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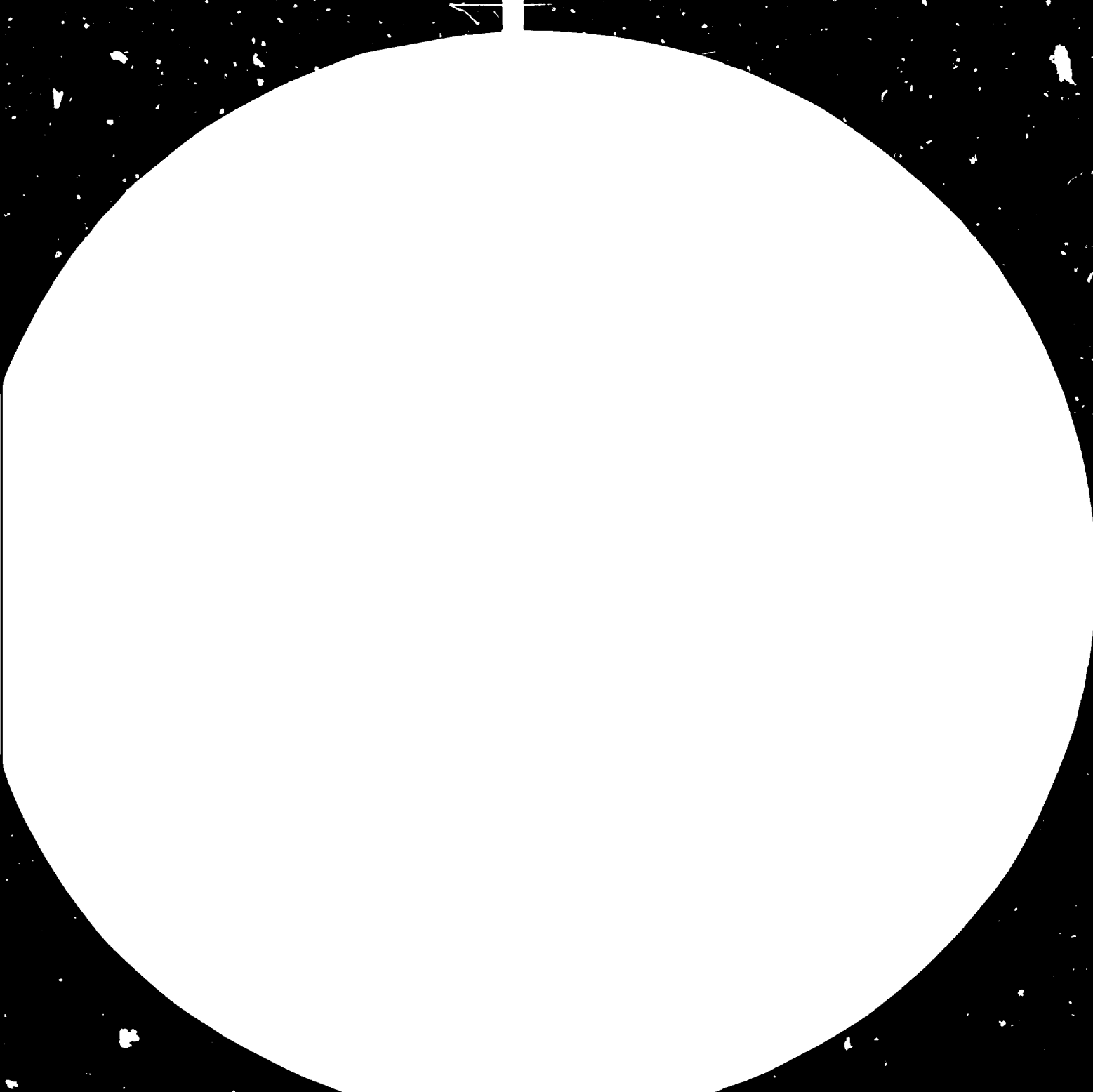

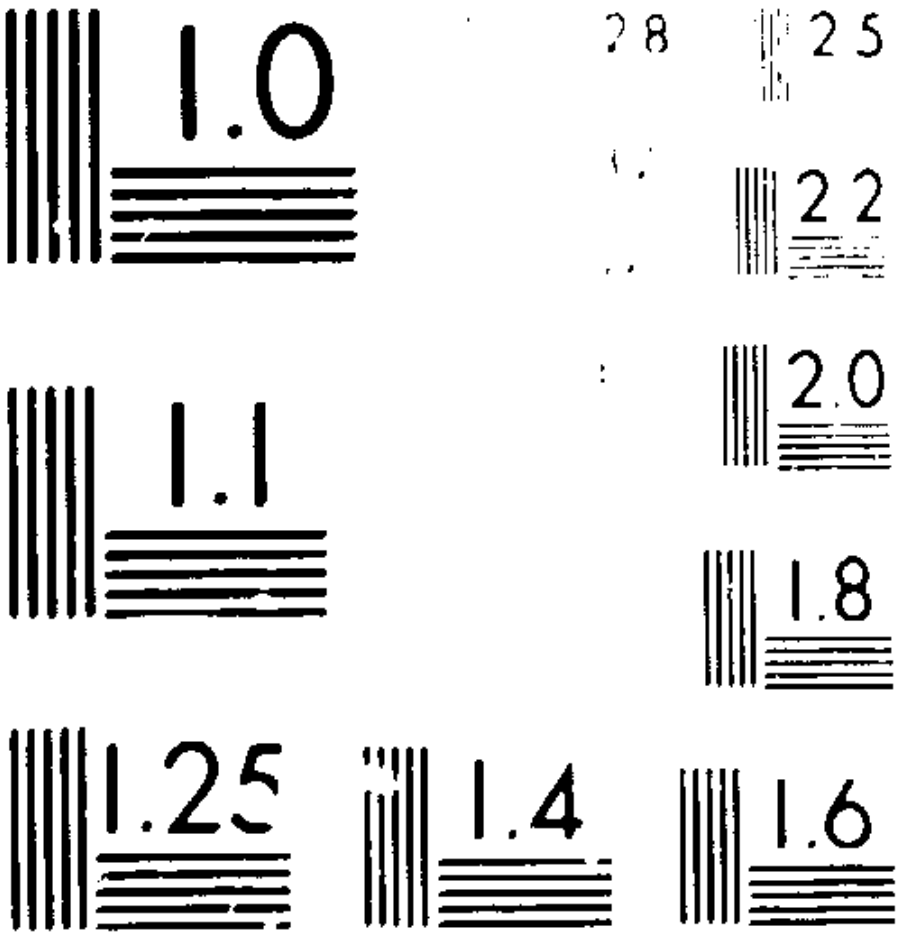
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COUNTRY INDUSTRIAL DEVELOPMENT PROFILE

OF

INDONESIA */

Prepared by the

International Centre for Industrial Studies

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PREFACE

The International Centre for Industrial Studies, Regional and Country Studies Section, has undertaken the preparation of a series of Country Industrial Development Profiles. These profiles are desk studies, providing statistical and economic analyses of the industry sector, its growth, present status and future prospects. It is hoped that the profiles will provide analyses of use to programming technical assistance, industrial redeployment and investment co-operation activities.

This profile on Indonesia is entirely based on documents, reports and studies available at UNIDO Headquarters. No field survey has been undertaken and some of the data on industry are not up to date. The profile has been prepared during the early part of 1978, and updated, to the extent possible, in early 1979.

The views and comments contained in this document do not reflect those of the Government of Indonesia nor do they officially commit the United Nations Industrial Development Organization to any particular course of action.

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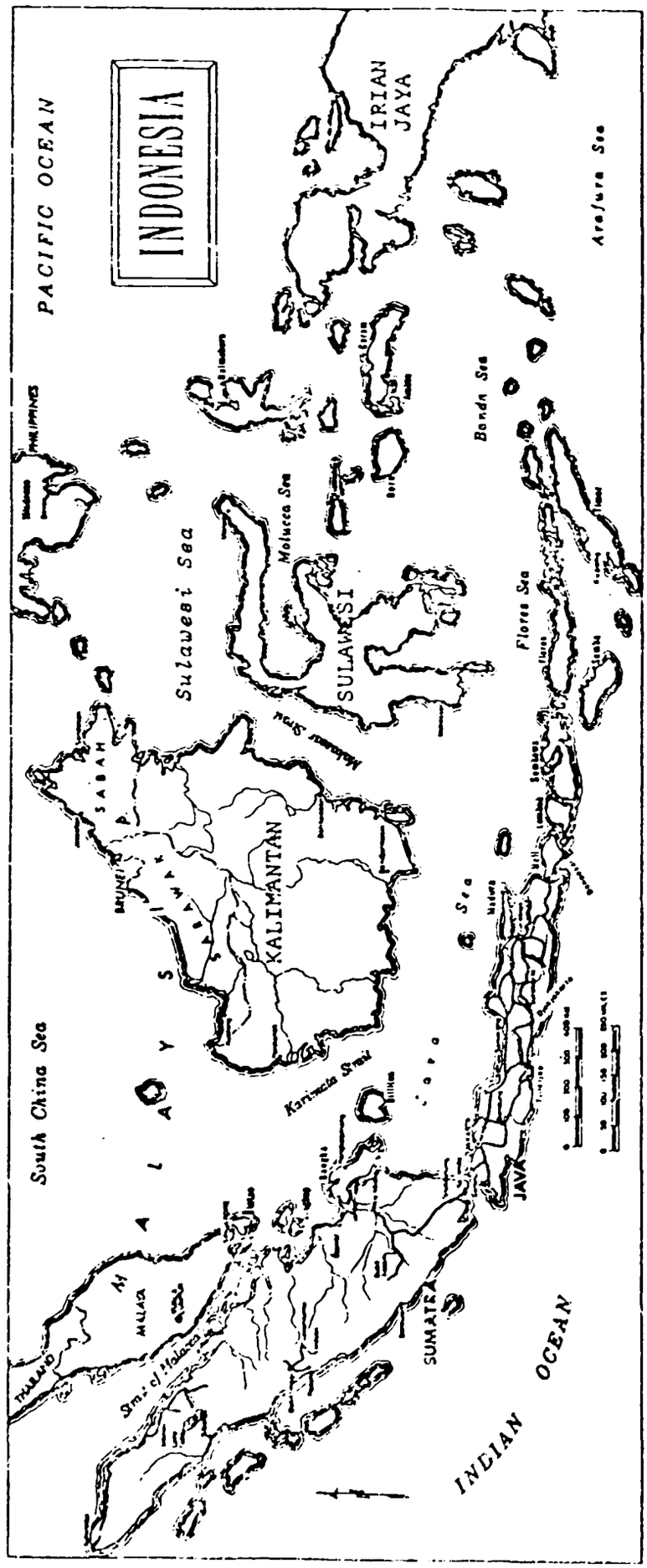
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JAVA
INDIAN OCEAN
Karimata Strait
Strait of Malacca

Chapter I

GENERAL ECONOMIC BACKGROUND

Population, labour force and income distribution

The Republic of Indonesia is the world's largest archipelago consisting of seven main island groups and more than 13,000 smaller islands (1000 inhabited) extending over 3400 miles from the North-western Sumatra to the centre of New Guinea. Indonesia comprises a land area of 779,000 sq. miles (2,020,000 km^2) making it the largest country in Asia after the Peoples Republic of China and India.

Indonesia is fifth among the countries of the world in population exceeded only by the Peoples Republic of China, India, the USSR and the United States. It is the second largest country among developing countries in terms of population. Totalling some 137 million in 1978, its population has been growing at an annual rate of 2.3 per cent during the period 1974-1979. Projections indicate that the annual rate of population growth is expected to fall to 2.0 per cent during the period 1979-1983. Total population is therefore expected to reach 151 million by the end of 1983 (Table 1.1).

Indonesia is basically rural with some four-fifths of its population living in agricultural areas. Some two-thirds of the population live on the islands of Java and Madura, which together account for only 7 per cent of the total land area. Population densities in Java and Madura are much higher than those of the Outer Islands. The "Inner-Indonesian" core, which in addition to Java and Madura also includes Bali and Lombok, has rich soil endowment and has inherited a social and economic infrastructure, yet is overpopulated with lower per capita incomes than the resource-rich and thinly populated periphery of the major islands outside Java. The Government has been encouraging people to resettle or transmigrate from Java to the Outer Islands. Population growth of these islands is projected at 2.3 per cent annually for the period 1978-1983, while that of Java is expected to grow at a rate of 1.8 per cent annually during the same period.

In spite of the growth of several large cities, Indonesia has not undergone the rapid urbanization which has characterized many other South-east Asian countries. The present urban population is relatively small, around 18 per cent of the total population, and it is not expected to increase appreciably in the near future. Urban population growth has been

mainly attributed to natural increase rather than migration from rural areas, except in the case of Jakarta, which in 1971 had a total population of 5.8 million inhabitants.

Table 1.1 Total Area Population and Population Density 1978 and 1983

	Area (000 sq km)	Population (million) 1978	1983	Population density (persons per sq km) 1978	1983
Java	135	87	95	644	704
Outside Java	1,892	50	56	26	30
Indonesia	2,027	137	151	68	75

Source: Repelita III: The Third Five Year Development Plan

The total working age population (10-65 years) was estimated at about 90 million in 1975 and the labour force at 48 million growing at 2.6 per cent per year. The labour force participation ratio is thus estimated at 53.3 per cent. The majority of the population is dependent upon agriculture, but there has been a major shift in sectoral and regional composition of employment in recent years. A decline in the share of agriculture in total labour force from 68.9 per cent in 1964 to 55.8 per cent in 1978 was observed (Table 1.2). Simultaneously there has been an increase in the share of manufacturing in total labour force from 5.8 per cent to 9.2 per cent. Employment has also shifted markedly in favour of the service sector which now accounts for around 32 per cent of the labour force. Significant regional differentials in the pattern of growth of the labour force have also been observed. While agriculture has remained predominant in the Outer Islands, the manufacturing and service sectors have been predominant growth sectors in Java. As in many other developing countries, urban unemployment and rural underemployment remains a more or less intractable problem. Projections indicate that during the period 1978-1983 around 6.4 million people will enter the labour force. Additionally, around 15 per cent will leave the agrarian sector. The pressure for employment opportunities will therefore increase further and will, no doubt, be most critical in urban areas.[1/]

1/ Institut fuer Wirtschaftsforschung: Die Industrialisierung der Entwicklungslaender und ihre Rueckwirkung auf die deutsche Wirtschaft - Laenderstudie, Indonesien. Muenchen, Maerz 1974, p. 92. (Draft).

Table 1.2 Estimated Distribution of Labour Force (excl. Government)
(percentage)

Sector	1964	1969	1971	1978[a/]
Agriculture	68.9	68.8	63.2	55.8
Mining	0.2	0.5	0.2	0.2
Manufacturing	5.8	5.9	7.5	9.2
Building and public utilities	1.2	1.6	2.0	2.8
Trade, tourism, transport, communication, finance, insurance	23.9	23.2	27.1	32.0
Total	100.0	100.0	100.0	100.0

Sources: National Sample Survey 1964-65; Preliminary Report. National Sample Survey 1969; Preliminary Report, Population Census, 1971; Repelita

a/ Forecast

Like the rest of the developing world, Indonesia is faced with an uneven income distribution reflecting high disparities between regional incomes, population and resource distribution. High disparities exist between the economic structure of Java and the Outer Islands. Based upon a number of studies[1/] it has been estimated that in 1973/75 the lowest 40 per cent income group of the Indonesian population received slightly more than 15 per cent of total national income, the middle 40 per cent income groups 32 per cent of total income and the top 20 per cent income group 53 per cent of total income. This classifies Indonesia among the group of developing countries with "moderate inequality". There are indications, however, that these income inequalities have widened in recent years and that they will continue to do so in the future in the absence

1/ Strategic Variables in Indonesia's Long-term growth by S. Djojohadikusumo, Economics and Finance in Indonesia, Vol. XXV; No. 1, March 1977, p. 29.

of a deliberate employment policy.[1] The most predominant form of income inequalities exist within the urban areas and within the rural areas, while income inequality between urban and rural areas account for only a small proportion of inequality in the country as a whole.[2] The picture emerging from a more recent study[3] is that large regional differences in standards of living exist with sharp differences between Java and Outer Islands (especially rural areas), between urban and rural areas, within the urban areas of Jakarta and between Jakarta and other cities. The general impression is that rural distributions have become more equal while the urban changes are more unequal. On the whole, inequality increases in urban areas; declines in rural areas; increased in Java and declined in Outer Islands.

Main sectors of the economy

The Indonesian economy has improved markedly in the last decade. The rate of growth of GDP more than doubled from 3.5 per cent annually in the 1960s to 7.9 per cent annually in the 1970s (1971-1977). Indonesia thus ranks third in East Asia after Iran and the Republic of Korea in terms of GDP growth during the first half of the 1970s. Overall economic progress in the 1970s has been associated with a rapid increase in gross domestic investment, in government consumption and in imports, particularly of capital goods. In spite of these generally favourable trends in the Indonesian economy, GDP per capita (in 1975 prices) has remained low; around $247 in 1977 compared with a stagnant level of around $160-175 throughout the 1960's, when practically no improvement in GDP per capita was achieved. In contrast, GDP per capita increased by 5.3 per cent annually from 1971 to 1977. This still leaves Indonesia among the lowest income countries in Southeast Asia, and as the lowest among the ASEAN countries.

1/ S. Gupta: Income Distribution, Employment and Growth. A Case Study of Indonesia. World Bank Staff Working Paper No. 212, August 5, 1975, p.71.

2/ ILO: Rural and Urban income inequalities in Indonesia, Mexico, Pakistan, Tanzania and Tunis, Geneva 1976, pp. 52, 53.

3/ R.M.Sundrum: Income Distribution 1970-1977, Bulletin of Indonesian Studies, Vol. XV, No. 1, March 1979.

Table 1.3. The pattern of growth of GDP (at 1975 constant prices) by economic activity and type of expenditure 1960-1977, selected indicators

	Average annual rates of growth (percentage)								
	1960-1970	1971-1977	1970-1971	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977
GDP	3.54	7.94	5.96	9.42	11.31	7.03	4.98	6.88	7.53
GDP per capita	1.03	5.32	3.43	6.63	8.29	5.26	2.27	4.44	5.11
Agriculture	2.21	3.74	3.09	1.55	9.32	3.73	0.01	4.71	3.39
Mining and quarring + electr. & gas	6.24	12.15	7.74	20.03	21.20	6.73	0.74	13.46	12.10
Manufacturing	4.51	13.37	13.72	15.10	15.25	16.15	12.31	9.68	11.83
Gross fixed capital formation	9.75	13.35	21.74	19.04	17.05	19.21	14.60	6.00	4.90
Gov. final Cons. expend.	-0.14	12.31	4.96	8.22	27.65	-16.47	30.34	7.32	16.03
Private final Cons. expend.	3.41	7.81	3.16	6.95	12.03	13.84	4.13	6.21	4.06
Exports of goods and services	4.72	10.00	12.19	26.11	20.55	3.63	-9.73	12.50	10.75
Imports of goods and services	5.58	17.94	9.53	26.80	42.18	26.86	7.88	8.10	0.89

Source: UNIDO, based on computer print-outs supplied by the UN Statistical Office, New York.

Until recently, agricultural commodities were the mainstay of production and exporters. As in other developing countries, however, the agricultural sector has lagged behind the more dynamic sectors of the economy, albeit some improvement has been observed in recent years. Following severe draught and pest, agricultural output of some of the major commodities like rice has not kept pace with population growth. As a result there has been no improvement in food production per capita over the last decade. Some improvement in the rice harvest, however, was observed in 1978. But projections indicate that a rice deficit of 1.5 - 2.5 million tonnes is expected to prevail at least through 1990.[1/] Indonesia is thus still the world's largest regular buyer of rice (around one fourth of world rice exports) and import of rice constitute 11 per cent of total imports. During the 1970s the agricultural sector expanded by 3.7 per cent annually (1971-1977) with setback in production from 1971-1972 and from 1974-1975. In regard to the mining sector, higher

1/ Source: Asia Research Bulletin, 30 June, 1979

output and prices of petroleum and gas contributed to increasing the sector's share of GDP significantly from 17.8 per cent in 1971 to 22.4 per cent in 1977, implying an annual rate of growth of 12.2 per cent. The structural transformation associated with a moderately expanding agricultural sector has resulted in a gradual decline in the share of agriculture in GDP from 37.8 per cent in 1971 to 29.8 per cent in 1977 (table 1.4). Thus, more than half of the total labour force (in 1978 55.8 per cent) in Indonesia depending upon agriculture produced less than one-third of gross domestic product (in 1977 29.8 per cent).

Table 1.4 Gross Domestic Product by Sectors 1971-1977 (based upon 1975 constant prices)

	Shares in GDP 1971	1977	Contribution to absolute increase 1971 - 1977
Agriculture	37.8	29.8	16.1
Mining[a/]	17.8[a/]	22.4[a/]	30.2[a/]
Manufacturing	7.1	9.5	13.6
Construction	3.0	4.5	7.1
Wholesale and Retail Trade	29.5[b/]	30.2[b/]	31.4[b/]
Transport and Communication	3.9	4.6	5.7
Gross Domestic Product	100.0	100.0	100.0

Source: UNIDO based on computer print-outs supplied by the UN Statistical Office.

a/ Includes also electricity, gas and water

b/ Includes others.

Indonesia is still at the threshold of industrialization. The manufacturing sector is relatively small, its share being lower than that of other developing countries at similar stages of development and of other ASEAN countries. Over the last five years, however, the manufacturing sector succeeded in improving its contribution to the national economy from 7.1 per cent of GDP in 1971 to 9.5 per cent in 1977, implying an average annual rate of growth of 13.4 per cent (1971-1977). This compares with an average annual growth of the manufacturing sector of 4.5 per cent during the 1960s. The rate of industrial growth was adversely affected in 1974-76 by worldwide recession, higher production costs, sluggish domestic demand and foreign exchange constraints following the Pertamina crisis. The rate of growth of manufacturing, however, remained high during this period and, more recently, the industrial

sector has shown signs of recovery.

The significant contribution which the manufacturing sector has made to overall economic growth in Indonesia may be visualized by the fact that from 1971-77, 13.6 per cent of the increase in GDP originated in the manufacturing sector, which is only slightly less than the contribution made by the agricultural sector (16.1 per cent). In comparison, the corresponding contribution of the mining sector was 30.2 per cent while that of trade was 31.4 per cent.

The leading growth sectors of the Indonesian economy now encompass, in addition to the manufacturing sector, the non-traditional activities connected with the extraction industries in the field of petroleum, hard minerals and timber. It is envisaged that these sectors will continue to spearhead economic development in Indonesia at least for the next decade or two. These highly capital-intensive sectors, being largely dependent upon foreign technology and capital, are not expected to contribute significantly to the creation of new employment opportunities until such a stage where backward and forward linkages of industrial activities will have generated secondary effects of sufficient momentum.

The Indonesian economy and the global economy

The Indonesian economy exhibits a dual profile, one as a major oil exporter sharing the wealth of that group of countries, another as an extremely poor, albeit resource-rich, country with a large agricultural population and great development needs and opportunities. Unlike many other developing countries, Indonesia has benefitted from the recent fourfold increase in oil prices in 1973-74 which has given Indonesia's development prospects a tremendous boost. The increase in oil prices presented the Government with major new opportunities through expansion of its foreign exchange earnings. The increased oil prices enhanced Indonesia's capacity to import and also strengthened the role of the public sector in investment programmes. Short-term problems arose, however, particularly in regard to restraining domestic spending by government departments and public enterprises. Tighter control of government spending has recently been introduced. The oil sector now accounts for around a fifth of GNP, contributes over half of the government revenues and

generates around three fourths of export receipts. Oil export earnings rose from $1 billion in 1972/1973 to $7 billion in 1977/1978, and the cumulative effect over the five years represents an average addition of about 10 per cent a year to Indonesia's gross domestic product.[1/] The oil sector, however, leaves little impact upon the vast majority of the population who depend for their livelihood upon the larger but much less productive non-oil economy, where incomes are low, unevenly distributed and job opportunities scarce.

Several setbacks occurred in Indonesia's economy in the non-oil sector in the mid 1970s. In spite of the rapid increase in exports in 1973 and 1974, the subsequent world economic recession did not fail to leave its mark in the form of lower export receipts in 1974/75, which led to a weakening of the balance of payments. Severe setbacks also occurred in the agricultural sector from 1974-75 which, combined with substantial imports of rice and low world market prices for rubber and other export crops, resulted in a decline in real incomes and in domestic consumption. These problems were further compounded by the crisis surrounding Pertamina, the state-owned oil company, which encountered severe difficulties in meeting its huge short-term debts. The Government committed itself in meeting Pertamina's obligations and thus became directly involved in a struggle to overcome severe balance of payments difficulties. The pressure upon the balance of payments was intensified by a continuing sharp rise in imports. The resultant balance of payments deficit was financed primarily by official capital transfer in the form of project aid. By mid-1976 the most pressing aspects of the external crisis had been resolved and the balance of payments, strengthened by increased world demand for Indonesian products, went into surplus. In 1978 and 1979 the growth of oil exports declined. However, due to the devaluation of the Rupiah in November 1978, a marked improvement in the performance of non-oil exports occurred in 1979, almost offsetting a decline in net oil earnings. The balance of payments situation therefore improved slightly in 1979 in comparison with 1978. By surmounting the difficulties which the Indonesian economy faced in the mid-1970s. a base has been laid for

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1/ Source: H.W.Arndt: Survey of Recent Developments, Bulletin of Indonesian economic studies. Vol.XIV, No.1, March 1978, p. 15.

resumption of planned growth and the Indonesian authorities are more confident and in a better position to direct full focus of government policies towards achieving their development objectives.

In spite of economic recovery in recent years the problems facing Indonesia are considerable. Per capita incomes are the lowest of the five ASEAN member countries; its industrial sector is the least developed and unemployment and underemployment is high. The scope for increasing per capita income and employment through agricultural development alone is limited due to the high land/man ratio. While oil, mineral and forestry exploitation contribute significantly to GDP, per capita income, government revenue, and balance of payments, yet the employment effect is small and the majority of the population is unaffected. It is therefore inevitable that if Indonesia is to tackle successfully the problem of providing adequate employment opportunities and improving the standard of living, greater emphasis will have to be placed upon industrialization. In turn, industry itself is faced with the task of directing its pattern of growth towards the large part of the Indonesian population which looks towards industry for employment opportunities and for manufactured goods to satisfy their essential needs. In a recent analysis of the Indonesian economy, the World Bank [1/] has emphasized that industry is the only productive sector capable of sustained high rates of growth for longer periods without being constrained by financial or natural resources. With prospects for slower growth of mineral (including oil) and timber sectors in the future, industrialization becomes more important with a view to stimulating employment and exports. Further elimination of poverty and sustainable rapid development are becoming increasingly dependent upon the pace and quality of industrialization.

