs to approach USAID with investment proposals. These inducements are influential in persuading entrepreneurs to conform with USAID requirements for technical and financial feasibility studies in the development and implementation of industrial projects.

IV. PLANNED TARGETS, RESULTS AND OUTPUTS

A. Goal for Industry Development

*To encourage and assist the growth of private sector industry in the Lao economy by providing: (1) technical experts to identify optimum industrial sectors for present development and specific industries holding prime investment promise, and for these to conduct pre-investment surveys of economic, technical and financial viability and to provide technical and planning assistance to developing private industries; (2) short term consultants to prepare intensive feasibility studies for selected industries, to produce industry-start plans, and to provide guidance in the critical formative and initial operating stages of assisted industries.

(For loan support of selected industries see Goal C below)

FURNITURE MANUFACTURING PLAN

- 1. Target: - To assist the private sector in planning, constructing and operating a small, modern efficient furniture manufacturing plant.

- a. **Results:** (To provide higher quality, less expensive furniture, flush doors, treated and seasoned lumber and allied products to Laos.) It is estimated that plant will operate at 40% capacity in FY 70 and reach 100% of planned capacity in FY 72, advancing to 190% of planned capacity in FY 1974.
- b. **Status** - The project is in the development stage. A preliminary feasibility study has been completed. The site has been purchased, leveled and some construction started by the private investor. Private equity is expected to have been provided by June 30, 1969.
- c. **Course of Action**

Additional review of the feasibility study including revisions in specifications is needed. Providing anticipated favorable results are confirmed, assistance will include DBI-IIF loan, equipment under USIP, technical advice on equipment planning, plant installation and operation.

VENEER/PLYWOOD MANUFACTURING PLANT

2. **Target:** - To assist the private sector in establishing a small veneer/plywood manufacturing plant in Laos.
- a. **Results:** (To provide to the economy of the Vientiane area various grades and types of veneer and plywood panels.) Also to provide veneer for export to Thailand. The locally produced plywood panels should replace the import of plywood. USAID will finance and provide guidance and technical support in the design, planning, construction and initial operation of the plant. Contribution of this project to the GNP of Laos should be in excess of \$1,000,000 per annum beginning in FY 1973. Significant output will commence in FY 1971 and reach capacity by FY 1974.
- b. **Status** - The feasibility study is under contract to an American firm.
- c. **Course of Action**

The feasibility study will be reviewed. Providing results are favorable, assistance will include a loan to a private sector group through DBI; equipment procurement under USIP and Technical advice on operation from USAID.

METAL WORKING & FABRICATING INDUSTRY

3. **Target:** - To assist the private sector in developing an efficient and practical metal working and fabricating industry in Laos
- a. **Results:** Development with the metal working and fabricating industry of three facilities which will consist of:
 - (3.1) A General Machine Shop

This shop will engage in general repair work including fabrication of

spare machinery parts, will fabricate simple tools and dies and rebuild auto and truck engines.

(3.2) A Welding Shop

The welding shop will do general welding repair work and will produce special weldments such as roof trusses, water and fuel tanks.

(3.3) A Metal Fabrication Plant

((This plant will produce only proprietary items in series production. Items to be produced include agricultural and garden hand tools, simple agricultural machinery, bolts and nuts, screws and simple hardware such as hinges, hasps, handles and pulls.))

Demand for these services and products is strong, and local production will lower import requirements. USAID will provide technical advice, assist in industry loan fund support and USIP procurement at a favorable exchange rate to advance this program. This program should reach 150% of its planned capacity by FY 74. The planned capacity is \$100,000 gross annual sales.

- b. Status - Information is being compiled regarding these types of industries. Some members of the private sector are analyzing improvements needed to present facilities or the establishment of a new operation. The Project Industrial Engineer has arrived at Post and is reviewing the program.

c. Course of Action

Review by Industrial Engineer. If the studies indicate this industry appears profitable and practical, the project will move forward, including possible DBL loans to the private sector to assist in financing the venture. Equipment requirements will be reviewed and types of equipment will be decided. Procurement of equipment will be under USIP. Technical advice will be provided to the private sector as appropriate.

