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**INDUSTRIAL DEVELOPMENT REVIEW SERIES**

**LAO PEOPLE'S  
DEMOCRATIC REPUBLIC**

**Industrial transition**

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## PREFACE

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This Industrial Development Review of Lao People's Democratic Republic is part of a non-sales series aimed at strengthening the "country focus" of UNIDO activities. Within the framework of the work programme of the Industrial Development Reviews Unit of the Programme Support and Monitoring Branch of UNIDO, the Reviews present a survey and analysis of each country's industrial development achievements. The Reviews are intended to provide a service to those within UNIDO and other international agencies concerned with industrial policy, planning, project development and implementation, and to be a ready source of information for governments, investors, industrialists, entrepreneurs, policy-makers, international organizations, aid agencies, academics and research institutes.

The Reviews have two separate but interrelated objectives: they are designed to facilitate and promote the activities of UNIDO, as well as to serve as an informative and analytical document for the international industrial community. The analyses contained in the Reviews are intended to support the technical assistance programming for industry by providing industry specific analysis which may serve as an input to programming activities and as a basis for informed discussions. The Reviews are also designed to accommodate the needs of a wide readership in the international community associated with industry, finance, trade, business, research and government, laying the groundwork for undertaking in-depth analyses of specific aspects of industrial development trends, policies and strategies.

This Review comprises four Chapters. Chapter I presents an overview of the economy. Chapter II analyses the macroeconomic context of the ongoing process of industrial transition. The structure and performance of the industrial sector are analysed in Chapter III, with particular reference to the country's resource endowment for industrial development, ownership, location and trade. Chapter IV examines the industrial sector's needs and prospects.

The Review was prepared in cooperation with Ian Livingstone, UNIDO Consultant, on the basis of information available as at December 1993.

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References to dollars (\$) are to United States dollars, otherwise stated.

Dates divided by a slash (1991/1992) indicate a fiscal year or a crop year. Dates divided by a hyphen (1991-1992) indicate the full period, including the beginning and the end years.

### In Tables:

Totals may not add precisely because of rounding.

Three dots (...) indicate that data are not available or not separately reported.

A dash (-) indicates that data are not applicable.

The following abbreviations are used in this publication:

EPZs	Export Processing Zones
FIMC	Foreign Investment Management Committee
GDP	Gross domestic product
GNP	Gross national product
HDI	Human development index
IMF	International Monetary Fund
Kp	Kip
MEER	Ministry of External Economic Relations
MEPF	Ministry of Economy, Planning and Finance
MTPF	Medium Term Policy Framework
NEM	New Economic Mechanism
NGO	Non-governmental Organization
SACs	Structural Adjustment Credits
SIP	State Investment Plan
SOEs	State-owned Enterprises

# BASIC INDICATORS

## BASIC INDICATORS I: THE ECONOMY

Population (1993)	:	4.4 million							
GDP (1992)	:	Kp 685,566 million <sup>a/</sup>							
GDP per capita (1993)	:	\$270							
Growth of GDP (Per cent)	:	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>
		4.8	-1.1	-1.8	13.8	6.7	3.9	7.2	7.0
Structure of GDP (Per cent)	:				<u>1986</u>	<u>1992</u>			
					Agriculture	63.0	57.9		
					Industry	13.1	16.6		
					Manufacturing	8.2	12.1		
					Other	23.9	25.5		
Exports (1992)	:	Kp 19,533 million							
Composition of exports (1992) (Per cent)	:						Electric power	47.3	
							Wood and wood products	43.6	
							Other	9.1	
Imports (1992)	:	Kp 90,250 million							
Composition of imports (1992) (Per cent)	:						Transport equipment	28.2	
							Machinery and parts	33.4	
							Fabrics, clothes and threads	5.4	
							Paper and stationery	5.0	
							Other	28.0	
Current account balance (\$ Million)	:	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u> <sup>b/</sup>	<u>1993</u> <sup>b/</sup>		
		-44	-46	-64	-65	-97	-101		
External debt (\$ Million)	:	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u> <sup>b/</sup>	<u>1993</u> <sup>b/</sup>		
		450	542	615	701	815	913		
Changes in consumer prices (Per cent)	:	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u> <sup>b/</sup>	<u>1993</u> <sup>b/</sup>	
		6.6	14.8	75.9	19.6	10.4	9.7	8.0	
Official exchange rate (Kp equivalents to \$1)	:	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
		180	421	576	709	702	715	716	718

a/ At constant 1990 prices.

b/ Asian Development Bank projection.

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**BASIC INDICATORS II: THE INDUSTRIAL SECTOR**


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Value of industrial output (1990) (At constant 1989 prices)	:	Kp 44,669 million						
Value of manufacturing output (At constant 1989 prices)	:	Kp 38,241 million						
Index of value added in industry (1986 = 100)	:	<u>1987</u> 84.0	<u>1988</u> 82.0	<u>1989</u> 110.0	<u>1990</u> 127.4	<u>1991</u> 151.2	<u>1992</u> 157.0	
Index of MVA (1986 = 100)	:	<u>1987</u> 93.4	<u>1988</u> 87.5	<u>1989</u> 121.1	<u>1990</u> 139.1	<u>1991</u> 178.1	<u>1992</u> 185.7	
Composition of manufacturing output (Per cent)	:						<u>1990</u>	
		Food products					11.9	
		Tobacco					16.3	
		Textiles and clothing					5.4	
		Wood and wood products					40.1	
		Furniture					5.0	
		Chemicals					4.0	
		Non-metallic mineral products					4.0	
		Fabricated metal products					10.8	
		Other					3.5	
Industrial enterprises (1992)	:	Small-scale employing less than 10 persons		Medium-scale employing 10-29 persons		Large-scale employing more than 29 persons		
		Mining and quarrying		2		2	8	
		Manufacturing		2,232		93		99
		Electricity, gas, water		6		4		7
		Construction		37		142		127

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**BASIC INDICATORS III: INTER-COUNTRY COMPARISON OF SELECTED INDICATORS**

Indicator	Year	Unit	Lao People's Democratic Republic	Bhutan	Mongolia	Myanmar	Viet Nam
Population	Mid-1991	Million	4.3	1.5	2.2	42.7	67.7
Per capita GNP	1991	\$	237	180	..	200 <sup>a/</sup>	200 <sup>a/</sup>
Growth of GDP	1990	Per cent	6.7	3.1	-2.1	4.0	4.5
	1991	Per cent	3.9	3.5	-18.0	3.7	3.8
	1992	Per cent	7.2	4.0	-6.0	4.0	5.0
	1993	Per cent	7.0	4.6	-1.5	4.1	4.5
Growth of value added industry	1990	Per cent	15.7	4.9	-1.9	7.7	3.7
	1991	Per cent	28.8	4.0	-30.6	5.0	4.9
	1992	Per cent	12.2	4.5	-12.0	5.5	4.9
	1993	Per cent	11.0	5.5	-4.5	6.0	4.8
Agriculture	1991	Per cent share of GDP	57.3	45.8	17.4	47.7	38.0
Industry	1991	Per cent share of GDP	17.8	25.2	28.5	13.2	22.4
Services	1991	Per cent share of GDP	24.9	29.0	54.1	39.1	39.6
Gross domestic savings	1991	Per cent of GDP	2.0	..	3.5	11.6	..
Gross domestic investments	1991	Per cent of GDP	12.7	35.6	12.2	12.5	5.8
Inflation rate	1992	Per cent	7.0	10.5	50.0	26.0	45.0
Exports	1992	\$ Million	71	88	485	588	2,323
Imports	1992	\$ Million	257	128	595	1,144	2,425
Current account balance	1992	\$ Million	-97	-62	-103	-510	-426
External debt	1992	\$ Million	815	89	..	4,900	16,383
Debt service ratio	1992	Per cent of goods and services	15.0	..	..	20.0	51.0

Source: World Bank, *World Development Report 1993* (July 1993); Asian Development Bank, *Asian Development Outlook 1992* (April 1992).

Note: Data presented may not correspond to those cited in the text because of different sources. Figures for 1992 and 1993 are ADB projections.

a/ 1990.

## SUMMARY

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Lao People's Democratic Republic embarked on a major overhaul of the economy in the mid-1980s with a comprehensive set of reforms in pursuit of a rapid transformation from central planning to market orientation. What was first initiated on an experimental basis in 1985 for granting managerial autonomy to state-owned enterprises under the New Economic Mechanism eventually cut across the entire spectrum of the economic activities in terms of liberalization, market orientation and privatization.

The productive response to new waves of reforms was initially restrained by a series of supply shocks and a number of exogenous factors, including a rapid decline in assistance from the former Soviet Union and deteriorating trade with the non-convertible currency area. The economy rebounded well in 1989 with a 13.8 per cent increase in GDP in real terms. The years 1990 and 1991 turned out to be a period of consolidation of economic gains, with the growth of GDP averaging around 5 per cent. A high pace of economic expansion at 7 per cent was sustained for the second consecutive year in 1993.

Recent attempts to maintain financial and monetary stability have been successful. As a result, the economy is undergoing a structural transformation and inching out of economic isolation. Agriculture accounts for 58 per cent of GDP, compared with 63 per cent in 1986, with a lion's share of the arable land destined for paddy cultivation and 90 per cent of the population engaged in the agricultural sector. The industrial sector currently accounts for 16.6 per cent of GDP and is fast expanding with a substantial inflow of foreign investment, which is pouring in at an annual rate of \$150 million. While construction is another dynamic sector, the most visible impact of the market-oriented reforms is in the service sector. Shortcomings in statistical coverage seem to understate the growth of the sector in recent years.

The direction of exports and imports changed dramatically with the exports to the non-convertible currency area falling to 3 per cent of total exports in 1992. Without electricity exports there would be an extremely unhealthy dependence on exports of wood and wood products. The rapidly growing garment exports represent Lao's endeavour to expand labour-intensive and export-oriented manufacturing. Landlocked Lao of 4.4 million people with one of the world's lowest annual *per capita* incomes of about \$270 has considerable economic potential in the areas of intensive farming, forestry production, hydroelectricity generation, mining and labour-intensive activities such as garments and handicrafts manufacturing. Sweeping efforts will, however, need to be initiated to address the country's major handicap of inadequate infrastructural base in terms of road and communications network in order to facilitate effectively the process of industrial transition currently under way.

The tenets of macroeconomic and industrial policy environment have been effective in reducing the annual inflation rate from 75 per cent in 1989 to 7 per cent in 1992, and a realistic exchange rate near parallel to the market rate has been maintained. The country's banking system has been reorganized. There are observable improvements in augmenting government revenues and balancing the fiscal budget in 1993 for the first time in many years. The rather reluctant response of the entrepreneurs to opportunities made available in the divestiture programme and the new industrial investment climate led to the introduction of leasing arrangements for 5 to 10 years. The establishment of an Industrial Investment Corporation under the Ministry of Industry and Handicrafts has been suggested with a view to providing a more commercial management and to serving as a vehicle to implement the privatization programme.

The emerging enabling environment is designed in substantial part to attract foreign investment. Hitherto the largest foreign investments were in mining, petroleum, hotels, banking, transport and hydropower. Within the manufacturing sector three sectors stand out in terms of number of projects. Forty eight were in garment-making, of which 35 came on stream in the last two years.

There were 27 investments in agribusiness and 22 in wood products. Asian countries account for 64 per cent of the total foreign investment, of which 39 per cent originated from Thailand, reflecting the progressive incorporation of the country into the regional market. Once the internal and regional road network is established, the prospects for resource-based and export-oriented industrial activities could be significantly enhanced. The two dominant resource-based and export-oriented industry branches are wood processing and hydroelectricity generation. Recently garment making has been emerging as an important labour-intensive and export-oriented manufacturing activity.

#### **Mineral resource potential**

The country is endowed with deposits of gypsum, iron, manganese, tin, copper, gold, silver, oil and natural gas. There are in fact over 500 recorded mineral deposits. Few of these have been evaluated, but these do not seem to warrant immediate commercial exploitation in the absence of roads and railway infrastructural facilities. The sector is characterized by great deal of small-scale artisanal mining activity, but international companies are beginning to show interest. The most immediately exploitable mineral resources are gold, other precious metals and gemstones, for which transport cost is a much less critical factor, extraction costs are lower, and the required investment in infrastructure is much less.

The other resources for which there are immediate market prospects are gravel and sand, as large increase in demand can be anticipated for construction purposes. Increased demand for cement will certainly improve the viability of the initial cement plant. Once the transport network is completed in the long term, there is the possibility of linking together iron ore at Pha Lek, coal, lime, potash, high grade base metal deposits in Vang Vieng District, manganese and cheap electricity for steel production, cement and other manufacturing and processing activities. Further exploration of mineral deposits needs to be combined with an assessment of market prospects, so that a realistic and properly sequenced plan for mineral development can be prepared.

#### **Hydroelectricity**

Hydroelectricity generation constitutes an important industrial activity in view of the country's natural resource base and the industry's substantial export earning potential. Electricity is estimated to have contributed 47 per cent of the value of exports in 1992. The potential for further expanding the production of hydroelectric power is clearly enormous. Numerous rivers run through mountainous areas in which dam sites are easily identified with no major problems of population displacement, though the environment impact of new schemes would need to be assessed very carefully. There is a pivotal need to enhance the country's supply response to a substantial increase in demand. Lao's electricity system is already closely tied in with that of Thailand, with Lao exporting to Thailand from the Nam Ngum and Xeset Dams, and importing from Thailand in Savannakhet. The complementarity in the future will involve more Thai industry and Lao electricity supply, however, making electricity by far the most promising of existing industrial possibilities.

#### **Food processing**

The country's agricultural resource base is grossly underutilized. The backward and forward linkages of agro-processing mean that it can contribute substantially to the development of the rural economy in different provinces. The most widespread agro-processing industry is rice milling. There appears to be general as well as localized excess capacity in the industry because a number of mills are not well located in relation to the supply of rice, and are uneconomical due to a low level of rice production. Less than 5 per cent of lowland rice in Lao is irrigated at present. What is needed is intensification of rice production through increased irrigation in order to enhance agricultural incomes, food supplies and make rice milling operations more economical. There appears to be a definite scope for import-substituting domestic capacity in sugar production and it is worth exploring the avenues of vegetable and fruit processing. There are also possibilities for livestock-related processing activities, such as tanning, the use of tallow for soap, the bones for glue, and slaughter waste for fertilizer. The expansion of coffee growing would also open up

opportunities for enhancing value added through processing activities. Possibilities also exist for vegetable oil extraction from sesame, soya and groundnut. The potential for expanding soya bean production in the south in particular is substantial.

#### **Wood processing**

A wide range of forest-related industrial activities include sawmills, plywood, veneer, parquet flooring, furniture making, chipboard and fibreboard, and a range of non-wood products. There is an urgent need for rationalization and restructuring of the industry because of the need both to improve efficiency and performance and also to conserve and manage future supply in each area. This would involve closing down specific mills while also opening up new forests for logging, in such a way as to adjust sawmill capacity regionally to the potential supply of wood. Obviously, this could be done by closing down those sawmills which are technically inefficient. This would simultaneously improve utilization rates in the remaining mills. It calls for a strong measure of cooperation and planning at the provincial level. There is a need to adjust the overall level of logging and mill production to the capacity of the forests and to control the cutting of individual species within the individual concessions in line with prudent forest management plans, with a view to utilizing the resources in a sustainable manner.

#### **Textiles and clothing**

The most exciting development in manufacturing is the growth of the garment industry, with export sales rising from \$2 million in 1989 to \$25 million in 1992 and 23 new garment production licences granted to foreign interests in 1991. Foreign investment in the industry, mostly Thai, Hong Kong, and Taiwanese, amounted to \$27 million by end-1992. The industry is based exclusively on imported fabrics and designs and on the country's cheap labour which strengthens the comparative cost advantage. The country's low cost labour is diligent, requiring little training, and readily accepts overtime work. Informal sector enterprises in garment making are both traditional and widespread, with the use of sewing machines in villages. There are possibilities for Lao to acquire the most favoured nation status (MFN) in the United States in the near future. This would give a major impetus to the industry.

#### **Agro-related metalworking**

Apart from two large-scale agro-related metal working establishments, there exists a sizeable informal sector. According to rough estimates, if rural families numbering 560,000 each required a Lao spade, medium sized spade, hoe, sickle, mower, hay-fork, rake and machete, this would produce some 1.5 million hand tools a year on the assumption of 3 year depreciation of the tools. There is indeed a large effective demand for agricultural tools, capable of supporting appropriate agricultural machinery production. It points to the need simultaneously to expand rural incomes through agricultural intensification in order to further develop the required demand and direct linkages as well as the need for more systematic techno-economic research into existing and potential methods of producing agricultural tools.

#### **Industrial prospects**

The most promising areas for industrial expansion are hydroelectric power, wood processing, garment manufacturing, and the mining sector. There is also considerable potential for developing domestic-resource-based agro-processing industries. This calls for significant improvements in agricultural productivity with more concerted crop growing schemes in order to utilize the resource base for such operations.



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The fragmented nature of the local market suggests the need as well as the possibility of dispersed rural industry capable of strengthening linkages with agriculture, rural housing, construction and transport. It is important that promotional measures be directed towards cultivating an industrial mentality and motivating the rural population to venture into agricultural trading activities and eventually to participate in the industrial transformation of the country.

In the sphere of forward linkages, rice mills are easily the most important in the country. Although there appears to be plenty - perhaps excess - of milling capacity in Vientiane, milling facilities in the provinces are primitive and inadequate. There are indications that 75 per cent of paddy in Champassak and Saravane is still hand pounded. Vegetable processing represents another opportunity in conjunction with increased production of oil seeds. Similarly, as production of the crop expands, coffee processing will contribute manufacturing value added.

As to the backward linkages, ox-carts and tools production, for example, point specifically to rural woodworking and metalworking industry. These two activities are also linked closely to rural housing and construction. In addition to joinery and carpentry associated with what is often impressively substantial wooden housing in the country, there is a quite remarkable development in brick making in the Vientiane Plain. The labour-intensive methods of production adopted in this industry generate employment opportunities for women and children as well as men, and provide an apparently good rate of return to rural loan capital. There is, likewise, scope for the production of roof tiles.

There is a need to examine the scope for expanding the use of appropriate metal products. Linkages to small-scale industry would be most obviously in food processing, garments, furniture-making, metal working, construction materials, handicrafts for tourists. The new growth impulses introduced since 1985 have substantially strengthened the country's market orientation. However, the limited absorptive capacity of the small domestic market and deficiencies in physical infrastructure are particularly important constraints on the current process of industrial transition. The government continues to consolidate the recent economic gains by maintaining macroeconomic stability and policy-induced stimulus for a rapid economic transformation of the economy.

# I. THE ECONOMY OF LAO

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## A. RECENT ECONOMIC TRENDS

The economy of Lao People's Democratic Republic (hereafter referred to as Lao) underwent a major overhaul following the enunciation of the New Economic Mechanism (NEM) in 1985. The NEM was first initiated on an experimental basis for granting managerial autonomy to selected State enterprises and eventually turned out to be the framework for market orientation, liberalization, and privatization. It was endorsed by the government in 1986 as a comprehensive set of reforms, permeating the entire spectrum of economic activities, in order to achieve rapid transformation from central planning to a market economy. Although Lao avoided the sequencing dilemma of a phased and gradual approach to a market economy, formidable challenges in terms of financial strains and macroeconomic imbalances surfaced due largely to administrative incapacities and ill-prepared institutional framework.

An analysis of economic performance in terms of production, prices, exchange rate, demand and public finance is constrained by the bewildering nature of economic statistics in Lao. Notwithstanding doubts about the reliability and validity of statistical data some guestimates of sectoral performance have been made on the basis of available information. The productive response to economic reforms was restrained by a series of supply shocks in the wake of the drought in 1987 and 1988, temporary ban on logging, and a number of exogenous factors. The economy had long been depending on the former USSR for substantial assistance, as had many individual state enterprises, with 80 per cent of its budget deficit covered by grants from the former Soviet Union. Not only were all the large-scale enterprises in the economy state-owned but also a large proportion of quite small enterprises in the provinces. From almost complete dependence on such help from the non-convertible currency area until 1985, aid from that source fell to 43 per cent of the total aid in 1989 and less than 3 per cent in 1991. Most of the projects under the 1986-1990 Five-Year Plan were left half completed, while most of the main factories stopped work due to lack of materials and finance. The activities of the farm cooperatives were also adversely affected.<sup>1</sup>

The direction of exports and imports changed at the same time, most rapidly in the case of exports. The share of exports to the non-convertible area fell to 25 per cent in 1989 and 3 per cent of total exports in 1990, by which time imports from the non-convertible area were also down to 2 per cent. In 1991 the former USSR and Lao signed an agreement establishing a new basis for trade according to world prices and hard currency settlements, extended later in the year to other countries.

The agricultural sector was affected by a number of adverse factors. Two consecutive years of drought reduced the output of rice dramatically. The sector in general suffered from prolonged underinvestment, leading to ill-maintained facilities, weak support services and out-dated equipment. Until the late 1980s, fertilizer imports were also minimal. Given the inability of the agricultural sector to show a good supply response, improved price signals had a limited impact on producers.

Following a decline in 1987 and 1988, industrial production picked up due largely to the recovery of the mining sector in general and the production of gypsum in particular. By the end of 1988 tin production, carried out on an artisanal basis, recovered significantly and recorded a 50 per cent increase in 1989. Since mid-1988 manufacturing output picked up, especially in garments, building materials and consumer goods. While the construction sector benefited from the surge in demand for new buildings, hydroelectricity generation rebounded well in the face of good rains in 1989.

The service sector seemed to have benefited the most from the New Economic Mechanism. Private and public operators of transport services took advantages of the removal of inter-provincial trade barriers and from the liberalization of private activities. Repair shops, tailors and restaurants also benefited from the new waves of reforms.

The most encouraging feature in recent years has been the significant growth of gross domestic product (GDP). Available statistical information indicates a 13.8 per cent increase in GDP in real terms in 1989 (see Table I.1). The growth of GDP faltered to 6.7 per cent in 1990 and slowed further to 3.9 per cent in 1991. Preliminary estimates indicate a 7 per cent increase in GDP in 1993, sustaining a high rate of economic growth for the second consecutive year. The most striking increase in recent years was in manufacturing, with the index of manufacturing value added (1986 = 100) reaching 185.7 in 1992. The growth of electricity output remained subdued in 1992, but this can be expected to grow dramatically in the future in the face of a substantial increase in investment in hydroelectricity generation.

**Table I.1. Growth of GDP by sector of origin, 1986-1992**

	1986	1987	1988	1989	1990	1991	1992
GDP at 1990 constant market prices (Million kip)	521,342.1	515,749.6	506,278.3	576,367.9	615,020.2	639,267.9	685,566.4
Growth rate (Percentage)	4.85	-1.07	-1.84	13.84	6.71	3.94	7.24
Index (1986 = 100)							
Agriculture (Crops, livestock and fishery, forestry)	100	98.8	94.7	104.9	113.9	121.1	121.3
Industry	100	84.0	82.0	110.1	127.4	151.2	157.0
Mining and quarrying	100	80.7	70.5	84.2	77.3	71.2	86.2
Manufacturing	100	93.4	87.5	121.1	139.1	178.1	185.7
Electricity, gas and water	100	67.2	63.2	83.1	98.8	97.0	88.1
Services	100	108.0	112.4	125.1	121.9	130.0	133.5
GDP	100	98.9	97.1	110.5	118.0	122.7	131.5

Source: Ministry of Economy, Planning and Finance.

Landlocked Lao is fast changing and aspiring to emerge as a commercial crossroad in the region. Clothing manufactured in over 50 new factories seem to have already overtaken hydroelectricity as the country's principal export. Foreign investment, much of it originating from other Asian

countries such as Taiwan Province, Singapore and Thailand, is pouring in at an annual rate of \$150 million. These encouraging developments facilitate the process of economic transition currently under way.

## B. ECONOMIC STRUCTURE

Lao's population was estimated at over four million in 1992, growing at an annual rate of 2.6 per cent. Population density in the country as a whole is less than 18 persons per square kilometre, on average. Population density in Vientiane (Municipality and Province), Savannakhet, Champassak and Luang Prabang Provinces currently stands at 33, 30, 30 and 21 per square kilometre, respectively, while that in the rest of the country is only 12. These areas offer some local concentration of purchasing power but separate economic fragments a considerable distance from each other. Due to a very low GDP *per capita* of about \$270, Lao is classified officially within the least developed category. The country's Human Development Index (HDI) of 0.24 ranked 129th out of 160 countries in 1992.

The country is handicapped further by being landlocked, between China, Viet Nam, Cambodia, Thailand and Myanmar. It suffers from 'remoteness' since the communications through these countries are difficult, and on unfavourable terms of trade, affecting exports through transport costs and the cost of importing equipment and materials for production.

### The domestic market

The domestic market is small and extremely fragmented. The low aggregate purchasing power is reduced much further by the fact that the population is distributed over a relatively large area, increasing the costs of reaching consumers and thus the amounts which they can buy. The problems associated with the fragmented domestic market are compounded by the underdeveloped transport network in mountainous terrain. During the rainy period, whole areas of the country become inaccessible by land transport. The length of road per square kilometre in 1991 was just 0.06 kilometres, of which 24 per cent was tarred, 34 per cent was gravelled and 42 per cent was earth.

In these circumstances it is not surprising that the economy is predominantly agriculture-based and dominated by subsistence farming, with about 90 per cent of the workforce engaged in the agricultural sector. Rice is the staple crop cultivated by the large majority of farmers. At the same time only 4 per cent of the total area of Lao is under cultivation, about half each of this in lowland agriculture and in upland agriculture, which uses mainly slash and burn techniques. Only a quarter of the lowland agriculture is irrigated.

### Labour force and employment

An Urban Labour Force Survey was carried out by the Department of Labour in July, 1992, covering the four areas of Vientiane, Savannakhet, Pakxe and Luang Prabang. According to the Survey a significant proportion of households enumerated in these four areas was in fact engaged in agriculture, presumably in peri-urban areas. If only the non-agricultural households are counted as urban, a total of 303,437 can be classified as urban, at the most.

According to the Survey, only 17 per cent of the economically active among the non-agricultural households, some 20,000 people, were engaged in manufacturing; more important were wholesale and retail trade (25 per cent). The numbers in manufacturing, if calculated on the basis of an estimated 3.1 million in the active labour force in the whole country, would give only 0.6 per cent engaged in urban manufacturing (about half of these self-employed) and not more than 2 per cent throughout the country. It can thus be concluded that the supply of labour to manufacturing is

likely to be highly elastic, even without much inter-provincial movement of labour. This has been borne out by the experience of the rapidly growing garment industry, which has had no difficulty in attracting and training workers, mainly from rural areas, and found these very satisfactory.

Among the urban workforce as defined above, in 1992 about half were self-employed or unpaid family workers (see Table 1.2). Among men, this proportion was about 35 per cent; among women as much as 65 per cent. Less than 15 per cent of the men were engaged in manufacturing, with a much higher proportion in government (28 per cent). Men were also heavily engaged in construction (12 per cent). Among women the proportion engaged in manufacturing was significantly higher (21 per cent), while nearly 14 per cent were engaged in agriculture. The largest proportion, nearly 40 per cent, were engaged in wholesale and retail trade, including open market activities.