1/ World Bank: Indonesia, Growth patterns, Social Progress and Development Prospects, 20 February 1973, p. 108.

Chapter II

STRUCTURE OF THE MANUFACTURING SECTOR

Role of the manufacturing sector in the economy

The manufacturing sector in Indonesia is still small by comparative international standards. The share of manufacturing value added in relation to GDP was 9.5 per cent in 1977 compared with 6.0 per cent in 1960 (Table 2.1). Indonesia thus belongs to the group of developing countries classified as "non-industrial", where the share of manufacturing value aded in GDP is less than 10 per cent. In spite of its smallness, the manufacturing sector has greatly stimulated overall economic growth and emerged as a dynamic sector and one of the leading ones of the economy. Growth of manufacturing value added rose almost threefold from 4.5 per cent annually in the 1960s to 13.4 per cent annually from 1971-1977 (Table 2.2), only exceeded by Iran, the Republic of Korea, Hong Kong and Singapore in Asia in the latter period.

Table 2.1 Gross domestic product, manufacturing value added and share of MVA in GDP, 1960-1977

(at constant 1975 prices)

(million US$)

	1960	1970	1971	1972	1973	1974	1975	1976	1977
Gross Domestic Product	14,758.4	20,890.9	22,135.7	24,221.6	26,961.1	29,019.4	30,463.8	32,561.7	35,012.2
Manufacturing Value Added in GDP	884.9	1,376.0	1,564.8	1,801.1	2,075.7	2,411.0	2,707.7	2,969.9	3,321.8
					percentages				
Share of MVA in GDP	6.00	6.59	7.07	7.44	7.70	8.31	8.89	9.12	9.49

Source: UNIDO, based on computer print-outs, supplied by the UN Statistical Office, New York.

Table 2.2 Average annual rates of growth of GDP and Manufacturing Value Added (MVA) in 1960-1977, at 1975 constant prices

(Percentage)

	1960-1970	1971-1977	1970-1971	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977
MVA	4.51	13.37	13.72	15.10	15.25	16.15	13.31	9.68	11.85
GDP	3.54	7.94	5.96	9.42	11.31	7.63	4.98	6.88	7.53

Source: UNIDO, based on computer print-outs, supplied by the UN Statistical Office, New York.

The significance of industry's contribution to overall economic growth can be visualized by the fact that during the period 1971-77 the absolute contribution of industry to GDP growth was only slightly less than that of agriculture, even though agriculture was almost three times larger in terms of GDP. More exactly, industry's contribution to absolute GDP growth from 1971-77 amounted to 13.6 per cent compared with a contribution of 16.1 per cent for agriculture, 31.4 per cent wholesale and retail trade; and 30.2 per cent for mining (see Table 1.4). The per capita manufacturing value added was estimated at $13.7 in 1976, which compares with per capita net oil receipts on the balance of payments of $23.1 (1975).

Branches of industry

Detailed information on the structure of the entire industrial sector in Indonesia is scarce. Available statistics contain information on large- and medium-scale industries [1/] only, while little is known about the structure of the important small-scale and cottage industries sector, which is estimated to employ more than 4 million persons. Unless otherwise indicated, the analysis in this profile refers to the large- and medium-scale industries.

1/ Until 1973 the statistical definition included establishments with 10 or more workers not using power or with 5 or more workers using power equipment. From 1973 onwards, the statistical definition was changed to include establishments with 20 or more persons engaged. A statistical analysis of the situation before and after 1975 is therefore not entirely comparable.

Two branches of industry predominate in the manufacturing sector: i) the food, beverages, tobacco and ii) the textile industry sector. These two branches of industry accounted for the overwhelming proportion of all manufacturing activities in Indonesia, e.g. 60.4 per cent of establishments, 65.7 per cent of employees and 52.8 per cent of value added in 1976 (Table 2.3). Both sectors have undergone rapid changes. Value added increased at a remarkably high rate, especially in the textile industry, primarily due to labour productivity improvements. A significant number of new establishments were created in the food, beverages and tobacco industries in the early 1970s. Significant growth of industrial activity was also observed in the case of wood, paper and metal products industries.

In Table 2.4 the manufacturing sector has been classified into consumer, intermediate and capital goods industries. According to this breakdown the consumer goods industries continued to play an increasing role in the Indonesian manufacturing sector. In 1976, they accounted for 76 per cent of all establishments, 75 per cent of all employment and 61 per cent of total value added. A considerable number of new capital goods industries have been established in Indonesia in recent years; their contribution to employment and income, however, has remained small. In terms of value added, the capital goods industries account for 16 per cent of total value added, while the intermediate goods industries account for 24 per cent (1976).

The manufacturing sector may also be divided according to heavy and light industry. In 1968 heavy industries (including chemicals, fertilizers, basic metals, cement and refining) accounted for 48 per cent of manufacturing value added and light industries for 52 per cent. By 1975, heavy industry accounted for 53 per cent and light industries for 47 per cent. The respective growth rates for 1968-75 were 14.6 per cent for heavy and 11.2 per cent for light industry. These figures do not reveal that a significant shift in the industrial structure has occured; however, if present trends in the structure of industrial investment continue, with strong emphasis upon heavy industry, it could result in an unbalanced industrial structure.[1/] The growth of light industries which include

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1/ World Bank; Problems and Prospects for Industrial Development in Indonesia, May 25, 1978, Vol. I, page iv.

Table 2.3 Distribution of manufacturing establishments, employees and value added, by sector, 1970 and 1975-76 a/

(Percentage)

ISIC	Product	Number of establishments				Number of employees				Value added b/			
		Share			Growth	Share			Growth	Share			Growth
		1970 c/	1975	1976	1975-1976	1970 c/	1975	1976	1975-1976	1970 c/	1975	1976	1975-76
31	Food, beverages and tobacco	41.0	31.79	32.62	-1.77	51.7	37.58	39.15	12.05	59.3	40.97	37.70	23.71
321	Textiles	28.2	31.71	27.77	-16.19	19.1	30.37	26.62	-5.74	10.8	14.87	15.07	36.38
322-324	Wearing apparel, leather and footwear	1.5	2.33	2.39	-1.48	1.2	1.69	1.62	3.15	2.7	2.97	1.91	-13.48
33	Wood and furniture	5.3	7.02	8.23	12.13	1.7	5.09	5.15	9.90	1.1	3.80	3.77	31.46
34	Paper and printing	3.6	4.28	4.52	1.08	2.3	3.45	3.40	6.18	1.1	3.57	2.98	10.83
35	Chemicals	7.9	7.74	8.19	1.34	17.2	8.28	8.51	10.45	15.3	14.96	16.16	43.01
36	Non-metallic minerals	5.1	7.52	7.64	-2.76	2.3	4.39	4.25	3.94	3.3	5.33	5.94	46.57
37	Basic metals	-	0.15	0.22	38.46	-	0.39	0.54	51.72	-	0.23	0.81	334.80
38	Metal products	6.3	6.79	7.59	6.95	3.7	8.15	10.24	35.13	4.7	13.19	15.02	53.10
39	Other industries	1.2	0.67	0.81	15.52	0.9	0.60	0.51	-8.89	0.7	0.22	0.54	222.93
3	Total manufacturing	100.0	100.00	100.00	-4.31	100.0	100.00	100.00	7.55	100.0	100.00	100.00	34.47
		(Number of establishments)				(Number of employees)				(Billion rupiahs)			
		(16,671)	(8,684)	(8,310)		(868,900)	(750,900)	(807,600)		(104.51)	(482.37)	(648.66)	

Source: Based on the UN Yearbook of Industrial Statistics 1977.

a/ Establishments with 20 or more persons engaged.

b/ Net of non-industrial costs.

c/ Establishments with 10 or more workers not using power or with 5 or more workers using power equipment.

Table 2.4 Distribution of manufacturing establishments, employees and value added by consumer, intermediate and capital goods industries, 1970 and 1975-76 a/

(Percentage)

Products	Number of establishments				Number of employees				Value added			
		Share		Growth		Share		Growth		Share		Growth
	1970 b/	1975	1976	1975-1976	1970 b/	1975	1976	1975-1976	1970 b/	1975	1976	1975-1976
Mainly consumer non-durables c/	80.2	77.08	75.53	-6.23	76.3	77.76	75.39	4.28	75.5	64.78	60.65	25.50
Mainly intermediate goods d/	13.6	16.14	16.85	-0.14	20.0	13.76	13.88	8.52	19.8	21.85	23.54	44.84
Mainly capital goods (including consumer durables e/	6.3	6.77	7.62	7.65	3.7	8.48	10.72	35.95	4.7	13.39	15.81	58.88
Total manufacturing	100.0	100.00	100.00	-4.31	100.0	100.00	100.00	7.55	100.0	100.00	100.00	34.47

Source: Based on the UN Yearbook of Industrial Statistics 1977.

a/ Establishments with 20 or more persons engaged.

b/ Establishments with 10 or more workers not using power equipment or 5 or more workers using power equipment.

c/ ISIC 31,32,33,342,355 and 390.

d/ ISIC 341,35 and 36.

e/ ISIC 37 and 381-384.

many small-scale industries has been relatively sluggish in recent years. As a result of structural change and product diversification, significant growth in production has taken place in recent years in regard to a number of relatively new manufacturing products, which a few years ago were non-existent or negligible. This applies to fertilizers (urea and amonia sulphate), cement, glass, automobile tyres, radio and TV sets (assembly), galvanized iron sheets, automobile and motorcycle assembly, sewing machines, dry batteries, pipes, electric lamps, concrete iron bars and air conditioners.

Size and regional distribution

Data on size distribution based upon employment and value added varies considerably from one source to another. The Industrial Census 1974/75 records a total of 4.9 million persons engaged in manufacturing and a total value added of Rp 596 billion while the Intercencal Population Survey (SUPAS) records a total of 3.6 million persons engaged and Rp 890 billion value added in 1976. The data should therefore be interpreted with some care especially in regard to cottage industries.

Table 2.5 summarizes the major indices of the distribution of manufacturing industries by scale in 1974/75. The table shows the importance of cottage industries from the point of view of employment with 3.9 million persons engaged (80 per cent of total manufacturing employment) and the predominance of large- and medium-scale industries in terms of value added, representing around 80 per cent of total manufacturing value added. Small-scale industries account for around 7 per cent of both manufacturing employment and value added.

The small- and medium-scale industries may be classified as "local", "clustered" or "independent" industries in the context of their socio-economic environment and Government's measures for their assistance:

(i) "local" industries refer to small- and medium-scale industries which are based on a limited market like a single village community. This type of industry which may be classified as "household industry" comprises the majority of small- and medium-scale industries in terms of the number of establishments. The products are sold by the manufacturers directly to consumers without recourse to intermediary distributors.

Table 2.5 Distribution of manufacturing industries by scale, employment and value added, 1974/75 a/

	Number of establishments b/ (units)	Workers ('000)	Percentage share	Value added at market prices c/ (Rp b)	Percentage share	Value added per worker (Rp '000)	Reference year
Statistik industri							
Large and medium	8,187	661.7	13	476.9	80	721	1974
Small	44,475	343.2	7	44.2	7	129	1975
Cottage	1,234,511	3,899.9 d/	80	75.1	13	19	1974/5
Total	1,287,473	4,904.8 d/	100	596.2	100	122	
Supas		3,560.1		(890.0) e/			1976

Source: Peter McCawley and Maree Tait, "New Data on Employment in Manufacturing 1970-77," Bulletin of Indonesian Economic Studies, March 1979, based on: Biro Pusat Statistik, Sensus Industri 1974/75.

a/ At the time of the Sensus Industri 1974/75 new definitions of firm sizes were adopted which are being used for all industrial statistics issued by BPS. The old and new definitions are as follows:

	Old	New
Large (L):	100 or more employees without power, or 50 or more with power.	100 or more employees
Medium (M):	10-99 employees without power, or 5-49 with power	20-99 employees
Small (S):	1-4 employees with power, or 1-9 employees without power	5-19 employees
Cottage (C):	establishments without paid workers	establishments with less than 5 workers (including unpaid workers)

The Indonesian Government has reportedly further amended the definition of small industries from 1 April 1979 (Asia Research Bulletin 31 May 1979). Accordingly, industries with capital amounting to Rp 100 million (US$ 160,000) (and Rp 80 million (US$ 128,000) for housing industry) will be classified as small. The number of workers /employees will no longer be taken as a criterion. "Small industries" will be further sub-divided into five categories: non-existent industries, industries in an embryo state, industries engaged only as a side-line and not as a major means of income, industries already providing income and established industries.

b/ Figures according to the 1974/75 industrial cencus are 48,221 for small industries; 5,746 for medium industries and 1,306 for large industries.

c/ The data for value added have been adjusted to 1974 prices by deflating data for small firms by 20 per cent and for cottage firms by 10 per cent.

d/ Strictly speaking, a worker in the cottage sector (defined as a 'participant' in the Sensus Industri data) is qualitatively different to workers in the other sectors because intensity of work (as measured in annual mandays of work per worker) in the cottage sector is low.

e/ Sectoral national income estimates, 1974. No explanation is available for the large discrepancy.

(ii) "clustered" industries refer to those small- and medium-scale industries that are individually small in scale but form a "cluster" or geographical production area of many individual establishments that produce the same lines of products, which are collectively shipped by merchants to larger markets covering wider areas. Machinery is seldom used and labour is provided by family or community members. The main products produced consist of bamboo and willow craft articles, roofing tiles, earthenware, coconut sugar, batik, textiles, tahu and tempe, fishing nets and gear, wooden manufactures and furniture, metal castings, shoes, etc.

(iii) "independent" industries refer to small- and medium- scale industries that are relatively large in scale and have a capacity to develop technologies and sell their products to markets covering wider areas. Among these enterprises, a distinction can be made between those that have a certain level of established management system (managerial organized type) and those that have no management system of any sort (household business type).

The above distinction is important from the point of view of Government policy measures required for the development of the three types of small- and medium-scale industries (see Chapter IV).

Industrial location is heavily concentrated in Java and Madura with 72 per cent of all large-, medium- and small-scale industrial establishments (Table 2.6.) compared with a share of population of 63 per cent. Recent data indicate that some 54 per cent of foreign investment and 69 per cent of domestic investment are concentrated in Java, especially in Jakarta and its vicinity. Being the most densely populated area, Java faces serious problems of un- and under-employment, and several regions are distressed or potentially distressed. Since agricultural expansion is severely constrained by the lack of new land area and limitations in agricultural productivity improvements, the role of non-agricultural development, in particular manufacturing, in creating new employment opportunities has become increasingly important in Java. Most of the consumer demand also originates here, and there is a relatively well advanced infrastructure including a solid and extensive rail and road network. Industrial expansion, in particular of consumer goods, seems to provide a feasible alternative.

The medium- and large-scale industry category is almost entirely confined to Java and Madura, accounting for 86 per cent and 83 per cent, respectively, of the number of establishments. The Outer Islands, depending primarily upon agriculture and extractive industries, are well endowed with natural resources; however, the infrastructure is weak. The pattern of industrial development is heavily raw material-oriented, with practically no forward linkages. Raw materials originating from the Outer Islands are largely being exported in an unprocessed form and account for the bulk of all Indonesian exports. Their processing seems to be a desirable alternative. In the case of timber and rubber, the two leading non-oil exports, a stage has been reached to expand industrial capacities and export these in processed form. Other possibilities for industrialization of the Outer Islands are in the field of paper, petrochemicals and aluminium goods, but some of these are largely capital-intensive in nature and contribute little to employment generation.

The pattern of location of the medium- and large-scale industry sector is urban-oriented and mainly centered around Jakarta, which accounts for 9 per cent of all medium- and large-scale manufacturing establishments and 7 per cent of manufacturing employment. This compares with its share of the total population of around 4 per cent. Around one-third of approved domestic investments and one-fifth of the approved foreign investment in recent years has taken place in the Jakarta region. Nearly 40 per cent of the total public development expenditure in recent years occurred in Jakarta. The contribution of Jakarta to national income was double its share of population. As a result, the average per capita income in Jakarta is well over twice the level of the neighbouring province of West Java. Industrial location of medium- and large-scale industries have also centered around other large cities elsewhere in Indonesia, in particular the Javanese cities, Surabaya, Semarang and Bandung which are important industrial centres.

Having stated the above in regard to the medium- and large-scale industry sector and taking into account the limited information available on the small-scale industry sector in discussing spatial aspects of industrialization, there is little justification, however, for claiming that industrial location in Indonesia has been excessively urban-oriented.

Table 2.6. Regional distribution of industries 1974/75 by size

	Large Industries			Medium Industries			Small Industries			Total Industries		
	Number of establishments	Percentage share of total industry in region	Percentage share of total industry in Indonesia	Number of establishments	Percentage share of total industry in region	Percentage share of total industry in Indonesia	Number of establishments	Percentage share of total industry in region	Percentage share of total industry in Indonesia	Number of establishments	Percentage share of total industry in region	Percentage share of total industry in Indonesia
Sumatra	140	2	11	414	5	7	7,605	93	16	8,159	100	15
Java	1,089	3	83	4924	12	86	33859	85	70	39,872	100	72
Bali	15	2	1	49	6	1	712	92	1	776	100	1
Nusa Tenggara	8	1	1	72	8	1	818	91	2	899	100	2
Kalimantan	32	2	2	121	8	2	1,347	90	3	1,500	100	3
Sulawesi	17	-	1	149	4	3	3,658	96	8	3,824	100	7
Maluku	3	3	-	7	6	-	100	91	-	110	100	-
Irian Jaya	2	2	-	10	7	-	122	91	-	134	100	-
Total Indonesia	1,306	3	100	5,746	10	100	48,721	87	100	55,274	100	100

Source: Institut für Wirtschaftsforschung, Die Industrialisierung der Entwicklungsländer und ihre Rückwirkung auf die Deutsche Wirtschaft - Länderstudie Indonesien, Munich, March 1979, page 125. Based on: Biro Pusat Statistik: 1974/75 Industrial Census -; Statistical Yearbook of Indonesia, 1976, page 490.

In the 1971 Census of Population, slightly more than three-fourths of the labour force was classified as rural and only around one-fourth as urban, with slight differences among individual regions. Unlike many other developing countries, the large rural-based labour force in manufacturing, in part explained by high population densities, provides a good base for an employment-oriented and poverty-focussed industrialization strategy. The extremely limited information available on the informal and small-scale industry sector, however, is probably an indicator of the support which this important, albeit neglected, sector has received in the past. The Government, however, has taken many positive steps in recent years to examine[1/] and support the small-scale industry sector. The Government regards the geographical spreading of industry as a key element in its industrial policy and encourages industries to be established outside Jakarta and Java island.

In the past, Indonesia has thus experienced a pattern of industrial growth with heavy emphasis on the organized and more capital-intensive industrial sector of the medium- and large-scale category, primarily in urban areas and in Java. This has led to a marked difference in the pattern of development between the traditional and modern sectors and intensified the dualistic structure of the Indonesian economy. If unchecked[2/] a continuation of this pattern of industrial development would contribute to aggravating existing disparities and would lead to a more uneven income distribution, a lower rate of employment and a higher pressure on the foreign exchange resources.

The possible effect which the high growth of manufacturing employment in large- and medium-scale industries has had upon growth and employment in the small-scale and cottage industry sector is an issue which has attracted great attention. The only data which cast any light on the growth in the small- and cottage industries is information from regional income estimates prepared on a provincial basis (Table 2.7). While the data must be interpreted with some caution, they suggest that in the small-scale and cottage industry sectors, the real growth of value added of

1/ See for example: International Development Centre of Japan, Industrial Development in South-east Asian Countries: Small- and Medium-scale Industries - Republic of Indonesia - Phase I, 1977/78.

2/ Income Distribution, Employment and Growth. A Case Study of Indonesia. World Bank Staff Working Paper no.212, August 5, 1975.

7-8 per cent annually was achieved during the first half of the seventies (1969-1975). Since there was presumably little productivity growth in small and cottage industries during this period, employment would also appear to have been growing at the same rate. The data therefore lend no support to the hypothesis that total output and employment have been falling in small and cottage industries during the 1970s as a result of backwash effects from the modern sector.

Table 2.7 Annual real growth rate of value added in industry in selected provinces, 1969-1975

Province	Weight a/ (per cent)	Period	Total (per cent)	Large and medium (per cent)	Small and household (per cent)
North Sumatra	5.7	1969-74	15.5	18.5	3.5
South Sumatra	10.9	1971-75	2.3	2.1	8.8
Jakarta	7.5	1969-75	11.7	8.1	18.2
West Java	13.2	1969-71	6.4	7.9	2.1
		1973-75	10.5	9.9	13.7
Central Java	20.6	1969-75	12.1	13.3	9.6
East Java	24.4	1969-71	7.4	6.7	8.4
West Kalimantan	1.8	1969-75	8.0	7.3	12.9

Source: Peter McCawley and M. Tait:"New Data on Manufacturing Employment 1970-77", Bulletin of Indonesian Economic Studies, March 1979.

a/ Value added (current prices) in the industrial sector in the province as a share of total value added in industry in Indonesia in 1971 (which was Rp 356.6 billion). Total of the provinces included in the Table is 84.1 per cent.

Employment and manufacturing

The number of persons recorded as employed in manufacturing vary quite widely depending upon data-collection procedures and the definition applied in the Intercencal Population Survey (SUPAS) and Sensus Industri 1974/75. According to Sensus Industri almost 5 million persons were engaged

in manufacturing in 1974/75 (see Table 2.4.). The 1976 labour force data collected in the Intercencal Population Survey (SUPAS) record 3.6 million people as employed in 1976 in manufacturing activities (including cottage industry); this figure represents 7 per cent of the total labour force. The share of the labour force in manufacturing is lower than the share of manufacturing in GDP because labour productivity in manufacturing is higher than in other sectors such as agriculture and trading. Of the SUPAS estimate of 3.6 million employed in manufacturing, about 80 per cent were working in rural areas (mainly cottage industry), about half were women, the majority of whom were "own account workers" or "unpaid family workers". Important as the cottage industry may be in terms of employment (80 per cent of total manufacturing employment), it is the large- and medium-scale industry sector which contributes the bulk of value added in manufacturing (80 per cent of total manufacturing value added) while the small-scale industry sector accounted for 7 per cent of both manufacturing employment and value added.

In Table 2.8. estimates are given of employment in large- and medium-scale industries for the period 1970-1977. In spite of the apparent weakness of the basic data base, the general picture emerging is that manufacturing employment grew at a high rate of 11.8 per cent from 1970-1973 (according to the old size definitions) and at about 8.6 per cent 1974-1977 (according to the new size definitions). However, from 1976 to 1977 a contraction in manufacturing employment has been observed. One implication of the growth of employment in the large- and medium-scale industry sector is that it is hardly an answer to Indonesia's unemployment problems. An annual increase of around 10 per cent on a labour force of about 900,000 even if this rate were maintained, would provide direct employment to around 6 per cent of the estimated annual increase in the labour force of about 1.3 million. The absolute increase in employment for the three year period 1970-73 and 1974-77 was limited to 255,000 persons and 174,000 persons, respectively.

1/ For an analysis of discrepancies and definitions used in SUPAS and Sensus Industri see: Peter McCawley and Maree Tait: New Data on Employment in Manufacturing 1970-76, Bulletin of Indonesian Economic Studies, March 1979.

2/ same as 1/.

Table 2.8. Estimates of employment in large and medium firms, 1970-1977

(thousands of workers)

ISIC	Sector	Old definitions		New definitions				Growth rates (per cent per annum)	
		1970	1973	1973 b/ (estimate)	1974	1976	1977	1970-1973	1974-1977
311-12	Food	270.6	349.0 c/	188.7	190.8 d/	221.4 d/	224.2 d/	8.2	5.1
313	Beverages	5.2	5.9	4.9	4.7	6.0	5.9	4.8	6.2
314	Tobacco	173.4	152.0	136.0	128.0	169.5	162.6	-0.4	10.0
321	Textiles e/	168.6	233.4	178.3	165.0	215.0	198.7	13.1	4.9
322	Wearing apparel e/	1.9	2.1	2.4	2.6	4.1	4.9	6.4	20.4
323-4	Leather and products	5.7	6.5	6.5	6.6	9.0	9.0	-0.8	9.8
331-2	Wood products	14.6	41.4	20.6	22.4	41.6	45.2	43.8	24.5
341	Paper products	4.7	7.9	7.0	7.3	9.2	8.8	19.9	7.1
342	Printing	15.1	19.5	14.8	14.7	18.4	17.7	9.2	6.0
351,2,6	Chemical products	33.8	48.3	36.5	38.1	58.2	58.3	14.3	14.6
355	Rubber products	115.6	187.3 c/	44.6	45.7	48.2 f/	49.3 f/	17.3	2.6
361-9	Non-metallic minerals	20.0	45.6	23.9	24.6	34.3	35.5	33.4	11.9
371	Iron and steel	-	-	1.6	2.1	4.7	5.0	-	37.1
381	Metal products	16.7	27.3	18.6	21.3	31.2	29.5	18.3	13.4
382	Manufacture, repair of machines	4.8	12.9	6.7	7.3	7.2	10.6	48.5	9.6
383	Electrical goods	3.5	16.1	8.7	12.2	17.9	20.6	57.1	23.5
384	Transportation	7.1	14.9	13.7	14.3	25.9	25.0	34.5	19.3
390	Other	7.6	5.0	8.9	6.3	4.6	5.1	-7.1	-16.4
	Total employment L and M	868.8	1,175.0	699.2	716.9	926.1	915.7	11.8	8.5
Alternative estimates, excluding estate sector									
311-12	Food (excl. tea 31220) g/	203.2	281.6	124.3	121.0	138.9	134.9	10.0	3.0
314	Tobacco (excl 31410)	69.5	92.4	73.3	88.3	107.7	120.5	0.4	10.7
355	Rubber (excl 35521 and 35522) g/	9.0	11.2	7.0	7.7	10.5	11.2	8.7	13.1
Total manufacturing employment excluding estates		616.9	871.9	555.0	569.2	743.4	746.1	12.9	9.0

Source: P. McCawley and M. Tait, "New Data on Employment in Manufacturing, 1970-77", Bulletin of Indonesian Economic Studies, March 1979, based on Biro Pusat Statistik, Sensus Industri 1974 1975; Statistik Industri various years.

a/ Calculated from semilogarithmic regression equations fitted to data shown in the Table.

b/ Calculated by projecting 1974-77 data backwards using semilogarithmic regression equations.

c/ Data for tea processing (31220), smoked rubber (35521) and rubber remilling (35522) components unavailable for 1973; assumed here to be the same as for 1972.

d/ Employment in tea processing (31220) estimated by assuming that all tea factories remained in the L and M category under the new definitions, and that employment rose pari passu with physical output (output estimates from the Indikator Ekonomi series) taking 1972 as the base year.

e/ In 1970 and 1971, carpets and rug manufacturing (and in 1971 gunny sacks) were classified in the publications under textiles and in subsequent years under wearing apparel; in this Table they have been classified for all years under textiles.

f/ Employment for estates estimated by assuming that employment rose pari passu with physical output (output estimates from the Indikator Ekonomi series), that a substantial number of rubber firms were excluded from the L and M category under new size definitions, and that 1974 was a satisfactory base year.

g/ 1970 data unavailable; assumed here as same as for 1971.