LOGGING OPERATIONS

4. Target: - To assist the private sector of Laos in forming and operating an efficient logging operation by the use of modern powered equipment and modern methods that are compatible with good forest management practices.
- a. Results: ((Provide ample and dependable supply of logs to the sawmills, plywood plant and other wood using industries of Laos in a practical and efficient manner.

The production from the logging operations will be approximately 60,000 cubic meters in FY 72 and by FY 74 the production should be in excess of 100,000 cubic meters of wood.

- b. Status - The Lao Timber Company has been organized and is now operating, with USIP equipment provided by DBL-ILF loan. The Laos Xang Timber Company, Savannakhet, has been organized and the equipment has been ordered under USIP. The Sedone Timber Company, Pakse, has been organized and equipment ordered under USIP.

All three logging companies have received loans from DBL-ILF in the total amount of 139 million Kip.

A field trip by Industry Branch personnel (Feb. 1969) has identified the probable requirement for logging industry development in the northwest area of Ban Houei Sai. The 7 sawmills in the area are in need of technical and financial assistance for their timber extraction programs, establishing a need for the formation of one or two logging companies similar to the Lao Timber Company, Vientiane. It is possible that a DBL-ILF loan request may be formulated in FY 1969 or FY 1970 in support of this development.

c. Course of Action

When the USIP equipment arrives the logging companies in Pakse and Savannakhet will start their timber extraction operations. Technical advisors will assist the companies in their start up operations.

Development of the Ban Houei Sai logging industry will be supported by staff technical assistance. If a DBL-ILF loan is requested, the loan project will be studied for feasibility. If the result is affirmative DBL-ILF loan processing will be commenced.

TIRE RECAPPING PLANT

5. Target: - Assist private sector to successfully assemble and operate the Tire Recapping Plant. (USAID Property leased to private Contractor to perform recapping services for USG, RIG with remaining capacity available to service private sector.

- a. Results - (Tire recapping capability would lower import requirement and result in less expensive vehicle operation.) Production of this plant will be approximately 500 tires for FY 69, 6,500 tires FY 71 and up to 9,000 tires annually by FY 74.
- b. Status - This facility should be operating during the year 1969. This is a contractual arrangement between USAID and the private sector. The equipment is U.S. excess property originally consigned to USAID Cambodia. Mission continues to hold title to the property.

c. Course of Action

Further action anticipated includes technical advice and assistance required to procure specialty items that may be required for this plant.

MODERN SAWMILL

6. Target: - Assist private sector to establish an efficient modern production type sawmill.

a. Results: - (Provide a modern sawmill for the manufacture of lumber from salvage timber which would otherwise be wasted.) Logs from Nam Ngum reservoir area, later the Pa Hong reservoir, and other projects will provide a raw material supply far in excess of the capacity of existing sawmills. (Much of the production will be exported, helping to offset the chronic balance of payments deficit.)

Planned capacity is 100 cubic meters per eight hour shift, to be reached during FY 1973.

b. Status: - The construction of the Nam Ngum Dam will result in the inundation of substantial quantities of merchantable timber during 1971. This establishes need for the Nam Ngum basin timber extraction salvage program for which the Cooperating Government has requested USAID assistance.

A preliminary study and estimates of quantities and values of merchantable timber has been prepared by AMI Industry Branch Forest Products Industry Advisor that indicated preliminary feasibility of the timber salvage program proposed. Aerial photography of the area, performed under USAID Contract, will enable more detailed assessment of the timber quantities and values after the Canadian Forest Survey Team has completed studies in process. Responsibility for preparing a feasibility study will have been contracted to a qualified American firm and the results known by about ~~the end of~~ 1969. The feasibility of the Nam Ngum timber salvage will provide the parameters for the requirement for the modern sawmill. The feasibility of the sawmill, considering the export market required to absorb its product, will also have been attested by a study by the end of FY 1969.

c. Course of Action

Providing the results of the feasibility study show that the plan is practical and the facility is needed as anticipated, we will proceed to develop this project further. Action will include discussions with members of the private sector, RIG personnel, USAID to decide on the organization of the proposed cooperation. The equipment for this manufacturing facility will be provided under USIP. The justification for this plant is the requirement to obtain maximum value from salvage timber that ~~must~~ be cut prior to inundation of the Nam Ngum Dam reservoir and later timber salvage operations in Laos.