As might be expected from the low rate of rural-urban migration, there is comparatively little urban unemployment: even if only the non-agricultural households covered in the Urban Labour Force Survey are considered, the rate is 3.9 per cent overall, 4.9 per cent for males and 2.7 per cent for females. However, only 18 per cent of the unemployed had been unemployed for three months or more, and 48 per cent of the unemployed had no previous occupation, indicating that they were in fact recent school leavers. The rate of unemployment among male youth aged 15-19 (for the non-agricultural households) is higher, at 15.7 per cent, but this drops to 7.9 per cent at age 20-24. It is not significant among female youth, less than 6 per cent even among the 15-19 age group.

**Table 1.2. Share of employed and self-employed persons in the urban non-agricultural workforce, 1992 (Percentage)**

	Male	Female	Total
Employer	2.33	0.92	1.56
Employees	62.07	34.52	49.02
Self-employed	29.90	47.32	38.15
Unpaid family workers	5.71	17.24	11.17

Source: 1992 Urban Labour Force Survey.

### Structure of GDP

The share of agriculture in GDP has been around 60 per cent, but shows a downward trend, from 63 per cent in 1986 to 58 per cent in 1992 (in Table 1.3). This reflects especially the encouraging increase in the share of manufacturing in the last few years, rising from 7.4 per cent in 1988 to 12.1 per cent in 1992. Construction is another dynamic sector, but shortcomings in statistical coverage seem to understate the growth of the sector in recent years.

**Table 1.3.** Composition of GDP by sector of origin at 1990 market prices, 1986-1992 (Percentage)

Sector	1986	1987	1988	1989	1990	1991	1992
Agriculture	63.0	63.0	61.5	60.0	61.1	57.2	57.9
Industry of which	13.1	11.2	11.1	13.1	14.2	16.5	16.1
Mining/Quarrying	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Manufacturing	8.2	7.8	7.4	9.0	9.7	12.3	12.1
Construction	3.0	2.0	2.4	2.6	2.9	2.8	2.8
Electricity, gas and water	1.7	1.2	1.1	1.3	1.4	1.4	1.1
Services	23.9	25.8	27.4	26.9	24.7	26.3	26.0

Source: Ministry of Economy, Planning and Finance.

### Foreign trade and industrial exports

Exports account for about 10 per cent of GDP.<sup>2</sup> The country's international boundaries are rather porous and there are substantial flows of unrecorded exports and imports: logs, precious metals/stones and some agricultural produce as well as a wide variety of cheap consumer goods. While their inclusion would raise the ratio of exports to GDP from that indicated, a low ratio is consistent with the existence of a large subsistence sector involving the bulk of the population.

Accurate figures for exports, in particular, are not available, and fail to capture fully the recent growth of garment exports which is emerging as the country's leading export, yielding an estimated \$35 million in 1992, compared with \$12 million in 1991.<sup>3</sup> According to the Ministry of Economy, Planning and Finance, the two dominant exports are electric power and wood/wood products (see Table 1.4). The figure for logs is likely to be a gross underestimate, given large-scale illegal logging, apparently by both entrepreneurs of Thailand and Taiwan Province. Table 1.4 understates the value of exports of coffee, and excludes important exports such as clothing, precious metals/stones and tin, which together contributed about 20 per cent of total exports in 1990.

Without electricity exports, there would clearly be an extremely unhealthy dependence on exports of wood and wood products. Especially unhealthy would be dependence on the export of logs, which is much greater than indicated in Table 1.4, suggesting scope for increasing value added by enhancing the degree of further processing of sawn timber. The rapidly increasing exports of garments represent the spurt of labour-intensive export manufacturing linked also to the rapidly expanding Thai economy.

Consumer goods (probably underestimated, as just indicated) accounted for about one-third of imports in 1992, while 28 per cent comprised transport equipment and fuel. The other significant imports are of construction materials. Table 1.4 does not show imports of fabrics used by the expanding garments industry, possibly because, as duty-free goods, they do not get properly recorded. The share of food products in total imports is negligible.

**Table I.4. Value of selected exports and imports, 1992**

	Million kip	\$ Million
<b>Exports</b>		
Electric power	9,243.5	12.9
Wood and wood products	8,509.3	11.9
Sawn timber	5,248.3	7.4
Logs	767.4	1.1
Plywood	27.8	0.03
Furniture	1,504.0	2.1
Wood and rattan products	638.4	0.9
Other wood	323.4	0.4
Miscellaneous forest products	80.3	0.1
Coffee	135.1	0.2
Cardamom	287.7	0.4
Hides	11.5	0.01
Gypsum	1,195.4	1.7
<b>Imports</b>		
Motorized transport equipment	14,368.3	20.1
Fuel	178.9	0.3
Lorries	2,912.2	4.1
Pick-ups	1,533.8	2.1
Cars, jeeps	283.2	0.4
Buses	4,891.9	6.8
Motorcycles	3,335.8	4.6
Other vehicles and parts	12,325.2	17.2
Fuel	1,081.3	1.5
Bicycles	1,672.3	2.3
Iron	1,542.8	2.2
Cement	564.1	0.8
Paint	7,759.5	10.8
Other construction materials	5,075.5	7.1
Machinery and parts	30,111.8	42.1
Consumer goods	1,314.7	1.8
Rice	4,838.5	6.8
Fabrics, clothes and thread	4,500.2	6.3
Paper and stationery	536.8	0.7
Refrigerators	830.9	1.2

Source: Ministry of Economy, Planning and Finance.

Note: Excludes important exports such as clothing, precious metals/stones and tin

### C. OUTLOOK

Lao's recent attempts to maintain financial and monetary stability and to attract foreign investment have been fairly successful. A three-year International Monetary Fund (IMF) enhanced structural adjustment facility worth SDR 35.19 million granted in June 1993 is indicative of IMF's satisfaction with the country's recent economic progress. There is increasing evidence of a shift in the pattern of foreign investment: from the service sector to industry. The government endeavours to boost foreign investors' confidence and encourages greater foreign investment in industry and handicrafts in order to strengthen the export-oriented industrial base. The socio-economic plan for the period up to 2000 accords priority to promotion of export-oriented industrial activities with foreign participation in order to eventually achieve a balance in foreign trade. If the recent economic recovery is to be consolidated, sweeping efforts will need to be initiated to address the country's major handicap of inadequate infrastructural base in terms of road and communications network.

There is a lack of good internal communications between three sub-regions: the Central Region (3 provinces plus Vientiane Municipality, centred upon Vientiane City), the Northern Region (7 provinces, centred on Luang Prabang) and the Savannakhet/Pakxe Region (6 provinces) in the southeast, centred on Savannakhet. The problem is further exacerbated by transport bottlenecks,

though each region has geographic links with different other countries; the Vientiane region with Thailand, the Luang Prabang region with Myanmar and China, and the Savannakhet/Pakxe region with Cambodia, Thailand and Viet Nam. The latter region also benefits from a growing transit trade between Viet Nam and Thailand.

The problem facing Lao as a landlocked country in developing exports can be illustrated with the problems posing one of the country's principal commodities, rice. As with other potential export crops, the world price of Lao rice is at \$100 per tonne in Danang. With a domestic price of \$80 per tonne and transport cost to Danang of \$60 per tonne, Lao exporters would need an export price of \$140 per tonne, \$40 more than the competitive level. Such a high transport cost is a formidable constraint on bulk commodities.

A major transformation would obviously occur if the spine of the road system, Route 13, together with Route 9 to Danang in Viet Nam, could be paved. Some work is proceeding, but this is clearly a major undertaking. The existing roads, having been constructed before the 1950s, are poorly designed for the heavy commercial vehicles now used in long distance transportation. The completion of the roads mentioned would stimulate inter-provincial trade and specialization, increase the effective size of the domestic market and thus improve capacity utilization in large plants, and further enhance the competitiveness of exports, by reducing transport costs from production points inside the country to the export destination. Development of the network as a whole raises the possibility of Lao achieving a useful position in the long term at the crossroads of an Indo-Chinese region.

The scheduled opening, in April 1994, of the Mittaphab (Friendship) Bridge joining Tha Naleng in Lao, some 20 kilometres south of Vientiane, and the railhead<sup>4</sup> at Nong Khai in Thailand, will be of major immediate and long-term significance. This is the first bridge to cross the Mekong throughout its entire length. A second bridge under consideration at Savannakhet, crossing to Mukdahang in Thailand, is another possibility in the future which would generate considerable transit trade also. The present bridge, in addition to reducing transport costs for goods, could give an immediate boost to tourism and could be linked to an Export Processing Zone which is under consideration. To maximize the benefits of the bridge, it is essential that steps be taken to offer competitive transport charges to Lao goods in transit through Thailand and to ensure that border procedures at Nong Khai are as smooth as possible.

An ambitious programme of road development has been embarked upon, involving a number of international agencies and contractors. In the south the link to Saravane is being paved, due for completion in mid-1994. A further link to Paksong is being worked upon for completion a year later in mid-1995, though hampered by the long period of rains in the area. Roads from Pakxe to Chong Meh in Thailand and Viene Khan on the Cambodian border are under consideration. The World Bank has already supported a gravel road from Pakxe to Seno, 217 km in length. In the centre of the country work is being carried out with the Swedish International Development Agency (SIDA) assistance on Road 12, ultimately to go as far as Pak Kading. Development of National Road 7 will improve access to Xieng Khouang.

North of Vientiane, the road to Vang Vieng (162 km), involving a \$19 million investment, was due for completion in 1993, though involving construction of a large number of bridges. Work started in 1992 on a continuation to Luang Prabang, a further 232 km, the investment here amounts to some \$39 million. A northern extension to Pak Mong of 116 km, requiring a further \$34 million, was approved in 1991. A contract has been awarded to an international company for completion in mid-1996. These developments point to the fact that the problem of internal communications, however daunting the scale of what is required, is being addressed on a substantial basis.

Landlocked Lao is fast changing in terms of creating infrastructure and sustaining a healthy pace of economic expansion. A number of companies are being privatized and 100 per cent foreign ownership of companies allowed. Timber processing is thriving, a number of new dams are being constructed, and the country's garment manufacturing is emerging as a dynamic manufacturing segment in the new economic environment.



## MACROECONOMIC TRENDS

Fig. I.A. Growth of gross domestic product (GDP) and value added in industry, 1986-1993

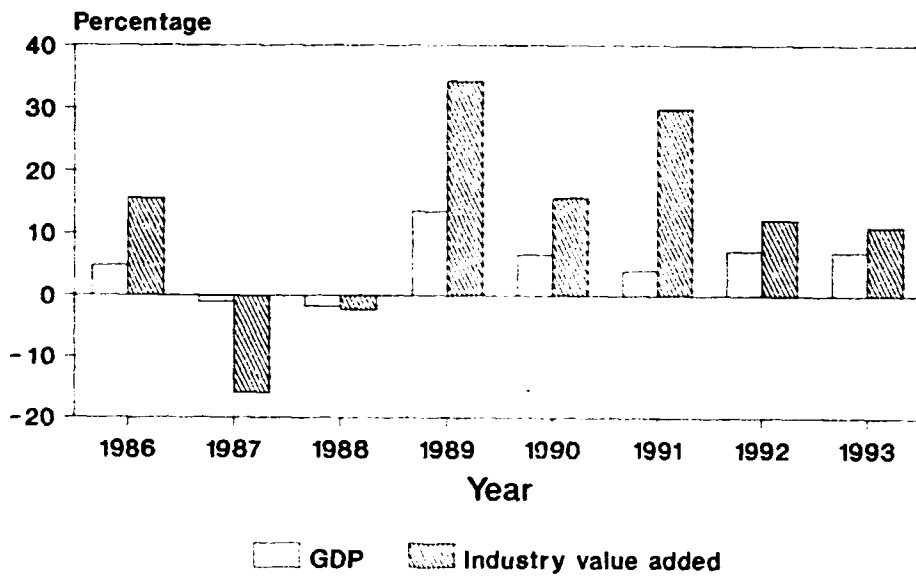


Fig. I.B. Structure of GDP, 1986-1992

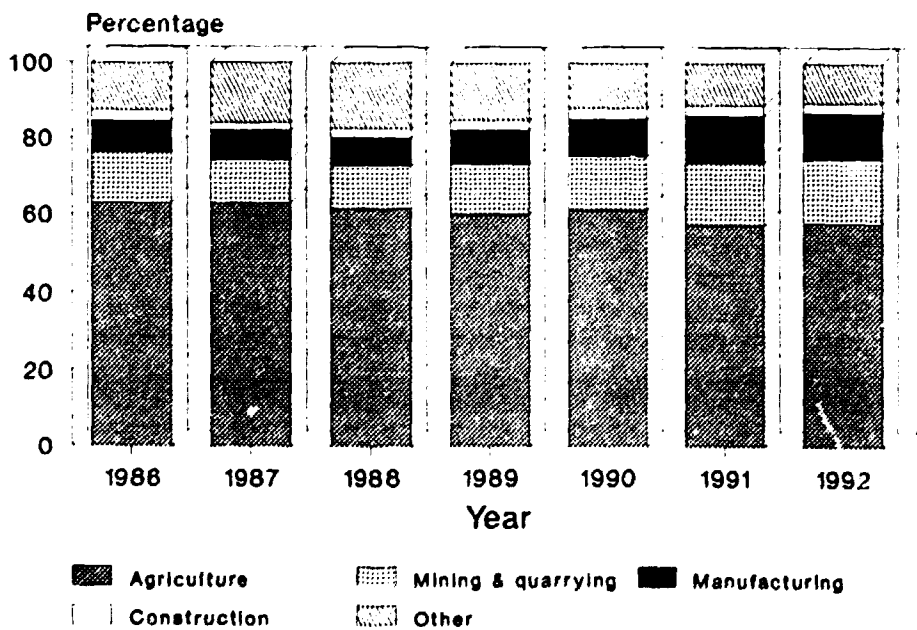


Fig. I.C. Exports, imports and trade balance, 1988-1993 (Million \$)

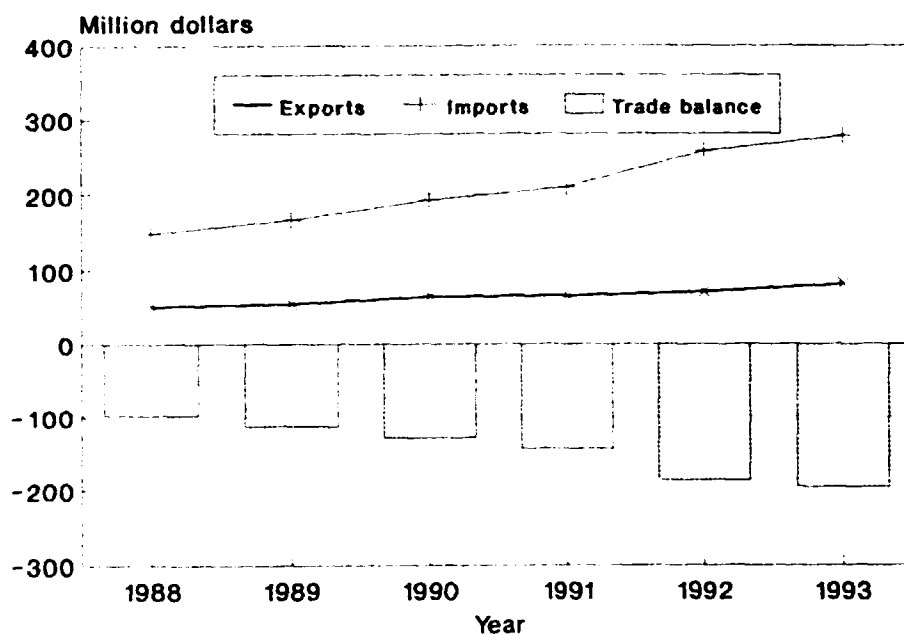
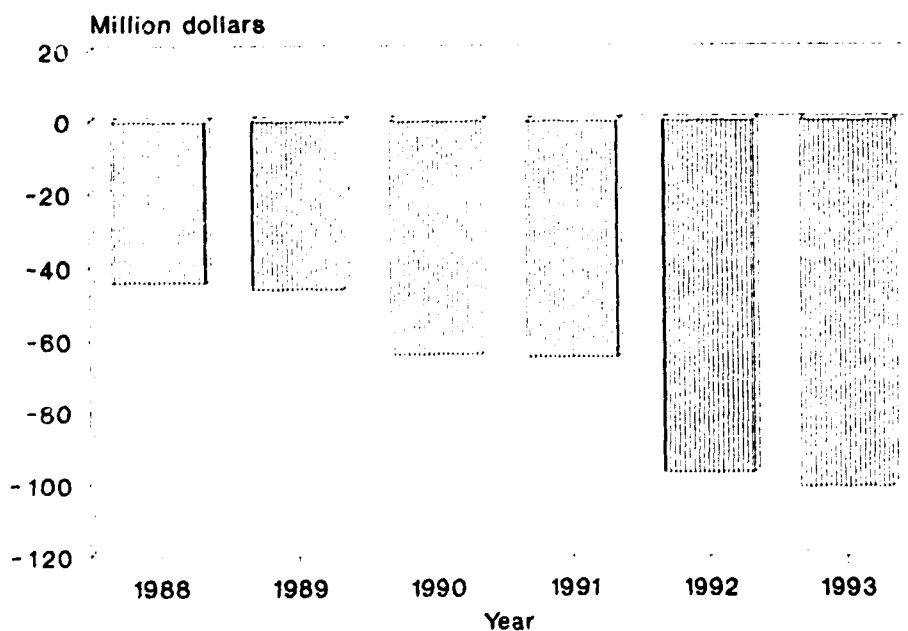


Fig. I.D. Current account balance, 1988-1993 (Million \$)



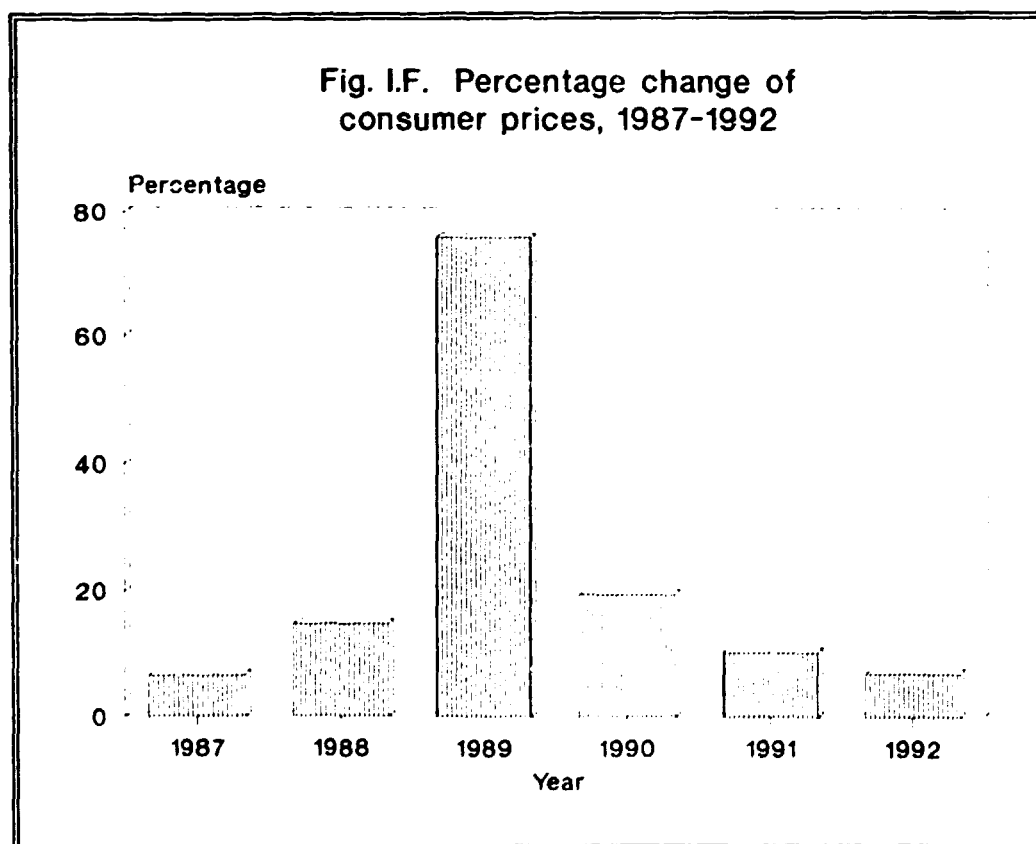
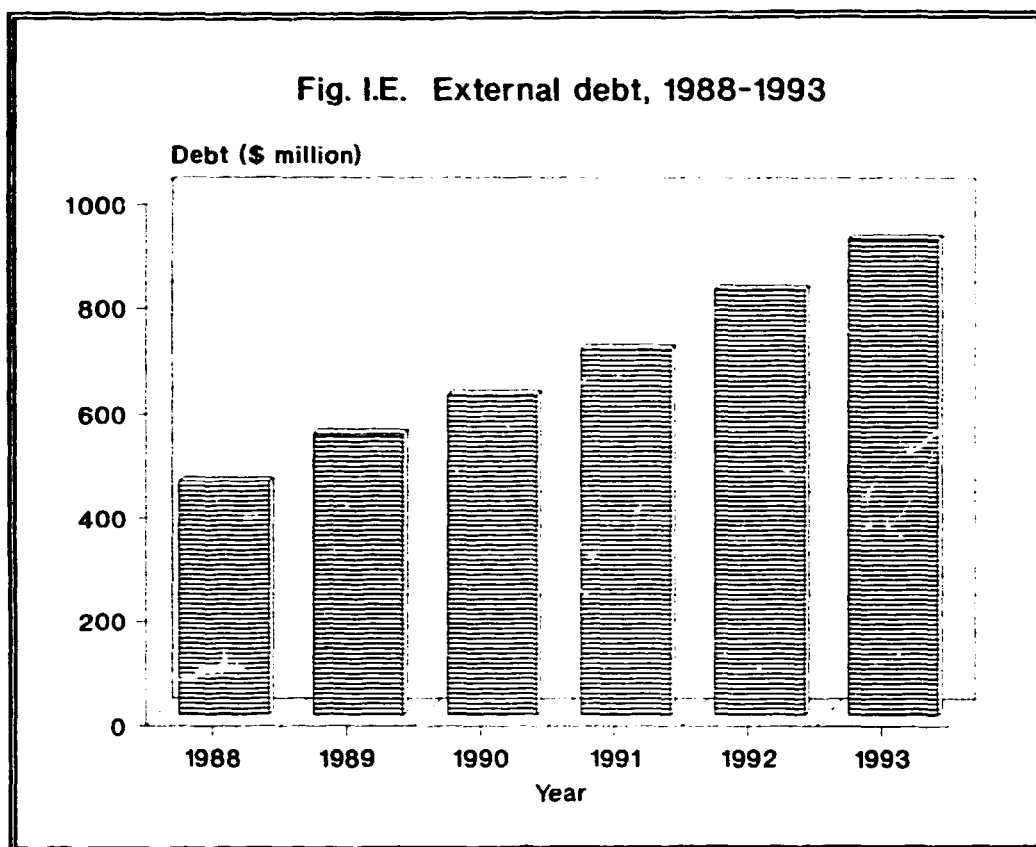


Fig. I.G. Fiscal balance as percentage of GDP, 1986-1991

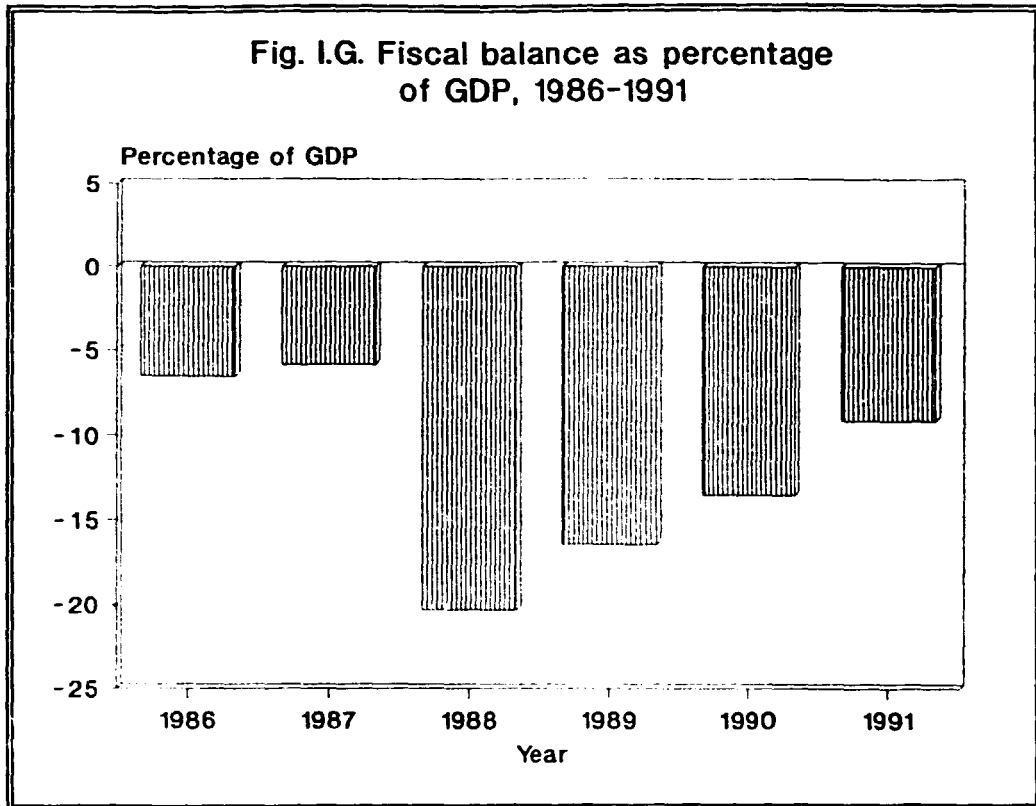
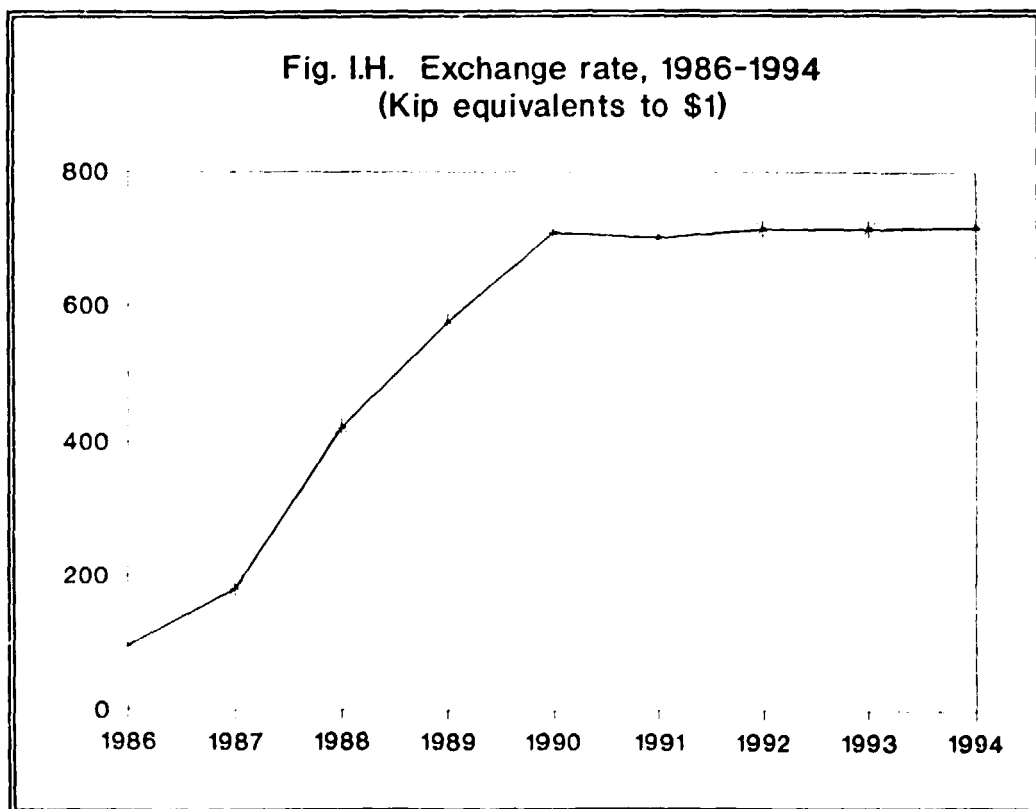


Fig. I.H. Exchange rate, 1986-1994 (Kip equivalents to \$1)



**NOTES TO CHAPTER I**

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- 1/      C. Norindr, *Laos in the Deadlock, Would Socialism Survive?*, *Indo-China Report No. 30*, (Singapore, January-March 1992).
- 2/      Asian Development Bank, *Industrial Sector Study and Strengthening of Ministry of Industry and Handicrafts, Lao People's Democratic Republic*, TA No. 1353 Lao (Manila, September 1991), p. 5.
- 3/      P. Handley, "Making connections". *Far Eastern Economic Review* (4 November 1993).
- 4/      The bridge has been designed with the capacity to carry a future railway line.