Table 2.8. also reveals that employment growth has been slow in traditional industries such as food, beverages, textiles and rubber products, which accounted for more than half (58 per cent) of manufacturing employment in 1977. Concomittantly manufacturing employment has grown rapidly in a number of non-traditional industries, whose absolute level of employment however is still small, such as iron and steel, wood products, electrical goods, wearing apparel, transport equipment, chemical products, metal products and non-metalic minerals. The data appear to indicate, that the "easy" stage of import substitution may be coming to an end in several braches of industries.[1/]

The productivity, measured in value added per employee, is highest in large- and medium-scale industries, Rp 721,000, and declines rapidly with smaller units to Rp 129,000 in small industries and Rp 19,000 in cottage industries (see Table 2.4) (1974/75). The employment effect of the medium- and large-scale industries vis-à-vis the small-scale manufacturing and cottage industries, however, need careful consideration. The employment effect can be analysed by using the gross-value-added elasticity of employment in both subsectors. Utilizing data for 1973 and projections for 1978, the gross-value-added elasticity of employment has been estimated at 0.29 per cent for the medium- and large-scale industries and 0.49 per cent for the small-scale industries. Thus the employment elasticity of the small-scale manufacturing industries is about twice the elasticity of the medium- and large-scale industries. Therefore, if small-scale industries can be developed more intensively, they can offer a promising contribution to the problems of unemployment in Indonesia.

A similar analysis has been made at a more disaggregate level. According to this analysis[2/] the employment output ratio, reflecting the effect upon employment of an increase in output of one percentage, has been estimated at +0.18 for the manufacturing sector as a whole for the period 1968 to 1972 based upon a sample survey of 120 manufacturing establisments. Comparable forecasts have beem made for the period 1973-78 with an employment/output ratio of +0.4. This ratio, while higher than the 1968-72 ratio, is still below the ratio of 0.5 applied in the second development plan. The incidence of employment potential varies considerably among individual branches of industry.

1/ Peter McCawley and Maree Tait: "New Data on Manufacturing Employment 1970-76"; Bulletin of Indonesian Economic Studies, March 1979.

2/ Employment and Training Pattern. "Problems and Requirements in the Manufacturing Sector in Indonesia", ILO Report, March 1975.

The ratio is particularly high in the following branches of industry: electrical machinery, printing and publishing, wearing apparel, non-ferrous metal industries, transport equipment, tobacco, wood products, textiles, machinery and metal products.

Import and export of manufactured goods

Indonesia's export structure is heavily dependent upon petroleum exports while its import structure primarily consists of manufactured goods. There is a strong external trade deficit in manufactures. The share of manufactures in total exports was limited to around 3.5 per cent in 1977, while the share of manufactured imports relative to total imports was as high as 62 per cent (Table 2.9.). Thus, while the value of manufactured imports was more than twice the amount of value added in manufacturing in 1976, the level of manufactured exports was confined to only 10 per cent of manufacturing imports. The manufacturing sector in Indonesia is therefore strongly oriented towards the domestic market and at the same time highly dependent upon imports.

Manufactured imports have grown less than manufactured exports and also less than overall imports. Yet in 1977, manufactured imports were still more than tenfold the level of manufactured exports. The incidence of capital goods imports, especially machinery and transport equipment has gained prominence in recent years, and now account for 37 per cent of all imports in 1977. Capital goods imports in 1975 were eightfold the level of 1969. Import of raw materials and intermediate goods have also increased rapidly, more than threefold from 1969-75, especially in regard to metal products, chemicals, fertilizer, paper, yarn, cement, paint and chemical products. They accounted for 27 per cent of all imports. Following the devaluation of the Rupiah in November 1978, the price increase of these raw material imports have unfavourably effected the cost of production of domestic manufacturing relying heavily on imported inputs including many small-scale industries. Concurrently, with these trends in raw material imports the share of consumption goods in total imports has declined significantly from 35 per cent in 1969/70 to 18 per cent in 1975/76.

Table 2.9. Import and export structure, 1971-1977

SITC	Products	Imports c.i.f. US$ '000		Imports c.i.f. percent	Exports f.o.b. US$ '000		Exports f.o.b. per cent
		1971	1977	Average annual growth rate 1971-1977	1971	1977	Average annual growth rate 1971-1977
0	Food and live animals	98,867	958,842	46.0	179,552	1,066,226	34.6
1	Beverage and tobacco	3,652	20,799	33.6	17,651	55,862	21.1
2	Crude materials excluding fuels	22,152	227,143	47.4	436,874	1,760,940	26.1
3	Mineral fuels	28,894	734,689	71.5	477,933	7,378,566	57.8
4	Annual vegetable oil	-	-	-	45,374	193,096	27.3
5	Chemicals	138,251	619,047	28.4	5,554	60,299	48.8
6	Basic manufactures	326,381	1,177,084	23.8	24,923	235,921	45.4
7	Machines, transport equipment	438,648	2,270,330	31.5	6,397	59,641	45.1
8	Miscellaneous manufactured goods	43,775	159,986	24.1	-	28,840	-
9	Goods not classified by kind	-	-	-	4,721	-	-
0-9	Total	1,104,256	6,182,581	33.2	1,199,465	10,852,626	44.3
	of which Manufactures SITC 5 to 8	947,005	3,824,774	26.2	36,874	384,701	47.8
	Share of manufactures in total	85.8	61.8	-	3.1	3.5	-

Source: UN Yearbook of International Trade Statistics 1975 and 1978.

Imports of capital goods, raw materials and intermediate goods have thus increased continuously in line with the process of industrialization and resulted in an unusual high proportion of such imports in relation to manufacturing value added [1]. The implications of such an unusual high import component of the manufacturing sector are firstly that far-reaching opportunities exist for further import substitution for the large Indonesian market, and secondly that the industrial sector is influenced not only by domestic price movements but also in particular by international inflationary trends, which have been contributing to the high cost of domestic production in the Indonesian manufacturing sector. These trends have been further compounded by the recent devaluation. The major sources of supply of Indonesian imports and therefore also inflationary trends are Japan (27.3 per cent of all imports in 1977), the USA (12.6 per cent), Singapore (8.6 per cent), Federal Republic of Germany (7.9 per cent) and Thailand (5.1 per cent) (Table 2.9.).

As far as manufactured exports are concerned, the rate of growth has been most impressive, 44.3 per cent annually from 1975- 1977. However, the weight of manufacturing exports relative to overall exports (3.5 per cent in 1977) and to manufacturing value added (10 per cent) has remained insignificant, with few signs of diversification. The rapid growth of manufacturing exports has been mainly attributable to significant increase in copper, tin, chemicals including fertilizer exports. In 1978 non-oil exports increased by 2 per cent attributed mainly to tin, rubber and palm oil [2]. The recent devaluation of the Rupiah in November 1978 has further stimulated export growth of a number of manufactured products, inter alia, textiles, fertilizer and cement. The major buyers of Indonesian exports abroad in 1977 were Japan (40.2 per cent of all exports in 1977); the USA (27.7 per cent); Singapore (9.2 per cent), Trinidad and Tobago (4.8 per cent) and the Netherlands (3.4 per cent). The scope for further development of the manufacturing export sector depends to a great extent upon the future of ASEAN regional co-operation.

1/ Performance and Perspectives of the Indonesian Economy. Institute of Developing Economics, Tokyo, March 1976, page 160.

2/ Source: Asia Research Bulletin, 30 June 1979.

Capital formation, investment and sources of financing

In the early 1970s industrial investment in Indonesia accelerated rapidly reflecting the growing confidence of both foreign and domestic investors in the economic potential and social stability of the country. The rate of implementation of foreign and domestic investment has generally been faster in manufacturing than in other sectors. The rate of growth of capital formation in manufacturing has both been impressive and diversified in the early 1970s Table 2.10 contains data for the period 1970-1976. While the bulk of capital formation has ben channelled into the traditional branches of industries such as food, beverage, tobacco and textiles, significant growth of capital formation has also been observed in the metal products and non-metalic nimeral industries. Unfortunately, the table excludes petroleum based industries, where substantial foreign investment activities are concentrated and also the small-scale industries sector for which lack of data preclude a review.

As far as investment projects, approved by the Investment Co-ordinating Board (ICB) under the domestic and foreign investment laws, are concerned, the following tables indicate the achievements during the period 1967-1977. Table 2.11. shows that domestic investment approvals peaked in 1973, primarily due to the presence of a few very large investment projects in resource based industries. Foreign investment rose sharply from $665.7 million in 1973 to $1,139.5 million in 1974 and $1,934 million in 1974, but has since declined to $433.8 million in 1977. The reasons for this slowdown in foreign investment, have no doubt been the recessionary conditions which prevailed in capital exporting countries combined with the financial difficulties surrounding Pertamina and the more restrictive measures being applied by the Government towards foreign investment. These developments have no doubt adversely affected the investment climate for private foreign investors. Foreign investment is expected to have declined after the 1978 devaluation of the Rupiah.

Table 3.10. Gross fixed capital formation in manufacturing industries, 1970, 1975 and 1976 a/

(Establishments with 20 or more persons engaged)

ISIC	Product	Rp '000 million			Percentage		
		1970 b/	1975	1976	1970 b/	1975	1976
31	Food, beverages, tobacco	16.51	32.46	63.12	44.1	18.20	31.38
321	Textiles	10.20	50.73	44.00	27.3	28.45	21.88
322-324	Wearing apparel, leather, footwear	0.29	1.28	0.42	0.8	0.72	0.21
33	Wood	0.10	14.75	16.03	0.3	8.27	7.97
34	Paper and printing	0.30	6.53	9.81	0.8	3.66	4.88
35	Chemicals c/	6.68	19.34	17.45	17.9	10.85	8.68
36	Non-metallic minerals	0.29	26.62	21.23	0.8	14.93	10.56
37	Basic metals	-	0.16	1.73	-	0.09	0.86
38	Metal products	3.0	26.09	26.20	8.0	14.63	13.03
39	Other industries	0.03	0.37	1.12	0.1	0.21	0.55
3	Total manufacturing	37.40	178.33	201.11	100.0	100.00	100.00

Source: Based on UN Yearbook of Industrial Statistics, 1977, vol. I.

a/ The value of sales is not deducted.

b/ Establishments with 100 or more workers not using power equipment or with 5 or more workers using power equipment.

c/ Excluding petroleum refineries and products.

Table 2.11. Domestic and foreign investment approvals by the Investment Co-ordinating Board (ICB)

Year	Domestic			Foreign		
	Number of projects	Total value (Rp billion)	Average value per project (Rp billion)	Number of projects	Total value ($ million)	Average value per project ($ million)
1967	-	-	-	20	162.8	8.1
1968	2	0.6	0.30	58	224.4	3.9
1969	185	53.6	0.29	70	645.7	9.2
1970	334	186.1	0.56	140	379.5	2.7
1971	390	275.7	0.71	98	391.7	4.0
1972	375	212.2	0.56	81	525.1	6.5
1973	616	599.6	0.97	121	665.7	5.5
1974	249	221.3	0.89	86	1,139.5	13.2
1975	173	252.5	1.46	41	1,934.1	47.2
1976	146	278.2	1.90	36	423.6	11.8
1977	309	511.6	1.66	29	433.8	15.0
Total, 1968-77		2,591.7	0.93	780	6,925.9	8.9
January - March 1978 a/	80	292.8	3.54	2	61.0	30.5
Total	2,859	2,884.5	1.01	782	6,986.9	8.9

Source: Bulletin of Indonesian Economic Studies, July 1978, page 28, based upon BKPM, Laporan Perkembangan Penanaman Modal, December 1977, January 1978, February 1978 and March 1978.

a/ Net cancellations and revisions.

Table 2.12 shows the distribution of domestic and foreign investment approvals by economic area 1967-1977, manufacturing dominate in both domestic and foreign investment accounting for two-thirds of all domestic investment approvals and 60 per cent of foreign investment approvals (value). The textile industry is most prominent among manufacturing sectors comprising nearly 20 per cent of domestic approvals and 16 per cent of foreign approvals. Chemicals, food processing and non-metalic mineral products have attracted domestic investment, while base metals industries have attracted a very large share of foreign investment.

Table 2.13 summarises the foreign investments in manufacturing approved by the Investment Co-ordinating Board (ICB) by branch of industry and by country of origin from 1967 to March 1976. The main foreign investors were Japan (59.5 per cent), Hong Kong (9.6 per cent), The United States (6.0 per cent) and the Netherlands (4.2 per cent). Japanese foreign investment has mainly been concentrated in fabricated metal products, textiles chemicals, and basic metal products, while foreign investment from the United States, Hong Kong and Singapore has mainly been directed towards chemicals and fabricated metals. An examination of foreign investment in Indonesia[1/] has revealed that 22 per cent of total foreign investment projects in manufacturing emanated from developing countries rather than industrialized countries. The observation has been made that[1/] foreign investors from developing countries are significantly different from the investors of the developed countries in the sense that they seem to be smaller and their technologies considerably more labour-intensive. They are mostly represented in industries with little prod ct differentiation and slow technological change. Due to the existing wage differentials in South-east Asia there seems to be some scope for redeployment of industrial capacity from other developing countries (Hong Kong, Singapore) to Indonesia, especially in the field of export industries.

1/ Source: Louis T. Wells and V'Ella Warren, "Developing Country Investors in Indonesia", Bulletin of Indonesian Economic Studies, March 1979, page 72.

Table 2.13. Domestic and foreign investment approvals by the Investment Co-ordinating Board by economic area, 1967 - 77 with first quarter 1978, inclusive[a]

Economic Area	Domestic[b]			Foreign		
	Number of Projects	Value (Rp billion)	Share, total value (per cent)	Number of projects	Value ($ million)	Share, total value (per cent)
Agriculture	107	210.6	7.3	51	162.6	2.4
Forestry	340	259.3	9.0	81	524.5	7.9
Fisheries	25	17.5	0.6	18	77.4	1.2
Metal mining	-	-	-	9	1,118.8	16.9
Other mining	13	50.0	1.7	6	154.0	2.3
Food processing	400	264.7	9.2	63	253.0	3.8
Textiles	482	551.4	19.1	66	1,027.3	15.5
Wood products	128	108.8	3.8	17	73.7	1.1
Paper	149	95.0	3.3	17	108.5	1.6
Non-metallic mineral products	122	253.8	8.9	20	471.1	7.1
Chemicals	407	358.3	12.4	121	473.7	7.1
Base metals	60	104.7	3.6	20	1,192.2	18.0
Metal-working	249	167.7	5.8	129	389.2	5.9
Other Manufacturing	34	16.5	0.6	19	17.3	0.3
Electric power	1	1.2	..	-	-	-
Construction	6	15.6	0.5	60	86.5	1.3
Trade	3	0.9	..	33	7.6	0.1
Hotels	98	81.6	2.8	10	185.9	2.8
Transportation	122	137.4	4.8	19	43.0	0.6
Communication	-	-	-	1	14.5	0.2
Trade Services	34	172.9	6.0	33	222.8	3.4
Sanitation services	1	0.2	..	1	0.02	..
Social services	-	-	-	10	19.5	0.3
Recreation	17	16.9	0.6	8	3.3	..
Other services	3	0.6	..	-	-	-
Total[c]	2,781	2,592.6	100.0	782	6,626.4	100.0

Source: Bulletin of Indonesian Economic Studies, July 1978, page 30.

a/ Net of cancellations and revisions.

b/ No domestic approvals prior to 1968.

c/ Totals may not add due to rounding.

Table 2.13. Approved foreign investment projects in manufacturing according to country or origin and sectors, 1967 - March 1976

Country of origin	Industry							
	Textile		Chemicals		Electricity equipment and appliances		Others	
	Amount of capital (US$ million)	Number of projects	Amount of capital (US$ million)	Number of projects	Amount of capital (US$ million)	Number of projects	Amount of capital (US$ million)	Number of projects
America	31.7	5	28.2	23	23.6	10	116.4	34
USA	(22.7)	(4)	(27.9)	(22)	(21.6)	(9)	(103.0)	(30)
Canada	-	-	(0.3)	(1)	-	-	(2.4)	(2)
Panama	-	-	-	-	(2.0)	(1)	(9.0)	(1)
Bahama	(9.0)	(1)	-	-	-	-	(2.0)	(1)
Europe	113.7	5	53.3	35	28.8	12	220.0	56
West Germany	-	-	(11.5)	(9)	(12.3)	(4)	(151.6)	(17)
United Kingdom	(4.9)	(1)	(12.3)	(6)	(2.2)	(2)	(3.6)	(7)
Netherlands	(75.8)	(3)	(14.1)	(9)	(12.9)	(4)	(19.9)	(11)
Others	(33.0)	(1)	(17.4)	(12)	(1.4)	(2)	(46.9)	(13)
Asia	544.2	58	258.7	44	27.2	21	1400.1	153
Japan	(347.8)	(23)	(215.3)	(20)	(18.8)	(13)	(1,137.1)	(72)
Hong Kong	(128.5)	(13)	(9.9)	(9)	(2.2)	(2)	(142.0)	(44)
Singapore	(13.4)	(2)	(6.7)	(5)	(3.1)	(3)	(55.6)	(21)
Others	(54.5)	(8)	(25.8)	(10)	(3.1)	(3)	(65.3)	(26)
Australia	1.1	1	4.2	6	0.6	1	68.4	23
Africa	0.5	1	-	-	-	-	-	-
Total	691.0	70	344.4	109	80.2	44	1806.9	276

Source: Investment Co-ordinating Board.

Proj .ons have been made for industrial investment for the years 1977, 1978 and 1979: according to which annual average investments spending by Indonesian manufacturing and mining (other than oil) amounts in total to about $3 billion in 1976 prices. Of the total, around 68 per cent will be represented by large-scale (and capital-intensive) projects; 20 per cent by "other approved projects"; 11 per cent by replacement investment: and 2 per cent by the small-scale sector. Within the manufacturing sector the major investments were in petrochemicals ($570 million per year), steel ($270 million) and fertiliser ($270 million). This pattern of investment for 1977-79 is estimated to generate about 540,000 jobs as a lower limit or about 820,000 jobs as an upper limit for the five-year period up to 1981. While many of the large-scale projects are expected to contribute to exports and import substitution, they are not expected to create much direct employment which has been estimated[1/] at only 8,000 new jobs per year. In comparison, the group of "other approved projects" are estimated to generate 40,000 jobs per year at a cost of $14,000 per job while the small-scale sector would generate 60,000 jobs per year at a cost of $1,000 per job. These figures fall short of the employment target of Repelita II and clearly indicate the importance of increasing industrial investment in the small-scale industry sector.

Industrial linkages

The Central Bureau of Statistics (BPS) has completed the statistical work of an input-output table for the economy for the year 1971 with 66 subsectors. The input-output table shows a great deal about the structure of the economy and various useful conclusions can be derived from it. Table 2.14 shows the backward and forward linkages of the Indonesian industry. The backward linkages show the extent to which the industry buys material inputs from other industries while the forward linkages show to what extent the industry sells its products to other industries. The development of industries that enjoy high linkages may create favourable conditions for the development of those industries to which they are linked either backward by purchasing or forward by providing inputs.

1/ World Bank: Problems and Prospe : for Industrial Development in Indonesia, Vol I, page ii, May 25, 1978.

Table 2.14. Backward and forward linkages in Indonesian industry

Name of industry	Backward linkage a/	Forward linkage b/
Logging and sawmills	.29	.57
Coal and metal mining	.30	.37
Petroleum and natural gas	.06	.37
Other mineral quarry	.13	.84
Processed food	.75	.43
Beverages	.64	.65
Cigarettes	.67	.09
Spinning industries	.70	.95
Textile, leather, apparel	.69	.30
Wood and wood products	.72	.53
Paper and paper products	.46	.62
Fertilizers and pesticides	.73	.99
Chemicals	.63	.54
Petroleum refining	.66	.66
Rubber products	.65	.91
Non-metal minerals	.44	.89
Cement	.70	1.00
Iron and steel	.75	.93
Non-ferrous metals	.64	.68
Prefabricated metal products	.65	.68
Machinery	.56	.09
Transport equipment	.47	.50
Other manufacturing	.62	.32

Source: World Bank, Problems and Prospects for Industrial Development in Indonesia, Vol. I, May 1978, p. 97. Derived from BDP 66 Order Input-Output Table.

a/ Backward linkage is the ratio of intermediate purchases of inputs to total inputs.

b/ Forward linkage is the ratio of intermediate sales of output to total domestic production.

The information given in Table 2.14 may be regrouped according to the degree of forward and backward linkages and their combination (Table 2.15). Accordingly there are six industries enjoying both high backward and forward linkages, e.g. spinning industries, fertilizer and pesticides, petroleum refinery, rubber products, cement, and iron and steel basic industries. The development of these industries would appear to be of high priority. Four industry groups enjoy high backward and low forward linkages while five industries enjoy high forward and low backward linkages. Noteworthy are the eight industries exhibiting low linkages in both directions, including, inter alia, machinery, chemicals and paper products. These industries usually enjoy high linkages in other countries. In Indonesia the situation may be explained by the fact that imports have substituted domestic production though this has most certainly changed since 1971.

Various other statistical indicators can be derived from the input-output table. In this regard two indicators seem important, e.g. the labour intensity of production in different industries and the relative importance of imports in those industries. The first indicator illuminates the range of potential opportunities for increasing employment, while the second indicator illustrates whether import substitution could be achieved in some of these industries. Table 2.1 contains three indicators of labour intensity (column (1) through (3)), e.g. the ratio of wage costs to total cost and to value added and the ratio of value added to domestic output. These are simple measures of labour intensity though all of them have conceptual defects. Taking the indicators in column (1) and (2), the highest labour intensity ratios are found in machinery industries, wood products, paper and printing, non-metallic mineral products, manufacture and repair of transport equipment, fertilizers and pesticides, textiles, leather and apparel.

In regard to import substitution the indicator in column (4) shows imports as a percentage of domestic output. The Table shows ten industries for which imports were more than 50 per cent of domestic output and three industries for which imports were more than 500 per cent of domestic output. The list is headed by machinery industries, iron and steel basic industries, and fertilizers and pesticides. However, it

Table 2.15. Combination of backward and forward linkages in industry [a/]

High Backward-High Forward		
No.	35	Spinning Industries
	39	Fertilizer and Pesticides
	41	Petroleum Refinery
	42	Rubber Products
	44	Cement
	45	Iron and Steel Basic Industries.
Low Backward-Low Forward		
	21	Logging and Saw Mills
	24	Coal and Metal Ore Mining
	25	Petroleum and Natural Gas Mining
	38	Paper and Paper Products and Printing
	40	Chemical Industries
	48	Machinery, Electrical Appliances, Apparatus and Accessories
	49	Manufacture and Repair of Transport Equipment
	50	Other Manufacturing Industries, not elsewhere classified.
High Backward-Low Forward		
	27	Processing and Preserving of Foods
	34	Cigarettes
	36	Textile, Leather and Wearing Apparel
	37	Wood and Wood Products.
Low Backward-High Forward		
	26	Other Mineral Quarrying
	33	Beverage Industries
	43	Mineral Products
	46	Non-Ferrous Basic Metal Industries
	47	Prefabricated Metal Products.

Source: World Bank, Problems and Prospects for Industrial Development in Indonesia, Vol I, May 1978, page 97. Derived from BPP 66 Order Input-Output Table.

a/ Dividing line between high and low = .65.

Table 2.16. Labour intensity and import dependence in Indonesian industry, 1971

	Wages and salaries as percentage of total cost	Wages and salaries as percentage of value added	Value added as percentage of domestic output	Imports (at landed cost) as percentage of domestic output	Imports as percentage of value added
Logging and sawmills	14.2	20.0	70.8	-	-
Coal and metal ore mining	17.4	24.9	69.8	1.8	2.6
Petroleum and natural gas mining	2.5	2.7	94.0	.5	.5
Other mineral quarrying	42.6	48.9	87.2	4.9	5.6
Processing and preservation of food	4.4	17.7	25.0	69.3	277.2
Beverages	11.3	31.2	36.3	8.8	24.2
Cigarettes	4.5	13.8	32.7	-	-
Spinning industries	10.9	36.8	29.6	83.0	280.4
Textile, leather, apparel	12.0	38.3	31.4	14.9	47.4
Wood and wood products	12.2	43.1	28.4	5.0	17.6
Paper and printing	18.7	34.4	54.5	69.9	128.2
Fertilizers and pesticides	13.4	49.6	27.0	632.4	2,342.2
Chemicals	10.9	29.7	36.8	74.6	202.7
Petroleum refining	3.3	9.8	33.5	4.7	14.0
Rubber products	9.7	27.8	34.9	46.5	133.2
Non-metallic mineral products	16.4	29.1	56.3	28.5	50.6
Cement	7.7	25.3	30.3	53.6	176.9
Iron and steel	10.2	39.3	26.1	691.0	2,647.5
Non-ferrous metals	2.2	6.1	36.7	38.7	105.4
Prefabricated metal products	12.8	35.2	36.4	52.9	145.3
Machinery (electrical and non-electrical)	22.1	50.2	44.1	1,774.7	4,024.3
Manufacturing and repair of transport equipment	17.1	32.2	53.0	31.3	59.0
Other manufacturing	15.9	41.8	38.0	80.3	211.3
All Sectors	10.2	29.2	35.0	7.1	203.3

Source: World Bank: Problems and prospects for industrial development in Indonesia, Vol. I, 25 May 1978, page 96.

should be noted that domestic output in some of these industries has expanded significantly since 1971 and that the situation therefore is different today. Yet the Table clearly indicates the heavy reliance upon imports while the figures provide only a starting point for more detailed analysis. It is essential to update and refine the input-output table in order to use the model more efficiently in future planning exercises.