A study must be made to find export markets for this lumber. Of particular interest is the request by the Thailand Railways to purchase railway sleepers at the rate of 100,000 per month. (6,000 cu. meter per month).

FOUNDRY INDUSTRY

7. Target: - Establishment and operation of a smelting foundry facility for various types of metals.
- a. Results - This operation will (provide the facilities to form various needed metals for domestic consumption.) Virtually all of these are now imported. (Local manufacture would reduce cost and improve balance of payments. The products should include small automotive parts, agricultural parts for implements, small industrial requirements and various other items of domestic consumption.) 100% of planned capacity will be reached approximately FY 74. (Annual capacity approximately 20 tons of produced commodities.)
- b. Status - Planning stage only.
- c. Course of Action
- (1) Assist members of the private sector to provide a much needed facility for Laos.
 - (2) Financial support will probably involve private equity and a DBL-ILF/Loan. It is estimated the loan requirement will approximate Kip 35 million.
 - (3) Technical advisory services will be provided by USAID to assist in this project. Industrial Engineer will review.

INDUSTRIAL ESTATE

8. Target: - To assist RIG in establishing and operating an Industrial Estate Project.
- a. Results - This project would (establish a planned industrial area, offering significant collective advantages such as mutual support of needed road construction and maintenance, combined installation and operation of utility systems, and minimizing conflicts with residential area needs including air and water pollution.) Electric power costs to participating industries are expected to be relatively low-possibly around 6-1/2 mills per kWh.
- 100% lessee participation in this project is anticipated by FY 73.
- b. Status - Planning stage only.
- c. Course of Action
- (1) (The project would provide planned sites for industrial development. This type development often results in reorganization of industries.) Probably the industrial estate would offer power, water and road system. Steam might be provided if needed. These facilities can be constructed and operated with less aggregate investment than would necessary if separate industries developed their requirements individually. Tax advantages might be offered participating industries, if RIG concurs.

- (2) The project would be a cooperative relationship involving USAID/RIC/private sector.
- (3) Financial considerations will require study and review following a complete feasibility study.

BATTERY MANUFACTURING PLANT

9. Target: - To assist the Private sector in establishing and operating an acid type battery manufacturing plant.
 - a. Results - (The anticipated production for a small plant of this type would be approximately 3,000 batteries per annum. This production should be reached by FY 72; and by FY 74 the battery production should be 150% of planned production or 4,500 units per annum.
 - b. Status - This project is in the planning stage.
 - c. Course of Action
 - (1) This project will require a thorough study. Assuming that the results are favorable, the private sector entity will move ahead into the financial, sales and manufacturing aspects. From preliminary studies and available information, this ~~project~~ project appears to be a profitable and practical venture.
 - (2) It appears that the project will have a total cost of Kip 30 Million. The private sector's equity should amount to approximately Kip 10 Million.

WOOD REMANUFACTURING PLANT

10. Target: - To assist the private sector in constructing and operating a wood re-manufacturing plant.
 - a. Results - To (make available a supply of kiln dried, planed and graded lumber items for domestic consumption. The items will include standard size boards, dimension stock, and also a reasonable number of different moulding patterns.) Product will be sold to carpenters, cabinet shops and furniture factories. Gross sales should reach an annual volume of \$200,000 by FY 73.
 - b. Status - This project is in the study and planning stage.
 - c. Course of Action
 - (1) Interest in this development has been shown by the private sector. The purpose is to (remanufacture rough sawn lumber into semi-finished products ready for the final user or for resale to various lumber dealers.

- (2) USAID will provide technical advice for the project
- (3) Equipment will be purchased under USIP. Estimated total financial requirement is approximately Kip 120 Billion. The private sector should provide one third of the total financial requirement in equity.