## II. MACROECONOMIC AND INDUSTRIAL POLICY ENVIRONMENT

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### A. MACROECONOMIC POLICY

With the enunciation of the New Economic Mechanism in 1985, the Second Five-Year Plan, 1986-1990, almost immediately ran into practical and financial difficulties of implementation and the whole series of decrees and measures lost relevance. Towards the end of 1990, the preparation of a new draft Third Five-Year Plan and a Medium Term Policy Framework (MTPF) commenced. The former, a draft of which was issued in March 1991, defined a series of objectives, policies and sectoral priorities. The Plan document projected an overall industrial growth rate of 9.6 per cent during the Plan period. This document was endorsed by the Supreme People's Assembly in March 1992 as the Five-Year Socio-Economic Development Plan.

The much more influential document has been the Medium Term Policy Framework and Public Investment Programme 1991-1995, published in May 1991, which not only spelled out much more specific and detailed policy proposals but also linked those policy pronouncements to a Public Investment Programme covering each sector and specific projects.

The MTPF lays out very clearly the intention to switch fully to a market economy:

"The transition will continue on two broad fronts. First the Government will continue to develop the regulatory framework for managing the emerging market economy. Second, it will redirect public expenditure to establish or strengthen the public institutions required to regulate the economy, and to provide the basic infrastructure necessary for the efficient operation of the market.... The Government will cease to be involved directly in most forms of production, and instead will be concerned with the regulation of private sector activities. The Government's key role will be to establish an environment in which the private sector can expand rapidly and create substantial real economic growth."

Against this background, a medium-term State Investment Plan (SIP) was adopted by the government through Decree No. 97 of the Prime Minister, issued in December 1991. This covers the period 1991-1995 and represents a rolling five-year Public Investment Programme covering all sectors. It is envisaged that the SIP will be updated every year to take account of performance in different sectors and by different agencies and of any changes of policy and priorities. The SIP is funded and made operational on the basis of an annual budget approved by the Supreme People's Assembly.

The three priority areas identified in the SIP are social services, physical infrastructure, and support for economic reform and stabilization. The first recognises the urgency of making up the shortfall in minimum social service provision, especially in health and education. The other two are both directed towards providing the foundation for the expansion of private sector activities.

Out of an allocation of \$745 million for 1991-1995 it was proposed to direct 37 per cent to the transport sector and 21 per cent to electricity generation.

The policy framework has been supported by successive IMF Structural Adjustment Facilities (SAFs) and World Bank Structural Adjustment Credits (SACs). A first SAF of SDR 5.68 million was agreed by the IMF in mid-1989 to cover the period 1989-1990. This was followed by a second arrangement in April 1991, which provided a further SDR 8.79 million, while a third, covering the calendar year 1992 allocated another SDR 5.86 million. Two World Bank SACs were provided during the same period. Further support will be continued as deemed necessary, on a similar basis.

The SAFs monitor closely money supply, the inflation rate, real interest rates, the ratio of the current account deficit to GDP (the objective is 15 per cent), official/parallel market exchange rate differences, the level of tax revenue received, the implementation of certain specific tax and tariff recommendations, targets for reduction in the size of the civil service, progress with the privatization programme and with the establishment of the new legal/regulatory framework, and the restructuring of the commercial banking system. Progress in many of these areas was deemed satisfactory at the end of 1992, with less progress in specific areas where obstacles were encountered.

The fiscal and monetary policies pursued were successful in containing inflation, in particular. The annual inflation rate was brought down from 75 per cent in 1989 to 10 per cent in 1991 and 7 per cent in the first half of 1992. The devaluation of the currency in 1987 meant that import prices were no longer artificially low, exports were stimulated and imported capital goods and materials for industry would rise in price relative to domestic labour and raw materials. Since September 1987 the official rate has been successfully maintained near to the parallel market rate. The difference between the two rates during the second half of 1992, for example, was always below three per cent and by the end of the year below one per cent. Currently foreign currencies are openly and freely exchangeable in the market against the kip.

An obvious reorganization relates to the restructuring of the banking system. Previously a single bank, the State Bank of Lao, combined all central and commercial banking functions. Decree No. 11 of March 1988, set out to separate these and establish a 2-tier banking system. In October of that year the State Bank changed its name to the Bank of the Lao People's Democratic Republic, to operate as a central bank, while a number of what had been branch offices were converted to autonomous commercial banks.

Initially a number of separate state-owned banks were set up in 1988, 1989 and 1990, including the Banque Pour Le Commerce Extérieur Lao. Later foreign-owned banks were allowed to establish branches, although the Thai Military Bank did not provide customer services. By 1993 there were 13 banks apart from the Central Bank, all of whose operations in Lao were established within a five-year period. The Bangkok Bank which opened a branch in Vientiane in August 1993, actually attracted deposits on its first day of business equivalent to \$278,000.<sup>17</sup> Other banks showing interest are the Citybank (American), the Banque Indosuez (French) and a Malaysian bank. While the establishment of the Bangkok Bank brought the number of private banks to six, these are all located in Vientiane, and the problem of branch banking facilities in the provinces remains for the present.

Despite some observable improvements in augmenting government revenues and in balancing the fiscal budget for the first time (in 1993) in many years, the country faces formidable challenges. As part of the on-going process of economic transition efforts are under way to establish an enabling environment in terms of structural, legal and institutional changes.

## **B. THE NEW INDUSTRIAL CLIMATE**

Ever since the implementation of the New Economic Mechanism the industrial policy and investment environment has been changing in favour of market forces, deregulation, decentralization, liberalization and enterprise autonomy. In 1986 it was decided to accord

managerial and financial autonomy to state-owned enterprises across the country, starting immediately with a large number of these. Later in the same year it was decided to decentralize decision-making in government to the provinces, allowing provincial governments to take over many of their own budget and planning functions. In 1987 internal trade barriers were abolished and the state monopoly in the transport sector discontinued. Authorization was given for joint venture companies to participate in the export and import of goods other than those listed as strategic, previously entirely state controlled. External tariffs were also significantly reduced. A privatization decree was adopted in 1990 for conversion of state-owned enterprises (SOEs) and in May 1991 a special Privatization Unit established in the Ministry of Economy, Planning and Finance (MEPF).

In pursuit of encouraging private sector development, legal measures were taken to promote foreign investment. A Foreign Investment Code was drafted in 1988, and in 1989 the Foreign Investment Management Committee referred to above was established in the Ministry of External Economic Relations. Policy Guidelines for foreign investment were issued in 1991.

In the area of taxes, a number of reforms were carried out, starting in 1987, including Decree No. 47 of June 1989 which, together with some subsequent amendments, simplified the tax system considerably. Previously there existed a complicated structure of different rates of business taxes, ranging from 20 to 85 per cent, depending on the type of activity, together with a range of taxes levied on profits from export-related activities. The 1989 Decree established a single profits tax of 45 per cent and made generous provision for tax holidays which could be granted for periods of one to five years, depending on the features and importance of each productive unit.

Previously employees in the extensive public sector were paid only nominal wages which were, however, made up by coupons for buying rice and other essential goods at well below private sector prices. At the same time goods and services were supplied to the public sector at administered procurement prices which were distorted and unrelated to market conditions. During this time there were in effect two parallel price systems for the public and private sectors. The 1988 deregulation freed all prices except for public utilities, minerals and air transport. Public sector salaries were adjusted to realistic levels and consumption subsidies abolished.

In 1990 a Contracts Law, Inheritance Law and Property Law were passed by the Supreme People's Assembly. A Land Decree will bring in an amendment to the Property Law by introducing the practice of issuing certificates of land usage where land is leased from the state rather than owned, so that such leases can serve as mortgageable assets for securing loans. A decree was passed in 1990 establishing a new accounting code in order to upgrade the weak accounting practices.

A National Chamber of Commerce and Industry was established in February 1990, with 60 members and by February 1993 it had already 157 members. In addition to serving as a vehicle through which existing business can articulate their problems and needs in carrying out or expanding their operations this Chamber can assist in advertising the existence of investment opportunities and advantages in Lao. It already cooperates with the Foreign Investment Management Committee in the Ministry of External Economic Relations in the publication of a business magazine dealing with such opportunities and related matters. Separate branches, with their own Presidents, were established in 1992 in five southern Provinces. Foreigners are included as associate members.

The lack of insurance cover against fire and other hazards had been a basic problem. A new Insurance Code was passed in late 1991 and a new company, Assurances Generales du Lao (AGL), a joint venture between the Government of Lao and Assurances Generales de France, began operations in January of 1992. This company was granted a monopoly by the government on condition of providing a full range of insurance services including, for example, fire cover for factories, which should remove one of the possible obstacles to factory owners in securing credit.

The passing of a comprehensive Factories Law has been strongly canvassed by the Asian Development Bank in order to ensure safety at work and control over environmental pollution and other nuisances. This would be implemented by a factories inspectorate and would form part of



the new regulatory functions of the Ministry of Industry and Handicrafts. A Factories Decree was signed by the concerned minister in February 1992 for the formally registered factories. A full-scale factories inspectorate has not yet been fully established, but inspections are beginning to be carried out by a mixed team based in the Ministry of Industry's Factory Management Department.

In May 1992 a pre-feasibility study was actually undertaken on the creation of a stock market. At present, however, there is no organized system of share transactions, even through the banks as intermediaries. Share transfer is agreed directly by the parties concerned. The development of tradeable shares would be of immediate practical importance to the changing industrial environment. Participation between the entrepreneur and the state on the basis of shares would need to be more flexible, giving the entrepreneur a more permanent stake in the enterprise, which could be progressively expanded with the participation of other partners. Equity participation in enterprises by insurance companies, social security funds, villages or workers could also play a major role.

Many of the new laws governing the new business environment, such as the Property Law, Contract Law and especially the Company or Enterprise Law, a final draft of which was only prepared in 1993, are yet to become fully effective and retain certain ambiguities and uncertainties. The existing legal framework is, moreover, a mixture of laws passed by the People's Supreme Assembly, decrees of the Council of Ministers, some of which are just policy statements while others are equivalent to laws, and regulations issued on the authority of a single Minister. Implementation is complicated in some cases, also, by the separate existence of Central and provincial governments. In June 1993, the first of what will be a regular government gazette was published, which will cover all government rulings, edicts and laws. This should help to eliminate any such ambiguities.

### **C. THE DIVESTITURE PROGRAMME**

A major component of industrial policy from 1990 onwards has been the programme of divestiture pursued with respect to the state-owned enterprises (SOEs) in the country, under which either local or foreign entrepreneurs would take over responsibility for the enterprises concerned. In the planned economy responsibility for those enterprises managed centrally was distributed among a number of different ministries, including the Ministries of Industry, Agriculture, Defence and Posts and Telecommunications, especially, but also Construction, Transport and Ports, Commerce, Interior, Health and Culture. However, there was in addition a vast number of small enterprises distributed throughout the provinces, for which the provincial governments were responsible. Most of these, as very small enterprises, often engaged in agriculture or livestock activities, were quite unsuitable for operation as public enterprises.

As shown in Table II.1, there were in 1990 as many as 436 SOEs, 365 of which were the responsibility of the provincial governments and another 71 that of various central government ministries. Among the 365 more than half, 193, were managed by Vientiane Municipality.

It is difficult, unfortunately, to secure consistent data on the number and distribution of SOEs in this period. Table II.2 indicates that in 1987, the industrial sector was dominated by 257 industrial enterprises, 196 in manufacturing, and 74 altogether under central management (59 in manufacturing). As many as 137 manufacturing enterprises, mostly small, were administered by provincial governments.

One of the first steps taken under the New Economic Mechanism in 1986 was to convert many of the SOEs into autonomous business units responsible for determining their own production, prices, investment, employment and wages, with a view to increasing their efficiency.

Despite some necessary statistical qualifications<sup>2</sup>, there would appear to have been a clear increase in the number of SOEs after the initiation of the NEM in 1985, particularly in the provinces, with the number more than doubling in Vientiane Province, for instance.

**Table II.1. Number of centrally and locally managed state-owned enterprises, 1976-1990, selected years**

	1976	1980	1985	1986	1987	1988	1989	1990
<b>Central management</b>								
Ministry of Industry	19	24	24	17	9	13	16	17
Ministry of Agriculture	1	2	3	23	16	17	15	16
Ministry of P.T.T.	2	2	6	5	6	10	13	13
Ministry of Defence	5	5	13	14	11	12	12	12
Other Ministries	4	4	8	13	2	13	13	13
<b>Local management</b>								
Vientiane Municipality	78	70	87	95	95	135	193	193
Other central region <sup>a/</sup>	5	9	22	29	41	48	48	46
Northern region <sup>b/</sup>	15	37	64	58	69	61	65	59
Southern region	16	30	59	63	63	65	63	57
<b>Total national</b>	<b>145</b>	<b>200</b>	<b>295</b>	<b>322</b>	<b>322</b>	<b>358</b>	<b>450</b>	<b>436</b>

Source: *Basic Statistics (1975-1990)*.

- a/ Vientiane, Xien Khouang, and Bolikhamxay Provinces.  
 b/ Khammouane, Savannakhet, Saravane, Sekong, Champassak, Attapeu.

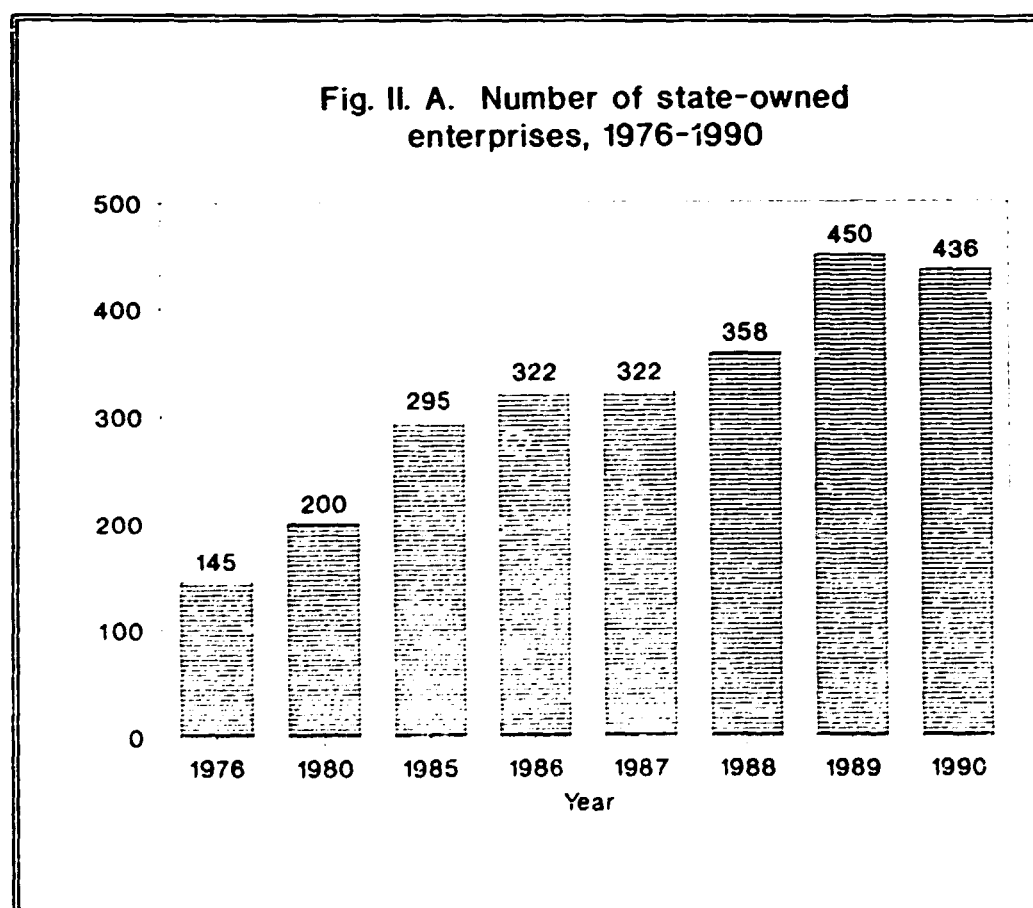
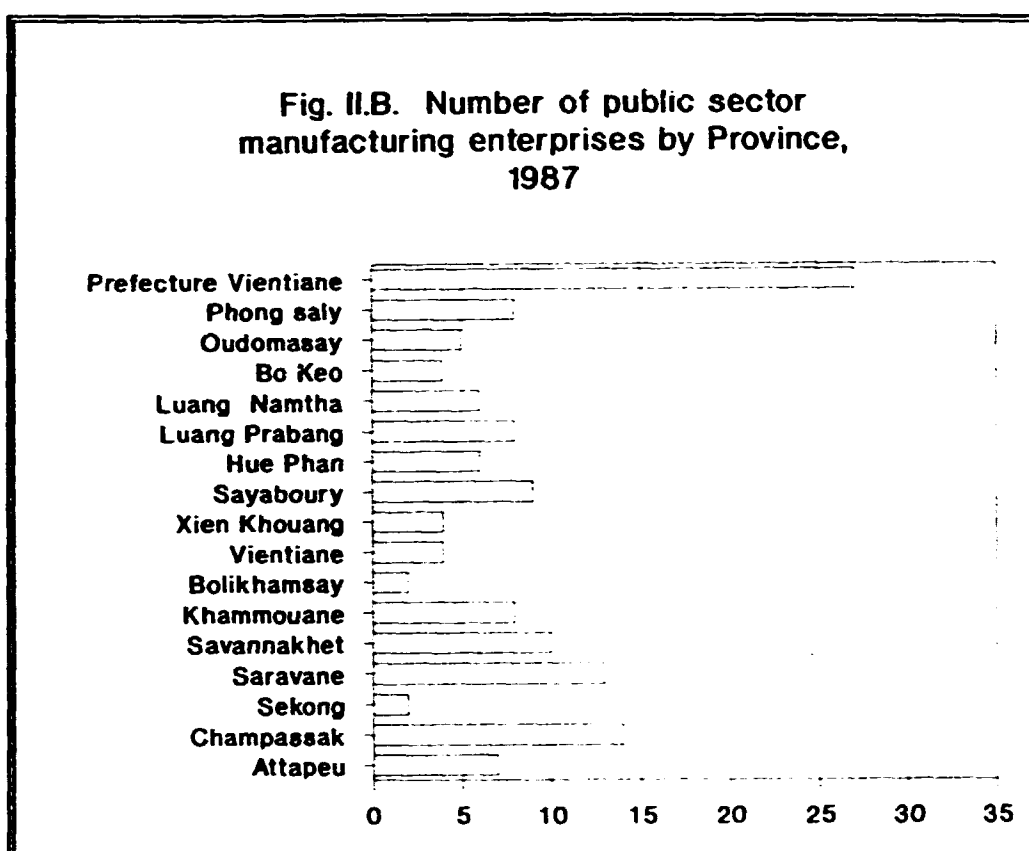


Fig. II.B. Number of public sector manufacturing enterprises by Province, 1987



When divestiture was embarked upon, the manufacturing sector was riddled with microeconomic and managerial inefficiencies, with a 30 per cent capacity utilization<sup>3</sup>. A review carried out in 1989<sup>4</sup> found that much of their machinery and equipment was obsolete, a large proportion more than 20 years old, with resultant high maintenance costs, substantial excess capacity existed throughout, deficient accounting systems, with no knowledge of unit costs and arbitrary determination of sales prices; and there was no information on inventories, no quality control, and no marketing effort. Past financial controls had been lax, in part because losses had been covered by monopoly positions, subsidies and steady injections of credit. The obsolete capital stock and the uncertain future facing many enterprises have discouraged potential private entrepreneurs who might have acquired the businesses. There has been a major problem to assess the assets, liabilities and thus net worth of the enterprises slated for privatization.

The rather reluctant response by entrepreneurs to the opportunities made available called for fresh initiatives towards accelerating the process of privatization, with a large proportion of all existing SOEs on offer. This led on to acceptance of rental agreements under which the factory or enterprises could simply be leased to the incoming entrepreneur for 5 to 15 years, with expectations of renewal. The approach was from the beginning ad hoc rather than in line with agreed criteria; government generally reacting to enquiries by private entrepreneurs in respect of specific enterprises rather than taking a pro-active line in deciding which enterprises were most suitable for transfer.

A regulatory framework for public enterprise operations was adopted in May 1991, and a Privatization Unit established in the Ministry of Economy Planning and Finance. Responsibility for the unit was subsequently transferred (in February 1992) and it now functions as the Secretariat for a new Committee on Privatization, reporting directly to the Prime Minister's Office. At the same time, in order to reduce the loss of time taken up by lengthy open-bidding processes, a new points system was introduced under which bids can be assessed on the basis of points derived from the financial package proposed, the restructuring plan put forward, and the financial standing and experience of the company bidding. Considerable changes were introduced in 1991

and 1992. A list of enterprises privatized (see Table II.3) reveals the wide variety of activities that had been state-run, many clearly inappropriate for public enterprise, such as pig farms and chicken farms. It can be seen that some of the largest enterprises in Lao, such as the plywood factory, were successfully hived off. However, it may be observed also that most of the privatization arrangements were for leasing rather than outright sale.

**Table II.2. Public sector industrial enterprises, 1987**

	Manufacturing	Mining	Construction	Electricity	Total
<b>Administered by provinces</b>					
Prefecture Vientiane	27	1	5	-	33
Province Phong Saly	8	-	1	1	10
Oudomasay	5	-	1	1	7
Bo Keo	4	-	1	1	6
Luang Namtha	6	1	1	1	9
Luang Prabang	8	-	2	1	11
Hua Phan	6	-	2	1	9
Sayaboury	9	-	1	1	11
Xien Khouang	4	-	2	1	7
Vientiane	4	1	2	1	8
Bolikhamsay	2	1	1	-	4
Khammouane	8	-	1	1	10
Savannakhet	10	1	3	1	15
Saravane	13	1	3	1	18
Sekong	2	-	1	1	4
Champassak	14	-	1	1	16
Attapeu	7	-	-	-	7
<b>Subtotal</b>	<b>137</b>	<b>6</b>	<b>28</b>	<b>14</b>	<b>185</b>
<b>Centrally administered</b>					
Ministry of Industry	13	4	-	1	18
Agriculture	14	-	-	-	14
Construction	5	1	2	-	8
Transport and Ports	2	-	6	-	8
Commerce	-	-	-	-	-
Defense	12	1	-	-	13
Interior	5	-	-	-	5
Education	3	-	-	-	3
Health	2	-	-	-	2
Other Organizations	3	-	-	-	3
<b>Subtotal</b>	<b>59</b>	<b>6</b>	<b>8</b>	<b>1</b>	<b>74</b>
<b>Total</b>	<b>196</b>	<b>12</b>	<b>36</b>	<b>15</b>	<b>259</b>

Source: State Planning Committee, Ministry of Industry, Vientiane Prefecture, reprinted in Girard and Correa (1989).

This picture may be compared with a statement of privatization arrangements as at end-1991 (see Table II.4). This shows a much lower proportion of leasing arrangements, but again shows very few outright sales, only 10 per cent in this case.

In January 1992, the government restated its commitment to full-scale privatization as follows:

- i. all SOEs would be privatized, with the exception of seven 'strategic' enterprises (Electricity de Lao, the national water company Nam Papa Lao, the Post Office, the State Printing House, and 3 enterprises under the Ministry of Defence);
- ii. those on state land, however, would only be leased;
- iii. certain large SOEs which make significant contributions to the state budget would be converted to joint ventures (Lao Soft Drink Co., the international hotel, the Lane Xang, and La Brasserie);

- iv. those unable to secure either buyers or lessees would be dissolved; and
- v. action in respect of provincial SOEs (including those under the Vientiane Municipality) with total capital below Kp100 million (\$140,000) in value will be based on the recommendation of provincial governors to the national privatization committee.

**Table II.3. List of privatized SOEs, 1991 and 1992**

Year		Period of lease (years)	Proceeds (Thousand \$ per year)
<b>Large enterprises</b>			
1991	First of May sawmill	10	182
	Plywood	15	560
	Wood products factory no. 1	15	100.5
	Wood products factory no. 2	10	62
	Parquet factory	10	224.5
	Animal feed factory	20	32.5
1992	Lao-Australian heavy mechanical workshop	(JV)	1,050.0
	Paksab sugar factory	HP(15 years)	3,200.0
	Lane Xang Hotel	(JV)	3,500.0
	NaPork seed production	15	-
<b>Medium enterprises</b>			
1991	Mechanical workshop at ThaNgon	10	5
	Pig-raising farm, Lao-Czech	10	5.7
	Chicken farm, Dongdok	10	15
	Fish farm, ThaNgon	10	10.9
1992	Nabong cow raising centre	10	22.7
	Latkhouay pig farm	-	-
	Lao-Cuba chicken farm	10	-
	Baby food factory	20	2.8
	Detergent factory	15	40
1992	Lao-Swedish mechanical workshop	20	30
	People's building, Pakse	20	20
	Phouvao Hotel	(JV)	700
	Warehouse Ferry, Thanaleng	15	69.9
<b>Small enterprises</b>			
1990	Rattan and bamboo factory	10	21.6
1991	Mechanical workshop, km 14	10	17.1
	Lao-Hungary chicken farm	10	11.4
	Agricultural technical service, Veunekham	10	12.9
1992	Vegetable production unit, ThaNgon	20	5
	Agricultural mechanical workshop, ThaNgon	5	28.0
	Sikhay sawmill	10	20
	Electrical wire and plastic factory	15	15
	Car rental co.	HP	-
	5-storey building Savannakhet	Sale	60
	Medium (3) and small (14) rice mills, Saravane	HP	95
	Phon Thevada, Pakson district	2	-
	Ferry, ThaNgon	3	33.6
	Sawmill, Borkhamsay	10	35

Leased: 30; Joint ventures (JV): 3; Hire purchase (HP): 3; Sold: 1

Source: Ministry of Economy, Planning and Finance.