Summary

In summary, Indonesia's industrialization process exhibits the following broad structural features and characteristics: (i) a comparatively small, but "high-growth" manufacturing sector, which, however, has been faced with declining growth in recent years: (ii) predominance of consumer-goods industries, primarily food, beverages, tobacco and textiles; (iii) the lagging behind of some important industries in the field of capital goods (machinery equipment), several groups of intermediate products and some consumer goods industries which have left a gap in the industrial structure; (iv) domestic market orientation founded upon a large population especially in Java; (v) uneven regional distribution of industry, with heavy concentration of industrial output, employment, foreign and domestic investment in Java, especially Jakarta: (vi) a large handicraft and small-scale industry sector which have important employment opportunities but which have not expanded sufficiently to match the need for employment creation: (vii) a comparatively underdeveloped processing sector primarily located in the resource-rich Outer Islands; (viii) urban-oriented growth with heavy emphasis upon the "organized" industrial sector which, if unchecked, will aggravate existing disparities in income and employment; (ix) growing "dualism" between the traditional small-scale industry sector and the capital-intensive, foreign technology-oriented large- and medium-scale industries; (x) heavy reliance on imported capital goods and imported raw materials for domestic manufacturing industries, implying wide ranging opportunities for further import substitution and sensitivity to international inflationary trends, (xi) a relatively insignificant, yet fast expanding export manufacturing sector, and (xii) a slowing down of foreign and domestic investment projects in manufacturing in recent years.

Chapter III

COMPARTSON OF PLANNED INDUSTRIAL DEVELOPMENT TARGETS WITH RECENT ACHIEVEMENTS

Repelita I, main targets and achievements

The First Five-Year Development Plan - Repelita I - covered the period from 1 April 1969 to 31 March 1974. The Plan concentrated on agriculture, particular food production, and infrastructure. Industrial priorities were primarily confined to sectors supporting agriculture, such as fertilizers, agricultural machinery and processing of agricultural products. Emphasis was laid on improvement of the tax structure and, unlike its predecessor, the Plan encouraged foreign investment. Regulations were frequently changed in order to attract and regulate private foreign investment. During the Plan period substantial improvements were made in the rehabilitation of infrastructure, laying the foundation for further development of the economy. GDP rose at an average rate of 8.5 per cent. The share of the agricultural sector in GDP fell from 38.7 per cent to around 33.2 per cent while the share of manufacturing rose from 6.5 per cent to 8.3 per cent (1970-1974). The agricultural sector grew at an average annual rate of 4.7 per cent, primarily due to increased rice production, while the manufacturing sector grew at 13.7 per cent annually. Gross capital formation increased at 22.5 per cent annually and its share of GDP was raised from 9.9 per cent to 14.4 per cent following significant inflow of foreign investment.

Repelita II, main targets and achievements

In the Second Five-Year Development Plan, Repelita II, which covered the period from 1 April 1974 to 31 March 1979, the overall economy was expected to grow at an annual rate of 7.5 per cent, population at 2.3 per cent and per capita GDP at 5.2 per cent. The projected overall growth of population of 15.5 million was expected to place great demand on national productive resources, in particular the industrial sector, which was expected to provide 22 per cent of the total projected employment increase or nearly 1.2 million new jobs. The Second Plan envisaged a rapid expansion of the manufacturing sector by between 11-13 per cent annually, leading to a planned increase in the share of manufacturing in GDP from 9.8 to 12.6 per cent. The agricultural sector was expected to grow at 4.6 per cent annually, implying a decline in the share of agriculture in GDP from around

40 to 35 per cent. Overall investment growth was projected at 13 per cent annually leading to a rising share of gross investment in relation to GDP from 17.7 to 23 per cent commensurate with a significant rise in the share of public investment from 30 to 46 per cent of total investement. Exports were forecasted to grow at 23.5 per cent annually; their share of GDP from 16.9 to 20.8 per cent. A significant expansion of imports was envisaged. Their share of GDP was expected to increase from 19.9 to 21.9 per cent. Imports of consumer goods were expected to fall from 31.9 to 16.6 per cent of all imports, reflecting the results of import substitution efforts and the expected pattern of industrial growth. A rise in total savings relative to GDP from 17.7 to 23.4 per cent was envisaged. The basic strategy of the plan was to reduce the dependence on foreign investment which was expected to fall from 39 to 22 per cent of total investment, concomitant with a corresponding rise in domestic savings from 61 to 78 per cent. Finally, the industry and mining sectors were expected to receive around 3.5 per cent of all government development expenditure, a substantial reduction from 12.3 per cent in Repelita I.

The preparation and implementation of Repelita II was thrown somewhat out of its original framework by the oil crisis and the subsequent world recession. For Indonesia, as a major oil producer, this has had a two-pronged effect. On the one hand, Government revenue and spending has increased far above the original target. On the other hand, restrictions were placed on the growth of certain non-oil commodity exports and manufacturing following intensified international competition and a slowdown of world market demand. As a result some of the original Repelita II targets were unrealistic and the government was compelled to respond in a flexible way to the emerging world economic climate.

Table 3.1 summarizes planned key targets in Repelita II compared to achievements during Repelita I. Generally speaking there is a clear tendency towards the planning of lower rates of growth in Repelita II compared to what was achieved under Repelita I except in regard to exports. The planned rate of growth of manufacturing was reduced from 13.7 per cent achieved during Repelita I to 11 - 13 per cent in Repelita II. Information on the rate of implementation of Repelita II is available for the period up to 1977, the third year of the Plan period. In this initial period of the Plan there was a drastic set-back for Indonesia's development efforts in particular in agriculture and exports in 1974/75. In fact, there was a short-

Table 3.1 Comparison of Planned Key Targets and Achievements in Repelita I, II and III.

(percentage)

Variable	Repelita I 1969/70-1973/74 Achievements [a]	Repelita II 1974/75-1978/79 Plan-target [b]	Repelita III 1979/80-1983/84 Plan-target [c]	Actual achievements [a] Repelita I (1969/70-1973/74) 1971-76	1970-71	1971-72	1972-73	1973-74	Repelita II 1974-75	1975-76	1976-77	1977-78	1978-79
GDP, annual growth	8.5	7.5	6.5	8.0	6.0	9.4	11.3	7.8	5.0	6.9	7.5	8.0 [d]	
GDP per capita annual growth	5.7	5.2	4.4	5.4	3.4	6.6	8.3	5.3	2.3	4.2	5.1		
Manufacturing, annual growth	13.1	11 - 13	11	13.7	13.7	15.1	15.3	16.2	12.3	9.7	11.9		
Agriculture, annual growth	4.7	4.6	3.5	3.8	3.7	1.6	9.3	3.7	0.01	4.7	3.4		
Gross Investment [e] annual growth	22.5	13.0	9.7	15.1	21.7	19.0	17.1	19.2	14.6	6.0	5.1		
Total exports, annual growth	18.9	23.5	11.2	9.9	12.2	26.1	20.6	3.6	-9.7	12.5	10.7	20.0 [d]	
Total imports, annual growth	22.0	-	-	21.7	9.5	26.8	42.2	26.8	7.9	8.1	0.9	8.0 [d]	

Source : a/ UNIDO, based on data computer print-outs supplied by the UN Statistical Office, N.Y.

b/ Repelita II, The Second Five Year Development Plan

c/ Repelita III, The Third-Year Development Plan

d/ Business Asia, November 4, 1977 (forecast)

e/ All achieved figures refer to Gross Fixed Capital Formation

fall in the implementation of many key targets (Table 3.1). The manufacturing sector expanded rapidly at a rate of 13.7 per cent annually from 1970–1976. In 1975 and 1976 the rate of growth declined to 12.3 per cent and 9.7 per cent, respectively, though still within the plan target in the former year. The Government has now surmounted the main problems of the Pertamina crisis; the balance of payments has been strengthened; policies of domestic financial restraint have successfully reduced inflationary pressures; and the world economy has recovered somewhat from earlier recession. A foundation was therefore laid for resumption of planned growth of the Indonesian economy in a generally stable environment although uncertainties in the world economic situation still prevail. By surmounting the major problems which faced the Indonesian economy during the mid-1970s, the Government is now in a position to direct its full focus on achieving its development objectives. Recent forecasts seem to reflect this optimism.

At the level of individual branches of industry, Repelita II specified the planned rates of growth based upon investment proposals which were before the Investment Co-ordination Board. The planned growth of individual branches of industry are summarized in Table 3.2. The estimates do not include small-scale and cottage industries, nor public industries such as fertilizers and petrochemical industries. Two trends seem to emerge from the pattern of planned targets. The first one is that rapid expansion is envisaged for some of the resource-based industries like leather, paper, chemicals, non-metallic minerals and wood industries. Secondly, some of the traditional important industries like food processing, textiles and rubber, which accounted for around three-fourths of total manufacturing value added in 1973, were all expected to grow less than the average of the manufacturing sector. Thus, a new and more diversified structure of the manufacturing sector seems to be emerging from the Second Development Plan.

Table 3.2 Repelita II Planned annual growth of different branches of industry 1974 - 1978 (fiscal year)

(Percentage)

Groups of Industry	Planned annual growth
Food industry	10.4
Textile industry	12.0
Leather products	53.1
Wood products	18.2
Paper industry	38.0
Chemicals and pharmaceuticals	23.4
Rubber processing	8.1
Non-metallic minerals	21.1
Metal products	24.1
Equipment industry	30.6
Total industry	11 - 13

Source: Repelita II.

Based upon estimates of 1974 production and applying planned growth rates, projections of industrial output for selected manufacturing products have been estimated for the period 1974 to 1978, as indicated in Table 3.3. Available statistics do not permit comparison of planned targets with actual achievements except for a few products categories in the first year or two of the plan period. According to the limited information which is available actual achievements exceeded plan targets in the case of motor-vehicles, motor cycles, TV's, car tires and textiles while the production of cement, weaving yarn and paper fell short of planned targets. A more disaggregate pattern of industrial output and diversification covering the period 1970-75 is presented in the Annex.

Table 3.3 Repelita II Industry Plan Projections, 1974 - 78 (fiscal years)

	1974[a]	1975[a]	1976[b]	1977	1978	Average annual growth 1974-1978 (percentage)
Textiles (million meters)	930 (974)	990 (1,017)	1,060 (1,247)	1,150	1,250	7.7
Weaving yarn ('000 bales)	486 (364)	541 (445)	621	746	898	16.6
Paper ('000 tons)	47 (43)	51 (46)	93	117	201	43.8
Fertilizers nitrogen ('000 tons)	110	207	400	584	981	72.8
Fertilizers P_2O_5 ('000 tons)	-	-	24	77	177.0	-
Car tires (million units)	1.2 (1.7)	1.6 (2.4)	2.4	2.6	2.7	14.0
Motorcycles tires (million units)	1.9	2.2	2.4	2.6	2.8	10.2
Cement ('000 tons)	970 (829)	1,650 (1,089)	3,125	4,363	5,135.0	51.7
Glass ('000 tons)	27 (35)	33 (31)	45	46	46	14.2
Bottles ('000 tons)	61	63	71	81	85	8.6
Steel sheets ('000 tons)	-	-	100	150	150	-
Steel pipes ('000 tons)	35	50 (97)[b]	60 (107)	75	100	30.0
Steel other ('000 tons)	200	250	350	550	650	34.3
Agricultural equipment ('000 units)	4,600	5,000	5,700	6,300	6,300	8.2
Irrigation pumps ('000 units)	2,000	3,000	10,000	13,000	13,000	59.7
Small electric motors (hp)	14,000	16,000	18,000	18,000	22,000	12.0
Car batteries ('000 units)	1,100	1,210	1,330	1,460	1,600	9.8
TV ('000 receivers)	33 (135)	35 (166)	36 (212)	38 (525)	40([illegible])[c]	4.9
Radios ('000 receivers)	2,000	2,100	2,400	2,500 (1,090)	2,700(1,[illegible])[c]	7.8
Cables (tons)	5,000	6,000	7,000	8,000	9,000	15.8
Motor vehicles ('000 units)	35 (66)	42 (80)	50	60	70	18.9
Motorcycles ('000 units)	180 (251)	250 (300)	350	450	575	33.7

Source: Derived from Repelita II and estimates of 1974 production.

a/ Figures in parenthesis indicate actual achievements.

b/ Source: Asia Research Bulletin, 31 October 1977, page 378.

c/ Source: Asia Research Bulletin, 3 May 1979.

Repelita III, main targets

The Third Five-Year Development Plan - Repelita III - covers the period 1 April 1979 to 31 March 1984. The Plan, as its two predecessors, is an indicative plan which provides directions of the intended development process and which stipulates the scale of priority ordering. The detailed implementation of its programmes and projects is expected to be spelled out in the Government annual budget. Repelita III is a continuation of its two predecessors. Whereas Repelita I was dealing with stabilisation, rehabilitation and the first stages of development, Repelita II was designed to deal with the problems of expanding employment opportunities, raising level of income, a more equitable distribution of income, a more even distribution of the gains of development among the various regions, provision of adequate supplies of basic human needs, improvement in the nutritional standard of the population and enhancement of the quality of life. In Repelita III these problems will continue to be treated as central problems of development, and priorities have been set accordingly. The essential goals of Repelita III are to raise the living standards and levels of knowledge of the Indonesian people, to strive for a more equal and just distribution of welfare for the whole population and to lay a strong foundation for the next stages of development.

During Repelita III the overall economy (GDP) is expected to grow in real terms at an annual rate of about 6.5 per cent (Table 3.4). With expected population growth of about 2.0 per cent per annum, real per capita gross domestic product GDP will increase by 4.4 per cent per annum. It is expected that with a 6.5 per cent average growth rate of GDP a total of at least 6.4 million new jobs will be created, which corresponds to the projected growth of the labour force. The most rapid rate of expansion will take place in the industrial sector which is expected to grow at 11 per cent per annum. The transport and communication sector follows closely behind at about 10 per cent per annum while construction and other sectors outside agriculture and mining are projected to grow at 9.0 per cent and 8.1 per cent respectively. Simultaneously, the agricultural sector is expected to grow by around 3.5 per cent and mining by about 4 per cent per year. The main problems facing the agricultural sector are seen to be:

the domestic food supply gap, slow growth of commercial crop production especially in the smallholder sector, inadequate marketing and infrastructure, resource depletion and inadequate institutions.

The associated structural change in the economy will imply that the share of agriculture in GDP is expected to decline from 31.4 per cent in 1978/79 to about 27.2 per cent in 1983/84 and that of mining from 17.9 per cent to 15.9 per cent. On the other hand, the share of industry in GDP is expected to increase from 10.2 per cent to 12.6 per cent as shown in Table 3.4. It is expected that the structural change will constitute another step towards achieving a more balanced economic structure and a much broader and stronger basis for future self-generating growth.

Table 3.4 Projected growth of Gross Domestic Product by main sector

	Projected average annual growth rate	Projected sectoral composition of GDP	
	Repelita III	1978/9	1983/4
Agriculture	3.5	31.4	27.2
Mining	4.0	17.9	15.9
Industry	11.0	10.2	12.6
Construction	9.0	4.9	5.5
Transport, communication	10.0	4.6	5.4
Other	8.1	31.0	33.4
Total	6.5	100.0	100.0

Source: Rancangan Rencana Pembangunan Lima Tahun Ketiga 1979/80-1983/84.

The overall investment resources required to achieve the economic and social development objectives of the plan will have to increase by not less than 9.7 per cent per annum. Total gross investment is provisionally estimated at 21.2 per cent of GDP in 1978/79 and is projected to increase to around 24.6 per cent in 1983/84. Out of this total investment, 79 per cent will be mobilized domestically and 21 per cent is expected to be provided through foreign capital inflow. Central Government investment through the development budget is expected to account for 51 per cent of total investment in Repelita III, as compared to about 54 per cent

in Repelita II. This decline in the share of government in total investment is due to the prospects that oil revenues will not increase as fast as they did during Repelita II. To finance the overall investment requirements the share of total savings in GDP is expected to increase significantly with about 79 per cent of total savings to be mobilized domestically while 21 per cent to be secured from foreign sources. A significant proportion of total savings will be provided by the Government, 29 per cent, which are expected to increase by 14.2 per cent per annum.

The balance of payments projections of the Indonesian economy are based on the assumption of reasonable favourable adjustments in the existing world imbalance in regard to world inflation, international monetary disturbances, instability in world commodity markets and tendencies towards protectionism in developed countries. The projections are based on the assumption of a steady growth in world demand for Indonesia's exports and a modest increase in both export and import commodity prices. Total exports are expected to increase at an average annual rate of increase of 11.2 per cent. During the same period net oil and liquified natural gas (LNG) exports will increase at a rate of 6.4 per cent, non-oil export by 16.5 per cent. This implies that by the end of 1981/82 non-oil exports are expected to exceed the net export value of oil and LNG and amount to 54.8 per cent in 1983/84. Exports of timber products and non-traditional commodities including industrial products are expected to grow at a higher rate than the average of non-oil exports. Mining exports will increase at a rate of 33.5 per cent per annum due to the development of new mineral products like nickel matt , nickel metal, and aluminium. Due to the development of new industrial products, such as cement and fertilizer, it is expected that exports of non-traditional commodities will expand at an annual rate of 22.2 per cent.

In order to allow for a continuous growth of productive capacity and investment activities, a significant expansion of imports of capital goods and raw materials of 14.4 per cent and 14.9 per cent annual growth respectively is envisaged. This is expected to lead to a rise in the share of capital goods and raw materials in total imports from, respectively, 46.9 per cent and 31.0 per cent in 1979/80 to 50.5 per cent and 33.9 per cent by the end of the plan period. Food import requirements are expected to rise by an average of 10.5 per cent yearly while imports of consumer goods are expected to rise by 3.0 per cent annually.

The planned key targets of Repelita II and Repelita III compared with recent achievements were summarized in Table 3.1. As mentioned earlier there is a clear tendency towards planning of lower rates of growth in Repelita II compared with wnat was achieved under Repelita I except in regard to exports and also agriculture. This trend towards lower planned growth rates has been continued in Repelita III where all key targets are lower than those planned under Repelita II. The planned annual growth of manufacturing was reduced to 11 to 13 per cent in Repelita II from 13.7 per cent achieved in Repelita I. In Repelita III the growth target of manufacturing has been reduced to 11 per cent.

Finally mention should be made that several recent developments provide Indonesia with the opportunity to improve significantly the basis for economic and industrial development planning. These include: (i) the completion of an industrial census (1974-1975), improved in both coverage and reliability; (ii) the preparation of a macro-economic long-term perspective "moral" of the economy up to year 2000, that may be adopted to short-term needs and planning purposes and (iii) the preparation of an input-output table that can be used to expand on the macro-economic analysis and on industrial planning. These three developments could be further integrated with a view to providing Government planning officials more insight into various short- and long-term growth scenarios; the potential impact of alternative policies and sectoral projections.

Chapter IV

MAIN FEATURES OF INDUSTRIAL DEVELOPMENT OBJECTIVES; STRATEGIES; POLICIES AND INCENTIVES

Objectives and strategies

The overall key goals of the Third Development Plan - Repelita III - are threefold; to raise the living standard and levels of knowledge of the Indonesian people; to strive for a more equal and just distribution of welfare for the whole population; and to lay a strong foundation for the next stage of development. With a view to achieving these goals, the Plan stipulate that all development policies should embody the following "Triology" of Objectives (Triology Pembangunan) which are closely interconnected and mutually supporting:

i) a more equitable distribution of development and its gains, leading to the welfare of the entire population;
ii) a sufficiently high economic growth;
iii) a sound and dynamic national stability.

Great emphasis is given in the Plan to the equity objective which the Government expects to be reflected in every development policy. With a view to achieving the equity objective, the Government intends to undertake policies and programmes with the following overall aims in view:

i) an equitable distribution of access to means of fulfilling basic human needs, especially food, clothing and shelter;
ii) an equitable distribution of access to educational and health services;
iii) an equitable distribution of income;
iv) an equitable distribution of employment opportunities;
v) an equitable distribution of access to business activities;

vi) an equitable distribution of access to participation in development, particularly for the young generation and women;

vii) an equitable distribution of development efforts throughout the various regions of the country;

viii) an equitable distrubution of opportunities to obtain justice.

In the light of these more general objectives referring to the economy as a whole, the chief objectives of industrial development plan are: to create employment; to fulfil basic human needs in sufficient quantities at reasonable prices; to produce finished and semi-finished goods to meet domestic demand as well as foreign markets; to process raw materials to meet domestic industrial requirements and to produce goods needed by other sectors. Further, the Plan stipulates that industrial development should contribute to a more balanced regional develoment and a more efficient use of natural resources without endangering the environment.

In the past, the overall emphasis of industrial strategies have been to develop: industries which support and complement the agricultural sector either by inputs for agriculture or processing of agricultural products; industries earning foreign exchange or saving foreign exchange through import substitution; industries processing local raw materials; labour intensive industries and industries promoting regional development.

Today the Indonesian manufacturing sector is primarily oriented towards the production of consumer goods for the domestic market. The present structure of the manufacturing sector has mainly been attributed to past industrialization strategies placing heavy emphasis upon import substitution industries. As a result, the domestic market has become highly protected by both import control and high tariffs. The combination of exchange rate policies, fiscal incentives policies and inflationary trends have induced a high degree of capital intensity in the manufacturing sector.

The present industrialization strategy reflects a growing awareness of these problems and active measures are being considered aiming at a more labour intensive structure of the manufacturing sector. Recent industrialization strategy has consisted basically of three major priority areas:[1/]

i) investments well under way in large-scale capital intensive projects being highly dependent upon foreign capital and technology and related to the processing of national resources for exports (e.g. mineral ore smelters, liquified natural gas plants) or to the domestic production of intermediate products (steel, cement, fertilizers, pulp and paper);

ii) medium to large-scale projects in particular those aimed at developing a non-traditional export base and allowing for more linkages with existing industries;

iii) small-scale industries which address the objectives of employment generation, regional dispersal of investment and production closer to raw material sources and markets. The development of small-scale industries has in the past been seriously impaired by resource constraints but it is expected that when the resources requirements for the first two groups of projects have been satisfied the prospects for developing the small- and medium-scale industries will improve.

Policies and incentives

4.6. Basically, over the long-term, heavy reliance is being placed on industrialization in achieving equity and growth targets. There has been a re-thinking under way within the Government in regard to modifying the past policy of promoting large-scale industries with greater employment effects; wider geographical impact and stronger intra- and inter-industrial linkages.

1/ World Bank: Indonesia - Appraisal of a Loan to the Republic of Indonesia for Industrial Financing through the P.T. Private Development Finance Company of Indonesia, January 7, 1977, Annex I page 4.

Rapid expansion has been envisaged for those industries which process domestic raw materials, effect import subsitution or are export-oriented. Import policies have assigned priority to capital goods and industrial raw materials. Priority has also been given to regional development programmes to achieve a more balanced pattern of regional growth. Moreover, policies relating to foreign and domestic investment will be aimed at encouraging the growth of indigenous ("pribumi") industries, especially in the small-scale industry sector.

In November 1978, the Government devalued the rupiah by 50 per cent (effective devaluation vis-à-vis the dollar 33.6 per cent). The devaluation was necessitated by the gap between the relative prices of internationally traded goods and local products. Within the manufacturing sector the need had become apparent to move from the purely import-substitution strategy of the past towards more export-oriented industrial development. The devaluation was expected to lead to a decline in imports especially of non-essential consumer goods and certain finished goods and to a rise in industrial activities which produce goods for exports. There is some evidence, however, that a price-wage spiral may have developed, and, depending upon the monetary policy, there is a danger that inflation may dissipate the effects of the devaluation. To reduce the unfavourable effects of the devaluation, the Government reduced import duties for raw materials intended for use in export production. The Government also issued guidelines for maximum price increase authorized for a wide range of industrial goods. Nevertheless, the sharp price increases of imported industrial raw materials was expected to affect unfavourably a number of industrial enterprises especially in textiles, wood industry, small-scale and home industries.[1/] While the devaluation was considered one way of boosting Indonesia's export of manufactures, and to uplift the non-oil economic sector, it has not removed all obstacles to the promotion of labour-intensive, export-oriented industries which do not enjoy the same degree of protection as import substitution industries.

1/ Asia Research Bulletin, 31 March 1979.

The post-devaluation price spiral indicates that inflation could have reached 20 per cent in 1979. The effect of the devaluation upon non-oil exports has reportedly been an increase in Indonesia's export of textiles, fertilizers and cement. 1/ A price increase has also been noted with regard to industrial raw materials and the Governemnt is therefore reportedly contemplating further export controls on certain raw materials. 2/ While the devaluation has opened up new opportunities for export development, concern has been expressed that with little experience export markets and facing multiplicity of administrative regulations, manufactures may continue to be inward-looking. Further, in the absence of any strong pressures for greater efficiency, costs may drift upwards and erase any advantage secured by the devaluation. 3/

Apart from these more general economic policies which effect industry, the main policy instruments used for promoting industrial development in Indonesia are: investment incentives policies granted by the Investment Co-ordinating Board (ICB) under the Foreign (1967) and Domestic (1968) Investment Laws; protective policies applied both through the tariff system and through direct import controls; policies related to industrial co-operation between foreign and national companies; policies related to industrial employment of small-scale industries; regional development; and public and private sector. These industrial policies are reviewed in the following.

The main elements of the investment incentives system include tax priviledges, reduction or exemption from import levies and accelerated depreciation allowances. The main thrust of the Government's investment policy, as reflected in the priorities list, is to reduce areas open to foreign investment and to encourage small-scale domestic

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1/ Asia Research Bulletin, 31 July 1979.

2/ Anne Booth and Amina Tyabji: Survey of Recent Developments, Bulletin of Indonesian Economic Studies, July 1979, p. 12.

3/ Howard Dick: Survey of Recent Developments, Bulletin of Indonesian Economic Studies, March 1979, p. 27.

investment. Priority is given to foreign investment only to the extent domestic investors have been unable to seize investment opportunities either due to shortcomings in capital, skill or technology. While foreign investment is recognized as being essential for development, it is generally viewed as being a temporary contractual relationship bringing in new technology and promoting the development of domestic skill. The new investment policy will allow the Government to be more selective in permitting foreign capital to enter into the country thereby reflecting the complementary nature of foreign capital investment while stressing domestic capital investment as the backbone of the Indonesian economy.