SAWMILL MODERNIZATION

- 11. Target: - To support private sector sawmill modernization by assisting private owners in remodeling and modernizing their lumber manufacturing operations.
 - a. Results - This program will increase the man hour production but will not necessarily cut down the labor force. Both production (capacity and quality of output will be increased, depending on the type and size of modern equipment installed. The major improvement will be in manufacturing standards:
 - (1) Square edges
 - (2) Smooth ends
 - (3) Straight lumber on edges and faces
 - (4) Improvement in overall appearance.
 - b. Status - This project is in the planning and discussion stage.
 - c. Course of Action
 - (1) Many of the private investors in the sawmill industry have asked for this project to be started. Presently sawmills are operating with old or outdated types of machinery and the maximum use of manpower. The man hour production for these mills is extremely low when compared to mills using modern equipment and methods. The quality of the manufactured lumber is not high due to wavy and uneven sides, tapered edges, no tridding, and rough surfaces.

Goal for Forestry

The overall goal for forestry in Laos is to facilitate the early and effective development and utilization of the country's forest resources. Achievement of the following Targets will help attain this overall goal:

- 1. Target: - Improve Technical and Administrative forestry capability of RIG Directorate of Water and Forests.
 - † a. Results - To eliminate or at least minimize need for assignment of forestry Technician level work to foreign advisory personnel by the end of FY 71.

Attainment will tend to strengthen Lao economic and industrial activities, encourage the best long range use of renewable resources, at the same time providing for orderly phasing out of foreign assistance.

- b. Status - Counterparts have been assigned to some advisors, but most RIG officials designated have full time regular responsibilities; only limited time can be spent with their advisors. This results in loss of excellent opportunities to train Lao Technicians and Supervisory officials. * On-the-job training for Lao Technicians assigned to Forestry Inventory has been successful and 6 Lao participants are enrolled in a two year Ranger school course at Prae, Thailand. Six additional participants are expected to be selected this year.

In addition, a few promising employees of RIG Department of Water and Forests have been exposed to English language training which may eventually qualify them for attendance at University, four year professional forestry training in U.S., Philippines or Australia or India.

c. Course of Action

- (1) Insure early assignment of RIG counterpart to each Forestry advisor.

Counterparts are needed in the following positions:

Director of Forest Inventory (Canadian Team)
 Photogrammetrist
 Cartographer
 Forester (Australian Team)
 Soils Scientist

Additional USAID support is needed, with one position recommended at FSP 6 level. Duties would involve assisting with RIG Training activities & coordinating selection of RIG counterparts. RIG needs encouragement to set priorities, assign best qualified personnel available to take full advantage of available training.

- (2) Strengthen Training Programs

Strongly encourage and support courses which provide basic English capability for all technical/administrative employees of RIG Directorate of Water and Forests.

- * Provide on-the-job training in Technical Skills. Continued two-year Ranger school training in Thailand, for 6 graduates each year.
- * Select 4 candidates per year for professional 4-year University Training in Forestry.
- * Select one University graduate per year for graduate study in Forestry.

Overall, financial or in kind support for training can be expected from Thailand, Australia, Canada, Philippines, India in addition to U.S.

2. Target:- Complete the approved Forest Inventory project by 6/30/70 and extend to other units as needed and possible.
 - a. Results - Enable efficient planning and administration of timber harvesting, avoid unnecessary loss of resources, assure coordinated development of wood based industry and facilitate transportation system planning.
 - b. Status - This activity has received technical assistance from the Canadian forestry team, with USAID support in the form of technical assistance and commodity support. (Four high priority areas - Vientiane, Nam Ngum, Pakse and Savannakhet were selected and USAID financed aerial photographic coverage.) Field work started in May of 1968, is approximately one quarter done, with completion scheduled for Oct. 1970.
 - c. Course of Action
 - (1) Continued support of Canadian Team to complete present project. (The four areas listed above include about 50% of currently suitable active Timber harvest; less than 5% of Forest in Laos).
 - (2) Coordinate efforts to introduce Australian expertise, especially in Soils and Reforestation, into the Inventory.
 - (3) Provide short term consultant to program compilation of data by EDP methods.
 - (4) Assist RIG in planning future inventory needs and extending project to additional high priority areas.

3. Target:- Minimize illegal Timber Cutting and Maximize Financial return to RIG from Timber Sales.
 - a. Results - As all timber in Laos except King's Teak Preserve is owned by RIG, legal cutting requires a permit from Directorate of Water and Forests. Royalties paid help support RIG, thus minimizing foreign aid required. Timber theft upsets planned road and resource development, and results in poor utilization.