It had been hoped that all SOEs other than the strategic category would be privatized during 1992/93 but, as before, progress has been slower than desired, particularly in relation to the larger enterprises. Out of 17 such enterprises approved by the Council of Ministers for privatization during the first half of 1992, only two (the Lao-Swedish Friendship Heavy Plant Workshop and the Thanaleng Warehouse and Ferry) had been so transferred during the period.<sup>5</sup> Twenty-five more enterprises were approved for privatization during the same year, bringing the total to 42. Some of these were scheduled for 1993.

**Table II.4. Privatization arrangements in mid-1991**

Type of privatization	Number	Percentage
Outright sales	6	10
Leasing arrangements	25	41
Management contracts	3	5
Workers' contracts	11	18
Other	16	26
<b>Total</b>	<b>61</b>	<b>100</b>

Source: World Bank.

Much more progress has been made in privatizing small enterprises, most of which come under provincial government (including Vientiane Municipality) jurisdiction. While the larger units previously under central management have gone to foreign investors, to the extent that these have been found, the provincial SOEs, which require less capital, marketing and management expertise, have been acquired by nationals, including workers operating as a group. Thus, for example, in Vientiane Municipality, 45 enterprises had been privatized, in Champassak 10 (out of 25, including 8 sold), Savannakhet 5 (out of 39, all sold) Saravane 5 (out of 15, 2 sold) and Xayboury 10, these by September 1992.

Despite the problems, progress has been made under the programme. As indications of what had been achieved up to the end of 1992, the number employed in privatized former SOEs was given as 6,000, compared with the number employed in all SOEs then of 10,000.<sup>6</sup> Proceeds from privatization between October 1989 and the end of 1992 have been estimated at \$9.6 million.<sup>7</sup> Finally, the share of bank credit accounted for by private companies jumped from about 13 per cent in 1990 to 46.4 per cent in 1991 and 58.5 per cent in 1992 (see Table II.5), partly reflecting new growth but partly also as a result of companies being transferred from one sector to the other. It is clear that in a large proportion of cases privatization has taken the form of leasing arrangements. Some of these cover land and buildings only, others include machinery. The rental may be fixed or linked to inflation.

As a stop-gap measure, leasing has some advantages. Given the lack of accumulated private capital in the country, it allows the individuals with entrepreneurial capacity to take over an ongoing enterprise and to accumulate capital during operations. Where the entrepreneur is a returned expatriate, the arrangement can allow him time to re-establish himself in the country substantially reducing the risk element of the venture. One advantage for the government, apart from that of accelerating the transfer of enterprises, is that if assets prove to have been undervalued initially, this can be adjusted subsequently.

**Box II.A. Privatization plans for 1993****Proposed for leasing**

1. Gold ore exploration
2. Women's Federation textile factory
3. Shooting Sports Field

**Proposed as joint ventures (70 per cent private)**

1. Lao Brewery
2. Tannery factory
3. Wood sculpture factory
4. Soft drinks factory
5. Company for servicing foreign experts
6. Interior Ministry garment factory
7. Defence Ministry garment factory
8. Concrete pole factory
9. Phousy Hotel
10. Muang Lao Hotel
11. TatLo TatHang Motel, Saravane

**Proposed for sale**

1. Modern rice mill, Savannakhet
2. Transportation Co. No.1
3. Honey enterprise, Sekong
4. Irrigation Enterprise No.1
5. Irrigation Enterprise No.2

**Sale of company with lease of buildings**

6. Lao Phanit Co.
7. Materials and Techniques Supply Co.

**Proposed for liquidation**

1. Slipper factory
2. Precious stone exploitation Co.
3. Film and video Co.
4. Xiengkhouang Rural Development Co.

Source: Research Department, Bank of Lao People's Democratic Republic.

Rental agreements must be considered very much a second-best policy, however, compared with outright sale of assets and full transfer of ownership. It does not provide the entrepreneur with the same incentive to build up the network of the enterprise through reinvestment or injection of additional capital through loans or new share participation and may, indeed, encourage him to maximize short-term profits at the expense of running down the enterprise. Investment in the enterprise will be further inhibited by the fact that the leased assets cannot be used as collateral for loans.

At the same time, the retention of central or provincial ministries as formal owners of large numbers of enterprises, often quite small ones, is likely to divert their officials from work at the

district, sectoral or national planning level, where they need to be much more effective than they have been in determining, initiating and carrying through policies and programmes. The arrangements thus fail to completely relieve the state fully of management responsibility. It could be considered that leasing is not real privatization, making the relevant government body simply an industrial landlord, to whom the equipment will revert at the end of the lease.

The slow emergence of investor/entrepreneurs, domestic or foreign, may not merely reflect lack of capital or lack of the necessary legal assurances or fiscal incentives. In many cases, the businesses will not represent good bets, either because they possess equipment in need of complete replacement and should be written off, or because they exist as a result of past decisions.

This suggests a need, in many cases, for project appraisal. Unfortunately, the limited capacity to undertake project analysis on the scale required, at central and certainly provincial level, means that the decisions necessary have had to be taken without vital relevant information and calculation, and considerable assistance in this area would appear to be needed. It is possible that the emphasis on the maintenance and transfer of existing enterprises, and the associated workload, has diverted some attention and effort away from measures to establish new industries and new enterprises, although an effective industrial and other project appraisal capacity would deal with both existing and potential new enterprises together.

**Table II.5. Bank credit to non-government sector, 1987-1992 (as of December each year)**

	1987	1988	1989	1990	1991	1992
State enterprises (Million Kip)	15,331	22,855	36,647	39,730	24,133	24,025
Private sector enterprises (Million Kip)	110	870	4,403	5,899	20,891	33,952
Private sector share (Percentage)	0.7	3.7	10.7	17.9	46.4	58.5
<b>Total</b>	<b>15,441</b>	<b>23,725</b>	<b>41,050</b>	<b>45,629</b>	<b>45,024</b>	<b>57,977</b>

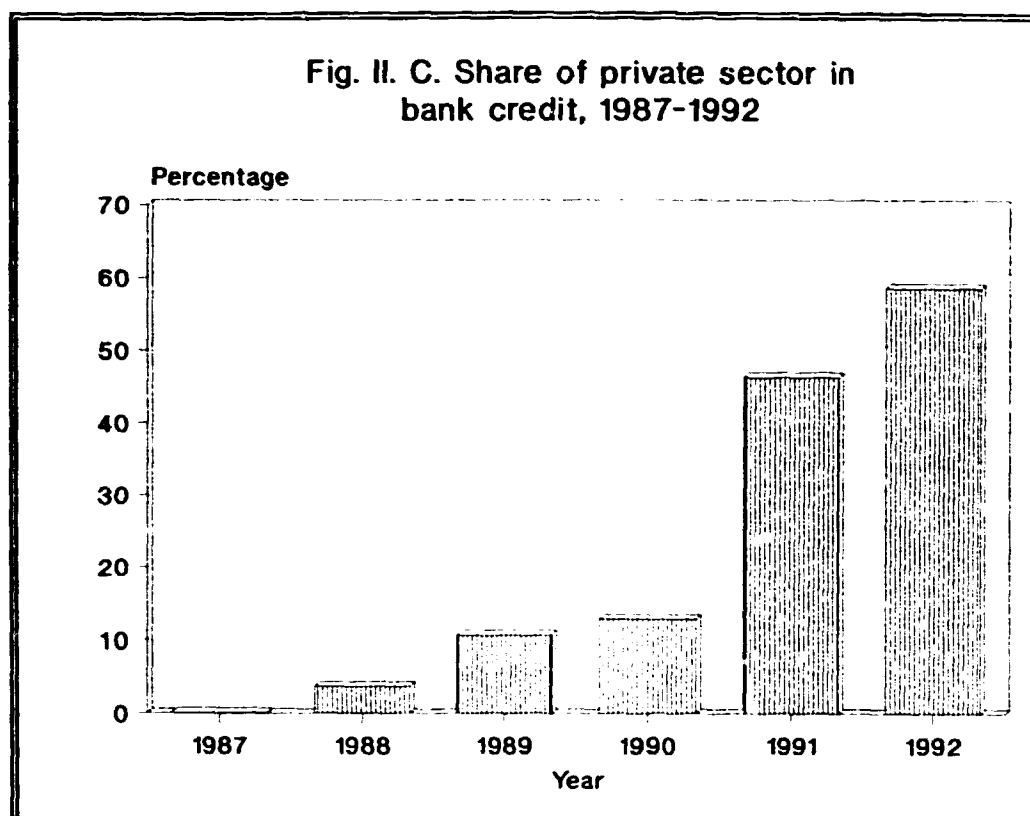
Source: Bank of Lao People's Democratic Republic.

In the course of reappraising existing manufacturing capacity from scratch in this way, it should also be considered whether the scale and technology of the present establishments are the most appropriate ones in every case. If capital is to be replaced, should it be replaced in the same way? In a whole set of areas - saw-milling, wood processing, tanning, soap manufacture, brick-making, livestock feed manufacture, and food processing - small-scale establishments may be appropriate.

It has been suggested\* that a useful development might be the establishment of a holding company in the form of an Industrial Investment Corporation under the Ministry of Industry and Handicrafts. This could be used as a means of separating the Ministry's general regulatory and policy-making functions towards industry from direct managerial and investment activities. While enterprises continue, for lack of alternatives, to be the responsibility of the Ministry, this might provide for more commercial management to be applied within an autonomous corporation, and also serve as a vehicle for implementing the privatization programme, through bringing in private capital to form joint ventures or hiving off the enterprises altogether.

As a development corporation, it would also be free to explore the possibilities for joint ventures in entirely new fields. Experience in other countries has shown this kind of organization to be a useful vehicle for attracting private investors into more adventurous areas or areas which require substantial amounts of capital. Such a corporation could also be the host body for the project appraisal capacity referred to above. The suggestion has already attracted some attention and was discussed at a seminar held in Vientiane in October 1992, and deserves to be carried further.





#### **D. AN ENABLING ENVIRONMENT FOR FOREIGN INVESTMENT**

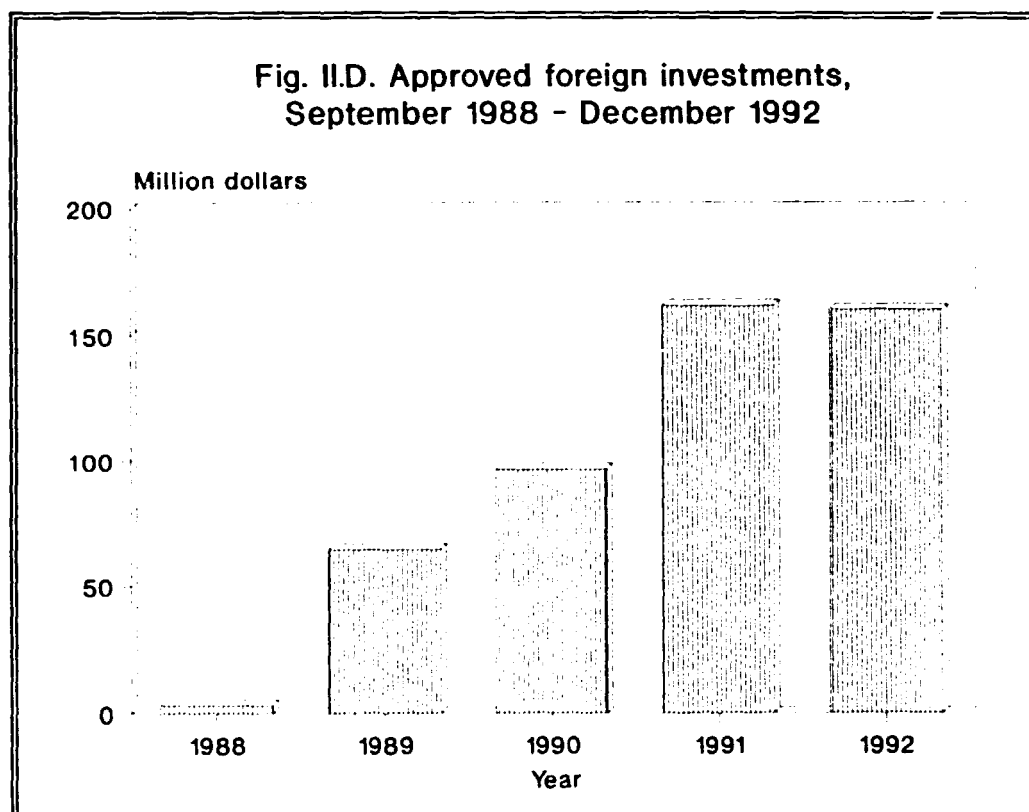
Many of the actions taken to establish the legal and regulatory framework and other administrative and fiscal conditions for an 'enabling environment' in which the private sector can flourish are designed in substantial part to attract foreign private investment also. However, a number of measures have been directed specifically towards the latter.

The government began serious attempts to attract foreign investment from mid-1988. A new Foreign Investment Code or Law was issued in March 1989, which authorized three forms of investment: business by contract, joint ventures and wholly-foreign owned companies. It also offered tax holidays for periods of up to 4 years, exempted reinvested profits from taxation, and provided guarantees against nationalization of assets, and for repatriation of profits. More specifically it allowed repatriation of capital, dividends and after tax income of foreign employees provided, as regards the last two, the foreign exchange earnings of the company covered these.

At the same time, an Investment Oversight Board was established to consider and approve investment proposals, the Board chaired by the Prime Minister and including representatives from the Ministry of Commerce and the Ministry of External Economic Relations (MEER). Within the MEER the Foreign Investment Management Committee (FIMC) was charged with implementing the Foreign Investment Code and issuing licences for foreign investors.

The FIMC is also active in promoting foreign investment. It has proved to be a small but quite effective unit, organising trade fairs and exhibitions in the country and abroad, as far as Paris and Sydney, maintaining statistical records of investments and publishing, together with the Chamber of Commerce and Industry, a regular six-monthly business magazine, *Investment Opportunities in the Lao People's Democratic Republic*, reporting on progress, activities and other information of interest to investors.

FIMC states that it is trying to fill the 'information gap' in respect of 'the new development approach' being pursued and the associated opportunities. One hope is that the success of the garment industry, to which a large number of foreign enterprises have been attracted and licensed within a short space of time, will exert a positive demonstration effect abroad. One stated objective is to achieve geographical diversity in its investment sources, to avoid dependence on a single source (as existed in the past) and in order to secure the most up-to-date technology available in any particular area. The aim is eventually to serve as a 'one-stop shopping' service for new investors.



Before 1989, there was very little foreign investment from outside the former USSR. Significant levels of investment began in 1989 when investments of some \$65 million were licensed (see Table II.6): by 1992 the annual figure was \$160 million, 2.5 times as great. The number of approved investments has continued to increase in 1993, 79 having been approved in the first half year, compared with 102 in 1992 and 69 in 1991. Not all of these, it should be stressed, have immediately started up. Investments up to the end of 1992 were about equally divided between joint ventures and wholly-foreign owned enterprises, with some business by contract.

Although a large proportion of the investments were quite small (216 out of 280 below \$1 million) and a good many were very small (62 below \$100,000), investment was still dominated by the 64 largest investments, these having a mean value of \$6.76 million and accounting for almost 90 per cent of the total invested. The mean values in the other categories by comparison were \$330,500 and \$48,300 respectively.

Table II.6. Approved foreign investments, September 1988-December 1992

		September- December 1988	1989	1990	1991	1992	Cumu- lative total	Per- centage of cumu- lative total
<b>Total investments</b>								
Number of investments		8	51	48	70	103	280	-
Aggregate value (Thousand \$)		3,302	64,552	96,791	161,793	160,242	486,680	100
<b>Size distribution by proposed capital value</b>								
\$0-	Number	1	15	10	15	21	62	-
\$100,000	Number	6	25	26	42	55	154	-
\$1 million and over	Number	1	11	12	13	27	64	-
\$0-	\$000	30	729	472	685	1,080	2,996	0.6
\$100,000	\$000	1,272	6,349	8,397	15,686	19,106	50,900	10.5
\$1 million and over	\$000	2,000	57,474	87,922	140,056	140,056	432,784	88.9
<b>Category of enterprise</b>								
Business by contract	Number	1	5	4	2	6	18	-
Joint venture	Number	5	32	22	33	38	130	-
Wholly foreign- owned	Number	2	14	22	35	59	132	-
Business by contract	\$000	246	2,075	20,982	886	22,094	46,284	9.5
Joint venture	\$000	810	31,038	10,386	131,128	58,636	232,038	47.7
Wholly foreign- owned	\$000	2,246	31,398	65,423	29,779	79,512	208,358	42.8

Source: FIMC/L.NCCI. *Investment Opportunities in the Lao People's Democratic Republic*, December 1992.

Over half the investments made, about 35 per cent of the value invested, was in manufacturing, over the period as a whole from 1988 (see Table II.7), although it can be seen that the share of manufacturing was much greater in the last two years, 1991 and 1992, when 108 out of 185 projects (58 per cent) were in manufacturing, accounting for 44 per cent of value.

The largest individual investments were in mining/petroleum, hotels, banking and finance, transport and hydropower. Hotels/tourism in fact accounted for a quarter of total value and the number of investments in the sector are strongly suggestive of future potential.

Within the manufacturing sector three sectors stand out in terms of number of projects. Forty-eight were in garment-making, 35 of these in the last two years. It may be noted that the garment factories are quite small, the average investment being worth \$672,000. There were also 27 investments in agribusiness and 22 in wood products, both resource-based industries.

These three sectors might be said to be the three main prongs of manufacturing growth in this period and possibly the most promising in the immediate future, apart from hydroelectric power. The expansion of the hotel and tourist industry could have some important linkages, moreover, into other manufacturing and construction, as well as services.

Table II.7. Approved foreign investments by sector, September 1988-December 1992

Industrial sector	Thousand \$		(Number of investments licensed)				Cumulative total	Percentage of cumulative total	Mean value
	September - December 1988	1989	1990	1991	1992				
Agribusiness	-	438 (2)	140 (2)	23,310 (5)	12,864 (18)	36,752 (27)	7.6	1,361	
Garments/textiles	207 (1)	715 (3)	10,699 (9)	6,381 (12)	14,253 (23)	32,255 (48)	6.6	672	
Wood products	619 (3)	4,217 (3)	4,011 (4)	4,521 (6)	32,420 (6)	45,788 (22)	9.4	2,081	
Other manufactures	-	5,115 (13)	3,124 (6)	14,817 (18)	33,373 (20)	56,429 (57)	11.6	990	
<b>Total manufactures</b>	<b>826 (4)</b>	<b>10,485 (21)</b>	<b>17,974 (21)</b>	<b>49,029 (41)</b>	<b>92,910 (67)</b>	<b>171,224 (154)</b>	<b>35.2</b>	<b>1,112</b>	
Mining/petroleum	245 (1)	22,650 (4)	23,750 (2)	5,278 (3)	17,508 (7)	69,432 (17)	14.3	4,084	
Import/export	2,200 (2)	7,462 (15)	2,299 (12)	7,566 (8)	7,008 (11)	26,535 (48)	5.5	553	
Hotel/tourism	-	17,216 (5)	2,440 (5)	96,871 (9)	6,933 (5)	123,460 (24)	25.4	5,144	
Retail/restaurants	-	-	-	25 (1)	492 (5)	517 (6)	0.1	86	
Banking/finance	-	4,000 (1)	-	2,000 (1)	20,000 (4)	26,000 (6)	5.3	4,333	
Consulting	30 (1)	100 (3)	418 (5)	210 (5)	119 (3)	877 (17)	0.2	52	
Other professional Services	-	-	-	-	511 (5)	511 (5)	0.1	102	
Construction	-	2,639 (2)	-	-	7,080 (4)	9,719 (6)	2.0	1,620	
Transport	-	-	44,160 (3)	314 (1)	2,681 (3)	47,155 (7)	9.7	6,736	
Telecommunication	-	-	-	500 (1)	-	500 (1)	0.1	500	
Hydropower	-	-	5,750 (1)	-	5,000 (1)	10,750 (2)	2.2	5,375	
<b>Total approvals</b>	<b>3,302 (8)</b>	<b>64,552 (51)</b>	<b>96,791 (49)</b>	<b>161,793 (70)</b>	<b>160,242 (115)</b>	<b>486,680 (293)</b>	<b>100.0</b>	<b>1,661</b>	

Source: AFIMC/LNCCI, *Investment Opportunities in the Lao People's Democratic Republic*, December 1992.

Note: The total number of investments by sector exceeds the total number of overall investments because some investments are bisectoral.

**Table II.8. Approved foreign investments by country of origin, (Number of investments), 1988-1992**  
(Thousand \$)

Industrial sector	Thousand \$		(Number of investments licensed)				Cumulative total	Percentage of cumulative total value
	September - December 1988	1989	1990	1991	1992			
Thailand	1,055 (6)	26,321 (32)	5,258 (15)	93,078 (23)	33,067 (34)	158,779 (110)	38.7	
Taiwan Province	-	-	4,200 (5)	9,896 (5)	23,126 (11)	37,222 (21)	9.1	
China	-	-	2,715 (2)	849 (5)	14,912 (12)	18,475 (19)	4.5	
Malaysia	-	-	-	-	17,341 (4)	17,341 (4)	4.2	
Hong Kong	-	-	885 (1)	6,423 (7)	7,700 (6)	15,008 (14)	3.7	
Other Asian	-	-	3,223 (8)	3,807 (6)	6,803 (8)	13,833 (22)	3.4	
<b>Total Asian</b>	<b>1,055 (6)</b>	<b>26,321 (32)</b>	<b>16,281 (31)</b>	<b>114,053 (46)</b>	<b>102,949 (75)</b>	<b>260,659 (190)</b>	<b>63.6</b>	
United States	2,000 (1)	200 (1)	68,977 (7)	860 (4)	4,783 (4)	76,820 (17)	18.7	
Former USSR	-	40 (2)	5,200 (2)	10,166 (5)	865 (3)	16,271 (12)	4.0	
Australia	-	-	104 (2)	1,261 (4)	9,763 (9)	11,128 (15)	2.7	
France	17 (1)	8,305 (4)	3,391 (6)	2,348 (4)	15,215 (10)	29,276 (25)	7.1	
United Kingdom	-	11,827 (5)	-	-	174 (3)	12,001 (8)	2.9	
Other Europe	-	660 (4)	10 (1)	525 (5)	1,377 (7)	2,572 (17)	0.6	
Other, (nes)	-	460 (2)	302 (2)	228 (2)	333 (4)	1,323 (10)	0.3	
<b>Total licensed investments</b>	<b>3,072 (8)</b>	<b>47,813 (50)</b>	<b>94,265 (51)</b>	<b>129,441 (70)</b>	<b>135,459 (115)</b>	<b>410,050 (294)</b>	<b>100</b>	

Source: FIMC/LNCCI, *Investment Opportunities in the Lao People's Democratic Republic*, December 1992.

Note: The total number of investments by country of origin exceeds the total number of overall investments because some investments have multiple foreign partners. The total aggregate value of investments by country of origin is less than the total aggregate value of overall investments because the former amount excludes the proposed capital contributions of domestic Lao investors.

Looking at the geographical source of new investment, it can be observed (see Table II.8) that the former USSR has ceased to be a major source, accounting for no more than 4 per cent of the total invested, in 12 out of 294 projects. The most striking feature is the dominance of Asian investment, amounting to 64 per cent of the total. Out of this, as much as 39 per cent (110 out of 294 projects) were from Thailand, but it is encouraging that there is a broad spread of Asian countries showing concrete interest, including Taiwan Province, China, Malaysia, and Hong Kong. As can be seen from the previous table, this is not related to any concentration of investments in any one sector, but was associated with widely distributed investments.

The other major investing country, second in importance, in fact, to Thailand, was the United States. This was due to some very large investments, the mean value of investments of the United States being \$4.5 million, compared with less than \$1.2 million for the remainder.

The rising influence of the East Asian countries can be gauged from the fact that these accounted for 82 per cent of the value in the last two years, compared with 30 per cent prior to that. This may presage a progressive incorporation of the Lao economy into a regional market marked by rather mobile investors. Worth noting here also is the fact that Thailand is now giving economic aid to Lao, mostly in the form of training and technical assistance, through a fund, established in 1991, of Baht 200 million (\$7.9 million), a signal of both positive interest and developing economic and political ties between the two countries.

The new investment code gives Lao considerable advantages (apart from that of transport cost) for foreign investors as compared with Thailand. Wages are much lower than in the neighbouring country, with labour potentially and perhaps actually of equivalent productivity. One particular part of the Code which is advantageous is the flexibility in the establishment of joint ventures, in contrast with Thailand, where 51 per cent national participation is required.

The prospects for Lao once basic infrastructure is established, in the form of an internal and regional road network, appear rather promising, particularly in the longer term when such developments might activate the rich but dominant mineral resources of the country. This would alter the situation of an isolated, landlocked country dependent on one limited external access route through Thailand, replacing this with a position in which Lao is conveniently placed at the crossroads between six countries, with a choice of external routes.

**NOTES TO CHAPTER II**

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- 1/ P. Handley, "Making connections", *Far Eastern Economic Review*, (4 November 1993).
- 2/ These figures must be interpreted with great caution. The numerical increase is explained in part by the splitting up of some large companies into separate smaller units. Also, many of the changes in the enterprise status which were given as 'joint ventures' and included in the list of SOEs are in fact leasing arrangements with the managerial function assigned to private interests. Again, relatively few of those considered to have been privatized have been made so through outright sales: many are under leasing arrangements. Hence the definition of what constitutes a private or privatized enterprise and what constitutes a state-owned one is ambiguous.
- 3/ World Bank, *Lao People's Democratic Republic, Industrial Credit Project* (1 July 1988).
- 4/ Girard and Correa, *Ebauche Stratégie de Développement Industriel. Horizon 200*, (April 1989).
- 5/ Those awaiting transfer included the Lao Brewery, Lao Soft Drink Co., Detergent Co., Plastic and Electrical Cord Factory, Thangnone Feed Mill, Lanc Xang Hotel, Phouvao Hotel, Lat Khonay Pig Farm, Lao-Cuba Poultry Farm, TH Vegetable Plantation, Lao Australian Heavy Plant Workshop, Thangnone Repair and Agricultural Equipment, Honaysay Precious Stone Exportation Co., Small Transportation, Champassak People's Big Building.
- 6/ Chi Do Phan, *Economic Reforms in the Lao People's Democratic Republic, Current Trends and Perspectives*, IMF, (Vientiane, September 1992).
- 7/ Research Department, Bank of Lao, 1992.
- 8/ I. Livingstone, *Industry, Trade and Tourism in the Lao People's Democratic Republic: Issues and Recommendations*, University of East Anglia, Norwich, 1991, and Asian Development Bank, *op. cit.*, 1991.