A preview of Indonesia's investment priorities reveals that the Government's foreign investment policies are becoming increasingly restrictive. As a result foreign investment in Indonesia has dropped precipitously since 1975 and is likely to continue to do so in the future. In an effort to clarify its investment policy, and to untangle complicated and time-consuming investment procedures, the Indonesian Government introduced in early 1977, a list of investment priorities (DSP) involving foreign as well as domestic investment. A predominant feature of this new investment policy is the differentiation between foreign and domestic investments and the differentiation between incentives according to the level of priority. Another important feature is the specification of locational requirements for new investment and of involvement of weak economic groups. In this connexion it has been suggested that the approval process of investment could be decentralized and made more automatic and that Indonesia can non afford a more "open" economy in terms of automatic investment approvals since there may be positive social gains from pursuing a relatively open-door policy on new investment applications. 1/

1/ World Bank: Problems and Prospects for Industrial Development in Indonesia, Vol. I, 25 May 1978, p. V.

The Third Development Plan - Repelita III - provides for programmes of Government support through the introduction of a more clearly defined system of incentives coupled with straightforward licensing procedures. The system of incentives involves among other things, taxation policies, tariffs and credit facilities. While the Plan does not elaborate the details of the policy instruments, it does indicate in general terms of Government commitments to the policy. This will enable the Government to make the necessary adjustments and improvements during the Plan period. With a view to improving the climate for industrial development, the licensing procedures, which have been a bottleneck in the past, will be simplified. A thorough review of existing regulations will be made and special attention given to the speed of processing and the number of levies. In addition, procedures of the Investment Board will also be simplified.

In early 1979, it was reported 1/ that the Government was planning to adjust a number of investment policies to increase total capital expansion and to channel funds directly into priority sectors in Repelita III. These adjustments may include, inter alia: incentives for export industries especially for bonded industrial export zones; measures to encounter labour-intensive investments through some form of tax compensation based upon the number of jobs created by a given investment; a bigger role for regional governments in investment to provide more facilities for local industry and provide information on investment needs and opportunities; revision of the Investment Board's priority scale system for investors which was introduced in 1977; and wider use of competitive bidding and tenders in approving investments in certain very basic industries.

A major policy instrument used for promoting import-substitution industries in Indonesia has been the use of protection against imports through import duties and import restrictions. Though these measures were originally envisaged in cases where imports present unfair competition, it has become common practice for many industries to ask for protection from the Government and to get it. The justification

1/ Asia Research Bulletin, 31 March 1979.

for protection has primarily been fear of international competition on the Indonesian market. Imports are divided into four groups classified according o rates of imported duty:

i) very essential items, mainly basic foodstuffs, some raw materials, medicines, and agricultural and industrial machinery and equipment, on which no duty or very low duties are applied;

ii) essential items including raw materials and spare parts for industry, on which there are low rates of duty;

iii) less essential items, and goods which might be competitive with local products with medium to high duties;

iv) mainly luxury goods on which high duties are imposed.

Tariff normally range up to 100 per cent for less essential products and those in competition with domestic industry. On some luxury goods, however, an additional import surcharge of 50 to 600 per cent is levied on the duty. The average duty rates were 52.3 per cent for consumer goods (35 listings), 22.5 per cent for intermediate goods (36 listings) and 18.9 per cent for capital goods (42 listings). There are other taxes that apply to a wide range of imported products; including an import sales tax of 5.20 per cent of the c.i.f. price plus important duties surcharges;and a tax on imports collected from the importer and the next user of the imported commodity. The protective duties are generally high, for example in the engineering industries, the effective rates of protection have been estimated at 300 - 500 per cent. 1/ There seems little doubt that on an overall basis, the system of customs duties is causing distortions in the use of resources in industry. However, it has not been determined whether the tariff system plus corollary arrangements on banned imports and the administrative practices have worked to the disadvantage of smaller-scale industries. 2/

1/ Engineering industries in Indonesia by R.S. Sharma, Senior Advisor on Industrial Policies (UNIDO) (INS/74/012), December 1977, p. 5.

2/ World Bank: Problems and Prospects for Industrial Development in Indonesia, Vol. I, May 1978, p. vii.

The protection granted to domestic industries has resulted in a pattern of import substitution, which apart from having little labour absorbtion, has been characterized by inefficiency, excess capacity and high domestic costs of production and has also left little or no incentives for enterprises to improve quality or operations. Furthermore, over-protected industries with surplus capacities, low productivity and high prices are finding it very difficult to compete on the world market, despite the advantages of the recent devaluation. The Government has recognized that the policy of restricting imports is not conducive to a healthy development of industry and could become a serious disadvantage in a wider ASEAN context. The Government has therefore decided to impose no more import restrictions but is now following a policy of making imports expensive either through import duties or through import financing.

Some important investment regulations were amended in early 1974, affecting industrial co-operation between foreign and national companies. According to these policies, new foreign investments are allowed only in the form of joint ventures, on the understanding that the Indonesian share be increased to 51 per cent within a specified period, usually ten years. These policies were also aimed at increasing the number of Indonesians to be employed in foreign or joint-venture enterprises. Domestic investment policies were also revised to ensure greater participation by "indigenous" Indonesians and effective early 1974, only indigenous or "pribumi" [1/] enterprises are allowed access to medium-term credit facilities under the INVESTASI programmes. In early 1978, these policies related to co-operation between foreign and national companies were further revised to ensure greater participation by Indonesians. According to these policies, foreign companies established in Indonesia are required to co-operate with domestic national companies and are obliged to hand over their trade and sales activities to national companies, while the foreign company is allowed to engage in production only. The rationale behind this policy is to help build up indigenous capacities.

1/ Indigenous or "pribumi" enterprises are those companies in which indigenous entrepreneurs control either 75 per cent of equity, or 50 per cent of equity or key management positions.

Accordingly, 15,000 - 16,000 foreign companies are to transfer their businesses to "pribumis" [1] affecting 6.6 per cent of all enterprises operating in Indonesia. [2] As a part of this policy all foreign enterprises are required to provide a training scheme designed gradually to replace expatriate staff by Indonesians.

The Government has also established various other policies and regulations affecting industrial co-operation related to investment protection schemes; protection against nationalization and repatriation of earnings. In regard to the Intergovernmental Investment Protection Agreements, Indonesia is party to the Convention for the Settlement of Investment Disputes between States and Nationals of other States, and investment guarantee treaties have been concluded with Belgium, Canada, Denmark, France, the Federal Republic of Germany, Netherlands, Norway, the Republic of Korea, Switzerland and the USA. In regard to protection against nationalization, the Government undertakes not to nationalize any enterprise, revoke ownership rights or reduce the rights to control of management except by act of Parliament, in which case compensation will be provided in accordance with international law and through transferable currency. In regard to repatriation of earnings, foreign investors are granted the right to transfer profits in the currency of the invested capital at the prevailing exchange rate and also permitted to transfer funds to cover depreciation of capital items and the costs of employing foreign personnel and of training Indonesian personnel overseas.

The industrial policies and incentives pursued by the Government were originally designed to promote investment which would yield the greatest return to the Indonesian economy. In this regard it can be argued that fiscal policies and incentives offered to industry by the Indonesian Government in the past have generally lowered the price of capital relative to that of labour and hence encouraged the adoption of more capital intensive technologies and as a corollary low capacity utilization and low labour absorbtion of industry. It would thus appear that the objective of employment creation has in the past not received full attention. While this problem is recognized, it is usually dismissed on the grounds that if such incentives were not granted, potential foreign investors would locate elsewhere.

1/ Indigenous or "pribumi" enterprises are those companies in which indigenous entrepreneurs control either 75 per cent of equity, or 50 per cent of equity of key management positions.

2/ Asia Research Bulletin, May 31, 1977.

Domestic and foreign investment priorities

As referred to earlier, the Government of Indonesia has established a yearly "List of Priority Scales for Fields of Domestic Investment and Foreign Investment" within the framework of the Domestic and Foreign Investment Laws. The main policy instrument used for ensuring new or expanding industrial capacity in accordance with the list is the licencing system, whereby industrial branches and products have been classified into the following four different priority categories according to which different degrees of incentives are being granted and different requirements apply in regard to industrial locations, export, government participation etc.

i) fields of investment which are open with priority;
ii) fields of investment which are open with facilities;
iii) fields of investment which are open without facilities;
iv) fields of investment which are closed.

Fiscal incentives are granted to the first category, i.e. those "open with priority" and also, albeit to a lesser extent, to the second category i.e. those "open with facilities". The incentives granted to these two categories take the form of tax holidays, investment allowances, accelerated depreciation, and waiving or reduction of customs duties and of import sales taxes. These incentives are summarized in table 4.1. Fiscal incentives are not granted to investment projects falling under the third category i.e. these "open without facility" since these are considered to be of less benefit to the society. The fourth category refers to those investment areas which are "closed" and where investment with some exceptions under the investment law is no longer allowed.

Table 4.1. Fiscal Facilities According to the Scale of Priorities

Type of Facility	Priority Fields		Facilities Field
	New Enterprise	Old Enterprise	New or Old Enterprise
(1)	(2)	(3)	(4)
I. Taxation.			
1. Company Tax	Tax Holiday	Investment Allowance	Investment Allowance
- Accelerated Depreciation	Granted	Granted	Granted
- Loss Compensation	Granted	Granted	Granted
2. Dividends Tax	According to Tax Holiday Formula	2 Years Holiday	2 Years Holiday
3. White Washing Capital	Granted	Granted	Granted
4. Capital Stamp Duty	Waived	Waived	Waived
5. Ship Registration Fee	Waived	Waived	Waived
II. Customs Duties and Import Sales Tax			
1. Machinery/Equipment	Waived	Waived	Waived
2. Building Materials and Fixtures	Waived/Reduced	Waived/Reduced	Waived/Reduced
3. Office Equipment, Transport	Selective Reduction	-	-
4. Raw Materials/ Catalysts	Waived/Selective Reduction	Waived Selective Reduction	-

Source: List of Priority Scales for Fields of Domestic Investment and Foreign Investment for the Year 197[illegible], TII

A predominant feature of this new investment policy is the differentiation between foreign and domestic investors in regard to incentives and the strong preference given to domestic investors. In 1977, domestic investors were given priority in 337 industry sectors while foreign investors were given priority in 240 industry sectors. In 1978, domestic investors are given priority in 55.3 per cent of industrial sectors compared with 38.8 per cent for foreign investors. Around half of all sectors are open to foreign investment with incentives while the other half is either closed or open without incentives. The assignment of priority to domestic versus foreign investors for the year 1978 are indicated in table 4.2. The relative priority between foreign versus domestic investment is based upon the general principle that foreign investment is required primarily in those areas where domestic investment is unlikely to be forthcoming. Accordingly, foreign investment is basically closed to fields of investment where domestic capital can be mobilized.

Table 4.2. Numbers of Industry Sectors for Domestic and Foreign Investment Arranged According to the List of Priorities, 1978

	Open with Priority	Open with Facility	Open without Facility	Closed	Total No. of Industrial Sectors
Domestic Investment	531 55.3 per cent	269 28.0 per cent	67 7.0 per cent	93 9.7 per cent	960 100 per cent
Foreign Investment	372 38.8 per cent	120 12.5 per cent	63 6.5 per cent	405 42.2 per cent	960 100 per cent

Source: Based upon List of Priority Scales for Fields of Domestic Investment and Foreign Investment for the Year 1978

The list of priorities specifies various industrial products at the ISIC 5-difit level and is as diversified as the number of products would seem to indicate. It is therefore difficult to discern some general pattern of opportunities open to foreign investment.

However, some of the more obvious cases where foreign investment is open with priority include i.e. plywood, chipmill, pulp, paperboard, pesticides production, synthetic resin, plastic materials, man-made fibres, cement, basic metals, iron and steel, machine tools, metal and wood working machinery, etc. On the other hand, some of those sectors closed to foreign investment refer to certain light industries, e.g. canning and preservation of fish and other seafood, grain milling products, bakery, sugar, alcoholic and non-alcoholic beverages, tobacco (except cigars), sawmilling, paint, soap, perfumes, cosmetics, tyres, plastic products, electrical home appliances. Fertilizer production is closed to foreign investment unless undertaken in joint venture with the Government.

The basic criteria applied in determining the list of priorities has been to ensure consistency with overall development priorities contained in Repelita II with regard to increasing output, creating employment opportunities, spreading activities to the regions, increasing public participation in development, and equally distributing income throughout the society. The more specific criteria for classifying industrial investment activities in the list of four priority groups has been as follows: increasing exports taking into account the capacity of the domestic market; saving of foreign exchange; promotion of import substitution; utilization of local raw materials; increasing domestic value added in manufacturing through processing of raw materials; creating multiplier effects; absorbing new technologies and skills; production of capital goods or intermediate products for domestic industries; protection and upgrading of existing weak economic groups; protection of national enterprises; preservation of the environment; reservation of large capital and/or high risk projects for foreign investment; opening up of local participation and ownership; locational considerations; and creation of a competitive business climate.

In the past the issuance of the "priority scale list" was long delayed, unduly lengthy and did not provide a concise guide to investors. Based upon the existing industrial structure one might expect three priority industries: i) resource based industries where Indonesia has comparative advantage [industries based upon petroleum (including petrochemicals), minerals and wood products]; ii) industries basic to further

industrial development in which Indonesia is badly lacking [engineering industries producing intermediate and capital goods] and iii) light consumer goods industries which have developed over the past few years but which have encountered difficulties.

Policies for increasing industrial employment and for the development of small-scale industries

The Government's past approach to the promotion of the three different types of small- and medium-scale industries (see Chapter II) may be described as follows:[1/]

i) "local" industries - The Central Government and the provincial Governments are not directly involved in assistance programmes for this type of industry and leave them more or less to the municipalities at the kecamatan level or below for implementation. The efforts of the Central and provincial Governments for assisting small- and medium-scale industries are directed exclusively to the "clustered" and "independent" industries.

ii) "clustered" industries - The basic policy of the Government is to organize the establishment of "clustered" industries through co-operatives whose functions include: i) joint purchases with financial assistance from the Government, ii) establishment of production and related facilities through financial and technical assistance from the Government, iii) joint marketing activities in co-operation with the organizations concerned.

iii) "independent" industries - The Government takes a great interest in promoting independent industries, since the owners are among the few Indonesians who are well endowed with entrepreneurship. Efforts are made to help them grow into modern industries through managerial guidance and financial assistance. Presently the Government's assistance programmes are not yet extended to industries which are "managerially organized" but the Government realized their importance and plans to shift its policy emphasis gradually onto this sector by means of developing links between larger and more modern industries.

1/ Source: International Development Centre of Japan: Industrial Development in Southeast Asian Countries: Small- and Medium-scale Industries - Republic of Indonesia, Phase I, 1977/78, pages 12-13.

In a recent study[1/] the International Development Centre of Japan has enunciated a number of possible additional policy measures relevant to the three types of industries referred to above.

One of the major objectives of the industrial development policy during Repelita III is to increase industrial employment quantitively and qualitively. This will entail balanced investment policies and more labour intensive products and methods of production. The Plan envisages that investment in small-scale and home industry will be increased so that the productivity of workers, family labour, and other categories of manpower can be improved. In this connexion, the Plan attaches priority to a higher degree of processing of agricultural products, especially goods related to the satisfaction of basic needs. Another important aspect of the industrial employment policy is to intensify linkages between large-scale modern industry and small-scale and home industry. This implies that the requirements of modern industry can in part be produced by small-scale industry, and further that modern industry will be geared in part to the needs of small-scale industry. Another aspect related to the industrial employment policy is the Government's intention to induce industrial enterprises to adopt multiple shifts with a view to maximizing the employment creating effects of existing installed plant capacity.

The Plan recognizes the importance of the choice of technology in determining the amount of labour that can be absorbed through industrial development. Priority is therefore given to labour-intensive technologies and a policy of technology adaptation will be followed to ensure more widespread use of that technology. Research activities to support this objective will be enhanced, as will research activities to improve productivity without sacrificing labour intensity. The Plan also envisages that existing labour-intensive technologies will be promoted for wider use.

Consistent with the objectives of expanding employment opportunities and a more equal regional distribution of growth and export

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1/ Source: International Development Centre of Japan: Industrial Development in Southeast Asian Countries: Small- and Medium-scale Industries - Republic of Indonesia, Phase I, 1977/78, pages 12-13.

promotion, Repelita III emphasizes policies and programmes to promote and support small-scale industries which offer opportunities for greater absorbtion of the growing labour force and regional diffusion of exports. The policies adopted in this regard consist of financial, marketing and promotional activities.

In the past, small-scale industries have had access to various credit facilities but they have not been fully used due to the problem of collateral. Repelita III contemplates departing from the practice of using collateral as a criterion for credit approval. Instead the Plan calls for the state banking system to use the cash flow approach in evaluating credit requests. Further, equity participation in small-scale industries by existing government financial institutions will be promoted and enhanced. The Plan also states that the Investment Board will undertake a campaign to promote more widespread use of existing promotional investment facilities by potential investors who would like to invest in small-scale industries. These facilities have not been used extensively partly due to many small-scale enterpreneurs being unaware of the facilities. Simultanously, procedures for the use of these credit facilities will be simplified and decentralized.

In regard to the problems encountered in the marketing of output and input, the Plan encourages co-operative development. It is expected that co-operative development will lead to economies of scale for input procurements and marketing of output. The Plan also stipulates the need for enhancement of government assistance through existing agencies to encourage small-scale industries to use opportunities in the export market.

The third area of support for small-scale industry development is aimed at intensifying the linkages between small- and large-scale industries whereby the latter would be encouraged to use the output of the former. By adopting this approach, small-scale industries would be guaranteed a market for their output, which is needed by the large industries as components,

sub-assembly and related products. It is expected that this approach will lead to a higher degree of specialization in large industries.

The Plan recognizes that the choice of technology is crucial for small-scale industry development. Simultaneously, the Plan recognizes that while the technology used in small-scale industries is generally simple and labour-intensive, the productivity improvement of these technologies without reducing their labour intensity is a major objective of the Plan itself.

Small-scale industries, village and home industries are classified under the group of industries which contribute to the equity objective of the Plan as opposed to the growth objective. The Plan stipulates that public resources will be used in the implementation of these "equity" programmes while programmes that emphasize growth objectives will rely on private domestic and foreign resources.

Industrialization and regional development policies

Indonesia is striving for greater equity, social justice, national unity parallel with economic growth in a general environment of uneven distribution of population, income, resources and opportunities. While Java is well endowed with infrastructure and is in a better position to benefit from the development process, it is in Java that problems of unemployment and underemployment are most serious. The greater part of Indonesia is still isolated and afflicted with dualism even though many of the Outer Islands possess rich resources. The manufacturing sector is heavily concentrated in Java, in particular Jakarta, though some resources based in industries are located in the Outer Islands. Therefore a policy aimed at the promotion of industrial growth centres in Java and other islands appears to be a necessary part of an overall industrial strategy.[1/] With a view to rectifying past tendencies towards widening regional disparities in growth and development - in part contributed by the industrial sector itself - the Government has formulated seven principal objectives in regard to regional development as follows:[2/]

1/ World Bank: Indonesia, Growth Patterns, Social Progress and Development and Development Prospects, 20 February 1979, p.112.

2/ World Bank: A Framework for Regional Planning in Indonesia, vol.III, 15 August 1974, p.6.

i) to reduce differences in the level of development among regions;
ii) to achieve a more equal distribution of population density among regions;
iii) to reduce the concentration of urban activities in the Jakarta area;
iv) to intensify the degree of interdependence among regions;
v) to develop each region's unused or underutilized resources which have high development potentials;
vi) to pay particular attention to special regions, and
vii) to achieve a more equal distribution of income within each region.

There appears as yet to be no concrete comprehensive policy package of any real incentives in Indonesia to decentralize industry to non-metropolitan areas. Although the Government has adopted the gowth centre strategy, it seems that "comprehensive and cohesive set of policies has yet to be formulated" 1/. The Indonesian Government, however, has recently attempted to restrict private, and in particular foreign, investment in Jakarta and Java, through disincentives and restrictive licensing, whereby the Government's foreign investment policies have been increasingly tied in with its regional development policies. In an effort to achieve a more balanced pattern of regional development and with a view to channelling investment to regions outside Java, foreign investment has now been banned in Java in regard to several industrial branches including, inter alia, pharmaceuticals 2/ and textile industries 3/. In regard to the textile industries, for example, the Government's policies are aimed at tranferring manpower to regions outside Java, avoiding concentration of large industries in selected locations and at promoting the equitable dissemination of development efforts on a wider geographical basis. The Government has named North

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1/ ESCAP: New Alternative Approach towards Intergrated Industrialization in Non-metropolitan Areas in the ESCAP Member Countries, Vol.I, page 16, ESCAP, UN, Bangkok 1979.

2/ Asia Research Bulletin, Jan.31, 1977. It is noted, however, that Java is still open to foreign capital for the establishment of factories producting basic pharmaceutical raw materials.

3/ Asia Research Bulletin, July 31, 1977. Java is still open to joint-ventures between foreign capital and Indonesian private parties on the condition that these ventures do not pose any obstacles to the Government's effort to distribute manpower throughout the country, and that no full mechanization is involved.

and West Sumatra as the desirable sites for foreign capital investment in the textile industries.

There is a danger, however, that restrictive policies in regard to industrial decentralization may lead to a reduction in the level of domestic and foreign investment, unless attractive alternative locations are provided. The Government is planning four such major industrial development centres in Medan (Sumatra), Cilacap (Central Java), Surabaya (East Java), and Ujung Pandan (Sulawesi). Presently, the establishment of industrial estates in these cities is under study. The development of Batam Island, located south of Singapore, as a major growth centre incorporating an industrial estate, is also envisaged. Infrastructural improvements for manufacturing investment at such selected growth centres would appear justified and necessary to the decentralization of manufacturing activities. It should be borne in mind that the decentralization of urban manufacturing activities from the Jakarta area cannot be done by blanket restrictions on manufacturing investment alone, but requires not only a well formulated policy package vis-a-vis decentralization and rural industrialization but also a comprehensive integrated policy package incorporating a number of associated elements such as decentralization of the structure of Government decision-making and resource allocation, improvement in infrastructure at selected locations in different regions, and improvement in the transportation and communication system linking different parts of the country particularly through inter-island shipping. Concomitantly, a more active role played by provincial Governments as well as local and regional development banks in the promotion of enterpreneurs and manufacturing enterprises is required.

As part of a policy aimed at greater geographical dispersion of industry in priority areas, it might be useful to employ the concept of agro-industrial centres.[1/] The main objectives of such centres would be to combine agricultural and rural development programmes close to the processing area. These centres would concentrate on the processing of agricultural products and could also develop ancillary activities providing manufactured input to agriculture and thereby contribute to increasing

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1/ World Bank: Indonesia, Growth Patterns, Social Progress and Development Prospects, February 20, 1979, page 113.

productivity in agriculture. The promotion of agro-industrial growth centres may therefore be viewed as part of a rural industrialization strategy consistent with geographical dispersal of industry, accelerated employment in non-metropoletan areas, and increase of agricultural productivity.

One of the main instruments of implementing the Government's objectives in regard to regional planning is the application of regional planning methods to Indonesia's development problem. However, it has been observed[1/] that almost all of the regional plans hitherto produced in Indonesia have been a duplication of the national plan and the link between Plan and implementation has remained strikingly weak. Steps towards improving the regional planning and implementation capacity at the national and regional levels have been made through the strengthening of the Regional Planning Division of BAPPENAS and through the establishment of a Regional Agency for Investment Co ordination. It seems that increased emphasis on the training and retraining of public servants at all levels is simultaneously required.

To support the government efforts to promote regional development, industrial decentralization, and rural industrialization, there is need for regional development studies at various levels. While regional studies have been attempted in the past in several regions their scope has been limited,[2/] and their focus confined to narrow sectoral lines rather than conceived of as comprehensive systematic or integrated approaches to overall regional development opportunities. It would thus appear that there is need for[3/] interpretation of regional development goals and objectives; identification of development potentials of each region; development projections for each region; assessment of the spatial implications of projected development and their infrastructural requirements; identification and evaluation of alternative regional development policies including industrial location policies ; and formulation of regional development policies. The co-ordination of policies and studies related to industrial decen-

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1/ Regional Planning Studies in Indonesia by Hendra Esmara, EKI, Vol. XXIV, No. 4, December 1976, page 362.

2/ An examination of the "state of arts" in regional studies, is given in: Regional Planning Studies in Indonesia by Hendra Esmara, EKI, Vol. XXIV, No. 4, December 1976, page 364.

3/ A Framework for Regional Planning in Indonesia, Vol. III, August 15, 1974, page 16.

tralization and rural industrialization with these overall regional development efforts would appear both timely and appropriate.

In this connexion a proposal[1/] has recently been made for the establishment of two institutional units that could work through BAPPENAS on the problems of linking regional planning more closely with sectoral implementation programmes and the problems of developing a national urbanization and settlements strategy. The specific assignment of the first unit would be related to project proposals and promotion and would include identification of specific development projects based upon regional studies and the preparation of concise proposals that can be brought to the full attention of implementing agencies. The specific assignment of the second unit refers to urbanization and settlement strategies and includes careful analysis of development strategies suggested by regional studies.

The Third Five Year Development Plan - Repelita III - stipulates that favourable fiscal and monetory measures be designed to promote further regional development and that the role of Government is to develop infrastructure in the form of roads, power, harbours, etc. For some services the ongoing INPRES programme may be the proper vehicle. Repelita III further encourages industrial development in various regions, and industrial estates are expected to operate as public utility enterprises.

Public sector, private sector and transnational corporations

Public sector investment programmes in industry and mining amounted to Rp. 179.0 billion in 1976/77 and are expected to increase to Rp. 311.0 billion in 1977/78 - 78/79. In relation to the overall public sector investment programme, this represents a relative decline from 9 to 7 per cent (excluding Pertamina). The majority of public sector investment programmes in industry take the form of large capital-intensive projects. They include, inter alia, four fertilizer plants, four or five cement plants, a major steel plant, two LGN plants and at least one petrochemical plant. The investment required to create one new job in a standard cement plant is $ 200 - 300,000 and in

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1/ A. Majid Ibrahim, H. Benjamin Fisher: "Regional Development Studies and Planning in Indonesia", Bulletin of Indonesian Studies, Vol. XV, No. 2, July 1979.

the steel, fertilizer and petrochemical industries, the capital/labour ratio is even higher. The considerable public sector investment programmes in these industries represent a faster rate of addition to the existing large-scale industrial capacity than is either desirable or can be sustained by public finance without debt service obligation rising beyond prudent limits. Recently the Government's rethinking has led to the curtailing of many new projects in this category, particularly those of Pertamina. Others have been deferred to the private sector. The complementary role of transnational corporations in providing a "package" of capital, technology and markets for the development of these resource-based industries then becomes very real indeed.