At present ^{an estimated 73%} ~~possibly 50%~~ of the timber cut in Laos is done without permit or payment of royalties to RIG.

b. Course of Action**(1) Support successful functioning of Lao Timber Co. (See Target A-4).**

As capabilities of this logging combine grow, a larger proportion of available cutting permits should be assigned to it each year. Lao Timber Company pays royalties on all timber it cuts. RIG responsibilities for policing other cutting areas can be met more effectively.

(2) Improve tree marking system.

At present individual tree selection and stamping by RIG sometimes delays legitimate timber harvesting, and requires RIG employees services that are needed elsewhere.

Approval of area selection by diameter limits and coordination of approved cutting units would allow more efficient administration.

(3) More efficient log scaling.

Many logs are now scaled twice, with numerous scalers participating. One qualified individual should be made responsible at each scaling station, and a check scaling program developed to maintain accuracy and honesty. Such a system could free numerous RIG personnel for other duties, discourage Timber theft and facilitate Transportation of logs from legitimate sales areas.

4. Target:- Improve Utilization on Timber Sales

a. Results - Eliminate present poor utilization practices which waste wood. These practices result in lower production and in lower royalties to the RIG and also raises costs of sawn lumber.

b. Status - Presently in study stage.

c. Course of Action

Assist RIG Directorate of Water and Forests to establish and enforce merchantability standards, including length/diameter of logs; height of stump, defect allowable.

5. Target:- Study and evaluate alternative long range Forestry projects.

a. Results - These long range plans will allow opting as indicated by need and suitability of personnel, finances and security situation.

b. Status - Preliminary study of possible projects

c. Course of Action

- (1) Develop potential land use plan.
- (2) Identify and assess timber losses from insects - disease - fire.
- (3) Consider effect of ray (slash/burn) agriculture on timber resource.

6. Target:- Improve charcoal production

a. Results - To minimize loss of valuable sawlogs for conversion to charcoal, and utilize available wood now going to waste, making available a better, cheaper fuel.

Attainment of this target would tend to eliminate unnecessary drain of valuable timber, strengthen Lao economic and industrial activities, and make more widely available a better, cheaper charcoal fuel.

b. Status - At present a major proportion of the population uses charcoal and firewood for fuel, mostly for cooking food. Total drain on the Forests of Laos is around 100,000 M³ per year; of this sum firewood represents 55,000 M³ and charcoal 47,000 M³. (This exceeds total industrial wood drain). Charcoal is preferred to firewood, although the quality is low, and production/distribution systems are primitive and of low efficiency. In addition, much of the timber cut for charcoal is in the size classes which are rapidly attaining Sawlog size, and consists of the most desirable, high value species.

c. Course of Action

- (1) Encourage RIG Department of Water and Forests to allow free use of limbs, tops, unmerchantable logs from timber sales for charcoal producers.
- (2) Encourage RIG to set minimal royalty rates for cutting trees of less desirable timber species for charcoal, and prohibit use of high value sawlogs for conversion.
- (3) Study alternatives, select most appropriate methods for low volume local village charcoal production - distribution.
- (4)* (Initiate feasibility study for pilot plant, capacity 3,000 tons per year, including packaging - marketing methods, to be located in Vientiane area.

7. Target:- Improve Serviceable life of native woods in actual use.

- a. Results - The lumber, labor and capital necessary for schools, homes and other structures are all adversely affected when wooden structures deteriorate prematurely. Factors to be considered include extensive and rapid termite damage; rot; unsuitable selection from various woods available; construction methods unsuited to factors; almost complete lack of local wood treatment.
- b. Status - Structures built of wood, especially in rural Laos have an unnecessarily short serviceable life. The most common uses are for homes and schools, but numerous other applications would be more useful and satisfactory if deterioration could be slowed. Most of the problem involves wood in contact with the ground.
- c. Course of Action
 - (1) Study various types of deterioration of commonly available species.
 - (2) Conduct Survey of known simple inexpensive treatment methods suitable for application by villagers.
 - (3) Test suitable combinations of available species and practical treatment; also possible changes in construction techniques.
 - (4) Disseminate results, encourage changes if warranted.