### III. THE INDUSTRIAL SECTOR

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#### A. AN OVERVIEW

The two dominant resource-based and export-oriented industry branches in Lao are wood processing and electricity generation. Recently garment-making has been emerging as an important labour-intensive and export-oriented manufacturing activity with substantial foreign investment. According to available information, wood and wood products accounted for about 34 per cent of industrial output in 1990 (see Table III. 1), 39 per cent if furniture is included. The most important components of this output in 1990 were cut (sawn) timber (16 per cent), parquet flooring, thin wood and plywood (each about 5 per cent) and furniture (4 per cent). Wood and wood products also provided a large portion of the increase in industrial output between 1985 and 1990. Electricity supply in Lao is of vital importance in view of its potential to earn huge foreign exchange. In 1990 it accounted for 13 per cent of industrial output. Textiles and clothing accounted for only 4 per cent of the total in 1990, but was growing fast and contributed significantly to the increase in industrial output in recent years. However, much of the increase stemmed from the garment industry. According to the Ministry of Economy, Planning and Finance, value of garment output at 1990 prices increased from Kp 1,052 million in 1990 to Kp 3,488 million in 1992, corresponding to a more than tripling in output.

Apart from the electricity generation, wood and garment industries, there are a very large number of manufacturing activities which present a different spectrum of Lao industry. These include some resource-based activities such as brickmaking, food processing and other import substituting manufacturing activities. As is common with import-substituting industries, enterprises engaged in the production of beer, soft drinks and detergents, for example, are heavily dependent on imported raw materials, semi-processed items and imported machinery. As to the production of capital goods, an agricultural tools factory, a medium-scale enterprise employing 135 persons in 1992, can be categorized under capital goods production. This has not proved a successful enterprise which currently operates with a very low level of capacity utilization. An interesting recent addition to the machinery industry is motorcycle assembly, the establishment of a plant by Suzuki in 1991. This was followed by the establishment of another plant by Honda in 1992.

It is worth examining available data on the physical quantities of selected industrial goods. The list of principal products is presented in Table III. 2. What emerges is a set of erratic increases or decreases in physical output between 1980-1986 and 1986-1991. This probably reflects at least in part varying relevance of the different enterprises and industries in a changing industrial environment. Despite the long list of commodities referred to, there is in fact only a handful of medium-sized companies (and one very large one in electricity) which account for a substantial portion of the recorded industrial output, almost all of these in and around Vientiane. This situation is changing somewhat, due to the recent entry of garment factories.



**Table III.1**      **Composition of industrial output, 1980, 1985 and 1990**  
 Value at 1989 prices (Kp million)

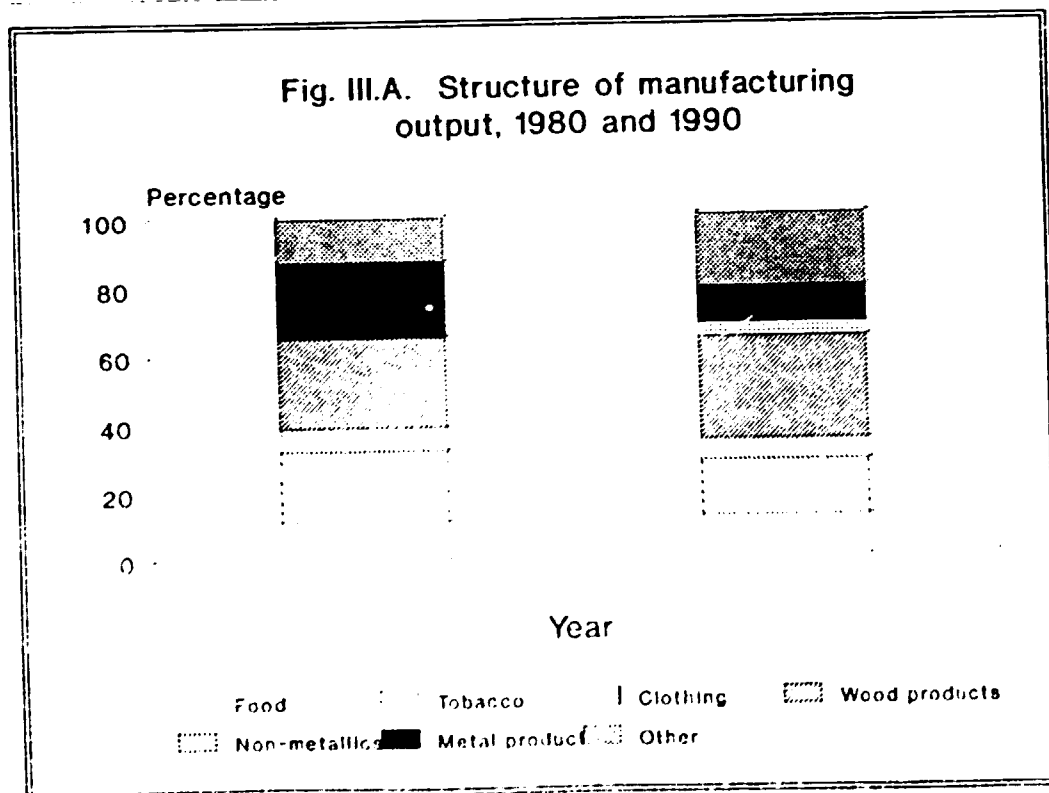
Subsector	1980	1985	1990	Percentage of total 1990	Percentage of increase 1985-1990
Food products and beverages	1,415	2,257	4,537	10.2	11.8
Beer	372	932	2,107	4.7	6.1
Soft drinks	250	131	708	1.6	3.0
Meat	95	215	924	2.1	3.7
Animal feed	198	411	275	0.6	- 0.7
Tobacco products	2,577	2,904	6,216	13.9	17.2
Cigarettes	2,537	2,758	5,250	11.8	13.0
Tobacco	40	146	966	2.2	4.3
Textiles	362	360	-	-	-
Clothing	833	487	1,942	4.3	7.6
Leather products	96	459	119	0.3	- 1.8
Wood and wood products	3,255	6,648	15,333	34.3	45.2
Cut timber	2,976	4,499	7,048	15.8	13.3
Parquet flooring	102	86	2,330	5.2	11.7
Thin wood	166	1,271	2,215	5.0	4.9
Plywood	-	13	-	-	-
Furniture	239	210	1,927	4.3	8.9
Handicraft	15	51	50	0.1	-
Paper and paper products	-	13	-	-	-
Printing and publishing	106	121	473	1.1	1.8
Chemicals and chemical products	625	1,066	1,532	3.4	2.4
Rubber and plastics	50	202	207	0.5	-
Non-metallic mineral products	47	850	1,517	3.4	3.5
Concrete	-	234	351	0.8	0.6
Concrete poles and rods	-	245	398	0.9	0.8
Cement	-	145	460	1.0	1.6
Bricks	36	151	270	0.6	0.6
Fabricated metal products	2,706	2,679	4,112	9.2	7.4
Roofing sheets	2,600	2,315	3,975	8.9	8.6
Machinery and equipment	35	77	195	0.4	0.6
Electrical machinery and apparatus	1	129	81	0.2	- 0.2
<b>Total manufacturing</b>	<b>12,362</b>	<b>16,513</b>	<b>38,241</b>	<b>85.6</b>	<b>102.6</b>
Electrical supply	6,266	6,667	5,921	13.3	3.9
Water supply	1	254	507	1.1	1.3
<b>Total utilities</b>	<b>6,267</b>	<b>6,921</b>	<b>6,428</b>	<b>14.4</b>	<b>- 2.6</b>
<b>Total industry</b>	<b>18,629</b>	<b>25,434</b>	<b>44,669</b>	<b>100.0</b>	<b>100.0</b>

Source: Industrial Sector Study and Strengthening of and Handicrafts, Lao People's Democratic Republic, TA No. 1353 Lao, Asian Development Bank, Manila (September 1992).

Table III.2 Physical output of selected industrial goods, 1980, 1986, 1990 and 1991

Commodities	Unit (Thousand)	1980	1986	1990	1991
Beer	Bottles	7.6	22.4	-	68.9
Soft drinks	Hectolitres	13.4	6.5	-	59.8
Bread, Confectionary	Tonnes	316.0	200.0	155.0	-
Fermented fish	Tonnes	131.0	64.0	121.0	-
Fish sauce	Hectolitres	1.5	2.7	1.2	-
Salt	Tonnes	4.5	10.7	11.6	-
Ice	Tonnes	23.0	8.3	8.0	-
Animal feed	Tonnes	1.8	5.6	2.5	-
Cigarettes	Million packs	14.6	17.4	-	29.6
Clothing	Pieces	260.0	662.0	-	882.5
Fabrics	Metres	1,044.0	967.0	-	145.3
Plastic goods	Tonnes	47.0	584.0	-	85.0
Soap	Tonnes	1.7	2,223.0	-	481.3
Detergent	Tonnes	602.0	2,631.0	-	566.0
Chalk	Boxes	18.0	113.7	-	21.9
Timber	Cubic metres	54.5	335.8	-	300.7
Lumber	Cubic metres	11.2	38.0	-	71.3
Plywood	Sheets	76.0	518.0	-	346.6
Thin wood	Cubic metres	-	225.8	-	63.5
Wood flooring	Cubic metres	15.5	57.0	-	45.5
Nails	Tonnes	60.6	149.3	-	55.0
Electric wire	Metres	7.8	549.0	-	101.0
Buckets, watering cans	Units	81.5	113.5	11.1	-
Agricultural tools	Pieces	62.8	85.4	-	5.6
Iron goods	Tonnes	11.6	70.5	-	-
Bricks	Million pieces	3.3	9.2	-	5.3
Concrete	Cubic metres	-	5.3	-	12.0

Source: Basic statistics.



Some of the major enterprises in terms of employment are shown in Table III.3. The cigarette, tobacco, beer and soft drinks factories are among the biggest employers, although the electricity company, Electricity de Lao (EdL), is by far the biggest. A significant level of employment, including employment in the two large enterprises engaged in tin and gypsum, exists in mining.

**Table III.3. Estimated average level of employment in selected industrial and mining enterprises, 1991 and 1992**

Establishment	Number of persons employed	
	1991	1992
Cigarette factory	451	451
Tobacco factory	219	219
Brewery	216	220
Soft drinks factory	108	115
Sub-total	994	1,005
Agricultural tools factory	127	135
Detergent factory	95	95
Plastics factory	33	33
Shoe factory	24	-
Concrete block factory	95	95
Industrial Services Co.	17	16
Sub-total	391	374
EdL (Electricity de Lao)	1,124	1,624
Electrical Installation and Construction Co.	455	430
Hydro-electric Power Consultancy Co.	45	45
Sub-total	1,624	2,099
Tin Mining Co.	336	336
Gypsum Mining Co.	206	183
Zinc Mining Co.	80	88
Gold Mining Co.	50	40
Coal Mining Co.	50	40
Mining Services Enterprises	54	80
Sub-total	776	767
<b>Total</b>	<b>3,785</b>	<b>4,245</b>

Source: Ministry of Industry and Handicrafts.

The existence of one or two medium or large firms in the production of an industrial product is due largely to the limited size of the market which is a constraint on the creation of competition. The main source of competitive pressure could stem, if this is allowed, only from imports. In some of the resource-based industries, particularly rice-milling and sawmilling, however, there is strong competition in many cases for supply of the raw material.

According to rough estimates, around 51 per cent of persons engaged in manufacturing are employed in establishments employing less than 10 employees. These very small establishments and many in what the Survey calls "medium" establishments (but would generally be considered to be within the category of small industry), can probably be characterized as informal sector.

Table III.4. Small, medium and large establishments by sector, 1992

	Number of establishments			Total
	Small (< 10 employees)	Medium (10-29 employees)	Large (> 29 employees)	
Agriculture, forestry and fisheries	8	12	11	31
Mining and quarrying	6	2	8	16
Manufacturing	2,232 (92.5)	93	89	2,414
Electricity, gas and water	6	4	7	17
Construction	37	142	127	306
Transportation, communication and storage	3,206 (96.5)	73	44	3,323
Wholesale and retail trade	16,315 (98.1)	217	99	16,631
Banking, insurance and real estate	-	3	9	12
Other services	2,939 (96.3)	64	50	3,053
<b>Total</b>	<b>24,749 (95.9)</b>	<b>610</b>	<b>444</b>	<b>25,803</b>
Estimated number of employees	61,872	9,150	19,980	91,002
Percentage	68	10	22	100

Source: NSO Establishment Survey, 1992.

Note: Figures in parentheses are percentages of corresponding totals.

It is assumed that small establishments have average of 2.5 employees, medium 15 and large 45.

If one takes very small establishments into account, again, the position may be rather different, since many small-scale activities are dispersed to some extent in line with the dispersal of population. Table III.5 indicates those manufacturing activities which are geographically concentrated and those which are dispersed. There is a large proportion of informal sector manufacturing establishments outside Vientiane area, at least to some extent offsetting the concentration of any large-scale manufacturing in Vientiane. Most of the large manufacturing enterprises are located in the Vientiane area. One estimate<sup>17</sup> shows that about 85 per cent of the value of industrial output is turned out in Vientiane area. The only medium-scale industry branch which is dispersed quite widely is, of course, sawmilling. Box III. A. shows the list of geographically dispersed and concentrated industrial activities in Lao.

**Table III.5. Small, medium and large establishments by region, 1992**

	Number of establishments			Total
	Small ( <i>&lt; 10 employees</i> )	Medium ( <i>10-29 employees</i> )	Large ( <i>&gt; 29 employees</i> )	
Central Government	15	137	166	318
Vientiane Municipality	5,959	154	131	6,244
Vientiane Province	2,853	26	22	2,901
<b>Subtotal</b>	<b>8,827</b>	<b>317</b>	<b>319</b>	<b>9,463</b>
Khammouane	1,141	68	31	1,240
Savannakhet	2,911	110	21	3,042
Saravane	984	7	3	994
Sekhong	89	7	2	98
Champassak	3,893	20	27	3,940
Attapen	350	-	-	350
<b>Subtotal</b>	<b>9,368</b>	<b>212</b>	<b>84</b>	<b>9,664</b>
Phongsali	385	5	-	390
Luangnantha	229	4	2	235
Oudomxay	1,034	11	5	1,050
Bokeo	385	9	-	394
Luangprabang	2,190	7	11	2,208
Houphanh	361	4	2	367
Xayaboury	584	15	10	609
Xienghouang	612	14	2	628
Borikhamxay	777	13	9	799
<b>Subtotal</b>	<b>6,557</b>	<b>82</b>	<b>41</b>	<b>6,680</b>
<b>Total</b>	<b>24,752</b>	<b>611</b>	<b>444</b>	<b>25,807</b>

Source: NSO Establishment Survey, 1992.

Note: Refers to all establishments, not just manufacturing.

### Box III.A. Geographically concentrated and dispersed industrial activity

#### Concentrated activities

Beer, soft drinks, tobacco and cigarettes, abattoir, sugar, animal feed, detergents, leather tanning, shoe manufacture, printing and publishing, medicines, vaccines, plywood, agricultural tools, metal products (roofing sheets) electric cable, electricity, industrial gases, motorcycle assembly

#### Dispersed activities

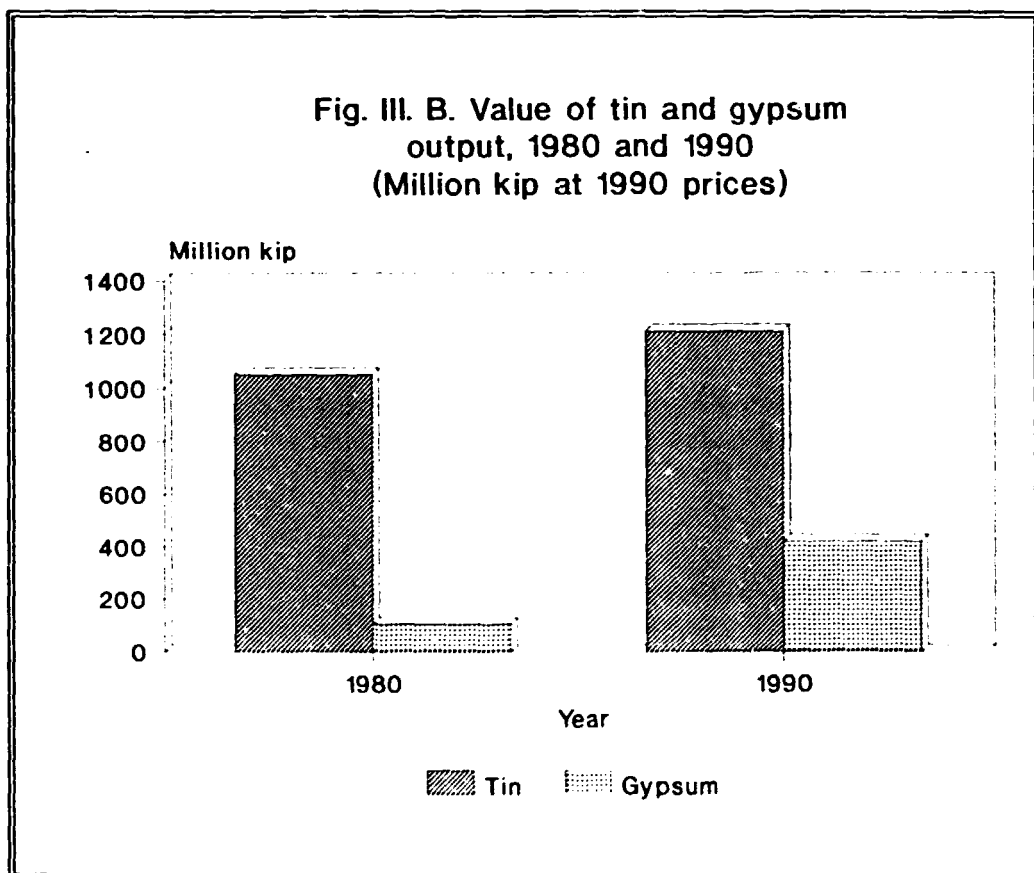
Rice mills, rice noodles, bakeries, ice manufacture, bottled drinking water, sauces, coffee, alcohol, clothing, plastic goods, bricks, concrete construction materials, sawmills, parquet flooring, furniture, handicrafts

Source: ADB.

Note: Mining is not included.

## B. THE MINERAL RESOURCE POTENTIAL

Lao is endowed with deposits of gypsum, iron, lead, manganese, tin, copper, gold, silver, oil and natural gas. There are in fact over 500 recorded mineral deposits distributed throughout the country. Few of these have been evaluated, but these do not seem to warrant immediate commercial exploitation. The main obstacle has been the lack of infrastructural development in the form of roads and railways, and the resultant high transport costs. Because of this, little commercial capital has so far been deployed in the sector, and not much serious commercially-oriented exploitation undertaken, though international companies are now beginning to show interest. Currently the sector is characterized by a great deal of small-scale artisanal mining activity.



The most important minerals are tin, gravel, gypsum and salt, which together accounted for 93 per cent of estimated value of mining and quarrying output in 1990 (see Table III.6). Estimated in value terms at about \$3 million only, mineral output has increased very little over the years. Tin and gypsum are exported, contributing one or two per cent of domestic exports, while gravel and salt are for domestic use.

**Table III.6. Value of mining and quarrying output, 1980-1990, selected years**  
(Million Kp at 1989 prices)

	1980	1985	1990	Change 1985-1990
Tin	1,051	1,084	1,210	126
Sand and gravel	-	192	802	610
Gypsum	105	525	420	-105
Salt	104	457	382	-75
Other	7	55	215	160
<b>Total</b>	<b>1,267</b>	<b>2,313</b>	<b>3,029</b>	<b>716</b>

Source: Ministry of Industry and Handicrafts.

### Tin

Alluvial tin is mined by the State Tin Mining Enterprise at Nam Pathene, where there are 134,000 tonnes of contained tin. Tin output was exported entirely to the former USSR in the past, under a barter trade arrangement, but now has found other outlets, particularly in Thailand where, with the help of an assistance contract with Shell Oil, it has been destined to the tin smelter at Phuket, which has been experiencing a raw material shortage. Current production is estimated at 60 tonnes a month.

The transport handicap is not a major obstacle in the case of tin, as a comparatively high value-for-weight product, although currently world prices remain very low. With additional investment, however, it is considered that monthly output could be increased to 2,000 tonnes.

### Gold

Gold is panned from streams by artisanal methods at hundreds of locations all over the country, though the most important area presently is in a zone of some 35,000 square kilometres in eastern Vientiane Province. As many as 189 alluvial gold workings are recorded also in Xieng Khouang District, over an area of some 3,300 square kilometres. Another location of potentially great importance is in the extreme south-east corner of Lao, in the area of the Xekong and Xe Kamen rivers. The government has signed mining agreements with Newmount Gold, the largest gold producer in North America and with an Australian subsidiary of Rio Tinto Zinc.

Currently, most gold and gemstones leave the country as unrecorded exports to Thailand and China. High quality sapphires are mined at Honei Sai in the far north-west of Lao and several other areas, particularly in the north, while there is some mining of amethysts in the far south.

### Other non-ferrous metals

There are numerous occurrences of other non-ferrous metals such as copper, lead, zinc, silver, antimony, mercury, arsenic, bismuth, molybdenum and tungsten. The Xieng Khouang Province, already mentioned in relation to gold, is an area of very great long-term potential, with more than 20 recorded base metal occurrences. A number of high grade copper, lead and zinc deposits have been identified north of Muang Xai, near the Chinese border, in an area some 35 kilometres wide. More accessible metals with good potential are copper, zinc, lead and silver occurrences in a limestone area surrounding Vang Vieng, 150 kilometres north of Vientiane.

### **Gypsum**

The State Gypsum Mining Enterprise at Dong Heng in Savannakhet has been producing gypsum at the rate of some 100,000 tonnes a month. Until now it has been exported under a barter trade arrangement to Viet Nam, where it is used as an additive in cement manufacture. If Viet Nam were to abandon this special arrangement and shop on the world market, Lao may have difficulty in holding on to this outlet, given its transport cost disadvantage, in the face of competition from the other southeast Asian sources. The domestic market might provide increasing demand, on the other hand, for the manufacture of building boards and other building materials.

### **Coal**

A state-owned enterprise has been mining coal deposits at Bo Chan, producing about 1,000 tonnes annually for the domestic market. There are substantial reserves, but difficulties of exploitation may reduce effective potential utilization. The company has benefited from some financing under the IDA credit line.

The Lao State Coal Mining Enterprise has the concession for an area in which barite has been found at Nalong, in the Muang Fouang Valley. It has made arrangements with an established Thai company to mine the barite, and production started in late 1991, with export to Thailand.

### **Potash**

A major (50 billion tonnes) potash deposit exists beneath the Vientiane Plain, apparently of higher quality (19 per cent sylvinitic, 15 per cent coruallite) than similar deposits in Thailand.

### **Iron**

Iron deposits exist in at least three places, Pha Lek, north-east of Lake Nam Ngum, Pha Nouane, in Xieng Khouang District, and Phu Lek, near Sam Neua. These deposits are apparently large.<sup>2</sup> The Pha Lek deposit, which is estimated to comprise as much as a 100 million tonnes of good ore, is at least in the same geographical area as the high grade base metal deposits of Vang Vieng District and the Vientiane potash deposit. Unfortunately, oversupply in the world market, combined with the market disadvantage, affects the prospects for exports. At the moment, what could be investigated is the scope for small-scale production for the domestic market.

### **The role of foreign companies**

As noted above, foreign companies have begun to show interest in exploration and development of minerals in Lao. In the case of gold and gemstones, one has been investigating gold ores (so far with not much success) in Sanakhan, Vientiane Province, and another, from Hong Kong, in the northern parts of Luang Prabang and Vientiane Provinces. A Thai company has been given a concession in Bokeo for the exploitation of precious stones, and a New Zealand company is investigating possible precious stone (amethyst) occurrences in Champassak.

Exploration for oil and natural gas is being undertaken by three different international companies which had by 1993 already made substantial financial outlays in respect of developments in central and southern Lao. One company has identified petroleum and natural gas with high potential in southern Lao.

### **Constraints and prospects**

The fundamental constraint affecting the exploration of minerals in Lao, in combination with the difficult terrain over much of the country, is the lack of an internal road (or rail) network and, as far as mineral exports are concerned, the external transport costs, especially for bulk mineral deposits such as gypsum and iron. The low density of farm population means this network is less likely to be quickly developed to serve the agricultural sector. And even when a basic network



comes to be established, substantial local and specialized infrastructural investments for bulk mineral development will be required in most cases.

The scale of these financial demands both limit the enthusiasm of potential foreign investors and also increase the need, given the domestic scarcity of funding, to look to foreign investment for future development. As indicated above, interest from foreign companies has been growing quite rapidly and points to the need to maintain and expand the publicity-drive in relation to the potential for mineral exploitation in Lao.

To balance this reliance on independent private investors, it is important that the government itself devotes adequate resources to basic geological surveys, compiles and coordinates the stock of information as it expands, and develops its own capacity to evaluate the country's mineral resources by raising the technical capabilities of Lao geological staff who can work in both public and private sectors.

The most immediately exploitable mineral deposits are gold, other precious metals, and gemstones. For these minerals transport cost is a much less critical factor, extraction costs are lower (in the case of alluvial gold, for example), the required investment in infrastructure is much less, and urgently needed revenues can be anticipated within a few years. Once again it will be necessary to rely on private investment, both domestic and foreign. With large numbers of widely distributed on-going small-scale activities, it would seem to be particularly important to direct this into the most effective channels by developing a good base in terms of geological, technical and economic information and, secondly, to ensure that appropriate mechanisms for securing mineral royalties are in place in respect of all such operations. Priority should also be accorded to the promotion of a small-scale craft and jewellery industry which can significantly enhance the domestic value added to the available gold, silver and gemstones. This should be developed alongside tourism as the latter expands.

The other mineral resources for which there are immediate market prospects are gravel and sand, as large increases in demand can be anticipated for construction purposes, particularly road development. Increased demand for cement will certainly improve the viability of the initial cement plant and the scope for further expansion of the industry, for which demand in the domestic market is a principal constraint. As the construction industry expands, there will be scope for building board manufacture, using local gypsum, cement and other fibrous materials. The Thai-based Southern Concrete Pile Co. (SCP) plans to establish a plant for the production of spun piles at Putthamonthol Sai 7., requiring an investment of some 500 million baht, part of this to be raised from commercial banks.