The significant growth of public sector industrial investment activities and their narrow contribution to employment creation warrant a close re-examination. While it is true that large-scale projects in a resource-rich country are required at some stage of development, they must form part of the overall development efforts and must be accompanied by the development of other industries that contribute to employment of a larger part of the people and satisfying their needs. The thinking in the Government has been to carry out and complete those investment projects which are clearly beneficial and which can no longer be conveniently reduced or stopped. Altogether the actions already taken or planned by the Government constitute an effective response to the situation confronting it.

The resources released by the intended decreases in the public sector industrial investment programme can be most effectively utilized in the small- and medium-scale industry sector where development prospects have become seriously jeopardized by credit restrictions and resource constraints following the requirements of the large-scale heavy industry. Parallel development of forward linkages in the form of plastics, fibres, textiles, metal industries, etc. and backward linkages in the form of engineering industries will place heavy industry and past public sector investment on a more sound footing.

In Repelita III the Government has further enunciated its policy towards public, private and foreign enterprises. The Plan stipulates that public resources will be used to assist the implementation of programmes emphasizing the equity objective, covering industries which are labour intensive and fulfill basic human needs (textiles, building materials for low-cost housing construction, pharmaceutical industries, paper, small-scale industries, village and home industries). On the other hand, the programmes emphasizing growth objectives, which are in general capital intensive (chemical, steel, transport equipment, etc.) will have to rely on private domestic and foreign sources. For this purpose state enterprises are now encouraged to form joint venture enterprises with foreign partners in the expansion and further development of their enterprise.

In regard to government procurement policy, Repelita III stipulates that wherever possible they should be confined to domestic industrial output. The Plan further states that wherever possible projects receiving foreign aid will be urged to use domestically produced supplies. Through these policies the Government expects the market for industrial goods to increase, since the Government is the largest single buyer in the country.

Chapter V

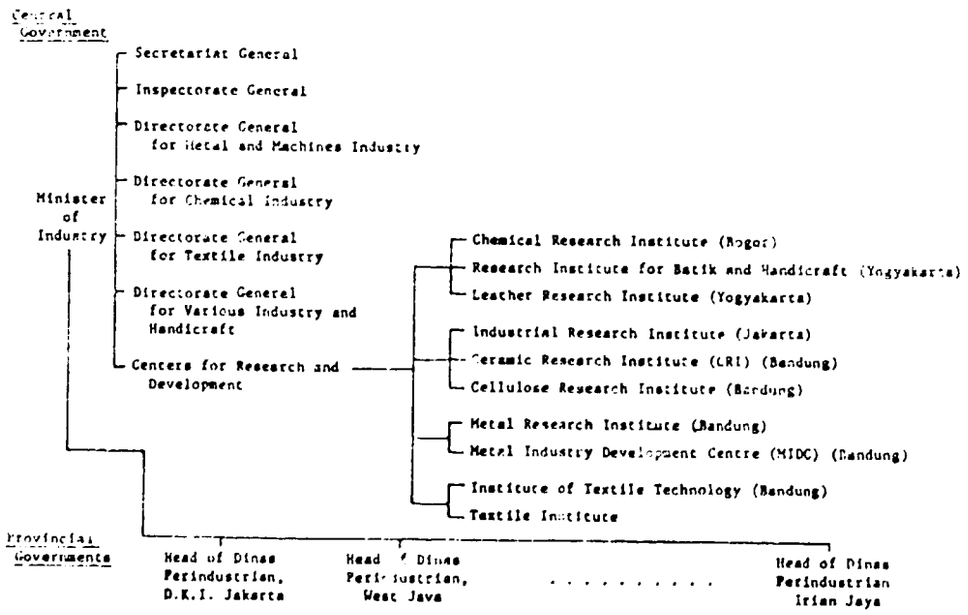
INSTITUTIONAL INFRASTRUCTURE FOR INDUSTRY

National, industrial and regional planning

The National Planning Board (BAPPENAS) is responsible for the preparation of Indonesia's five-year development plan - Repelita - which incorporates an industrial sector plan. BAPPENAS plays the central planning and co-ordinating role vis-à-vis the individual ministerial departments, including the Ministry of Industry.

The Department of Industry is headed by a Minister of Industry assisted by five Director Generals in the field of metal and machines industry, various industries and handicraft, chemical industries, textile industries and a centre for research and development. The latter is responsible for ten specialized research institutes in various fields (Figure 5-1). The Department of Industry has regional representation in 25 provinces to provide information and guidance to public and private enterprises and for supervision and control of their activities.

Figure 5-1 Organization Chart of Departemen Perindustrian (Department of Industry)



The Government has placed emphasis upon the building-up of a planning machinery at the regional level within Indonesia. In 1974, with a view to implementing regional development programmes, the Government created regional development offices - BAPPEDAS - in each province and also strengthened the regional development unit in BAPPENAS. Further, the Government has financed an institution known as the Regional Agency for Investment Co-ordination to encourage investment in the Outer Islands. Its role is mainly informative, providing information on investment opportunities in the regions concerned, while the final decision is still in the hands of the Central Government. It is too early to evaluate the results of these institutional improvements for encouraging regional development and investment, particularly in the Outer Islands.

Science and transfer of technology

Presently, Indonesia is faced with the dilemma that on the one hand it is highly dependent upon imported technology, and on the other it is lacking an adequate institutional machinery for the transfer of technology and for the development of an indigenous technological base appropriate to the development needs of Indonesia. In this regard, the Second Five Year Plan called for a closer linkage between efforts in science and technology and national goals and also emphasized the building up and strengthening of a national network of scientific institutions.

The Indonesian Ministry of Industry controls and finances nine major Industrial Research Institutes (batik, handicraft, ceramics, chemicals, leather, materials, metal industries, pulp and paper, textiles) and six small Regional Industrial Research Institutes, primarily concerned with testing, quality control and advisory services. Further, the Minister of State for Research is assisted by Deputy Assistants in the fields of industry and technology; standardization, instrumentation and metrology; research and scientific information; and cross-sectoral research. The Government recognizes the need to develop and strengthen these institutes in line with national priorities.

Expectations have been expressed that these institutes penetrate into key industrial sectors and cover even the most remote areas within the country.

The Indonesian Institute of Science (LIPI) is one of the more important scientific and technological research institutes in Indonesia. It is expected: i) to advise the Governemnt on the formulation of a national science policy part of overall national policy; ii) to give guidance to research institutions and to develop existing technological activities; iii) to guide research worker to a higher sense of awareness and responsibility; iv) to encourage and develop science mindedness among the Indonesian people; and v) to conduct and maintain relations and co-operation with international, as well as national, scientific bodies. LIPI is authorized to co-ordinate, integrate and synchronize all activities in the field of science and technology at both the national and regional levels. In an effort to increase national capabilities in solving technological problems related to economic development, LIPI is considering the strengthening of its research establishments by merging them into a multidisciplinary National Technological Research Institute .

The existing machinery for the transfer of technology embodies, inter alia, the following institutions: i) the Investment Co-ordinating Board, co-ordinating both foreign and domestic investments; ii) technical and administrative government agencies which also scrutinize licensing applications; iii) the Institute of Standardization; and iv) the Patent Office under the Department of Justice. At present, these institutes are inadequately equippped to select and direct the inflow of fresh technology in concordance with the development aspirations of Indonesia. In this connexion, various ideas have been propounded regarding the establishment of a Research and Development Co-ordinating Board to work closely with a Central Agency for the Regulation and Promotion of Foreign Technological and Licensing Transactions . Such an agency would consolidate and integrate existing research activities within the Government. In the view of the close linkage between investment and technology it could possibly be integrated

into the Investment Co-ordinating Board. Further, the need for elaboration of a single legislative system governing the evaluation and approval of all agreements related to transfer of technology has also been promulgated.

Financial institutions

The banking network consists of the Central Bank, the Bank of Indonesia (BI), five large state-owned commercial banks, a State Development Bank (BAPINDO), two joint venture development banks, Indonesian Development Finance Company (IDFC) and the Private Development Finance Company of Indonesia (PDFCI), 26 regional development banks, 128 small domestic private banks, and branches of 11 foreign banks. There are 9,000 savings and village banks, but their assets are relatively insignificant. The Bank of Indonesia and the State Banks account for almost 90 per cent of all outstanding credit; a large part of the remainder is made up by local and foreign private banks, the latter now being more important than the former.

Over the last few years the Government has attempted to remedy some of the short-comings affecting the financial sector and institutional improvements have been made to meet the emerging needs of the private sector and in particular industry. Four national development banks now specialize in extending term financing to industry:

i) BAPINDO is the principal domestic source of medium- and long-term capital for the private industry sector. BAPINDO finances large, medium- and small-scale industrial projects in the public and private sectors and it is the only state bank allowed to grant term loans with maturity over five years.

ii) the Indonesian Development Finance Company (IDFC) concentrates on the financing of relatively small industrial projects and also participates in equity financing. IDFC provides a limited amount of technical assistance to industrial enterprises.

iii) the P.T. Private Development Finance Company of Indonesia (PDFCI), a privately owned development finance company established in 1973 with active World Bank assistance, provides medium- and long-term loans, equity investment, and also plays a role in the identification of new projects and in the promotion of new enterprises.

iv) the P.T. BAHANA, a development bank established by the Government in 1973 with the main objective of providing equity financing and managerial assistance to financially weak enterprises. P.T. BAHANA also engages in lending operatings on a limited scale and has focussed its operations on the small-scale industry sector.

In reviewing the financial institutions in Indonesia it is noteworthy that all of the programmes are relatively small and still represent a relatively minor source of credit to the marufacturing sector. It also appears that the availability of credit for the private sector has been a residual determined by the amount of credit available after more urgent official needs have been met. Further, the national private banks in Indonesia have a potentially important role to play in the future in the provision of credit for industry.

Investment application and approval procedures

With a view to speeding up the processing of domestic and in particular foreign investment applications, reduce bureaucratic procedures and counter depressed foreign investment, the Government introduced in 1977 a "one-stop" investment service for investment applications. According to these new procedures the Central Office of the Investment Co-ordinating Board (ICB) is the only body with which prospective investors need to deal. All formalities and negotiations are chanelled through ICB for the purpose of facilitating and expediting approval procedures and granting of incentives. No additional negotiations are required with the relevant ministries or with regional governments. Each department of the Central Government is to set up a special unit within the ICB to expedite the handling

of new applications. Further, the earlier requirement of a Letter of Investment (INTENT) has been abolished and investors can now proceed immediately with their applications. These institutional improvements are aimed at rationalizing the country's complicated and time-consuming investment processing apparatus. According to the new procedures, all licences will be processed and approved by the ICB with an official maximum time limit of three months - a great improvement compared to the twelve or fourteen months required in the past. It is, however, as yet too early to evaluate the effectiveness of these institutional improvements.

Institutional support for small- and medium-scale industries

The institutional infrastructure established to support small- and medium-scale industry development may be divided into financial or technology and management institutions.

i) Financial Institutions

The Government has introduced various institutional facilities for the financing of small-scale industry and for assisting small-scale entrepreneurs. Table 5.1. summarises the loan opportunities available to small- and medium-scale enterprises under the short- and medium-term lending scheme of Bank Rakyat Indonesia (BRI), Bank Negara Indonesia 1946 (BNI 1946) and BPD. Among them, the major sources of loans for the promotion of small-scale enterprises are the scheme for lending funds for plant and equipment investment (KIK) and the similar scheme for working capital (KMKP), both of which started in February 1974. The objectives of these schemes are to encourage enterpreneurs with small capital to start businesses, and to help them operate efficiently. The investments interest is lower than ordinary bank rates and loan procedures are simplified. In addition to these small investment credit schemes there is also a small-scale credit scheme as shown in Table 5.1. All these schemes, which are handled by the State Banks and selected Rural Development Banks on the basis of re-financing by the Central Bank, have provided a large number of small entrepreneurs with much needed long-term funds. One of the problems associated with the KIK and KMKP schemes, however, is that the share of manufactures in total loan is still small and the terms of the loans are restricted to 3 to 5 years.

Table 5.1. Credits for Small Businesses

Type of credit	Purpose	Maximum loan	Loan interest rate	Terms of loan	Banks
Small-scale credit	Plant & equipment investment capital and working capital	100 thousand rupiahs	Investment: 12% Working capital: 15%		BRI
KIK	Plant & equipment	10 million rupiahs	10.5%	5 years	BRI, BNI 1946 & BPD
KMKP	Working capital	10 million rupiahs	12.0%	3 years	BRI, BNI 1946 & BPD
Credit by Badan Kredit Kecamatan [1/]	Working capital for agri. trade & mft.	--	Agri.& mft.: 0.5%/month Trade: 1.0%/month	3-5 years	BPD

1/ BPDs finance this credit to mainly small economic units in the agricultural sector (especially to the livestock sub-sector). Some resources has been directed to the manufacturing sector but their share was less than one per cent of the whole resources.

Source: International Development Centre of Japan: Industrial Development in South East Asian Countries: Small- and Medium-scale Industries - Republic of Indonesia, Phase I, 1977/78.

In 1973, BAPINDO initiated a small industry financing programme in collaboration with selected regional development banks. This programme was modified in 1974, following the introduction of the KIK and KMKP Small Investment Credit schemes referred to above. As a result, BAPINDO was henceforth to concentrate primarily on making loans to medium- and large-scale industrial enterprises while its lendings to small-scale enterprises would be limited to co-financing arrangements. BAPINDO now endeavours to broaden its economic role and to enhance its development impact through its lending policy, project promotion and technical assistance, industrial studies and policies, and its co-operative programme with the Regional Development Banks (RDBs).

In 1971, the Government eatablished the P.T. Asuransi Kredit Indonesia (ASKRINDO) to insure bank loans made available to small entrepreneurs covering up to 75 per cent of the total risks. This insurance scheme was established with a view to inducing State Banks to pursue more vigorously their term lending to small-scale entrepreneurs. The major functions of the scheme are i) to guarantee bank loans and ii) to assist banks in reviewing loan applications. From 1971 to mid 1977 ASKRINDO insured 17,842 loans to small-scale manufacturing enterprises for a total insurance value of Rp 24,757 million, corresponding to 4.3 per cent and 12.7 per cent respectively of ASKRINDO's total activities.

There are two non-bank financial institutions providing funds to small-scale enterprises viz., P.T. Bahana founded in 1973 and UPPINDO founded in 1972. The major objective of P.T. Bahana is to stimulate and upgrade the managerial capabilities of small- and medium-scale entreprepreneurs through i) equity participation in small- and medium-scale enterprises; ii) selection of projects suitable to small- and medium-scale enterprises and undertaking of feasibility studies on such projects; and iii) provision of funds and/or professional knowledge to solve technological and managerial problems. The major sources of funds are the Department of Treasury and the Bank of Indonesia. The present bank policy explicit stages

that the entrepreneurs have to finance at least one fourth of the necessary capital. Most of the assistance provided by P.T. Bahana has been channelled to medium-scale industries and to a lesser extent small-scale industries.

The second institution, P.T. Usaha Pembiayaan Pembangunan Indonesia (UPPINDO), was established in 1972 for the purpose of promoting and assisting manufacturing industries in the following ways: i) capital participation, both domestic and foreign, including UPPINDO itself; ii) medium- and long-term loans to manufacturers and/or assistance in raising additional funds in domestic and foreign capital market, and iii) acting as an intermediary in the recruitment of professionals and experts. Financing by UPPINDO is made through loans for a maximum of Rp. 500 million and 75 per cent of the required funds for plant, equipment and working capital. UPPINDO also participates in capital formation of projects requiring more than Rp. 100 million when the burden of interest payments on the entrepreneur becomes too heavy. UPPINDO, however, does not participate in management. Due to the size of the loan ceilings, it can be assumed that the UPPINDO scheme is mainly directed towards medium-scale enterprises. One of the problems associated with both the P.T. Bahana and the UPPINDO schemes is that the offices are located in Jakarta and that therefore small-scale enterpreneurs in non-metropolitan areas find it difficult to benefit from the schemes.

In a recent examination of prospects for industrial development, the World Bank[1/] recommended the following measures in an effort to increase financial assistance to small-scale industry: i) continuation of the KIK and KMKP programmes and an increase in the supply of funds available to them; ii) strengthening of P.T. Askrindo and P.T. Bahana so that they can function as originally intended; iii) encouragement, under control of Bank Indonesia, to private banks to undertake more lending to small enterprises; iv) increasing the resources of the IIPC and PDFCI; and v) providing, through the Ministry of Industry, better technical extension services with respect to production planning and scheduling, marketing and management.

1/ World Bank: Problems and Prospects for Industrial Development in Indonesia, Vol I, page 74, May 25, 1978.

ii) Technology and Management Institutions

The planning and implementation of measures to assist production technology and management in small- and medium-scale industries is carried out mainly by the Department of Industry of the Central Government and by the Offices of Industry of the provisional governments. The measures for development and promotion of small-scale industries are consolidated under a scheme entitled "Industrial Extension Services for Small Industries", BIPIK.

The BIPIK programme was established in 1974 to assist in the development of small industies and to encourage and guide indigenous entrepreneurs. The BIPIK programme was intended to overcome some of the weaknesses of the KIK and KMKP programmes which were found to be dealing more with commercial than with manufacturing enterprises. The BIPIK scheme is financed by the development budget of the Central Government. However, in many cases implementation is carried out by provincial governments which also have separate budgets for the promotion of small- and medium-scale industries.

The BIPIK scheme provides assistance to small- and medium-scale industries in the following fields:[1/]

i) extension services and guidance activities;
ii) training in management and technology;
iii) marketing assistance;
iv) materials procurement support;
v) mechanization assistance;
vi) quality control and standardization; and
vii) surveys and research.

Industrial estates development

Industrial Estates can help maintain a balance between expansion of industry and infrastructure and generate important benefits through external economies in infrastructure investment; reduce plant investment and operating costs for industrial enterprises, such as the

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1/ An extensive review of the assistance provided is contained in: International Development Centre of Japan: Industrial Development in Southeast Asia Countries: Small- and Medium-scale Industries, Republic of Indonesia, Phase I, 1977/78, pages 18-23.

main industrial estate at Pulau Gadung near Jakarta. Industrial estates can also contribute to the decentralization of industry away from the Jakarta area, which is fully in keeping with the Government's long range strategy. Presently, three industrial estates are being set up in the outlying cities of Cilacap in Central Jave: Surabaya in East Java; and Medan in North Sumatra. Three others are under consideration in Semarang, Ujung Pandang and Samarinda(East Kalimantan). Further an industrial estate in Batam, close to Singapore, is under discussion. To the extent that these projects materialize there would be an added incentive and attractiveness for enterprises to locate new industrial enterprises elsewhere than in the Jakarta area.

A substantial proportion of past domestic and foreign investment were attracted to the Jakarta area due to its locational attractiveness. The absence of enforced zoning regulations led to haphazard location of industry within the Jakarta metropolitan area with resultant overcongestion and overloading of public infrastructure, roads, power, water, sewage, telephones, etc. The first full-fledged industrial estate in Indonesia, the Pulau Gadung, located near the eastern boundary of Jakarta is intended to attract industry away from the congested Jakarta area. The agglomeration of industry in one area has greatly facilitated infrastructural development planning; reduced both costs and time required to implementing investment projects and further provided a useful testing ground to stimulate the growth of small-scale industry development and indigenous ownership.

The Pulau Gadung industrial estate is expected to be fully occupied in 1980 with 200 enterprises settling on the estate. It comprises a land area of 568 hectares and the financial requirements have been estimated at $ 51 million, part of which has been financed by the World Bank. The project was initiated in 1971. It is anticipated that industry settling on the estate will generate around 55,000 new jobs, which is equivalent to the total employment generation of the medium- and large-scale Indonesian manufacturing sector from 1970 to 1973. Estimates have been made that 20 per cent of this gross job creation and gross capital investment of $ 700 million may be considered as net incremental benefits which can be directly attributable to the investment generating effects of the project. The estate is open to both foreign and domestic investment and it is expected that it will act as a strong stimulus to the development of indigenous medium- and small-scale industry.

The Government, recognizing that Pulau Gadung is only the first step in a broader national programme of industrial estates development, has established within BAPPENAS a central office to deal with industrial estates. In view of the importance of industrial estates development in achieving national industry growth objectives, the establishment of a Central Industrial Estates Authority has been recommended. The Third Five-Year Development Plan - Repelita III -, encourages the establishment of industrial estates to be developed in various regions and to be operated as public utility enterprises.

Plans have recently emerged[1/] to develop Batam island, located 20 kilometres south of Singapore to a major growth centre with a tax-free bonded industrial estate for labour intensive manufacturing. Efforts are being made to attract foreign investors in the small- and medium-scale industry sector. Indonesia has enlisted Singapore assistance in the building of Batam infrastructure. The Batam-Singapore mutual industrial interdependencies in the availability of cheap labour in Batam and the growing labour shortage in Singapore. The co-operation established between Singapore and Batam may prove significant in a wider ASEAN context.

Institutional support for manufactured exports

Until recently, there has been no organized or sustained effort to promote exports of manufacture apart from certain policies related to the granting of incentives in regard to i) the refund or waiving of duties on imported raw materials and components and ii) the exception of export tax for finished items.

In 1971, however, a new institution, the National Agency for Export Development (NAFED) was created under the Ministry of Trade with the following objectives: i) to provide information and guidance to the business community about the possibilities of marketing Indonesian products abroad ii) to supply importers and consumers abroad with information about Indonesian export commodities iii) to assist the Government in promoting and achieving export trade targets and iv) to upgrade the practical abilities of businessmen and exporters with emphasis on international trade.

1/ Asia Research Bulletin, 31 July 1979.

NAFED incorporates three centres - crafts agriculture and manufactured exports. NAFED is now increasingly assuming a role in the promotion of manufactured exports, partly by finding ways and means of removing existing "disincentives" to exports (export regulations and procedures, transport, infrastructure, duties and taxes) and partly by devising new incentives (price stabilization, bonded warehouses and export financing). NAFED advises the Government, private producers and traders on quality control. It provides services to entrepreneurs through trade promotion and information for Indonesian products abroad. It also provides assistance in the carrying out of market surveys, training courses and product development. Further, NAFED is involved in the establishment of trade centres abroad with a view to attracting overseas buyers and potential investors to export-oriented industries in Indonesia.

In 1976 the Government announced a number of policy changes designed to encourage export development. These included, inter alia, removal of export taxes, stamp duties, relaxation on various regulations on finance, provision of guarantees for export credit etc. While these changes removed some obstacles to exports, they did not provide a strong package of incentives. An effective programme will require both the strengthening of NAFED and of the incentives system, so far hardly any incentives have rewarded good export performance.

Two bonded warehousing companies have been established in Indonesia, one located on Batam Islands and the other one in Tanjung Priok port. These bonded warehouses encompass the storage, transshipment, packaging and processing of goods for exports. The Government exempts from import duty and other levies all goods and materials which are brought into bonded warehouses for processing into export goods. The licence needed by industrial companies in bonded warehouses is granted by the Investment Co-ordinating Board (ICB).

In Repelita III full recognition has been given to the need for the establishment and expansion of a trade information network, and of product development and sales promotion activities. Lack of information on markets and export potentials, on the part of new industrial managers and potential investors, has in the past tended to

limit industrial growth. Further to ensure continuity of supplies of input, required for efficient industrial production, marketing organizations will be established which will also serve as information and communication centres.

The Government has recently taken a decision in principle to create export processing zones, where new industries can develop and buy imported inputs as well as domestic inputs at international prices free of trade taxes. In this connexion it has been suggested[1/] that it may be preferable to aim at the establishment of medium-sized and larger units to economize on scarce managerial skills, to facilitate access to foreign technology and to achieve effective quality control since larger units do not necessarily have to be less labour-intensive than smaller ones.

1/ World Bank: Indonesia. Growth Patterns, Social Progress and Development Prospects, 20 February 1979, p.110.

Chapter VI

ANALYSIS OF MAIN CONSTRAINTS TO INDUSTRIAL DEVELOPMENT

Classification of constraints

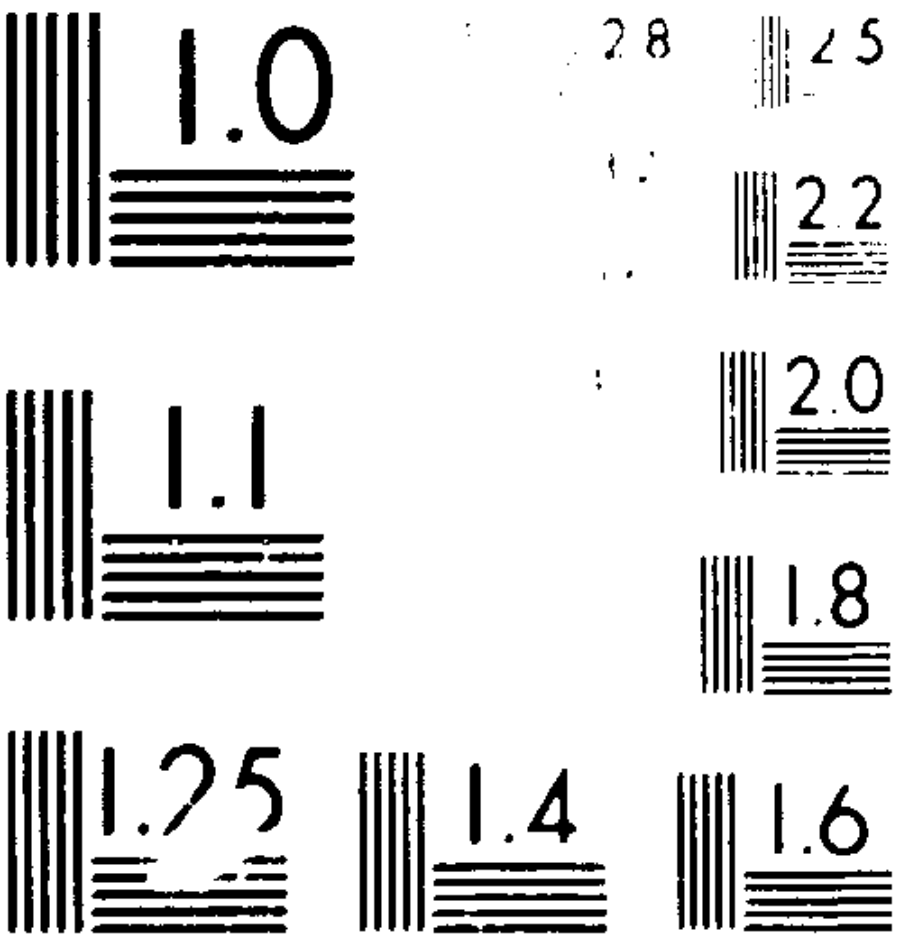
The main obstacles to further industrial growth may be classified in the following five categories:

i) insufficient industrial linkages with the primary sector and within industry;
ii) excessive capital intensity and neglect of rural industrialization;
iii) weak institutional infrastructure;
iv) inadequate physical infrastructure and transportation system;
v) weak competitiveness of Indonesian manufacturers.