C. Goal for Industrial Finance

To support the development of priority private sector industry and mechanized farming enterprises through intermediary of the Development Bank of Laos by controlled local currency lending designed to assure technical, financial and managerial feasibility of activities assisted; and to develop the capability of the Development Bank of Laos to serve as intermediary for development funds to private sector enterprises, and developing the capability of the DBL to undertake professional appraisal of loan applications, and effective supervision and control of loan projects.

1. Target:- To provide counterpart local currency through the intermediary of the Development Bank of Laos, Special Fund - Industry Fund, for the purpose of financing loans to approved industries or mechanized farming enterprises.

- a. Results - The result will be provision of financial assistance to priority industries and mechanized farming enterprises after the completion of feasibility appraisals designed to assure the success of the activity. Also purchase of USIP commodities will be required for 70% value of the loan, which will reduce the strain on U.S. Balance of Payments in support of this program.

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b. Status - The Industry Loan Fund has financed three loan activities for Logging Companies organized from associations of sawmill operators in three areas: Vientiane, Savannakhet and Pakse. These are respectively:

<u>Name</u>	<u>Date of Loan Agreement</u>	<u>Loan Principal</u>
Lao Timber Co.	September 8, 1967	Kip 91,258,408
Lane Xang Timber Co.	January 10, 1969	24,317,000
Sedone Timber Co.	January 10, 1969	24,103,000

c. Course of Action

Following the preparation of technical and financial feasibility study of a loan project, usually performed by technical advisory services financed by USAID, the loan application is readied by the Secretary General of Development Bank of Laos for presentation to the DBL Technical Committee, which is composed of representatives from several interested RIG Ministries or Institutions, as well as USAID. Following approval by the Technical Committee, or after resolution of deficiencies that have been pointed out in the Technical Committee review, the Loan Application is presented to the DBL Management Committee which is chaired by the Minister of Finance, or in his absence by the Governor of the National Bank of Laos. The other members of this Committee represent interested Ministries and Director USAID or his representative. USAID concurrence by letter is given for signing of Loan Agreement, which provides assurance that USAID funding will be provided promptly for the first "tranche" of the loan payment. The first loan financing is for the Letter of Credit to finance the import of USIP commodities. Part of the equipment cost at this stage is paid from equity as this tends to commit investor funds in a demonstrable form to the project.

The equity: loan ratio in developing a loan project ranges between equity 30% loan 70% and equity 40%: loan 60%. Loan funding requested for industrial and mechanized farming loan projects for the period FY 1969 through FY 1976 for targets enumerated under Goal A above is presently estimated to be as follows:

FY 1969	Kip 199,000,000
1970	,000,000
1971	,000,000
1972	,000,000
1973	,000,000
1974 - 1976	,000,000

2. Target:- To support through the Development Bank of Laos (DBL). Special Fund - Industry Loan Fund the industrial targets submitted under Goal A above.

- a. Results - Provision of financial assistance to allow certain priority industrial projects to be developed that might otherwise be postponed or not attempted.
- b. Status - As shown under Goal A above.
- c. Course of Action

Will be adapted to the particular priority industry. A description of action courses for each industrial target appears under Goal A above.

3. Target:- To develop the capability of the Development Bank of Laos to make professional technical and financial feasibility appraisals of industrial and mechanized farm loan applications.

- a. Results - The result when achieved will tend to assure that loans will support priority industrial activities, and that loan projects will have assurance of careful planning, and an optimum opportunity for success.
- b. Status - *Technical training in Thailand is being provided to two professional staff members of the DBL in academic and financial institutions. The Thai and Lao languages are sufficiently similar that training can commence after only a few weeks of language orientation.
- c. Course of Action

Participant training scholarship at Thai institutions are being programmed for two DBL personnel annually, for terms of up to 50 weeks per participant. This training is designed to prepare DBL staff to administer and participate in the preparation of technical and financial feasibility studies of industrial and mechanized farming loan projects.