In the longer term, when the transport network has been developed - a basic south-north road from the Nong Kai Bridge in Thailand through Vientiane and Luang Prabang to China in the north can be envisaged, certainly - there is the possibility of linking together iron ore at Pha Lek, coal, lime, potash (around Vientiane), high grade base metal deposits in Vang Vieng District, manganese (100 kilometres upstream from Vientiane along the Mekong) and cheap electricity, for steel production, cement and other manufacturing and processing activities. With proven mineral deposits, Lao might certainly be in a position to significantly increase the national income per head. Besides minerals, hydroelectric power is also capable of yielding high revenues given substantial improvements in infrastructural facilities.

Further exploration and confirmation of mineral deposits needs to be combined with an assessment of market prospects, so that a realistic and properly sequenced plan for mineral development including both immediate and longer-term components can be prepared. As noted above, a strengthened Department of Geology and Mines is essential. Since there are a number of not so well-managed state enterprises engaged in mining, however, there is a case for establishing a mining corporation independent of the Ministry of Industry and Handicrafts, operating as a holding company in respect of these enterprises, providing them with technical and management support services (as suggested in an ADB report)<sup>1</sup> but also keeping abreast of new exploration and mineral resource exploitation in the country, assisting or even participating where appropriate.

### C. HYDROELECTRIC POWER

Electricity de Lao (EdL) has a monopoly on both the production and distribution of hydroelectric power (HEP) in Lao. Currently electricity generating capacity in Lao stands at 215 MW of which 198 MW is hydro and 17 MW is diesel. Hydropower is a major industrial activity in Lao in many respects: it is the country's principal export commodity; this highly capital-intensive industry is based on the country's natural resource potential for electricity generation with a distinct comparative advantage. Moreover, once the transmission lines are established connecting Lao with Thailand's electric power grid, international transport costs, a major obstacle for other potential export products, will be quite low. Details pertaining to the installed capacity of selected power plants are presented in Table III.7.

**Table III.7 Installed capacity of selected power plants<sup>a</sup>, 1987-1991**

Project	Province	Capacity Megawatts	Annual production Gigawatts/hour	Year of completion
Sokpaluang DPP	Vientiane	8	-	1967
Nam Ngum HPP	Vientiane	150	859	1984
Nam Dong HPP	Luang Prabang	1	1	-
SeLabam HPP <sup>b</sup>	Champassak	5	30	1993
Xeset HPP	Saravan	45	180	1991

Source: Electricity de Lao.

Note: DPP = Diesel Power Plant, HPP = Hydropower Plant

a/ Installed capacity above 1 megawatt.

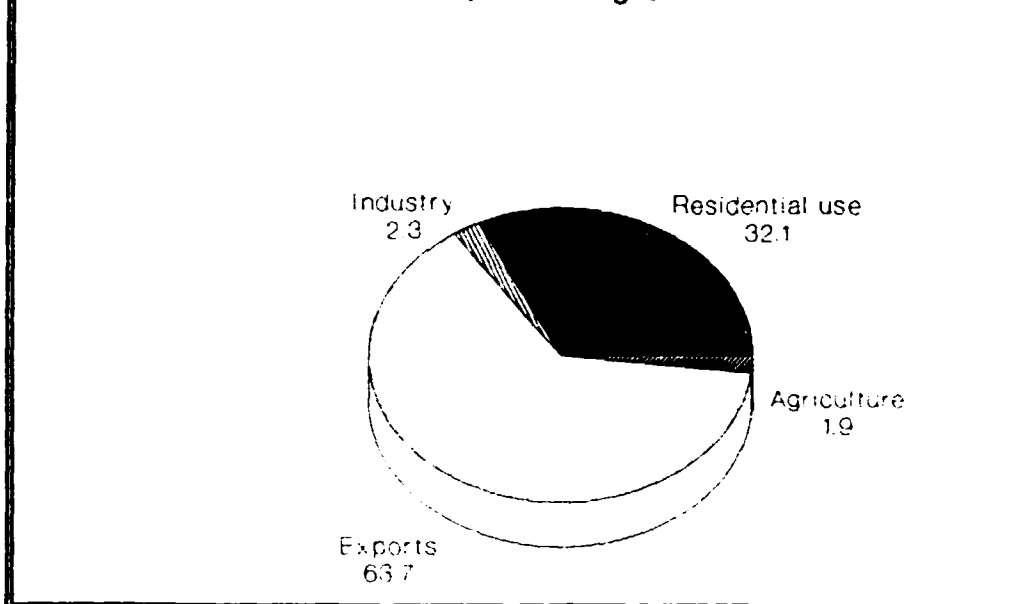
b/ After extension.

The value of electricity produced and exported fluctuates from year to year, being affected by drought in particular, but also other factors such as agreements secured periodically with Thailand, and decisions by EdL itself. According to preliminary estimates, electricity may have contributed as much as 47 per cent of the value of exports in 1992. The proportion of electricity sold to consumers (including commercial users) increased from 11 per cent to 32 per cent in the period 1991-1992, and this has been at the expense of energy exports, which have declined proportionately. Energy exports fell even in absolute terms by more than 50 per cent over the period.

It is evident that in periods of drought, when the total electricity available is reduced, cuts are made in export sales rather than domestic sales, so that export sales are regarded as a residual priority in terms of electricity supply. Thus in 1987 and 1988 the share allocated to exports fell by 10-11 per cent, while domestic sales rose significantly.

Domestic electricity rates are heavily subsidized by export sales revenue: in Vientiane, while high-voltage power was being sold to the Electricity Generating Authority of Thailand (EGAT) at Kp 24.85 per kilowatt hour, the charge for low voltage electricity to domestic consumers was Kp 14 per kilowatt hour. A rise in the domestic price would improve the financial position of EdL and increase its capacity to finance expansion of the domestic grid. It may be questioned, also, whether any funds available for subsidy would not be better spent in other directions, such as health or road development. While the previous royalty charge on export sales of 70 per cent has been reduced to 20 per cent, there is still no good case for a discriminatory tax as between domestic and export sales, and a uniform tax per unit on all sales should be introduced instead.

Fig. III.C. End-use of electricity, 1992  
(Percentage)



#### Constraints and prospects

Lao's potential for further expanding the production of hydroelectric power is clearly enormous. Numerous rivers run through mountainous areas in which dam sites are easily identified with no major problems of population displacement, though the environmental impact of new schemes would need to be assessed very carefully. At present it appears that sites for dams are being selected on an *ad hoc* basis according to their convenience for export to Thailand.<sup>4/</sup> The total potential capacity has been put as high as 20,000 MW, ten times the present level. Thailand's energy needs are likely to expand progressively as its industrial strength grows. There is a pivotal need to enhance Lao's supply response to a growing demand for electricity. Lao's electricity system is already closely tied in with that of Thailand, with Lao exporting to Thailand from the Nam Ngum and Xeset Dams, and importing from Thailand in Savannakhet. The complementarity in the future will involve more Thai industry and Lao electricity supply, however, making electricity by far the most promising of existing industrial possibilities in Lao.

For this reason, it is important to proceed with the implementation of Nam Theun 2 project, although the capital requirements (in this case \$0.5-1 billion) are very high. It is hoped that this project will be completed by the end of the decade, with the participation of a major Australian construction company. By then the government hopes to be exporting as much as 1,500 MW per annum to Thailand. The Xeset Dam near Pakxe in the south started operations in 1991 and has a capacity of 45 MW. Since only about 5 MW will be required for local consumption, this will increase export earnings substantially. The government has been aware of the potential of the electricity supply sector. The Public Investment Programme of 1991-1995 allocated nearly a third (31.9 per cent) of total proposed investment to this sector. Looking much further ahead, the government envisages the construction of at least 20 more dams capable of generating 7,000 MW, involving an investment of more than \$6 billion.

It may also be mentioned here that Lao has huge lignite coal reserves. A concession for the exploitation of lignite in Chai Buri District of Long Saa Province, not far from the Thai border has been granted to the Thai-based CB group of companies. If, as is anticipated, a minimum of 70 million tonnes of deposits, perhaps substantially more, are found to be available, the group will build a coal-fired electric power station to supply Thailand and perhaps Viet Nam. Under the contract it is expected that the government will retain a 25 per cent share in the enterprise.

## D. FOOD AND AGRO-PROCESSING

As indicated earlier, the bulk of the population in Lao is engaged in what is largely subsistence agriculture. Many of the small-scale enterprises which exist in Lao townships are engaged in food processing, making rice noodles, fermented fish, tomato sauce and other local products. Ice-making is quite an important small-scale industrial activity in all provinces. The development of agro-processing, being potentially widely distributed throughout the rural areas, has a number of important advantages for Lao. Its backward and forward linkages mean that it can contribute substantially to the development of the rural economy in the different provinces.

The low degree of commercialization of agriculture, however, means that the sector is generally underdeveloped. In the past there were restrictions on the movement of produce between provinces. This reduced the opportunity to specialize according to local comparative advantage and to benefit from the market. The poor road network at present impedes inter-provincial trade in agricultural produce and the development of commercial agriculture.

### Rice milling

The most widespread agro-processing industry is rice milling, though this activity is not included as industry in official statistics in Lao. Many rice mills exist throughout Lao, some private ones as well as state-owned enterprises. There appears to be general as well as localized excess capacity in the industry: localized because a number of mills are not well located in relation to the supply of rice, and are uneconomical for that reason, and general because of the low overall level of rice production. Less than 5 per cent of lowland rice in Lao is irrigated at present. The rice mill at Pakxe has been operating at as low as 16 per cent of capacity, while another new mill at Savannakhet has remained unused.

There remains scope for development of small rice mills. What is needed, however, is intensification of rice production through increased irrigation in order to raise agricultural incomes, increase food supplies, and to provide for more economical rice milling operations.

### Sugar

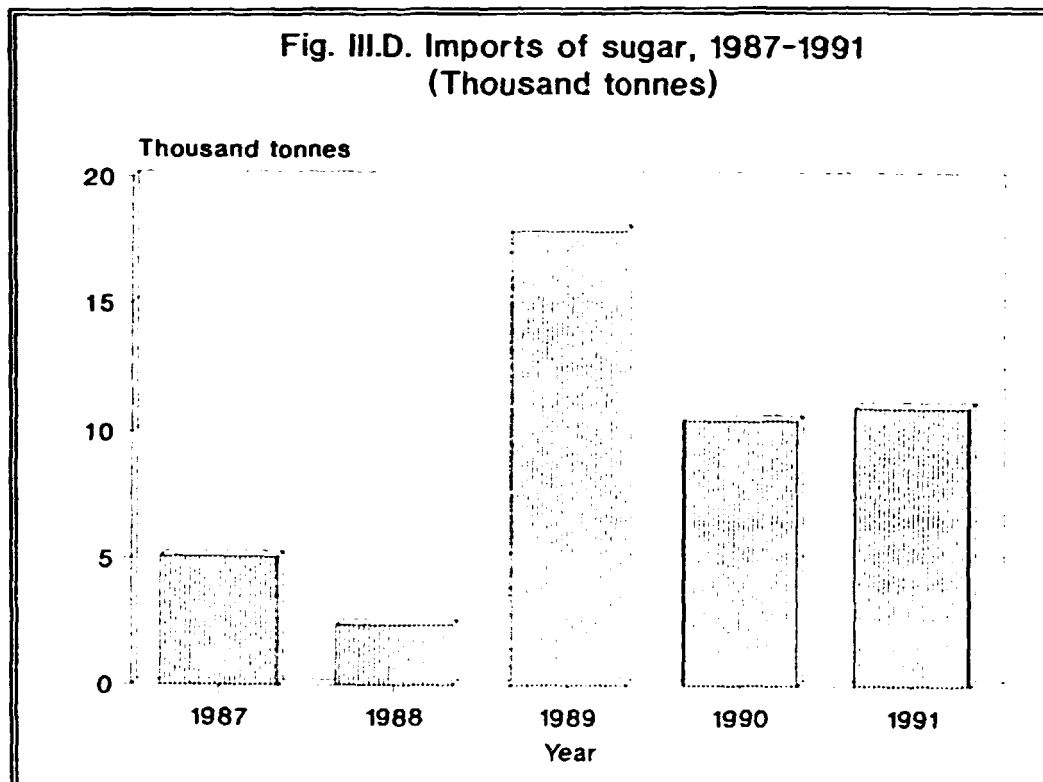
Although sugar is imported, both the area planted under sugar and the production of sugar cane has declined significantly over the past few years (see Table III.8), although the data here are not very reliable (the output would be expected to fall, not increase, in 1987 and 1988, as a result of the severe drought in those years). About 40 per cent of output is produced in Vientiane Municipality and Province.

Table III.8. Sugar cane production, area and output, 1984-1991

Year	Area	Production
	Hectares	Tonnes
1984	1,437	54,525
1985	2,640	73,035
1986	2,590	72,328
1987	3,843	103,853
1988	3,936	107,091
1989	3,826	126,047
1990	3,538	96,360
1991	2,835	80,491

Source: Basic Statistics.

However, Lao has had no sugar mill until very recently. Instead, cane is turned into sugar on-farm, as brown sugar or juice. Plans for the Pak Sap sugar mill, located some 30 km north-east of Vientiane, date back to 1983. It was finally constructed with the assistance of a World Bank loan of \$2.3 million and was to commence operations in 1992 as a state-owned enterprise under Vientiane Municipality management. Despite being quite a small mill, of no more than 2,500 tonnes annual capacity, it has had problems in finding the necessary working capital for its operation and in securing raw material supplies. The project itself was able to establish only a small area initially, used as a nursery for outgrowers, and has been struggling to persuade smallholders in the locality to expand planted area. It may be that successful investment in sugar milling will need to be accompanied by simultaneous investment in estate production or development of organized outgrower production in association with the mill.



There would appear to be definite scope for import-substituting domestic capacity in sugar milling, since imports run at 10,000-11,000 tonnes a year, equivalent to over 100,000 tonnes of cane. Increased supply, however, would need to be assured. A second small mill is planned for Savannakhet, where the population density is thought to be sufficient to provide a market and local farmers are said to be keen to enter into production. An independent evaluation has established an economic rate of return of 17 per cent for the project<sup>5</sup> but assumes that the supply side requirements can be met.

#### **Fruit and vegetable processing**

Though irrigation has not been extensively developed in Lao, vegetables are widely produced throughout the country, particularly in central and southern Lao and, according to available statistics, the area under production has increased by more than 40 per cent over a period of six years (see Table III.9).

In a recent report<sup>6</sup> recommendations have been made for starting with a number of small-scale projects for fruit and vegetable preservation and concentration based on simple technologies rather than attempting larger-scale export-oriented projects. This is worth pursuing while, over the longer term, the expansion of irrigated agriculture would increase productive capacity for the raw material.

Table III.9. Cultivation of vegetables, 1985 and 1991

	Area Hectares		Production Tonnes		Percentage change 1985-1991	
	1985	1991	1985	1991	Area	Production
Vientiane Municipality	700	453	5,694	3,640	-35.2	-36.1
Vientiane Province	520	606	4,264	5,141	16.5	20.6
Xayaboury	196	1,030	549	3,287	425.5	597.1
Xieng Khouang	375	556	1,105	5,106	48.3	362.1
Bars Kahmsay	150	242	1,083	1,959	61.3	80.9
Central region	1,941	2,887	12,695	19,133	48.7	50.7
Share of total (per cent)	40.1	42.4	35.9	37.4		
Phonsaly	106	283	1,219	2,456	167.0	101.5
Luang Namtha	90	81	180	702	-10.0	290.0
Oudomxay	215	232	1,700	1,994	7.9	17.3
Bokeo	80	202	650	1,571	152.5	141.7
Louang Phabang	311	250	1,330	1,000	-19.6	-24.8
Houaphanh	245	263	2,866	2,281	7.3	-20.4
Northern region	1,047	1,311	7,945	10,004	25.2	25.9
Share of total (per cent)	21.6	19.3	22.5	19.5		
Khammouane	100	404	700	3,509	304.0	401.3
Savannakhet	670	176	6,030	1,465	-73.7	-75.7
Saravane	385	677	3,120	5,878	75.8	88.4
Sekong	33	152	264	1,316	360.6	398.5
Champassak	613	1,010	4,291	8,875	64.8	106.8
Attapen	51	190	306	1,045	272.5	241.5
Southern region	1,852	2,609	14,711	22,088	40.9	50.1
Share of total (per cent)	38.3	38.3	41.6	43.1		
<b>Total</b>	<b>4,840</b>	<b>6,807</b>	<b>35,351</b>	<b>51,225</b>	<b>40.6</b>	<b>44.9</b>

Source: Basic Statistics.

Possibilities exist for vegetable oil extraction from sesame, soya and groundnuts. There is considerable scope for small-scale processing while Thai investors seem to be interested in large-scale operations. Raw material supply may be a constraint for large-scale operations. The potential for expanding soya bean production in the south in particular is substantial. The export market for edible oil demands quality control, calling for modern production techniques and therefore any small-scale units using simpler technologies would be directed towards the domestic market.

#### Animal feed production

One related project which has not been financially successful is the animal feed factory. This was established in 1980 as a modern plant with a capacity of 3,200 tonnes per annum. The annual output of the plant has fluctuated significantly from year to year (see Table III.10) but has averaged some 4,000 tonnes representing just 12 per cent of capacity. Failure to assess the precise nature of the market for animal feed in Lao, as well as the raw material supply response, underlies the problem. Consideration is being given to the proper future direction of the plant once privatized.

**Table III.10. Annual output of the Vientiane Animal Feed Factory, 1985-1990**

Year	1985	1986	1987	1988	1989	1990
Animal feed output (Thousand tonnes)	3.7	5.6	6.8	1.9	3.8	2.5

Source: UNIDO.

### Meat and hides

The Vientiane Municipal Abattoir, which has a monopoly of cattle slaughtering in Vientiane, is in fact operating at less than 50 per cent of installed capacity. Most slaughtering is done elsewhere, in the 'informal sector', no doubt because this is much cheaper and more convenient. Cattle and pigs are widely raised throughout Lao, but slaughtering in the provinces is even more likely to be carried out informally by local butchers.

There are possibilities for livestock-related processing activities such as tanning, the use of tallow for soap, of bones for glue, and slaughter waste for fertilizer. A tannery was established at the end of 1991, with United Nations Development Programme (UNDP) assistance, as an SOE, the intention being to increase value added and to utilize the widespread raw materials available in the country. The enterprise, unfortunately, has never been managed efficiently, and it was privatized in 1993. The foreign partner would be able to lease the assets at an agreed fee on a 25-year contract, leaving only a 25 per cent shareholding to the government. Arrangements should be concluded shortly. There is good long-term potential for expansion of the cattle population in Lao. However, insufficient attention may have been given to the establishment of an efficient system of hides collection and marketing, and this needs to be examined closely if raw material supply, as with other agro-processing operations, is not to prove a problem.

### Coffee

The expansion of coffee growing in Lao opens up opportunities for manufacturing value added through coffee processing. The chief area of production is in the Pakxong district, on the Bolovens Plateau, particularly in Champassak province, Saravane and Sekong, which together produces 98 per cent of the total. Output has increased by more than half in one year, and harvested area by a third (see Table III.11). This is the result of the UNDP-supported Upland Agriculture Development Project (UADP), under which output is projected to increase to 14,000 tonnes by 1996.

Production is centred on the Pakxong Coffee Mill, which was established with the assistance of the former German Democratic Republic in 1985 involving an investment of \$5 million. The mill processed 1,600 tonnes in 1991, just over half in relation to capacity of 3,000 tonnes. Substantial quantity is rough hulled at village level and secures a poor price on the market. This indicates problems between local producers and enterprises at the processing level which need to be investigated. Four other plants have since been established in the Pakxong area of Champassak, but all exhibit low capacity utilization rates.

The coffee industry does not appear to be well organized. The Pakxong mill is exporting mixed ungraded UG coffee, resulting in low export prices. Output comprises 85 per cent Robusta coffee and 15 per cent Arabica, which elsewhere would be clearly separated. In addition to an extension and quality improvement programme at farmer level, improvement is needed in marketing, grading and processing. This indicates the importance, in relation to agro-related industry, of promotional efforts which combine initiatives at production, marketing and manufacturing levels.

**Table III.11. Coffee production, 1986-1991, selected years**

		1986	1990	1991	Increase 1990-1991 Percentage
Champassak, Saravane and Sekong	Harvested area (Hectares)	13,048	16,795	22,532	34.2
	Production (Tonnes)	4,974	5,053	7,847	55.3
National	Harvested area (Hectares)	13,140	17,066	22,840	33.8
	Production (Tonnes)	5,011	5,204	8,017	54.1

Source: Basic Statistics

### Tobacco

Tobacco processing makes a significant contribution to industrial output, although it comprises just two companies, both located in Vientiane, a cigarette company and a tobacco-processing company. The former, apart from EdL, is the largest company in Lao in terms of employment and turnover. It has now been privatized under a leasing arrangement.

The industry is a typical example of resource-based industrial activity, with more scope for employment and income generation in the agricultural sector (see Table III.12).

**Table III.12. Tobacco production, 1980-1991, selected years**

	1980	1986	1987	1988	1989	1990	1991	Increase 1986-1991 (Percentage)
Area harvested (Hectares)	4,000	3,207	5,255	7,127	8,088	11,665	10,213	218
Production (Tonnes)	16,639	13,999	24,727	29,847	33,492	56,428	45,332	224

Source: Data collected from primary sources

### Cashew nuts

A project for the development of cashew nut production and subsequent processing, the Lao Cashew Project (LCP), was initiated a few years ago under an agreement between the Thangone Feed Mill Corporation attached to the University of Agriculture and a company from the United States. Some 70,000 trees have been planted previously as a result of promotional efforts among farmers by the Ministry of Agriculture, but the trees, of local and Vietnamese varieties have produced only low yields. Under the project some 240,000 trees would be established with a view to exporting around 415 tonnes of nuts a year. Employees from the company, together with a group of farmers, have been sent to Thailand for training and 30 hand-shelling machines have been imported by the Vientiane Municipality in order to establish a central planning facility.



## E. TIMBER AND WOOD PRODUCTS

Lao encompasses extensive forests comprising many species of hardwoods. A wide range of forest-related industrial activities include sawmills, plywood, veneer, parquet flooring, furniture making, chipboard and fibreboard, and a range of non-wood products. Logs are also exported.

### Sawmilling<sup>7</sup>

Reliable information on the state of the sawmilling industry is available from a major sawmill survey conducted in 1988. This covered all 72 mills with a nominal annual production capacity in 1988 of 700 cubic metres sawn wood. A complementary survey was prepared in August 1990, to update the previous one in respect of new mills established since 1988 (see Table III.13).

**Table III.13. Sawmilling capacity, 1988 and 1990**

Area	1988 Number of sawmills	1988 Nominal capacity (Thousand cubic metres sawn wood)	1990 Number of sawmills	1990 Nominal capacity (Thousand cubic metres sawn wood)	Increase in capacity 1988-1990 (Per cent)	Estimated share of capacity in 1990 (Per cent)	Estimated share of production in 1990 (Per cent)
Vientiane	19	105	33	173	65	38	43
Savannakhet	9	71	20	105	48	23	21
Thakek	3	21	9	61	190	13	9
Pakxe	5	22	6	30	36	7	13
Pasane	3	9	4	15	67	3	6
Distributed	13	63	16	74	17	16	8
<b>Total</b>	<b>52</b>	<b>291</b>	<b>88</b>	<b>458</b>	<b>57</b>	<b>100</b>	<b>100</b>

Source: Ministry of Agriculture and Forestry, Sawmill Surveys, 1989 and 1990.

Note: Excludes mills with nominal production in 1988 below 700 cubic metres sawn wood.

In May 1990, there were 132 sawmills distributed across the country, 88 of these with output in excess of 700 cubic metres sawn wood and 44 smaller mills. Seventy of the mills were in Vientiane Province and Municipality. The two most important areas were in fact Vientiane, with nearly 40 per cent of total capacity in 1990, and Savannakhet, with 23 per cent. The number of persons employed in sawmilling in August 1990, were given as 5,900.

There has been extremely rapid expansion in the industry in the last few years, with a 57 per cent jump between 1988 and 1990, when conservation and other concerns led to a logging ban for some time. Most of the increase in milling, 85 per cent of the total, came in the two areas mentioned above and Thakek. The fastest increase was in fact in Thakek, although from a much smaller base.

This increase has occurred mostly through private investment, 50 per cent of the increase in the two years to 1990, of which 78 per cent was in mills of either private or mixed public-private ownership. As a result the equity participation by state/provincial army ownership and management has fallen from about 50 per cent in 1988 to 20 per cent in 1990.

Capacity utilization across mills remained low due to the lack of logs, spare parts and fuel. In the case of spare parts there is a long waiting time for spare parts and repair of equipment during which period working time is lost. The major problem is the lack of logs due to what the survey concludes is "a permanent and big shortage of logs in the country". The strong effect of log supply

on sawmill capacity utilization is suggested by regional data on sawmill efficiency (see Table III.14) which shows the two provinces where accessibility to forest resources is still rather good, Champassak and Saravane, to have much higher capacity utilization rates, 70 and 66 per cent respectively, compared with the average rate of 30 per cent.

The 1988 survey found 60 per cent of the mills in operation to be "in urgent need of repair or reconstruction", of which 40 per cent of sawdoctoring equipment was in need of repair or replacement. The establishment of new mills since 1988 is likely to have raised the standard of equipment significantly.

**Table III.14. Regional performance indicators of sawmilling efficiency, 1988**

	Capacity Utilization (Percentage)	Number of mills	Occupation efficiency (Percentage)	Number of mills
Municipalities	10	(14)	41	(22)
Vientiane Province	26	( 5)	37	(10)
Bolikhamxay	44	( 4)	39	( 4)
Xayaboury	30	( 3)	42	( 3)
Khammouane	20	( 3)	75	( 6)
Savannakhet	28	( 9)	55	(11)
Saravane	66	( 3)	56	( 3)
Xekong	2	( 1)	40	( 1)
Champassak	70	( 4)	64	( 4)
Attapen	35	( 1)	58	( 1)
Bokeo	3	( 2)	14	( 2)
Luangnamtha	9	( 1)	21	( 1)
Oudomxay	6	( 1)	19	( 1)
Xiengkhuang	30	( 2)	21	( 1)
<b>Municipalities and all Provinces</b>	<b>31</b>	<b>(53)</b>	<b>40</b>	<b>(70)</b>

Source: Sawmill Survey, 1989.

A significant deterioration in wood quality occurs in both transit and storage. All mills suffer from deterioration of logs from felling up to the point of delivery at the mill leading, according to the report, to an average loss in log value in transit between forest and mill of as much as 36 per cent. However, subsequent deterioration in storage as a result of shakes, insects and fungi leads to even more losses than the mechanical damage in felling and transportation. The result is a major slippage in the grade of logs at the mill. Long and careless storage with such damaging effect shows up very clearly the seriousness of the management problem in the industry which needs to be addressed.

One of the reasons for low capacity utilization rates among sawmills is the lack of integration between forest enterprises and mills. Hardly any of the sawmills is integrated with a forest enterprise and can benefit from a long-term agreement in respect of supply. Sawmills buy directly on the market from different forest enterprises or temporary suppliers. These also suffer from the lack of an established grading system, grading being carried out, if at all, at the delivery point between buyer and seller. A second reason is that new mills have been established without due regard to the availability of logs within the supply area.