All these obstables are closely interlinked and discussed in more detail in the following sections.

Insufficient industrial linkages with the primary sector and within industry

The present economic structure of Indonesia is characterized by a high degree of economic dualism. On the one hand, there exists a modern large-scale, capital-intensive, resource-based and export-oriented industry sector being highly dependent upon foreign capital and technology. This modern sector has left little impact on the Indonesian economy in the form of manufacturing employment. It has focused primarily upon the exportation of products with relatively little degree of processing and small proportion of domestic value added. Few linkages have been created with the indigenous manufacturing sector, which has remained highly dependent upon imported raw materials and imported capital goods. On the other hand, there exists a traditional indigenous small-scale industry sector which together with cottage industry affects the livelihood of more than 4 million Indonesians, but which so far has been unaffected by developments in the modern sector and which is in real need of institutional, financial, educational, training, managerial, technological


2.8
2.5
1.0
2.2
2.0
1.1
1.8
1.25
1.4
1.6

and infrastructural support from the Government. The strengthening of linkages between the modern, large-scale, capital-intensive, resourced based industries dependent upon foreign capital and technology and the indigenous labour-intensive medium- and large-scale industries is one of the major challenges facing the Indonesian manufacturing sector of to-day. In this regard, the parallel development of backward linkage industries dependent upon agriculture, forestry, petroleum and minerals as well as forward linkage industries aimed at strengthening the domestic industrial base such as metal and engineering industries (food processing equipment, textile machinery, agricultural machinery, etc.) will play a catalytic role in further development efforts. Once the resource-based and engineering industries have attained a certain level of development, the derived demand can increasingly be produced domestically, imports reduced and self-sustained growth attained. It is unlikely, however, that many of these industries can develop very fast without simultaneous progress in agriculture, where lack of progress in the past has restricted the effective demand for industrial products. These demand constraints have been compounded by widening income disparities which have narrowed the range of products demanded and also tended to favour an import-biased consumption pattern of manufactured products for the few rather than the many.

Excessive capital intensity and neglect of rural industrialization

Industrial policies and incentives in Indonesia are primarily linked to fiscal incentives which lower the cost of capital relative to that of labour. This has led to excessive capital intensity in many industries with resultant excess capacity and high costs of production. The emphasis given to the development of large-scale, capital-intensive, resourced-based industries can hardly be expected to provide a solution to the problem of unemployment and underemployment. The emphasis given to these capital-intensive medium- and large-scale industries equipped with modern technology has led to a marked difference in the pattern of development in production and technology between the traditional and the modern

sectors and intensified the dualistic structure of the Indonesian economy. The danger lies in the possibility of the small-scale industries being squeezed out of business by the medium- and large-scale industries in competing lines of production, a situation which existed in Central and West Java where many small-scale textile mills were forced to close down. It is evident that a continuation of this trend will have severe repercussions upon the employment-generating capacity of the manufacturing sector. Thus, there seems to be a need not only for the development of rural industrialization and in particular small-scale industries which are mainly labour intensive, but also for the promotion of more labour-intensive technologies in the indigenous medium- and large-scale industries, for example in the form of incentives being inversely related to the capital-labour ratio. The absence of a deliberate employment policy seems to have constrained the development of rural industrialization, in particular the small-scale industry sector. 1/

Weak institutional infrastructure

The resources required for the development of the modern sector have in the past impaired the resources which could be made available for the development of the traditional sector. Hitherto small and medium industries have been supported by small investment credit. They have also been assisted in the promotion of managerial and marketing skill by several Government agencies. Recently, various surveys of small-scale industry problems and opportunities have been undertaken or initiated. However, there appears as yet to be no comprehensive systematic policy and institutional package for the effective development of these industries. The investment required and support needed for the development of these and other industries have been impaired by administrative obstacles in the form of duplication and overlapping of institutional functions, commercialization of officials and inadequate institutional infrastructure for the development of rural industrialization, in particular small-scale industries. The stricter enforcement of "pribuminization" regulations has probably also retarded growth. Further, the institutional infrastructure for transfer of technology and for the development of an indigenous technological base is at

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1/ A Preliminary Survey of Conditions and Problems in Small- and Medium-scale Industries is contained in International Development Centre of Japan; Industrial Development in Southeast Asian Countries - Republic of Indonesia, Phase I, 1977/78, Chapter 3.

present inadequate. Greater institutional, technological, managerial, training and infrastructural support is needed if the small-scale industry is effectively to contribute (i) to the creation of employment opportunities for those who cannot be gainfully employed in agriculture, and (ii) to the provision of basic needs for a larger part of the population which so far has been unaffected by developments in the modern sector. By nurturing rural industrialization through emphasis upon small-scale industry and their "change agents", the economic dualism and existing disparities will gradually diminish.

Inadequate physical infrastructure and transportation system

In the past the manufacturing sector has primarily benefitted certain sections of the population, particularly in Jakarta and other major cities in Java. The large majority of the Indonesian population, in particular in rural areas, has been left unaffected by developments in industry. The policy of establishing resource-based industries combined with the development of metals and engineering, in particular small-scale industries, can be related to the objective of decentralization of industry and linked to the Government's overall objectives of development of various regions of Indonesia, in particular the Outer Islands. A step in this direction is reflected in the recent establishment of a Regional Agency for Investment Co-ordination and in the establishment of regional planning units (BAPPEDAS) in each province. Further, in the Government's new list of priorities for domestic and foreign investment (1978), different fields of manufacturing investment are being granted various degrees of incentives and assigned different locational specifications. The contours of an industrial location policy thus seems to be emerging for the medium- and large-scale industry sector. There is no doubt a corresponding need for a locational framework for development of rural industries, in particular the small-scale industry sector. The high population density in Java coupled with a relatively good and extensive communication and transportation has in the past made Java attractive for import substitution industries requiring large domestic markets. The Outer Islands are more sparsely populated, yet rich in

resources. They are more suitable for resource based export-oriented manufacturing activities combined with the development of medium- and small-scale consumer goods industries in selected locations where the demand base is sufficiently broad or where some form of regional specialization in manufacturing can be attained. But regional specialization in manufacturing and spatial linkages with the domestic economy has been impaired by the inadequacy of infrastructure in the Outer Islands and the weak transport links between different regions of the country. It is no coincidence that the archipelogic nature of the country has favoured shipping as the most important means of domestic transportation, while land transportation in the Outer Islands has been constrained by topographical considerations and the associated importance of river transport used for primary goods. While the Government has stepped up efforts to link small ports in remote provinces with regional shipping services to and from Java, there is still a need for making larger areas of the Outer Islands more accessible. There is as yet little complementarity in regional specialization of manufacturing. Most of the inter-island trade is in agricultural consumer goods, primary goods and derivates, and re-exports from Jakarta or Surabaya to nearby provinces. To achieve a more balanced and integrated economy, the internal transport and infrastructural constraint will have to be solved. Associated herewith is the possibility that the indigenous medium- and small-scale industries may take advantage of the large infrastructural improvements being undertaken in the field of energy, roads, transport, etc., in connexion with the establishment of the large-scale, resource-based industries in the Outer Islands presently under way or planned.

Weak competitiveness of Indonesian manufacturers

One of the major obstacles to expansion of industrial output and exports is the high level of production costs which has characterized the import substitution industries in Indonesia. This has resulted not only in a weak competitive position for Indonesian products at the domestic market vis-à-vis imported manufactures but also impeded the competitiveness of Indonesian products

at international markets. The most obvious case is the Indonesian textile industry which, in fear of competition from cheaper imported products from other developing countries, has repeatedly made a case of protection against foreign competition. The major reasons for the high level of production costs have not only been the high capital intensity but also the high import content in domestic manufacturing activities in the form of raw materials and capital goods, reflecting strikingly weak backward linkages with the domestic economy. As a corallary the cost of production in the Indonesian manufacturing sector has been heavily influenced by international inflationary trends. The Government has adhered to various short-term protective measures in the form of tariff barriers but such measures are unlikely to prove effective for making Indonesian manufactures competitive domestically and internationally in the long run. The recent devaluation of the Rupiah, however, is expected to improve the competitiveness of Indonesian manufactures and to stimulate manufactured exports, though the cost of imported raw material will increase.

Chapter VII

PROSPECTS FOR INDUSTRIALIZATION

Indonesia's long-term growth perspectives

This section analyzes, in a summary fashion, the main contours of the provisional results of a study[1] on Indonesia's long-term growth prospects. The study illustrates the nature and dimensions of the prospects for long-term growth of the Indonesian economy. According to the study the population is expected to increase from 132 million in 1975 to 235 million in year 2000; the corresponding figures for the labour force being 48 million and 91 million. The labour force will thus increase by 43 million up to year 2000 almost equally distributed between Java (including Madura) and the Outer Islands. GDP is expected to increase at an average annual rate of 7.0 to 8.5 per cent up to year 2000. This rate of growth is required to cope with the problems of employment for the rapidly growing population. Should present trends and policies continue, however, even this rate of growth may not be sufficient to reduce unemployment. The expectations in regard to the relatively high rate of GDP growth are based upon two considerations: firstly that the relatively high rates achieved in the past could have been even better had capital-output ratios been lower and closer to the average of other South East Asian countries; and secondly that the availability of unexploited natural resources in terms of food, timber, energy fuels, metallic and other minerals will open up new opportunities for growth of the Indonesian economy. The study further expects that the industrial sector will attain sufficient momentum to sustain a self-generating growth, of 12.8 per cent from 1975-85 and 10.5 per cent from 1985-2000. The agricultural sector is expected to grow less than half of that of manufacturing (Table 7.1).

Table 7.1 Projections of GDP and Sectoral Growth Rates 1960-2000
(Constant prices)

	annual growth rate (percentage)		
	1960-1975[a/]	1975-1985[c/]	1985-2000[c/]
GDP	4.95	8.5	7.0 - 7.5
Agriculture	5.38	5.4	4.7
Mining	8.03	7.5	4.9
Manufacturing	7.74	12.8	10.5

Sources: EKI. Vol.XXV No.1, March 1977; UNIDO computer print-out (1960-75)

a/ Based upon constant 1975 prices b/ Mining includes electricity, gas and water c/ Based upon constant 1973 prices

1/ Strategic variables in Indonesia's Long-term Growth by Sjahchamikusumo, EKI, Vol.XXV, No.1, March 1977. This study has been designated by the Indonesian Government as one of the five top priorities in its national research programmes. It is being carried out by an interdisciplinary team of researchers under the supervision of the Ministry of State of Research.

The resultant structural transformation of the Indonesian economy implies that in the year 2000 the agricultural and manufacturing sectors will be almost equally important, 22.5 per cent and 21.6 per cent of GDP, respectively (Table 7.2). The expected growth of the Indonesian economy requires a significant increase in investment resources for the productive sectors. Accordingly, the proportion of GDP to be channelled into investment is expected to increase from 19 per cent in 1975 to 25.5 per cent in 1985. To sustain its planned growth rate, the manufacturing sector requires almost one-third of total investment or 7.5 per cent of GDP, compared with 3.1 per cent for agriculture. In discussing the choice between an agricultural versus industrial oriented investment strategy, it has been suggested[1/] that while the latter undoubtedly will lead to faster overall growth, the effects on income distribution, poverty and unemployment would be more favourable in the case of the former. The pressure on the foreign exchange position would be higher in the industry-oriented case but the impact upon the domestic price level and tax revenue would be more favourable than in an agricultural oriented investment strategy. The role of external financing would decline to 20 per cent of total investment by 1985. Considerable pressure would therefore be placed upon the mobilization of domestic financial resources. In regard to trade, the study expects that the import requirements for capital equipment and intermediate goods will be on the rise although export prospects appear favourable. This will lead to a widening trade gap whereby foreign exchange will remain a serious constraint. It is expected that the export trade will continue to be dominated by the traditional export commodities - energy fuels (mostly oil), timber and rubber. Manufactured exports are expected to increase from 0.7 per cent of total exports in 1974 to 5.6 per cent in 1985.

1/ Income Distribution, Employment and Growth, A Case Study of Indonesia. World Bank Staff Working Paper No. 212, August 5, 1975, pp. 68, 69.

The World Bank has emphasized[1/] that Indonesia should probably aim at a pattern of rapid labour intensive industrial development with value added in manufacturing increasing by not less than 15 per cent annually, and manufactured exports growing by not less than 20 per cent annually. Obviously such high rates of growth cannot be sustained indefinately but other developing countries have done so for sufficiently long periods. While Indonesia is fortunate in having a potentially very large domestic market, yet it is too small to support the high manufacturing growth rates that are needed. Being a newcomer in this area implies that Indonesia could take advantage of utilizing the experience of other developing countries to avoid costly mistakes. However, being a newcomer in one of the most competitive areas of the world presents particular problems in connexion with protectionistic policies in developed countries for precisely those labour-intensive industries in which Indonesia might have a comparative advantage. It is worth noting, however, that Indonesia has the largest remaining pool of inexpensive and relatively literate labour in East Asia, even before the recent devaluation. The greatest obstacles to the realization of much higher rates of growth of labour-intensive industrial development and exports are physical and administrative bottlenecks, the financial system, and other cost raising factors including unofficial levies. Intensified efforts to overcome these obstables are required.

1/ World Bank: Indonesia, Growth Patterns, Social Progress and Development Prospects, February 20, 1979, page 109.

Table 7.2 Strategic variables in Indonesia's long-term growth 1975, 1985 and 2000

	1975	1985	2000
Population (in millions)	132	167	235
Labour Force (in millions)	48	62	91
GDP per capita (in constant US$)	143	245	500
Share of investment in GDP (percentage)	18.9	25.5	-
Share of external savings in total investment (percentage)	24 a/	20	-
Share of agriculture in GDP, constant 1973 prices (percentage)	37.8	28.5	22.5
Share of mining in GDP, constant 1973 prices (percentage)	10.5	9.7	8.2
Share of manufacturing in GDP, constant 1973 prices (percentage)	11.1	16.3	21.6
Share of services in GDP, constant 1973 prices (percentage)	31.0	31.6	31.0
Share of oil, gas and coals in total exports (percentage)	50.1 a/	48.0	-
Share of industry and crafts in total exports (percentage)	0.7 a/	5.6	-

Source: EKI Vol.XXV No.1, March 1977

a/ 1974

Agriculture and agro-based industries

Indonesia is richly endowed with natural resources from agriculture, forestry, petroleum and mining. The main agricultural commodities are rubber, palm oil, rice, copra, coffee, tea, sugar, tobacco, pepper and livestock. The agricultural sector is a mixture of private and Government estate holdings geared mainly to exports, and small holdings largely of a subsistence type. Palm oil is produced by the estates only, while rubber, tea and sugar are produced by both the estates and small holders. Coconuts, coffee, tobacco, pepper and cotton are grown chiefly by small holders. The main export crops are rubber, coffee, tea, tobacco and pepper. Food crops include rice, cassava, sweat potatoes and maize. Minor crops include soyabeans and groundnuts. Table 7.3 summarizes the production of major agricultural commodities 1973-1977.

Table 7.3 Agricultural Sector Production (excluding Staple Food Crops), 1973 - 77

(in thousand tons)

	1973	1974	1975	1976	1977	Annual growth rate 1973-77
Rubber	845	817	782	786	825	-0.6
Palm Oil/kernel	289	348	397	431	497	14.6
Coconut/copra	1,237	1,341	1,375	1,393	1,446	4.0
Coffee	150	149	160	186	186	5.5
Tea	67	65	70	73	79	4.2
Clove	22	15	15	17	26	4.2
Pepper	29	27	23	37	39	7.6
Tobacco	80	77	82	88	103	6.6
Sugar Cane	1.010	1,237	1,227	1,321	1,365	7.8
Timber: teak[a]	676	620	595	480	573	-3.6
other[a]	25,124	22,660	15,701	20,947	21,787	-3.6
Meat	379	403	435	449	469	5.5
Eggs	81	98	112	116	123	11.0
Milk	35	57	51	58	61	14.9
Fish: sea	889	949	997	1,043	1,099	5.5
freshwater	389	388	393	405	427	2.4

Source: Bulletin of Indonesian Economic Studies, November 1978, p. 14

a/ Thousand cubic metres.
b/ Million litres

Earlier, Indonesia was the largest producer of rubber in the world, but output has declined in the last two decades and much remains to be done in the way of replanting and rehabilitation. Today rubber has taken second place after timber among Indonesia's non-oil exports. Indonesia is the world's second largest producer of palm oil and also a major producer of copra although little rehabilitation has been undertaken. Indonesia is a major producer of coffee accounting for around 15 per cent of the world's robusta coffee output. In regard to tea Indonesia ranks third in the world after India and China. Production of tobacco has been increasing in recent years. Earlier, Indonesia was self-sufficient in rice but, due to accelerated population growth and increasing pressures

upon land resources, Indonesia has been forced to import large quantities of rice. Indonesia has emerged as the world's largest importer of rice and a rice deficit of 1.5 to 2.5 million tons is expected to prevail at least through 1990.[1] Livestock farming is also important; in 1976, there were 6.7 million cattle, 3.2 million sheep, 4.4 million pigs, and 7.5 million goats providing a good base for the leather industry. Fishing, both inland and offshore, plays an important role in the national diet and production reached 1.5 million tons in 1977.

Table 7.4 summarizes the planned growth of agricultural output 1979/80-1983/84 compared with recent achievements (1973-1977). Noteworthy is the rapid planned increase in palm oil, sugar and soyabeans. The planned expansion of these agricultural commodities provides a sound basis for further growth of the largest manufacturing sector in Indonesia, viz. the food processing industry which accounts for around half of total manufacturing value added. Recent investment proposals in this sector are actively concentrated on the establishment of new industrial capacities based upon rapidly expanding raw materials. For example, in 1977 a palm oil plant was reported to be built in Central Java with a planned annual capacity of 96,000 tons, requiring 20,000 hectares of plantation, the biggest of its kind in Indonesia. Three additional palm oil plants were expected to be built in North Sumatra.[2] The Government has put the planting and processing of palm oil on its priority list for investment. Indonesia is at present the second largest exporter of palm oil, and Indonesia plans to increase its palm oil production from around 600,000 tons in 1979 to 900,000 tons by 1983. Palm oil production reached 496,000 tons in 1977 and 513,000 tons in 1978 of which three fourth was exported.[3] New industrial capacities are also expected to be established in sugar processing including a new factory in Lampung with an annual capacity of 100,000 tons, requiring 14,000 hectares of plantation, and the expansion of a sugar factory in Yogjakarta with a capacity of 45,000 to 50,000 tons. Further, as a result of an ASEAN-EEC conference, United Kingdom and Holland are to invest $81 million in the establishment of a sugar factory in south Kalimantan with a capacity of 80,000 tons per year to start production by 1983.[4]

1/ Asia Research Bulletin, 30 June 1979.
2/ Asia Research Bulletin, 30 April 1977.
3/ Asia Research Bulletin, 30 April 1979.
4/ Asia Research Bulletin, 30 April 1977.

A cashew processing plant is expected to be built in Yogjakarta with an annual capacity of 2,165 tons requiring 11,000 hectares.[1] Further, an integrated meat processing plant requiring investment of $18 million based on a capacity of 12,000 cattle per year is planned to be built in East Nusa Tenggara. A pineapple canning factory is also planned in Lampung with an annual capacity of 10 million cases requiring 7000 hectares of plantation.[2] The Indonesian Government is also trying to develop the coconut industry to meet local demand for coconut oil. In 1978 Indonesia imported 93,000 tons of coconut oil and copra production reached 1.4 million tons in 1977. By 1983 coconut production is expected to reach 2 million tons and domestic consumption 1.65 million tons.[3] These are merely examples of selected investment intentions which testify the close linkages between rapid planned expansion of certain agricultural commodities and parallel investment activity in food processing.

Table 7.4 Annual Rates of Growth of Agricultural Output 1973-77 and 1979/80 - 1983/84 Targets

	1973-77	1979/80-1983/84
Food Crops		
Rice	3.8	3.5[a]
Corn	-3.9	5.1
Cassava	2.4	4.4
Sweet potatoes	0.7	7.3
Soy beans	-0.4	7.1
Peanuts	9.4	5.0
Estate Crops		
Palm oil	14.6	11.3
Copra	4.1	2.1
Cotton	16.0	64.1
Tobacco	6.8	2.6
Sugar	8.2	12.5
Coffee	5.7	3.3
Tea	4.3	4.0
Pepper	11.1	11.4
Cloves	8.6	18.5
Rubber	-0.5	1.6

Source: Bulletin of Indonesian Economic Studies, July 1979

a/ The growth rate given in the Plan is 4.3 per cent, but this was derived using a very low production figure for 1978.

1/ Asia Research Bulletin, April 30, 1977

2/ Asia Research Bulletin, February 28, 1978

3/ Asia Research Bulletin, October 31, 1979

According to the agricultural projections, certain commodities, however, are expected to increase at a very low rate. This applies in particular to rubber, copra, tea, coffee and rice. The planned expansion of these commodities are likely to be inadequate to meet the growing raw material requirements from industry. The resultant absence of investment activity testifies the effect of a lagging agricultural sector upon backward-linkage industries. Improvements in the agricultural sector are here crucial for the growth of industry. In regard to rubber, for example, which comprises 2,344,000 hectares of land divided between small holders (80 per cent) and plantations (20 per cent), the average yield per hectare is only 40 per cent of that of Malaysia and 63 per cent of that of Thailand.[1/] In 1977, production of natural rubber reached 825,000 tons, most of which was exported. The introduction of high yielding varieties and improved management in agriculture is thus essential for industry. During Repelita III natural rubber production is expected to increase by 1.6 per cent annually. Domestic consumption is expected to rise by 12.8 per cent annually increasing to 79,100 tons in 1983. The production of rubber has given rise to the manufacturing of tyres. Under the Third Five-Year Plan Indonesia's annual automobile tyre is expected to increase to 5.7 million units by 1984 from the present 2.6 million units (1979). At the same time an estimated 25 per cent of the output will be reserved for exports. Production of motorcycle tyres during the same period is expected to double from 2.8 million units to 4.9 million units. There are currently 6 automobile and 10 motorcycle plants operating in Indonesia.

The textile industry is the second largest industry in Indonesia. Its share of total manufacturing value added increased from 10.8 per cent in 1970 to 15.07 per cent in 1976. The output of knitting and weaving increased from 450 million metres in 1969 to 1,085 million metres in 1975/76, while the number of spindles increased from 482,000 to 1,152,000 during the same period. Total capacity of dyeing, finishing and printing increased from 665 million metres in 1970, and the actual output was 933 million metres in 1975/76. Currently about 70 per cent of Indonesia's demand for textiles are being supplied by West Java (in 1977/78 727.5 million metres). West Java's textile production has risen by an average of 15 per cent annually from 1969-77. A number of textile factories has been set up under the domestic and foreign capital investment project programme. Rehabilitation of existing textile companies has also played a part.[2/] One of the major impediments to the

1/ Asia Research Bulletin, September 30, 1977.

2/ Asia Research Bulletin, October 1978.

growth of this industry is the lack of adequate raw materials. Most raw materials are presently being imported. Apart from weaving yarn, with 55 per cent of requirements produced locally, almost all cotton and other inputs are imported. Cotton production has not been able to keep pace with consumption because of a decline in planting. As part of the Government's drive to boost the silkworm industry fifty natural silk experimental and testing stations were expected to be built in 1979. These were intended to be used to train silk industry personnel.

Although the textile industry is in difficult times at present, the longer term prospects to the mid-1980s appear more favourable since present per capita consumption is low and is expected to grow steadily. The best opportunities for investment in the textile industry exist in garment making followed by weaving. Both spinning and fibre making appear quite unattractive.

The combined effects of these diverse trends in the Indonesian agricultural sector have been a modest planned expansion of the backbone of the Indonesian manufacturing sector, namely the food processing, textiles and rubber industries. The planned growth of these backward linkage industries dependent upon agricultural raw materials is among the lowest of all branches of industries. Apart from supply constraints in the agricultural sector, these industries are also adversely affected by demand constraints in domestic and export markets.

Forestry, and forest-based industries

Forestry represents one of Indonesia's major assets. Having become the major timber exporting country in South East Asia, timber now ranks second in Indonesia's exports after petroleum. Indonesia's forest resources cover 125 million hectares of forest of which 40 million hectares are now under exploitation mainly in Kalimantan, more than half, and Sumatra. In 1976, Indonesia produced 22 million cubic metres of logs of which around 90 per cent was exported to Japan, Singapore, Taiwan and Italy for further processing. In the same year, Indonesia produced 1.9 million cubic metres of sawn timber and 75.000 cubic metres of plywood, of which one-third and three per cent, respectively, were

xported. The bulk of Indonesia's forestry resources are thus being exported in an unprocessed form and only around 10 per cent of the log output is processed into sawn timber. The Government, however, has measures to boost production and export of processed timber through fiscal and promotional measures as well as infrastructural improvements.

Table 7.5 Indonesia: Timber production and exports (1971-77)

Year	Log			Sawn timber		
	Production (000 cu.m)	Exports		Production (000 cu.m)	Exports	
		Volume (000 cu.m)	Value ('000 US$)		Volume	Value ('000 US$)
1971	13,200	10,761	168,635	470	30.6	1,304
1972	17,141	13,991	230,349	840	137.3	3,734
1973	25,636	19,433	593,345	1,380	337.9	19,[illegible]
1974	20,635	13,082	720,551	1,919	353.9	26,634
1975	15,774	13,991	499,976	1,708	410.4	31,[illegible]
1976	23,041	13,649	780,379	1,900	643.9	42,033
1977	4,040 a/	9,500 b/	450,000	n.a.	713 c/	[illegible],000

Source: Asia Research Bulletin, Dec. 31, 1977 a/first quarter b/first semester c/ projections

The Government is making the export of unprocessed logs less profitable in order to encourage its local timber processing industry. Government regulations stipulate that timber businessmen who are given licences to exploit forests in Indonesia have to set up wood-processing industries. If they do not possess the processing facilities themselves, they have to sell 10 per cent of the log production to those who do. Furthermore, they can only export their logs if their shipment includes sawn timber. In spite of these regulations the pace of industrialization in this industry has been slow and concern has been voiced to the effect that there are too many disincentives for log exports and not enough incentives for timber processing.