*Additional, invitational travel will be arranged, as opportunities arise that will take DBL personnel to see interesting industrial financing activities in neighboring countries which have rather recently faced the industrial development problems that will be encountered in Laos in the coming decades. Third Country financial support will be solicited.

↓ DBL personnel will also be exposed to and become involved in the conduct of feasibility studies by technical personnel financed by USAID Contract. This on-the-job type of exposure will be educational and will give confidence to DBL personnel in their first steps in the pump preparation and evaluation of feasibility studies.

4. Target:- To assist the DBL in attaining the posture of an industrial financing intermediary that will merit the confidence and support of the international lending community.

- a. Results - If and when achieved this target would result in provision of funds to DBL from international lending institutions such as the Asian Development Bank, which funds would in turn be used for industrial loans in Laos. The DBL would do all loan screening and appraisal, loan issuance, and supervision, in conformance with the requirements of the financing source.
- b. Status - Confidence is earned not contrived. The professional standards of the DBL and the validity of their financial statements are essential ingredients of the confidence to be accorded by the international lending community. However, this development may be expected to be slow.
- c. Course of Action

Development Assistance from other organizations and institutions such as the Asian Development Bank will be helpful and will be solicited as specific needs present themselves.

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Attachment: Small Industry Project PIP *sent to reproduction*
for handling under PIP procedure, 6/4/69

PROJECT AUTHORIZATION

1. PROJECT NUMBER 439-11-290-074	3. COUNTRY Laos	4. AUTHORIZATION NUMBER 0052
2. PROJECT TITLE Industry Development	A.I.D. Reference Center Room 1656 NS	5. AUTHORIZATION DATE 4/30/70
7. LIFE OF PROJECT		6. PROP DATED 5/27/69

a. Number of Years of Funding: 10
Starting FY 19 75; Terminal FY 19 76

b. Estimated Duration of Physical Work:
After Last Year of Funding (in Months): 12

FUNDING BY FISCAL YEAR (in U.S. \$ or \$ equivalent)	DOLLARS (000)		P.L. 480 CCC + FREIGHT	LOCAL CURRENCY (\$000)			
	GRANT	LOAN		U.S. OWNED		HOST COUNTRY	
				GRANT	LOAN	JOINTLY PROGRAMMED	OTHER
Prior through Actual FY	639	--		798			
Operational FY 70	445			323			
Budget FY 71	695			87			
B+1 FY 72	559			(414) 1/			
B+2 FY 73	555			(429)			
B+3 FY 74	530						
All Subsequent FY's 75-76	952			(2,595)			
TOTAL	4,375	--		1,208	2/		

9. DESCRIBE SPECIAL FUNDING CONDITIONS OR RECOMMENDATIONS FOR IMPLEMENTATION, AND LIST KINDS AND QUANTITIES OF ANY P.L. 480 COMMODITIES

1/ Kip budget offset by income from loan repayments or by funds attributable to U.S. Import Program.

2/ Kip required only through FY 71 when income expected to exceed obligations.

10. CONDITIONS OF APPROVAL OF PROJECT

Approval is granted of general project objectives and course of action. However, since the PROP presents very broad coverage and a large number of possible industrial projects eligible for A.I.D. assistance, prior to A.I.D. funding approvals each year, detailed review and justification of proposed activities based on adequate feasibility studies will be required from the Mission. Approval is further conditioned on deletion of proposed timber salvage activity in the Nam Ngum area under this project, as previously agreed by the Mission.

(Use continuation sheet if necessary)

11. Approved in substance for the life of the project as described in the PROP, subject to the conditions cited in Block 10 above, and the availability of funds. Detailed planning with cooperating country and drafting of implementation documents is authorized.

This authorization is contingent upon timely completion of the self-help and other conditions listed in the PROP or attached thereto.

This authorization will be reviewed at such time as the objectives, scope and nature of the project and/or the magnitudes and scheduling of any inputs or outputs deviate so significantly from the project as originally authorized as to warrant submission of a new or revised PROP.

A.I.D. APPROVAL	CLEARANCES	DATE
Charles H. Breecher	EA/OEA: HALEVIN	11/12/69
<i>Charles H. Breecher</i>	EA/TECH: R. JOHNSON	11/10/69
EA/DP	A/CONT	
TITLE	DATE	