There is an urgent need for rationalization and restructuring of the industry because of the need both to improve efficiency and performance and also to conserve and manage future supply in each area. This would involve closing down specific mills while also opening up new forests for logging, in such a way as to adjust sawmill capacity regionally to the potential supply of wood. Obviously, this could be done by closing down those sawmills which are technically inefficient. This would simultaneously improve utilization rates in the remaining mills. It follows that a strong

measure of coordination and planning is needed at both sectoral and provincial levels, building on the very useful database which exists.

The industries that have been developed on the basis, directly or indirectly, of the forest resource will be under threat eventually if the resource is not utilized in a self-sustaining manner. Out of the estimated 200,000 cubic metres raw wood consumed during 1992, some 60,000 (30 per cent) was of the species *May Theka* and another 20 per cent of two other precious species *May Bak* and *May Nhang*. The rate of exploitation of these species is selective and does not correspond to their representation within the forest resource. However, it is felt that the forest as a whole is heavily overexploited in many locations. There is need therefore both to adjust the overall level of logging and mill production to the capacity of the forests and to control the cutting of individual species within the individual concessions in line with prudent forest management plans.

Conservation of the forest resource is not related only to the exploitation by loggers. The forests are being depleted by shifting cultivation, which has led to substantial reduction of forest cover in central/northern Lao especially, and as a result of localized timber harvesting for domestic use, estimated at 100,000-150,000 cubic metres and 100,000-120,000 cubic metres respectively in 1989. Together with an annual logging quota in 1991 of 400,000 cubic metres these would yield a total annual rate of depletion of some 600,000-700,000 cubic metres, which is regarded as unsustainable.

In this situation quota allocation arrangements are critical. Current quota distribution is not based on adequate forest area management plans which take account of productive capacity and species content. Moreover, uncertainty regarding future quota arrangements brings a danger that short-term exploitation policies are pursued by those securing concessions at any one time. There is need, therefore, that allocations are made according to a sustainable use management plan and that a strong monitoring and evaluation organization be established to regulate the industry.

Major confusion in the allocation of concessions has occurred in the past, partly as a result of conflicting policies pursued by central and provincial governments. Thus one of the largest state forest enterprises (SFEs) in Lao, SFE9, which was important to the operation of the Lao Plymill and had been recently re-equipped through a substantial ADB/UNDP loan under the Second Forestry Development Plan, then lost its concession and had to be wound up early in 1992, after the provincial government had independently allocated much of the area of the concession to private companies.

In support of the above there is need for studies to determine the level of sustainable output of logs of different species in each area of the country in order to serve as a foundation for forest management plans and as a basis for establishing effective monitoring and evaluation systems. Progress in this direction has been made with the initiation in 1990 of work on a National Inventory, being carried out on a province-by-province basis. In 1990-1991, Saravane and Savannakhet Provinces were surveyed and in 1992/1993 Khammouane and Vientiane Provinces were covered by the survey. Three more provinces were to be covered in 1993/94.

#### **Wood-based manufacturing**

Much of the output of the forest is exported as logs. It is clearly of great importance if Lao is to make the most of the forest resource, for domestic value added to be increased by processing timber within the country and developing linkages with other industries. Some progress has been made in this direction and wood-based manufacturing is of increasing importance. Thus, in addition to a steady increase in the value of logs and cut timber production between 1985 and 1990 (see Table III.15) there was a substantial increase in the production of plywood, veneer, parquet and other wood products.

**Table III.15. Output value of logging, cut timber and other wood products, 1990**  
(Kp millions)

Product	1985	1986	1987	1988	1989	1990 <sup>a/</sup>
Logging	7,929	7,916	10,012	11,370	10,800	11,448
Cut timber	4,499	4,143	6,280	5,025	10,249	7,048
Plywood	1,271	1,165	1,675	1,156	1,805	2,215
Veneer	792	732	581	1,031	1,772	2,330
Parquet	86	177	398	512	2,391	3,520
Other wood products	-	-	-	42	178	220
<b>Total excluding logging</b>	<b>6,648</b>	<b>6,217</b>	<b>8,934</b>	<b>7,766</b>	<b>16,395</b>	<b>15,333</b>
<b>Total including logging</b>	<b>14,577</b>	<b>14,133</b>	<b>18,946</b>	<b>19,136</b>	<b>27,195</b>	<b>26,781</b>
Logging (Per cent)	54.3	56.0	52.8	59.4	39.7	42.7
Logging and cut timber (Per cent)	85.3	85.3	86.0	85.7	77.4	69.1

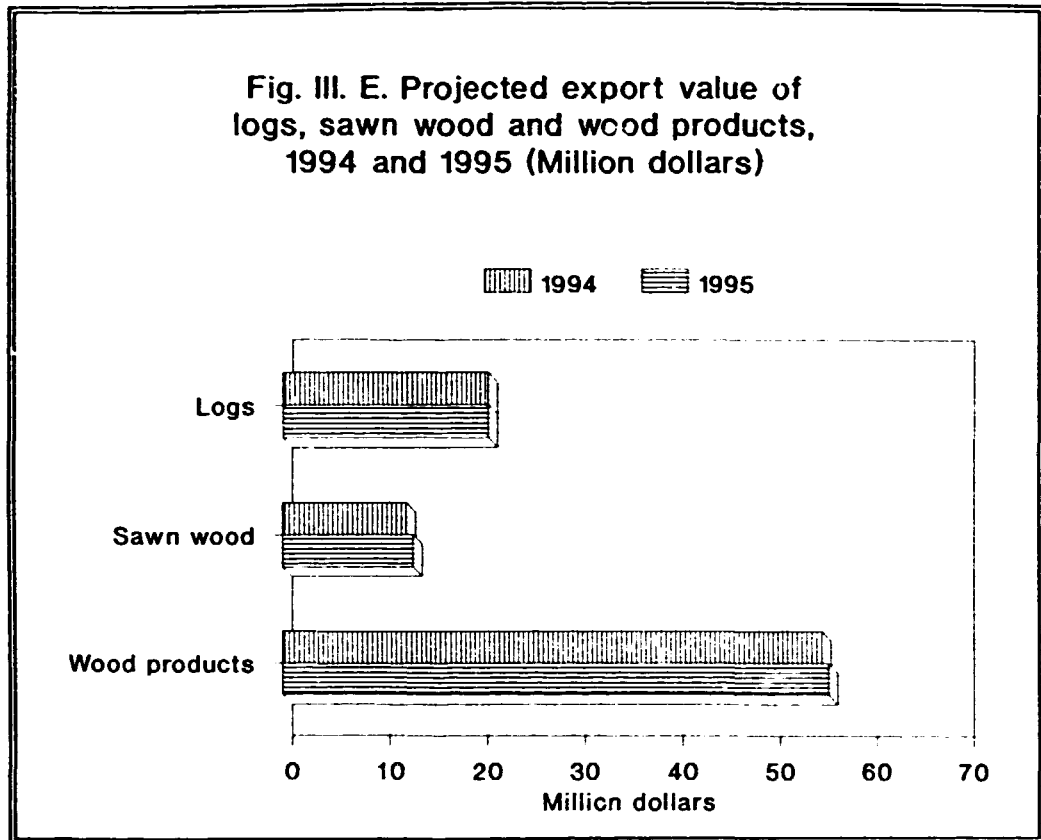
Source: Industrial Sector Study and Strengthening of Ministry of Industry and Handicrafts, Lao People's Democratic Republic, TA No. 1353 Lao, Asian Development Bank, (Manila, 1992).

a/ Estimates.

The main increase in these items was in the last two years to 1990, when their combined share rose from just 14 per cent to 31 per cent of the aggregate total. As a result of this and the increase in cut timber, the share of logs in total value, which had been more or less constant, fell in these two years to 43 per cent only. Wood products other than cut timber and logs are projected to account for about 38-40 per cent of wood exports over the period 1993-1995. There is considerable potential for the production of composite boards for the furniture and construction sector, with the latter in particular expected to show important growth in the future. The most important export market for wood products is neighbouring Thailand but other significant markets are Vietnam and China.

The plywood factory was started in 1973 as a private company, and became a state enterprise in 1977. It was subsequently included as a project in the Second Forestry Development Plan, when it benefited from Asian Development Bank-funded investment in new equipment, resulting in a 69 per cent increase in plywood production in the two years to 1990 and a 95 per cent increase in sliced veneer. Increased efficiency was reflected in an improvement in the recovery rate from 40 to 53 per cent. At the time of privatization, there was strong competition for the company between private investors but this led only to a 10-year leasing arrangement. Although only \$1.7 million out of the \$5 million ADB loan had been spent, this raises major questions about the distribution of benefits as between the state and the private investor in the process of privatization.

The Lao Parquet Factory was also established as a private company in 1972, but operated rather intermittently until it was taken over in 1982. Three years later it was producing only 20,000 square metres of parquet and other production compared with capacity of 100,000 square metres (calculated on a 3-shift basis). Again, re-equipment through an ADB loan, amounting to \$825,000, produced a doubling of output over 1989 and 1990. Nevertheless it was running at a loss in 1991, when it was privatized, again on a lease basis. There is a need for improved processing of parquet in Lao: full advantage has not so far been taken of the better quality of raw material available here compared with other competing countries such as Thailand and Singapore, and this needs examination. A number of other parquet factories exist in Vientiane and Savannakhet.



Previously the Lao Wood Industries Corporation (LWIC) operated under the Ministry of Industry and Handicrafts to control all state enterprises in the wood processing and forestry sectors. This was dissolved in November of 1988, when nine state enterprises were left free to function as separate and autonomous entities, though now under the Ministry of Agriculture and Forestry. Many of these have since been privatized.

The bulkiness of many wood products reduces the potential of Lao, despite its resource advantage, to compete internationally, due to the high costs of transportation. This makes it difficult to expand beyond the domestic market itself, and Thailand. Improved transport infrastructure through Thailand for reducing shipment costs, would make a great difference. Export possibilities within the region and to China do exist for reconstituted panels, particle boards and fibre board. Packed furniture for re-assembly has already been exported to Singapore. While the government has been anxious to increase domestic value added through the export of processed products rather than logs, this has been quite difficult in the face of quite strong preferences abroad, in Thailand, Japan, Republic of Korea and Taiwan Province for the latter.

Declining availability of hardwood logs in the importing countries, and a desire to support their own domestic industries, have been mentioned as a reason for a willingness to pay a premium for round logs over processed products. More specifically, tariff structures and non-tariff barriers in these countries favour the unprocessed product. As a result, for the high value species such as rosewood at least, log exports provide a return more than double than that of sawn timber.

Another explanation may lie in the technology of production, particularly as high value logs such as teak and rosewood especially require particularly sophisticated machinery and skills for the extraction of veneers and other products. The manager of one large sawmill in Bolikhamxay Province where the recovery rate on sawn wood was no more than 45 per cent in late 1990 gave this as a principal reason why the rate of return on sawn wood was lower than on round log exports.

## Furniture

A number of wood furniture factories exist, often connected with sawmills. However, this is for the most part a small-scale 'informal sector' activity which is widely distributed across the country making use of what is a widely available raw material. A report of the Tropical Forest Action Programme in May 1990 referred to a total of 607 'other units', identified as mostly very small enterprises for furniture-making. Of these 436 were listed as being in Vientiane Municipality and 93 in Savannakhet and Champassak. Since enterprises in eight provinces were not counted, this must represent a gross underestimate of the numbers in existence nationally.

The possibilities for promoting small- or large-scale production of furniture for export do exist in Lao. Some contacts have already been made, apparently, between companies in Singapore and small-scale producers in Vientiane for the export of made-up furniture using hardwoods. There could be scope for considerable expansion here if contacts can be facilitated, market requirements established, and appropriate training and product development instituted. This development which might be facilitated by a technical and market information centre which would establish mutually beneficial contact.

Other possibilities exist in respect of rattan furniture. This is already being exported from Champassak. However, current furniture quality and design is apparently not entirely in line with the requirements of the Thai market. Here again there is need to assess the precise market requirements, if necessary to copy the models in demand, for product development generally, and for the upgrading of skills in the domestic industry. Other marketable wood, rattan and bamboo products need to be identified. Direct entry by Thai-owned companies might itself bring together the industry and the identified needs of the market.

## Non-wood forest products

About 150 non-wood forest products are produced in Lao, some of which involve a degree of processing and have export possibilities. Specific items are stielac, benzoin and pine and other resins. Cardamon is exported as a crop. These possibilities warrant closer investigation.

## F. TEXTILES AND CLOTHING

### Textiles

Although cotton is grown in the country, output has remained much the same since 1980. Due to the poor quality of cotton, the local cotton yarn is not considered suitable by most of the garment factories. While the import dependent garment segment grew significantly over the years, textile production declined rapidly. Local cotton can be used for handcraft items and possibilities do exist for the development of artisan specialist weaving. Products could be sold to tourists visiting Lao and Thailand.

### Garments

The most exciting development in the field of manufacturing industry is the rapid growth of the garment industry. At the beginning of 1989 there were just three factories exporting garments, with sales amounting to \$2 million. By 1992 expected export sales were already \$25 million. In 1991 there were still just eight factories, a privately-owned factory in Pakxe, Champassak, and seven in Vientiane, two managed by the Municipality, one under the Ministry of Defense with French management, three joint ventures between Lao and foreign interests, and another private company. However, 23 new garment production licences were granted in 1992. Foreign investment in the industry - mostly from Thailand, Hong Kong and Taiwan Province - amounted to an estimated \$27 million by late 1992. Some European companies also came on stream. Investors are now looking at alternative sites to Vientiane Province, where the industry has been concentrated up to now. These new sites will also have to have ease of access to Thailand for purposes of export and import.

The industry is based exclusively on imported fabrics and designs. The primary reason for the companies locating their activities in Lao, despite high transport costs, is the absence of quota restrictions in European and North American markets on made-in-Lao clothing, whereas Thai-manufactured garments, for instance, are subject to quota limits.

A second advantage is the availability of relatively cheap labour. While labour costs have been increasing quite rapidly elsewhere in Asia, garment workers in Lao are among the lowest paid in the continent. In 1992 about 5,000 were employed in garment factories, mostly young women. Lao labour is considered diligent, requiring little training, and readily accepts overtime work. It should be noted also that informal sector enterprise in garment making is both traditional and widespread, with the use of sewing machines in Lao villages. Including these microenterprises, as many as 10,000 workers could be employed in garment-making and sewing in Vientiane City alone.

The garment factories vary considerably in size from small factories of about a hundred workers to medium-scale modern enterprises with as many as 800 workers and 600-700 sewing and knitting machines. The joint venture or wholly foreign-owned factories are frequently branches of well-established companies, with long experience of the industry. Orders are generally placed with company head offices outside the country, which then arrange for the production to be carried out in Lao. For the moment this has had advantages in bringing with it marketing contacts and expertise, which has allowed very rapid development of the industry.

A wide variety of garments are now made apart from T-shirts, shirts, trousers, sweaters and sportswear. In other countries relocation of company activities in order to avoid quota restrictions has sometimes been accompanied by quota-dodging, achieved through using the second country for import and final assembly of semi-finished garments incorporating only minimal value added. There appears to have been some element of this initially in this case which has met with prompt response through the issue of a Garment Industry Fair Practices Notice in 1992 by the Foreign Investment Management Committee.

There are possibilities for Lao to acquire most favoured nation status (MFN) in the United States in the near future. This development would indeed be an additional attraction for a number of companies. In fact some exports are already being destined to the United States. Granting MFN status could give a major impetus to the industry. As with other potential exports facing transport disadvantages in exportation and importation the restrictions placed on transit traffic through Thailand need to be lifted and transport facilities improved as a matter of priority.

## **G. AGRO-RELATED METALWORKING INDUSTRY**

During the 1980s, two large-scale agro-related metal working establishments operated in Lao, the Agricultural Machinery Company (formerly the Agricultural Tool Factory) and the Mechanical Manufacturing Factory (MMF), both within 5-8 km of Vientiane. The first of these was started in 1978 as a metalwork training project supporting the private company, Lao Industries. The machinery from this private company was then transferred in the same year to the current site to constitute the Agricultural Tools Factory, to be run under the jurisdiction of the Vientiane Municipality as a provincial metalworking company.

This became a joint venture in 1990, re-named the Agricultural Machinery Co., its shareholding equally divided between the state and the company's 57 employees. The establishment, at one time making 320 ploughshares a day, and a large quantity of tools, was in 1990 making only nails, machetes and shovels and was by then in run-down condition and of doubtful viability.

The Mechanical Manufacturing Company (MMF) was split up in 1978, under the Ministry of Industry and Handicrafts. An oxygen and acetylene plant was later incorporated. This factory in contrast, is considered to have good potential as an industrial unit<sup>8</sup> with much better equipment, though in need of management training assistance.

Apart from these two establishments, it is reported<sup>7</sup> that a sizeable informal/artisanal sector exists, on which there is little information. A visiting UNIDO expert advising Lao Industries some time ago<sup>8</sup> made the observation that if rural families (then numbering 500,000, now substantially more) each required a Lao spade, medium-sized spade, hoe, sickle, mower, hay-fork, rake and machete, this would require around 1.5 million hand tools a year.

There is a big difference, of course, between need and effective demand backed by purchasing power. Nevertheless, this represents a large potential demand for agricultural tools which could support, on a purely arithmetical calculation, a number of agricultural tools factories. A number of questions to be considered, however, is whether as yet an effective market exists; whether this can be most effectively met at present by large-scale, medium-scale or artisanal production, or a combination; and whether such production can compete without subsidy against imports from adjacent countries. It points to the need simultaneously to expand rural incomes through agricultural intensification in order to develop the required demand and direct linkages, as well as the need for more systematic technical/economic research into existing and potential methods of production.

## H. CEMENT PRODUCTION

Up to now there is no clinker production in Lao, though a small, relatively high cost grinding plant exists in Vientiane which uses imported clinker. Previous studies carried out in the late 1960s found that the required economic scale of production was in excess of domestic demand within Lao. While the minimum economic size for a cement plant is considered to be in the region of 180,000 tonnes a year, imports into Lao in 1989 and 1990, for example, were around 100,000 tonnes only. This shows the problem posed for Lao by its small domestic market, affecting the potential development of an industry based on the country's resources.

With this level of demand, it would be necessary to plan for a relatively small plant. Accordingly a feasibility study was carried out in 1989 by an Austrian engineering company which in fact concluded that a plant of 63,000 tonnes annual capacity was technically feasible, if marginal from an economic standpoint, and one which might have difficulty attracting private investment.

There are, however, signs of renewed private interest at the moment, and the construction of a factory at Vong Vienth, organized as a joint venture with Lao and foreign interests, is expected to start. If the current rate of economic growth is sustained, it can be expected that construction activity will also grow and generate a rising demand for cement. The elimination of an overvalued exchange rate also means that prices for domestic timber and logs will move up, to reflect world prices, encouraging greater use in construction materials other than timber.



### NOTES TO CHAPTER III

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- 1/ *Industrial Sector Study and Strengthening of Ministry of Industry and Handicrafts, Lao People's Democratic Republic*, TA No. 1353, Lao, Asian Development Bank, (Manila, September 1992), p. 18.
- 2/ *The Economist*, (6 November 1993).
- 3/ Asian Development Bank, *op. cit.*
- 4/ *The Economist*, *op. cit.*
- 5/ UNIDO, *Opportunity Studies for Small- and Medium-scale Agro-industries in the Lead Countries in Asia and the Pacific Region*, Terminal Report (Vienna, March 1992).
- 6/ Asian Development Bank, *op. cit.*
- 7/ This section draws heavily on the findings of the Sawmill Survey conducted by the Ministry of Agriculture and Forestry in 1988.
- 8/ UNIDO, *Country Briefs on Agro-related Industries in Least Developed Countries in Asia and the Pacific Region* (PPD/R.47), (January 1991).
- 9/ World Bank, *Staff Appraisal Report*, Lao People's Democratic Republic, Industrial Credit Project (July 1988).
- 10/ Lenaerts, H.E., *Report: Lao People's Democratic Republic Production of Agricultural Tools*, UNIDO, Vienna, 1978.

## IV. INDUSTRIAL NEEDS AND PROSPECTS

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### A. KEY AREAS

Lao's substantial natural resources seem to attract the interest of a wide range of foreign investors, including increasingly, east and south-east Asian enterprises, Thai investors in particular. The major handicap of inadequate physical infrastructural base, particularly in terms of road and communications network, is being addressed with a view to changing the conditions for business operations considerably by the end of the decade. At the same time, the financial, legal and regulatory framework for the development of a market economy and the encouragement of investment have been substantially put into practice in pursuit of creating an enabling environment conducive for investors. There remains, however, a great deal to be done in terms of creating effective government operations at central, provincial and district levels, and in co-ordinating such efforts.

The most promising areas for the expansion of industry at the moment are hydroelectric power, wood processing, garment production, and the country's mining sector. Excepting garment manufacturing the other three industrial activities are domestic resource-based and capital-intensive, while the fast growing garment segment is labour intensive, offering substantial employment opportunities particularly for women. There is also considerable potential for developing domestic resource-based agro-processing industries. This calls for significant improvements in agricultural productivity with more concentrated crop growing schemes in order to enhance the resource base for such operations. Priority is being increasingly accorded to the development of the agricultural base in the provinces with a view to alleviating poverty as well as enhancing the agricultural resource base for the expansion of agro-processing industries. This again calls for a fundamental reorganization of agricultural credit, research and extension.

One of the key areas that warrants attention is the role of small-scale industries. There is a strong competition from imports from neighbouring countries such as Thailand and China which are major exporters of low-income mass consumer goods. The fragmented nature of the local market suggests the need as well as the possibility of dispersed rural industry capable of strengthening linkages with agriculture, rural housing, construction and transport. Rural housing-related activities, such as brick making and carpentry are already important rural industries in Lao. In both small- and medium- scale industry, entrepreneurship does not seem to be a constraint. The returning Lao businessmen have the further advantage of capital and industrial experience accumulated elsewhere. The immediate constraints will be market opportunities, given the small size of the domestic market, and capital in the case of local and rural entrepreneurs. For this reason, it is important that promotional efforts be directed towards cultivating an industrial mentality and motivating the rural population to venture into agricultural trading activities and eventually to participate in the industrial transformation of the country.

## **B. INCENTIVES FOR INDUSTRIAL INVESTMENT**

The issues pertaining to profits tax and tax holidays will need to be addressed. Corporate income tax rates are set high, while an element of arbitrariness is introduced through the granting of concessions in particular cases. A joint venture or wholly owned foreign enterprise may be exempt from profits tax for 2 - 4 years if certain conditions are fulfilled with respect to, among other things, sectoral priorities, scale of investment, volume of exports, and location. The Board of Management of Foreign Investment is also authorized to provide incentives for projects on a case by case basis in the form of reductions in profits tax of 2-5 per cent.

There is apparent discrimination in this set of arrangements, often with unequal access to privileges mostly in favour of enterprises capable of bargaining. The special advantage granted to the manufacturers of garments is a typical example of such discrimination. It is being suggested that the adoption of a uniform low rate of profits tax across the board, of about 20 per cent or more as appropriate, could be combined with the abolition of all tax holidays, special treatment and discretionary rules. There are indications that these suggestions are being seriously considered.

Lao businessmen find significant differences in tax rates among themselves and between local and foreign investors. Apart from variable profits tax benefits, there have been variable levels of protection from import duties, with rates varying from 20 to 50 per cent according to sector and manufacturing activity. A study of effective rates of protection is clearly needed as a basis for a more rational system of tariffs. A recent report reviews the world-wide experience in EPZs<sup>1</sup>, with a view to advising the government. It was felt that foreign investors would actually consider it a handicap if there is a restriction on factory location. It was contended that EPZs were not a good mechanism for establishing 'growth poles' intended for the decentralization of industry. It is more important to create an overall enabling environment in terms of general incentives than to proceed with the EPZ concept which does not necessarily imply an ideal location for the production of a number of products in Lao.

## **C. TRAINING**

Lao has the comparative advantage of cheap labour compared to neighbouring countries. Some factories in fact apparently prefer to recruit workers straight from schools for on-the-job training. Nevertheless, the structure of technical training in Lao is fragmented in different institutions of varying standard in which technical teachers are poorly paid and facilities are generally inadequate. This problem needs to be assessed in a systematic way.

The most critical area is that associated with the transition from state-run to autonomous and private enterprises. Given the past system of SOEs at all levels, there is lack of commercially-minded managers who are accustomed to operating within a competitive market situation. There is a particular shortage of accountants and financial analysts. These shortages have become apparent following the introduction of the Accounting Law in 1989 and the subsequent changes in accounting methods. The introduction of training courses in basic accounting is still needed for SOE managers as well as for potential private sector entrepreneurs and employees.

At a less advanced level, there is need for training in all the standard commercial subjects, bookkeeping, commerce, economics, statistics and computing. A further problem relates to quality: the Chamber of Commerce and Industry, for example, is of the view that the many commercial schools are not up to the required standard and are interested in establishing their own training institution if they are successful in securing some initial funding.

#### D. THE ROLE OF THE MINISTRY OF INDUSTRY AND HANDICRAFTS

With the privatization drive and the new emphasis on a market economy, the role of the Ministry of Industry and Handicrafts in particular would need to change significantly. One of the prime responsibilities of the Ministry has previously been to manage a large number of substantial state enterprises, with other SOEs distributed among other Ministries. Its new role will be rather to provide the regulatory framework and to undertake such promotional action as is useful to the private sector and new investors.

Decree No. 36 of June, 1990, went some way in this direction but defined the role of the Ministry as being "to study, develop, generate, introduce, control and organize Industry and Handicrafts within the whole territory Lao... It has the role of developing and creating favourable conditions for the improvement of production." This was still suggestive of a more interventionist role than is now envisaged and the decree is to be replaced.

In early 1993, the Ministry comprised 5 departments under the Minister, the Cabinet Department, Industrial Management, Industrial Promotion, Geology and Mines, and Administration. Following the new decree, there will be a Department of Industry with two sections, Factory Management and Industry and Handicrafts Promotion, a separate Electric Power Development and Research Bureau and, under the Department of Mining and Geology, an Institute for Geology and Mining Research.

It is important, however, that the Ministry has the capacity to formulate industrial policies and to carry out project planning and analysis. In relation to both of these, there is an urgent need to upgrade the economist cadre within the Ministry and indeed in the provinces. Relatively obvious errors, for instance in projecting all components of manufacturing to increase by the same percentage amount over the next planning period, are still being made. There is excess capacity in a number of enterprises, either due to poor choice of location or insufficient supply of material inputs, related to lack of co-ordination with agricultural development.

Since a great many new industrial projects will be resource-based, a large proportion will be small-scale industries located in the provinces. It is critical, therefore, that maximum co-ordination be established between the central Ministry and provincial and district industrial officers, covering areas such as data collection and execution of surveys, communication of official policies, and monitoring of projects. Establishing the necessary lines of communication, supported by the qualified staff needed at both ends, is a major challenge.

Another important role for the Ministry, which includes the Department of Geology and Mines, of course, is to monitor at both project and national levels the impact of manufacturing, mining and hydro-electric power projects on the natural resource base. The rapidly increasing interest by foreign companies in exploiting mineral and forest resources is warmly welcomed by the country which is in great need of capital, but there is a need to examine the environmental dangers of uncontrolled or haphazard exploration activity.

While big strides have been made over the years in improving the availability and quality of national statistics in Lao, this was from a base in which very little usable material existed at all, particularly in respect of prices and values. Lack of such a data base necessarily makes planning and policy making quite difficult at macroeconomic, sectoral or industry levels. Substantial initiatives are needed in this direction. A wide range of basic statistics on exports, imports, investment, employment, wages, for instance, are needed on a regular basis for valid and reliable time-series analyses of trends, with a view to deducing inferences and implications for future policy-makers. In this context there is a need to conduct a rural survey in the different provinces in order to assess the scope for promoting rural industries.

## E. THE ROLE OF SMALL-SCALE INDUSTRIES

There are a number of convincing reasons for promoting small-scale enterprises in Lao. With a small domestic market, realizing the opportunities for import-substitution through the establishment of large-scale projects is unrealistic. This is evidenced by the low levels of capacity utilization in large plants. The fragmented nature of the domestic market resulting from the poorly developed internal transport network - aggravated in many parts of Lao in the wet season - makes it desirable for many products to be produced locally, with appropriate scale and technology. The subsistence nature of this domestic economy, due especially to the transport factor, limits the possibilities for such development.

Various indicators suggest population and purchasing power are relatively well distributed across provinces. The distribution of rice and vegetable production, for example, corresponds relatively closely to population distribution, as does that of livestock, especially buffaloes. Maize and cotton are central/northern crops, coffee is concentrated in Champassak in the south, and sugar in Vientiane Province. The opportunities for developing linkages between agriculture and small-scale industry favour this form of development. Good possibilities for agricultural intensification exist in Lao, and for the development of agricultural trade once the transport network is improved, all of which will increase rural purchasing power and the scope for non-farm activities. Fertile areas which have been able to double-crop rice, such as the Vientiane Plain, already show results in the form of a richer vein of non-farm activities, including rural construction.

A basic needs argument may be added in favour of promoting local small industries. Casual observation of the rural scene in Lao is sufficient to call into question its image as a 'least developed country' based on GDP *per capita* figure. While not all areas are as active as the Vientiane Plain, there are indications of a spurt in activities: with often quite substantial rural houses, increasingly of brick; intensive agriculture, supplemented by small livestock; bicycles and motorcycles enjoyed not just in urban but in rural areas; substantial ox-carts, widely used for rural transport; wide ownership of sewing machines; and cheap imported Thai consumer goods in the rural shops and markets. A possible objective would thus be to supplement this by encouraging additional rural enterprise which can supply important needs, not at present covered, for the rural population as a whole, as identified in each province.

Another reason for focusing on widely distributed small-scale industries is to take advantage of the rural electrification system extensions which are in the pipeline. These will fairly soon reach Luang Prabang while, following the construction of the Xeset Dam, new systems will cover the provinces of Saravane and Xekong in the south. The marginal cost of providing power for rural industry can be considered low once initial capital outlays (dams) are justified by exports and transmission lines by perceived social benefits enjoyed by rural communities.

It is easy to underestimate the quantitative importance of small scale enterprises, which are frequently underenumerated in statistical surveys. The nation-wide Establishments Survey will go some way to correct this. Very rough calculations made above suggested that as much as 55 per cent of manufacturing employment might be in enterprises employing less than 10 persons, most of these in microenterprises employing 3-4 persons.

At the moment, only piecemeal information, and not much of this, is available regarding small-scale industry in the provinces. A survey carried out in Bolikhamxay Province in 1990 identified 181 small-scale industrial establishments (see Table IV.1) employing an average of 3-4 persons each. It was noted that the large variation in reporting rates between districts indicates that the figures obtained for establishments are almost certainly a gross underestimate. Separate inquiries suggested that there were at least 300 commercial tailors in the Province and 200 blacksmiths, and that most villages have 6-10 carpenters. The Survey clearly failed to cover the category of independent artisans: only 14 are listed.

Table IV.1. Distribution of enterprises in Bolikhamxay Province, 1990

	Province wide	District number						Total number of enterprises
		1	2	3	4	5	6	
Commerce	3	-	-	-	-	-	-	3
Import-export	8	-	-	-	-	-	-	8
Domestic commerce and retail	-	108	51	44	45	92	30	370
Restaurant	-	10	2	2	-	-	-	14
Pharmacy	-	50	14	21	17	46	7	155
<b>Total commerce</b>	<b>11</b>	<b>168</b>	<b>67</b>	<b>67</b>	<b>62</b>	<b>138</b>	<b>37</b>	<b>550</b>
Rice mills	-	49	17	26	25	5	2	124
Small sawmills	1	4	1	1	1	-	-	8
Sawmills	4	-	-	-	-	-	-	4
Furniture making	-	2	-	-	-	-	-	2
Alcohol production	-	11	2	1	2	1	1	18
Electricity production	1	-	-	-	-	-	-	1
Salt production	1	-	-	-	-	-	-	1
Vehicle repair	-	10	1	1	-	-	-	12
Noodle production	-	6	1	1	1	1	1	11
<b>Total industry</b>	<b>7</b>	<b>82</b>	<b>22</b>	<b>30</b>	<b>29</b>	<b>7</b>	<b>4</b>	<b>181</b>
Brick-making	-	7	-	-	-	-	-	7
Pottery	-	2	-	-	-	-	-	2
Tailors	-	2	-	-	-	-	-	2
Barbers	-	2	-	-	-	-	-	2
Concrete products	-	1	-	-	-	-	-	1
<b>Total artisanal</b>	<b>-</b>	<b>14</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>14</b>
<b>Total commerce, industry and artisanal</b>	<b>18</b>	<b>264</b>	<b>89</b>	<b>97</b>	<b>91</b>	<b>145</b>	<b>41</b>	<b>745</b>

Source: Ministry of Commerce, Bolikhamxay Province

## F. SMALL-SCALE MANUFACTURING POSSIBILITIES

It is useful to examine the results of a rural survey, carried out in Vientiane Province in 1987, covering 135 households (out of 372) in three villages (see Table IV.2). From these one might extract a list of local manufacturing possibilities, including small agricultural tools (axes, sickles, spades), ploughs and harrows, weaving, mats and hats, fishing boats and gear, wheelbarrows and ox-carts.

This itself points towards agriculture-linked industries, whether connected through backward linkages or through forward linkages to agricultural processing. In respect of the former, it might be noted that the expansion of mechanized irrigation can be expected to provide employment for rural workshops producing and repairing pumps and other equipment, as has occurred in other Asian countries such as Pakistan and Bangladesh.

**Table IV.2. Household ownership of tools and equipment in three villages in Vientiane Province, 1987**

Item	Number of items owned by 135 hhs	Households Number	Owning item per cent	Average number owned
<b>Agricultural implements</b>				
Plough	152	101	75	1.1
Harrow	111	98	73	0.8
Mattock	202	124	92	1.5
Axe	116	100	74	0.9
Sickle	513	119	88	3.8
Knife	493	134	99	3.7
Space	138	107	79	
Sprayer	54	54	40	1.0
Motor pump	2	2	2	1.4
Tractor	1	1	1	-
Foot thresher	7	6	4	-
<b>Handicrafts</b>				
Weaving loom	17	17	13	0.1
Weaving mat	70	68	50	0.5
Pottery	7	1	1	-
Bollevs	3	3	2	-
<b>Construction and repair tools</b>				
Power saw	16	13	10	0.1
Repairing tools	11	10	7	0.1
Construction tools	11	11	8	0.1
<b>Transportation</b>				
Wheelbarrow	113	107	79	0.8
Cart	6	6	4	-
Bicycle	185	116	86	1.4
Motorcycle	10	9	7	0.1
Car	1	1	1	-
Pirogue	27	27	20	0.2
<b>Fishing</b>				
Cast-net	42	35	26	0.3
Square net	177	63	43	1.3
Fishing net	95	84	62	0.7

Source: UNDP.

In the category of forward linkages, rice mills are easily the most important in Lao. Although there appears to be plenty - perhaps an excess - of milling capacity in Vientiane Municipality, it was reported some time ago that milling facilities in all the provinces were inadequate. It was noted further that in Champassak and Saravane, for instance, 75 per cent of paddy is still handpounded - one would expect more remote provinces to be even worse off - compared with 20 per cent in Vientiane Province. The mechanized processing consists of small Engelberg-type village mills.

Vegetable oil-processing represents another opportunity, in conjunction with increased production of oil seeds. The same report observed that only one oil mill existed in Vientiane Province. Similarly as production of the crop expands, coffee processing will contribute more to manufacturing value added, while tobacco-curing can constitute further value added at the village level.

Some of the backward linkages from agriculture mentioned above, ox-carts and tools production for example, point specifically to rural woodworking and metalworking industry. These two activities are also linked closely to rural housing and construction. Further, in addition to joinery

and carpentry associated with what is often impressively substantial wooden housing in Lao, there is a quite remarkable development of brick making, in the Vientiane Plain, at least. Using labour-intensive village methods, this provides employment to women and children as well as men, and provides an apparently good rate of return to rural loan capital. There is, likewise, scope for the production of roof tiles.

There is also potential in the area of metalworking, in part because of the competition from cheap metal products made in Thailand. Associated with rural and low-income urban housing, however, there is a demand for metal window frames, demand which will increase with rising levels of income. More active search for appropriate metal products is called for.

Linkages to small-scale industry would be most obviously in food processing, garments, furniture-making, metal working, construction materials, including bricks, and handicrafts destined mainly for tourists. The last of these will be entirely dependent upon expansion in the number of tourists. Technical assistance to the Ministry of Industry and Handicrafts in the area of handicrafts development and marketing needs to be provided now in anticipation of a rapid acceleration in demand, which needs to be planned for. The Ministry needs a fresh review of national possibilities and organizational requirements at the grassroots level. This initiative could be integrated with small-scale industry promotion initiatives as a whole.

## G. THE NEEDS OF SMALL-SCALE ENTERPRISES

### Credit

There appears to be a clear need for a rural credit programme in the provinces. Capital shortage is reflected in the existence of informal credit sources in some of the small townships, with the major traders usually involved as money-lenders. In Vientiane Province loans to rural brickmakers were charging rates of interest of 20 per cent a month, and were generally taken for periods of 3-6 months, and with severe penalties for late payment. A similar rate was charged by traders based in Paksan, Bolikhamxay Province.<sup>2</sup>

The informal credit market in the provinces and the extent of unsatisfied demand for rural credit need to be examined more systematically. Any credit scheme should be examined very carefully in the light of the experience of credit schemes elsewhere. A limited survey of small-scale enterprises carried out in late 1990 in Vientiane City, for instance, did not find lack of capital or credit to be a major concern in most cases. Any rural credit programme should be expected to start gradually in the light of the major infrastructural constraints prevailing in the provinces.

A rural credit programme should cover a full range of rural activities and not be confined to industrial enterprises. Employment creation in trade and services is equally important and there are significant linkages between these and small-scale industry. The expansion of inter-provincial trade and transportation, for instance, will itself raise rural incomes and thus create opportunities for new small-scale industry. Further, profits earned in the trading sector may be invested or loaned for use in small industries or rural construction.

At present, delivery mechanisms for rural credit do not exist. In Vientiane Province, for example, which is the best served, only 4 out of 9 districts had bank branches in 1990. There are also the usual problems of collateral. To deal with this, consideration might be given to the encouragement of groups or other types of mechanisms. A further problem is the lack also of Non-governmental Organization (NGO) presence at provincial or district level able to work in cooperation with the banking system. Any organized loan scheme based in Vientiane will face the problem of lengthy communication lines if loans are to be offered and supervised in the more distant provinces. Up to now NGOs have been discouraged from operating outside Vientiane. This policy would need to be reformulated in terms of active encouragement and involvement of the Small Enterprise Development Office.



### **Rural electrification**

Transmission lines from the Nam Ngum Dam already supply electricity from which adjacent small industries can benefit in Vientiane Province and small roadside townships extending as far as Bolikhamxay Province. Its 10-year expansion plans are ambitious, including a Northern system, based on the Nam Ngum grid, a Central System, embracing also Khammouane and Savannakhet, and a Southern System, based on the Xeset Dam grid.

It is doubtful whether rural electrification will be economic, despite official documentation suggesting internal rates of return of around 12 per cent for the investments envisaged. A number of small enterprises will be assisted and new ones generated, but these will continue for some time to be rather dispersed. The electricity used would need to be valued at the export price, reflecting the opportunity cost of the electricity used. It should also be noted that forest industries will continue, for reasons of location, to depend on generators.

On the other hand, the capital cost of dams can be charged against exported electricity. This makes a considerable difference. What remains as the marginal cost of electricity supplied might be covered by perceived social benefits in terms of the quality of life in rural areas or the development stimulus arising out of more active market centres, including trade and service activities.

The development of an extensive electricity distribution system within Lao, would certainly provide an opportunity for the initiation of a programme of dispersed rural industry, even if the return from this particular activity would not for a long time be able to justify the initial capital outlays.

### **Appropriate technology and development**

Linkages between small-scale industry and agriculture would need to be developed and it will be necessary to identify opportunities for introducing appropriate technology which can be applied in an economic and effective way in the rural sector and simultaneously offer scope for small enterprises to produce some of the relevant equipment. Some technologies of this kind have already been experimented with in a rural development technical cooperation project in Lao.<sup>1</sup> Training equipment used in this project included food processing equipment of different kinds (a hand-operated rice flour mill, a peanut shelling machine, a noodle-making machine, and one for fruit juice extraction); a knapsack sprayer; bamboo and rattan tools; a hand tractor; hoes, shovels and machetes.

What is needed is to establish a mechanism for the effective search, selection and adoption of appropriate technologies. Support for efforts in this direction should be secured from a suitable international appropriate technology group with Asian experience. Related, but somewhat different search efforts need to be directed towards product development partly to identify new products marketable in Lao and in neighbouring or other markets, and partly to improve existing products for purposes of import substitution or to satisfy customer preferences elsewhere.

### **An 'enabling environment'**

The most important requirement for the development of small-scale enterprises, however, is an enabling environment, an economic and legal context in which they can thrive. The biggest handicap up to now has been the lack of infrastructural development in the form of roads, which has reduced the development and commercialization of agriculture, and low the level of rural incomes.

This problem was exacerbated previously by many of the policies which were being pursued: restriction on interprovincial trade, controls over internal transportation, lack of freedom for people to move to jobs in other villages, and administered prices for agricultural commodities, affecting production incentives. In the area of money and finance constraints do exist due to lack of banking facilities in the provinces.

The government has gone a long way to eliminating those problems that were most directly under its control. Inter-provincial trade restrictions have been removed, inflation brought well under control, exchange rates have been freed, so that the kip, baht and dollar circulate alongside each other in the economy, with increasing use of the kip. The deregulation of the prices of rice and other staples (in 1986) has almost allowed Lao to achieve food self-sufficiency and simultaneously increased farm production for the market. Agricultural product prices should increase agricultural incomes, in turn providing a better platform for rural enterprise.

#### **Developing agriculture**

A diagnosis made by the ADB<sup>1</sup> suggested the 'need for investment in extension, post-harvest equipment, feeder roads, planting materials, availability of inputs.' The same diagnosis notes that the adaptive research programme is very weak, the use of chemical fertilizers very low, and the seed multiplication and distribution industry is largely disorganized and ineffective. Similarly, livestock production has been largely neglected and 'is constrained by a combination of endemic diseases and sub-optimal levels of animal nutrition'.

However, considerable scope exists for livestock production and crop diversification for both domestic consumption and export. There are significant import substitution possibilities for both maize and sugar cane, and coffee could grow into a major export earner. Exports of livestock, tobacco, groundnut, mung beans and cardamom could also be increased considerably. A major requirement is remunerative prices at a level much closer to export parity prices.

The point to be made in relation to industrial development is that the most rapid means of raising incomes in Lao will be to develop the immediate agricultural and livestock potential, and that this will itself provide the best foundation for new industrial enterprises, through domestic market expansion and forward linkages into further (agricultural) resource-based activities.

#### **Integrated rural development**

For the small-scale industry component of the industrial development strategy, an integrated approach to rural development at the provincial level is called for. While the scope for small-scale and rural industries has been outlined, there is perhaps even more scope initially in agriculture and livestock, fishing, trade and construction. Promotional efforts, including credit, should thus be directed towards rural activities with the most positive returns, including small-scale industry.

A substantial base already exists in Lao for achieving a good quality of life, if adequate resources such as health, education and water supplies can be provided in addition to what is there already. An integrated rural development approach would incorporate these basic needs elements.

#### **Technical cooperation and organizational assistance to rural industry**

A major gap exists in basic information regarding the present nature and extent of rural enterprises in different provinces. Reference has been made above to two isolated local surveys which are rather incomplete. The forthcoming Census of Establishments should be a valuable addition when published but much more work will need to be done to establish a reasonable data base and subsequently to maintain statistical records with respect to small-scale enterprises. To this end, there is a need to develop a basic data base covering all provinces. Initial information also needs to be collected locally on potential investors and projects.

A certain amount of credit or other assistance to the small-scale enterprises has been offered in the past. A report<sup>2</sup> notes that in the late 1980s most state bank loans were given to individuals for the acquisition of draught animals rather than projects, though no doubt satisfying a strong felt need. An IDA credit of \$10 million was granted some time ago for the provision of support to new and expanded units in the small and medium enterprise sector, including possible projects such as a tannery, tobacco, electrical supplies, weaving, ceramics, wood processing, plastics, farm tools and beer. In the event, expansion of the brewery industry has accounted for a large portion out of this allocation, leaving the other areas to remain as candidates for loan support. A \$6.3

million grant from the former German Democratic Republic for the period 1977-1990 was used as support for developing tailoring shops, furniture and joinery factories, sawmills and small metalworking establishments in a number of towns, including Savannakhet, Pakxon and Luang Prabang. This appears to have been reasonably successful. As part of two World Bank-assisted agricultural projects, finance has been allocated for the establishment of rice mills, livestock feed processing facilities and a mini sugar cane factory.

Proposals are under consideration for a Small Business Development Programme, to be supported by UNDP, the German Agency for Technical Cooperation (GTZ) and the Asia Foundation. This programme will address the policy and institutional framework, training requirements entrepreneurial development and promotion of cottage and handicraft industries.

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**NOTES TO CHAPTER IV**

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- 1/ FIAS, *International Experience with Export Processing Zones and Implications for the Lao People's Democratic Republic*, (Washington, 1992).
- 2/ Livingstone I., *Industry and Tourism in the Lao People's Democratic Republic: Issues and Recommendations*, (United Kingdom, 1991).
- 3/ UNDP, *Terminal Report of Project TLP.LAO Improved Household Economic Activities*, (Vientiane, 1988).
- 4/ Asian Development Bank, *Economic Report on the Lao People's Democratic Republic*, No. LAO: EC 6 (November 1988).
- 5/ Ibid.

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ANNEX A: MEDIUM TERM POLICY FRAMEWORK AND PUBLIC INVESTMENT PROGRAMME, 1991-1995

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SUMMARY STATEMENT ON POLICIES TOWARDS MANUFACTURING

Manufacturing

Summary: Policies, strategies and actions

- Policies:
- Promote rapid growth of the manufacturing sector, both of export-oriented and import-replacing industries.
  - Promote improvements in efficiency in the sector.
  - Mobilize capital and human resources required for the sector.
- Strategies:
- Develop an economic and regulatory environment conducive to private investment in the sector.
  - Privatize all non-strategic state-owned enterprises (SOEs), to introduce better management.
  - Strengthen the management and structure of the remaining SOEs as well as the supervision of SOEs by the Government in its role as owner.
- Actions:
- Complete laws covering company operation, issuance of securities, enforcement of contracts, property rights and land use.
  - Develop accounting standards and an auditing system for Lao People's Democratic Republic which are compatible with existing international standards. In addition, develop taxation law and establish clear guidelines on the tax deductibility of various expenses.
  - Ensure that all commercial and tax laws are consistent with the Foreign Investment Guidelines.
  - Strengthen the banking system to improve funding arrangements for smaller, locally-owned enterprises.
  - Remove import and export licensing controls, and delete all non-strategic goods from the strategic goods list.
  - Remove all export taxes.
  - Extend electricity distribution systems and improve transport and communications.
  - Remove restrictions on labour mobility.
  - Establish a support service to advise manufacturers on quality control and standards that must be met in export markets.
  - Negotiate transit and trade agreements with neighbouring countries.
-

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SOE-related actions:

Separate the Government's role as owner from its role as regulator of economic sectors.

Introduce adequate legal provisions, institutional structures, and monitoring and planning instruments for the financial supervision of SOEs by the Government as their owner, and compensate SOEs for non-commercial tasks requested by the Government.

Privatize non-strategic SOEs, where possible through outright sale rather than through lease arrangements.

Restructure SOEs where the current financial structure precludes sale.

Liquidate non-viable SOEs.

Allow SOEs to retain depreciation allowances.

Introduce dividend payments related to profits for all SOEs.

Rehabilitate or, if necessary, replace SOE assets where this is necessary to maintain the SOEs viability prior to privatization.

Establish short-term training courses in basic accounting principles for SOE managers.

Establish long-term courses in accounting and management at the National Polytechnic Institute.

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*Source:* Medium Term Policy Framework and Public Investment Programme, 1991-1995, Government of Lao People's Democratic Republic. (May, 1991).

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**ANNEX B: EXTERNAL ASSISTANCE TO AGRICULTURE, FORESTRY AND FISHERY PROJECTS**

Project number and title (Donor number)	Duration of project (start/end)	Source of assistance	Total Commitment (Thousand dollars)	1991 expenditures (Thousand dollars)	Type/terms	Target area(s) of project	Brief description of project (Beneficiary institution)
<b>Forestry</b>							
LAO/AGR/0005 LAO-Swedish Forestry Programme (26900002)	1988-1992	Sweden	11,141	3,819	FTC/GRANT	Luang Prabang Vientiane	Support for the development of the forestry sector in Lao (Department of Forestry and Environment)
LAO/AGR/0006 Support to forest nursery at KM 14 (CL-119)	1989-1992	CIDSE	44	10	IPA/GRANT	Vientiane	Rehabilitation of an existing forest nursery and promotion of fruit tree cultivation by providing basic materials for seed production and spare parts for the water supply system. (Vientiane Municipality)
LAO/AGR/0064 Silviculture	1975-1991	Germany	2,927	2,411	FTC/GRANT	Vientiane	Provision of training in the field of forestry in Germany, and preparation of evaluation for continuation of the project. (Forestry School at Dong Dok Institute)
LAO/AGR/0088 Support to second forestry development project (LAO/88/028) (TA 1262)	1990-1992	UNDP ASDB	411 568	202 278	ITC/GRANT FTC/GRANT	Vientiane	Development and strengthening of the capacity in forest management and timber harvesting; assistance to the rehabilitation of wood harvesting facilities.
LAO/AGR/0129 Forestry in integrated rural development (AF.4)	1987-1991	CIRDAP	8	1	FTC/GRANT	Vientiane	Provision of insights into the process of involving the rural poor in social forestry activities; creation of job opportunities in rural sector; environmental development of communities.

**ANNEX B: Continued.**

LAO/AGR/0140 Second forestry development (716)	1985-1993	ASDB	10,933	1,392	IPT/LOAN	Bolikhamxay Vientiane	Support to 4 state enterprises: Lao Plymill, Lao Parquet, Lao Rattan furniture factory, State forest Enterprise No.9, and strengthening capacity in forest management and timber harvesting
<b>Cottage and small-scale industry</b>							
LAO/IND/0004 Strengthening of the Lao handicraft industry (LAO/84/002) (LAO/85/C02)	1984-1992	UNDP UNCDF	3,700 1,037	35 n/a	IPT/GRANT ITC/GRANT	Vientiane	Establishment of a pilot textile development centre to provide spun and dyed yarn, giving training and employment to 340 women weavers. (Lao Women Union).
LAO/IND/0005 Programme to establish small- scale industries	1977-1991	Germany	6,138	1,808	IPT/GRANT	Country-wide	Establishment of a small work- shop for bicycle repair, wood and electrical goods repair. (Departments of industry in various provinces.)
<b>Medium-scale industry</b>							
LAO/IND/0002 Development of Lao's leather sector (LAO/87/001)	1988-1992	UNDP	1,367	321	ITC/GRANT	Vientiane	Establishment of a semi- mechanized training plant producing wet-blue leather for the export market, and assessment of the potential for leather goods production through pilot production and test marketing. (Vientiane Municipality)
<b>Support services and facilities</b>							
LAO/IND/0008 Assistance to implementation of the IDA credits to industrial enterprises	1989-1991	France	810	270	ITC/GRANT	Country-wide	Preparation of technical pre- sentations of request for IDA credits, assistance in contacts with suppliers and monitoring of the installation of new equipment. (State Bank of Lao)



## ANNEX B: Continued.

LAO/IND/0009 Rehabilitation and development of mechanical workshops (LAO/84/005)	1986-1991	UNDP	397	n/a	ITC/GRANT	Champassak Savannakhet Vientiane	Installation and training of technical and managerial staff at 3 workshops in Vientiane, Savannakhet and Champassak. (Ministry of Commerce and Tourism)
LAO/IND/0012 Improving the management efficiency of state-owned enterprises (1211)	1989-1991	ASDB	858	261	FTC/GRANT	Vientiane	Surveying and improvement of the management of state-owned enterprises. (Ministry of Economy, Planning and Finance)
<b>Industry</b>							
LAO/IND/0013 Industrial credit line (1947)	1989-1993	IBRD	10,000	750	IPT/LOAN	Vientiane	Upgrading the capacity and productivity of small- and medium-sized industries through the acquisition of modern equipment, essential spare parts and raw materials, and through the provision of technical assistance to improve production methods and management skills; developing the Government's capacity to provide long-term financing to industry. (Ministry of Industry and Handicrafts)
<b>Technological research and development</b>							
LAO/IND/0015 Science and technology policy (90-0304)	1991-1992	IDRC	87	18	FTC/GRANT	Vientiane	Capacity building in the management of sciences and technology to improve the national policy planning and management of science and technology. (Ministry of Sciences and Technology)

Source: UNDP, Development Cooperation, Lao People's Democratic Republic, 1991 Report. (November, 1992).

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**ANNEX C: TAX RATES FOR FOREIGN INVESTMENT BY SECTOR AND INDUSTRY BRANCH, 1991**

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Sector/Industry	Percentage of net profit
Road construction irrigation, tree planting, plantations, agricultural production, livestock processing industry	20
Exploitation and processing of: minerals (excluding oil, metal, precious stones) forestry products (excluding wood) medical products education materials	25
construction materials electric appliances electric power supply heavy plant and machinery	
Exploitation and processing of: oil and wood	30
consumer goods building construction repair and services n.e.s.	35
Exploitation and processing of metal, precious stones, hotels, high class restaurants, leisure enterprises	40
Trade, banking and insurance	50

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*Source:* Decree No. 20, Council of Ministers on the application of the Foreign Investment Code.

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