Effective May 1978, the Government introduced an export ban covering 14 species of log wood.[1/] Because of environmental damage caused by indiscriminate logging, following large inflow of foreign investment in the late sixties and early seventies, the Government has now banned any foreign investment in forestry projects, even on a joint venture basis. The Government has now embarked upon a comprehensive afforestation programme aimed at having one-third of the country planted with commercially viable species.

1/ Asia Research Bulletin, February 28, 1978

The prospects for the wood processing industries seem bright in the light of existing resources and the planned rate of growth of 18.2 per cent in Repelita II. The emphasis on housing spells out a good future for certain types of processed wood. At present, there are about 200 sawmills in Indonesia of which 35 export nearly 60 per cent of their output mainly from West and Central Kalimantan. There are 14 plywood plants with an annual capacity of 35 million sheet. Further it is estimated that 12 more plywood plants will begin production in Indonesia within the next few years. Major new investment proposals include a $ 21 million sawmill and plywood factory in Sumatra[1/] with an annual capacity of 10,000 cubic metres, and a sawmill in East Kalimantan with an annual capacity of 90,000 cubic metres to be completed in 1978, the largest investment in the wood processing sector in Indonesia.[2/]

The Indonesian Government has successfully brought about the establishment of substantial new sawn wood and plywook production capacity over a relatively short period of time. However, if the desired value added and employment effects are to be achieved certain positive steps will have to be undertaken. Such steps might include[3/]: i) the establishment of an effective export timber marketing board; ii) the establishment of training and other technical facilities to assist plants to produce sawn wood and plywood and iii) tax and price incentives to produce sawn wood and plywood domestically and less incentives to export unprocessed logs.

Indonesia's production of paper amounted to 148,000 tons in 1978 compared with 90,000 tons in 1977 and less than 50,000 tons in 1976. Domestic consumption in 1978 was estimated at 400,000 tons. Substantial amounts of paper and paper products have therefore been imported in recent years. In fact no other country in the world with substantial fibre resources is so dependent upon imports. By the end of Repelita III in 1983/84 domestic demand is expected to reach 750,000 tons per year compared with an estimated production of 400,000 tons.[4/] Substantial imports of paper and paper products are therefore expected to continue

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1/ Asia Research Bulletin, June 30, 1977.
2/ Asia Research Bulletin, October 31, 1977.
3/ World Bank: Problems and Prospects for Industrial Development in Indonesia, Vol. II, page i, May 25, 1978.
4/ Asia Research Bulletin, March 31, 1978.

Substantial imports of paper and paper products are therefore expected to continue for some time. The Government, however, plans to achieve self-sufficiency in printing and writing paper by the end of Repelita III and the possibility of surplus for exports is also envisaged. Except for writing and printing paper which are 90 per cent domestically supplied, demand for newsprint and sack craft paper are all imported. Thus in the next five years priority would be directed for the production of pulp, newsprint and craft paper. A possible new source of raw materials for the paper industry is bagasse from sugar mills. The country's major paper mills are in West Java, Central Java, East Jave, South Sulawesi and Martugara. A number of small production units exist which could never be profitable if not protected from import competition by a 60 per cent tariff barrier. Following consolidation and expansion, the existing state paper mills were expected to produce a total of 63,500 tons of paper per year by the end of Repelita II. In 1978 P.T. Kertas Bekasi Teguh paper plant alone was expected to produce 33,000 tons.[1/] A major expansion of the state paper mill in East Java with a capacity of 88,000 tons was envisaged.[2/] Plans exist for the establishment of five paper mill projects within the next five years with an estimated total investment of $1.1 billion, two to be located in East Kalimantan and one each in Aceh, Central Java and South Kalimantan. Various forms of investment participation are being sought for these five paper mill projects:[3/]

- Aceh: being promoted by P.T. Alas Helau at an estimated investment of $85.3 million. The plant will produce 50,000 tons of multiwall sack paper and 70,000 tons of linen board;
- Central Java: to be developed by P.T. Aka in a joint venture with a foreign company, the plant is to produce 60,000 tons per annum of newsprint initially;
- South Kalimantan: this project consists of two production plants, one for the production of 20,000 tons of bleached craft paper per annum requiring an investment of $120.7 million, while the other is to produce 147,000 tons of fine paper requiring an investment of $152.1 million. The projects are being promoted by P.T. Sopromar in joint venture with a French company;
- East Kalimantan: project being promoted by the Australian Government in joint venture with P.T. Inhutani to be constructed in 1980. Saudi Arabian participation is also a possibility. Production is scheduled

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1/ Asia Research Bulletin, 31 October 1978.
2/ Asia Research Bulletin, 31 March 1978.
3/ Asia Research Bulletin, 31 August 1979.

to commence in 1984 with 84,000 squaremetres of sawn timber, 30,000 squaremetres of plywood and veneer, 180,000 tons of pulp, 100,000 tons of paper and 175,000 tons of chips for export. Total investment is expected to reach $115.9 million.

- East Kalimantan: a paper mill plant to be constructed in 1980 under the management of P.T. Inhutani with an annual capacity of 35,000 tons of white paper, 40,000 tons of pulp and 60,000 tons of board.

Proposals have been made[1/] to form a public sector pulp and paper company which would take over control of the five existing Government-owned pulp and paper mills. This company could be empowered to negotiate with the sponsors of the five major pulp and paper projects under consideration, to select the best projects for immediate development and to proceed with bankable feasibility studies, equity raising and finally implementation of the projects.

Petroleum, energy and chemical-based industries

Indonesia is the largest producer of crude petroleum east of the Persian Gulf and in 1963, crude oil took over the position of natural rubber as the country's largest foreign exchange earner and now dominates the economy. Natural gas is also produced in substantial quantities. Indonesia is estimated to possess over three-quarters of total oil resources in Southeast Asia and around two per cent of world resources. Known crude oil reserves are estimated at from 15 to 17 billion barrels. Undiscovered oil resources have been estimated at 35 billion barrels.[2/] Prospecting however has hitherto only covered a small proportion of the total area, and much remains to be explored. The main production areas are Sumatra, Kalimantan and Irian Jaya. Indonesia's overall growth prospects are critically dependent upon the successful exploration and exploitation of these resources which contribute to around one-fifth of GDP, half of Government revenues, three-fourths of export receipts but only one per cent of employment. Petroleum resources are expected to continue to be the main source of financing further development plans.

Indonesia's crude oil production has increased from 168 million barrels in 1967 to 615 million barrels in 1977. An annual increase of 15 per cent in oil production is expected during Repelita III (1979-83).[3/] Around 80 per cent is exported. Imports have been significantly reduced and now account

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1/ World Bank: Problems and Prospects for Industrial Development in Indonesia, Vol II, page iii, May 25, 1978.
2/ Asia Research Bulletin, 31 March 1979.
3/ see footnote 1/.

for around 10 per cent of total oil supplies. Domestic demand is growing rapidly and efforts are being made to develop alternative resources of energy for domestic consumption. Indonesia's net foreign exchange earnings from oil has increased from US$ 204 million in 1971/72 to an estimated US$ 4,278 million in 1977/78. The main producer is Caltex with close to three fourth of total output. Another major producer is Pertamina, the state-owned oil company. A number of French, Japanese and Australian enterprises are involved in production and search for new deposits. The Indonesian oil industry operates on "production-sharing agreements" between the oil companies and Pertamina. According to these "production-sharing" contracts, the state enterprise has full management control and is handling political matters and liaison with the Administration while the foreign owned companies concentrate on the technical aspects of exploration and production of oil and gas. Costs and revenues are shared in accordance with the "production-sharing agreement". In 1976, the Government unilaterally revised the contract terms to obtain a larger share of the revenue, but this has discouraged exploration and investment activities by the foreign companies. The Government now seems to be ready to compromise with the foreign-owned oil companies to overcome the impasse.

Table 7.6 Total Indonesian Crude Oil Production and Export, 1967-1977
(million barrels)

	1967	1974	1975	1976	1977
Production	136.90	501.30	476.80	550.30	611.10
Export	-	378.90	363.00	449.20	-
Shares of exports in production	-	75.5 %	76.1 %	81.6 %	-

Source: Asia Research Bulletin, September 30, 1977, and Asia Research Bulletin, 31 December, 1978

A major crisis in the petroleum sector developed in the mid-1970s when Pertamina expanded its interests into petrochemicals, natural gas liquefaction, steel, office and hotel buildings, housing and shipping. On its way to becoming an industrial conglomerate Pertamina accumulated debts which at one stage reached US$ 10,500 million. Following liquidity problems, the government stepped in to pay off some of Pertamina's debts

which has since thwarted a number of Indonesia's development projects. Some of the company's non-oil activities are now sold off and the role of Pertamina scaled down.

The Indonesian Ministry of Mines and Energy has recently outlined a long-term domestic energy policy that will gradually reduce the country's dependence on oil and develop Indonesia's non-oil energy resources. The cornerstone of the integrated national policy is the development of alternative sources of domestic energy primarily coal, hydropower and natural gas. The policy comprises programmes for energy diversification, conservation and indexation over the next 10 to 15 years. While oil is expected to remain the principal source of revenue for the next 15 to 20 years caution has been expressed regarding a possible stagnation in the country's oil revenue for the foreseeable future.[1/] Concern has also been voiced that Indonesia's oil refineries do not have enough capacity to meet domestic demand. Pertamina, the state oil company, is planning to remedy the situation by mid-1980's but the investment requirements are formidable.[2/] Caution has also been expressed that Indonesia may cease to be an oil exporting country by around 1990 if current trends in consumption and production continues. However, abundant oil resources still remain to be exploited and discovered.[3/] Exploitation is expected to increase at a 10 per cent compound annual rate during Repelita III[4/]. The alternate sources of energy comprise the following possibilities: Indonesia has an estimated 10 billion tons of coal reserves and the Government is to begin work on a US$ 1 billion to exploit these reserves for the purpose of domestic electricity generation. In 1977 and 1978 production of coal reached 2.3 million tons and 2.8 million tons respectively. In regard to natural gas, trillions of cubic metres of gas are currently flared off which could be used as domestic fuel. In the field of hydropower, current capacity is 450 mW and potential hydropower capacity is 31,000 mW. Indonesia has also about 8,000 mW of geothermal power potential of which 400 mW would be in use by the end of the century. Further, potential commercial deposits of uranium have been discovered. Finally, firewood could be used more efficiently to displace petroleum product usage in rural homes though some concern has been expressed about deforestation.

1/ Asia Research Bulletin, 31 July 1978.

2/ Ibid., November 1978.

3/ Ibid., October 1978.

4/ Ibid., 31 July 1979

Indonesia's development plan - Repelita II - envisaged an annual growth rate of 23.4 per cent for the chemical industry, and large-scale investments are being planned for both the petrochemical and fertilizer industries. The aim is to arrive at self-sufficiency by 1985.

The following table shows the production of chemical industries in Indonesia for the period 1974/75 - 1977/78:

Table 7.7 Chemical Production 1974/75 - 1977/78

Production	Unit	1974/75	1975/76	1976/77	1977/78
Fertilizer - urea	Tons (000)	209.1	387.4	406,000.0	990.0
Z.A.	Tons (000)	129.1	113.8	105.2	93.3
Cement	Tons (000)	839.2	1,241.4	1,979.3	2,878.6
Paper	Tons (000)	48.7	46.7	54.4	83.5
Glass (bottles)	Tons (000)	34.1	32.3	36.6	59.9
Tyres	(000)	1,704.0	1,795.0	1,883.8	2,339.1
Salt	Tons (000)	75.1	147.2	563.0[a]	786.0
Soda	Tons (000)	4.8	8.8	8.2	9.5
Aluminium sulphate	Tons (000)	14.4	13.7	14.6	18.5
Sulphate acid	Tons (000)	17.9	15.3	23.5	19.5
Pesticide - powder	Tons	309.0	605.8	770.0	2,414.8
- liquid	Cu.Lit.(000)	303.3	546.4	1,761.0	1,280.2
Oxygen	Cu.Met.(000)	4,660.9	4,914.1	5,855.0	6,806.0
CO_2 - gas	Tons (000)	1.4	1.6	1.7	2,858.0
- dry ice	Tons (000)	0.2	0.9	0.6	
Acetylene	Cu.Met.(000)	123.8	234.2	289.1	305.0
Readymixed concrete	Tons (000)	65.2	116.4	107.5	99.2
Zinc oxide	Tons	-	133.1	471.4	801.7
Dynamic damstin	Tons	584.8	858.7	187.4	810.6
Dynamic geodin	Tons	465.7	378.8	-	
Textile materials	Tons	-	-	2,010.0	3,267.0
Synthetic resin	Tons	509.5	532.2	1,378.9	-

a/ Includes smallholder salt.

Source: Asia Research Bulletin, October 1978.

Indonesia's petrochemical industry is still in a very early stage of development, but given her large deposits of oil and natural gas, the industry has very bright prospects in the future. Indonesia has enough raw materials to supply several petrochemical complexes and among the locations under consideration are plants in Northern Sumatra (Aceh), Southern Sumatra (Palembang), West Java, Central Java (Cilacap), East Java and East Kalimantan. The main product of petrochemical industries are fertilizers needed for supporting agriculture. Other products include polyetaylen, vinyl chloride for plastic industries, ethyle glycol for synthetic fibre and carbon-black for the production of tyres. The Government has reportedly assigned priority to two of the five petrochemical projects to be built by the end of the current Five Year Plan in 1983. The Government is pushing for a $1 billion project to be built in Aceh province in Sumatra and a $450 million centre in Plaju in Southern Sumatra. Both are to be developed by Pertamina, the state oil company. The Aceh plant is expected to produce raw materials for the plastic industry and the Plaju plant to produce raw materials for the domestic textile industry.[1/]

Indonesia's production of fertilizers reached 2.3 millions in 1976 while domestic consumption totalled almost 2 million tons. At present, Indonesia has 7 fertilizer plants: PUSRI I in Palembang with a production capacity of 100,000 tons, the Gresik petrochemical fertilizer plant 45,000 tons, PUSRI II 380,000 tons, the East Kalimantan I factory 170,000 tons, PUSRI III 570,000 tons, the Cirebon plant 570,000 tons and PUSRI IV 570,000 tons. Expansion of several of these plants is envisaged. The construction of a fertilizer plant in Botang in East Kalimantan is expected to be finished in late 1981 with an annual capacity of 570,000 tons of urea and 495,000 tons of amonia. Indonesia is still an importer of urea but her imports have dropped to below 10,000 tons in 1976. Indonesia could thus become a major exporter of fertilizers (urea), especially to its ASEAN neighbours. In 1979 the total capacity in the country was 2.2 million tons per year of urea. A recent study revealed that phosphate deposits in Java have great potential.[2/] Indoneisa could play a major role in fertilizer (urea) production in the context of ASEAN regional co-operation. In this regard Indonesia has agreed to make available $53 million to finance the construction of the ASEAN fertilizer plant in Aceh, North Sumatra with

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1/ Asia Research Bulletin, 30 September, 1979

2/ Asia Research Bulletin, December 1979

Singapore, Malaysia, Thailand and the Philippines each contributing $8.94 million. The plant is expected to require a total investment of $289 million with a production capacity of 570,000 tons for completion in 1981. As yet there is no indication as to the financing of the balance of about $200 million.[1/] When the ASEAN and the Kalimantan plants are completed in 1982, production of urea is expected to reach 3.2 million tons per annum.

Indonesia is placing increasing emphasis upon the development of its natural gas reserves. Natural gas production increased from 150,770,000 M.C.F. in 1972 to 615,122,000 M.C.F. in 1977. Two plants for liquifying gas are being built in North Sumatra and East Kalimantan involving an investment of $3 billion. Pertamina has agreed to supply 7.5 million tons of LNG annually over 20 years to Japan beginning in 1977. Another 20 years contract has been signed with US which provides for the supply of 4.4 million tons a year beginning in the early 1980's requiring a total investment of $2 billion. Indonesia expects to earn about $200 million from its LNG exports and will join five other LNG producting countries in the world.

Rapid expansion is also taking place in Indonesia's pharmaceutical industry sector. During Repelita I some 30 foreign and 30 domestic pharmaceutical ventures were established. The Government expected as many as 60 new Indonesian firms and 10 foreign firms to enter the industry during Repelita II. To reduce the past dependence upon raw material improts, private foreign ventures have been obliged to expand into basic manufacturing and they have been under increasing presure to produce more raw materials locally.

Mining and mineral-based industries

Indonesia is rich in hard mineral resources with significant known deposits of tin, nickel, bauxite, copper, gold, silver, iron ore, coal, kaolin, granite, limestone, phosphate, uranium and molybden. Prospecting, however, has so far only covered a small proportion of the total area. Mineral resources are therefore still subject to substantial exploration. A recent exploration survey, for example, has indicated the existance of some 22 types of minerals in Tangse, Geumpang and Sumatra alone.[1/] Table 7.8 specifies the

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1/ Asia Research Bulletin, 31 August 1979.

Table I.3 Major Mineral Production of Indonesia in 1972-1977

Mineral commodity	1972	1973	1974	1975	1976	1977	Unit
Bauxite	1,275,957	1,229,375	1,290,054	992,556	940,269	1,301,416	tonne
Nickel ore	935,075	867,319	878,355	801,072	823,301	967,879	tonne
Ferronickel	-	-	-	-	16,886	21,574,450	tonne
Iron sand concentrate	264,915	280,938	365,206	352,991	292,334	311,519	tonne
Copper (concentrate)	9,750	125,870	212,620	204,937	223,301	188,103	tonne
Tin	21,765	22,646	25,709	25,337	23,224	24,021	tonne
Gold	3,390,089	3,521,493	3,952,533	3,306,696	3,551,544	2,359,141	tonne
Silver	8,683,975	9,371,929	6,464,607	4,758,374	3,397,451	2,831,967	tonne

Source: Asia Research Bulletin, 31 December, 1978.

output of major hard minerals in Indonesia since 1972. There has been a general downturn in the production since 1974 of some of the major minerals such as gold, silver, tin, copper and iron sand concentrate.

The Industry Ministry has decided on ten key projects that will be given top priority in the sector of mineral based industries for the coming years. The ten key projects are:[1/]

- the Asahan aluminium smelting plant
- diesel and gas-combustion engine project
- industry of agricultural machines, particularly those for land development
- industry of construction equipment
- industry of machine tools
- industry of TV picture tubes
- industry of electric motors and generators
- industry of motor vehcile components
- ship-building industry
- PT Krakatau integrated steel project

Indonesia is now the third largest producer of tin in the world, representing around 13 per cent of world output, yet only 3 per cent of country exports. So far only 2 per cent is consumed locally. Indonesia will take steps to raise its tin production from 26,000 tons to 30,000 tons annually. Despite local demand and availability of raw materials, Indonesia does not yet produce tin plates for containers and food packaging industries, through local demand for tin plates may reach 100,000 tons per year in 1980.

Indonesia has estimated nickel reserves of 14 million tons or 15 per cent of the world nickel resources. Large deposits of nickel have recently been opened in Central Sulawesi and Irian Jaya. At present, there are 3 nickel companies operating in Indonesia, one in South Sulawesi, one in South-east Sulawesi and one in Irian Jaya. Over the next few years nickel will increasingly be processed and exported in the form of nickel metal, nickel matte and ferro-nickel. However, two large nickel projects have recently been postponed due to lumping world demand and bulging inventories during recent years, dampening the country's hope of becoming a leading nickel producer in the world by the end of the decade. One project involved a total investment of $850 million to $1 billion.

1/ Asia Research Bulletin, 31 July, 1978.

Indonesia's production of bauxite reached 1.3 million tons in 1977 and 1.0 million tons in 1978. To date 90 per cent of bauxite output has been exported unprocessed. There are, however, several plans to develop local processing capacities and some of them should materialize over the next few years. The main scheme is the Asahan aluminium refinery in North Sumatra involving an investment of $900 million comprising two hydro-electric power units and a smelter to produce 225,000 tons of aluminium per year to be completed by 1980. Along with the completion of this project, a $400 million aluminium plant is expected to be completed by 1981 with a capacity of 400,000 - 600,000 tons. Following the discovery of large bauxite deposits in West Kalimantan, Alcoa is reported to be investing $1.26 billion to establish a bauxite mine and aluminium processing plant with a capacity of 500,000 tons of aluminium.

At the end of 1972, the construction of a major copper mine was completed by Freeport Indonesia Inc. in an area believed to contain 33 million tons of copper deposits with a plant capacity of 250,000 tons per year requiring investment of $225 million, employing 1500 workers under product sharing contract. Indonesia presently produces about 220,000 tons of copper annually. The Government does not intend to establish new copper smelting plants because copper production is relatively small and world market prices low. However, exploration for copper deposits have recently begun in North Sulawesi, South Sulawesi, and West Java by P.T. Riotinto Indoneisa.[1/] Recent exploration survey has indicated large copper deposits in Tangse Geumpang, Sumatra.

Although deficient in iron ore, Indonesia has 20 iron and steel mills. Raw materials consist mainly of domestic scrap iron; however, steel is imported due to the poor quality of Indonesia's raw material supplies. The feasibility of making better use of Indonesia's iron ore deposits located mainly at Cilacap in Central Java as the basis for a modern steel industry is being investigated, and proposals have been made for using gas. In spite of the lack of sufficient domestic raw materials a growing number of establishments are fabricating iron sheets, steel pipes and steel plates, as shown in table 7.9, which also illustrates that most industries operate far below capacity. With aid from the West German Government, the Krakatau

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1/ Asia Research Bulletin, March 31, 1978.

Steel Plant near Cilegon is expected to be Indonesia's main steel producer when its expansion is completed in 1985. The Krakatau steel complex was inaugurated in 1979 comprising 540,000-ton-per-annum steel billet factory, a 220,000 ton per annum wire rod factory, a 65,000 ton per annum spiral steel pipe factory, and a 400 MW steam power generator. Indonesia's steel demand is estimated to amount to more than 2 million tons at the eve of the third five year plan ending 1984.[1/]

Table 7.9. Iron and Steel Production 1975-1977 (tons)

	Capacity	1975 Production	1976 Production	1977 Production
Steel ingots	296,000	116,000	136,000	150,000
Concrete iron	-	202,000	296,250	350,000
Wire rope	-	-	6,000	12,000
Steel plate	-	-	3,839	5,000
Steel rope	-	-	5,500	12,000
Steel wire	129,500	43,400	84,630	100,000
Galvanised iron sheet	189,000	145,000	150,000	156,000
Water/gas pipe	70,000	35,000	38,500	42,350
Electric/furniture pipe	60,000	50,000	55,000	60,500
Spiral welding wire pipe	20,000	12,000	13,500	15,000
Light gauge	18,000	13,000	13,000	14,000

Source: Asia Research Bulletin, May 31, 1977.

There are about 81 foundries in Java and Sumatra with a combined capacity of 12,000 tons of cast iron per annum. The main problem in the development of these foundries is the lack of basic raw materials. While quartz sand is available, the type of sand is not of the right quality and has to be pre-treated before it can be used as moulds for castin metal and alloys.

1/ Asia Research Bulletin, December 1979.

Indoneisa is expected to have an additional 7 galvanised iron sheet factories in 1981, making a total of 17 such factories in the country. Indonesia is now capable of producing 200,000 tons of galvanised iron sheets annually, but with the completion of the additional factories it will be able to produce 437,500 tons of galvanised iron sheets annually by 1981. By then home demand for iron sheets is expected to reach an estimated 350,000 tons and is expected to grow by 15 per cent annnually. The basic raw materials for the manufacture of galvanised iron sheets is cold-rolled sheet metal, which is entirely imported from Japan (in 1977 300.000 tons of sheet metal). To reduce the country's dependence on such imports, a cold-rolled sheet metal mill in West Java is currently being built for completion by 1980.[1/]

There are 29 concrete iron factories in Indonesia with a total capacity of 1,273,400 tons. They produced 963,400 tons of concrete iron in 1978 as against an annual demand of 500,000 tons. The export target for 1979 was 313,000 tons of concrete iron.[2/]

In Repelita II, rapid expansion was envisaged for the engineering industries where large import substitution possibilities exist. A planned growth rate of 24.1 per cent and 30 per cent was envisaged for the metal products and equipment industry, which expanded rapidly during Repelita I. This growing trend towards diversification of the manufacturing sector has continued as shown in table 7.10. Rapid expansion is also envisaged in the case of cars, motorcycles, TV's etc. Concern, however, has been expressed in regard to the low value added which arises from these assembly operations depending primarily upon imported components. The Government has announced plans to cut down the number of motor assembly plants. Rationalization of the industry with greater use of local resources and stronger linkages with domestic industry would appear essential for the economy. An example of a constructive development in this regard is the Japanese Government's agreement to set up a forging centre in West Java to supply a diesel factory in East Java.[3/]

1/ Asia Research Bulletin, 30 September 1978.

2/ Asia Research Bulletin, 31 July 1979.

3/ Asia Research Bulletin, 31 May 1977.

While the growth of engineering industries has been quite impressive, comparisons within this industry indicate that development has taken place unevenly. While the consumer based engineering products (electronics, automotive industries) have expanded rapidly, the heavy engineering industries have expanded much less and widespread excess capacity exists. The engineering and machinery industries are critical for future industrial grwoth because: (i) they have strong backward and forward linkages; (ii) they are usually efficient at small-scale; (iii) they tend to be labour intensive; (iv) their demand is income elastic; and (v) there are export possibilities for some products. There is thus a strong need to have an overall strategy for developing Indonesia's engineering industries as a whole.[1/]

Table 7.10. Output of Machinery and Equipment (tons)

	1975	1976	1977 (targets)
Sprayers	15,000	20,000	20,000
Hand tractors	30	30	200
Paddy processors	3,000	1,000	1,200
Sugar mill machines	2,700	2,500	3,000
Oil palm, tea and other estate machines	2,000	2,000	4,000
Crumb rubber equipment	-	200	400
Concrete mills	500	500	1,000
Centrifugal water pumps	1,500	800	1,000
Hand water pumps	10,000	10,000	10,000
Room air conditioners	23,000	30,000	33,000
Refrigerators	40,000	50,000	60,000
Electric fans	143,000	166,000	180,000
Rice cookers	12,000	19,000	21,000
Sewing machines	520,000	400,000	450,000

Source: Asia Research Bulletin, 31 May 1977.

1/ In this connexion the World Bank has suggested two major studies to assess possible measures to deal with key problem areas and assist the development of an effective industrial strategy. These are: (i) an in-depth study of the problems in the capital goods sector; and (ii) a study of the possibility of developing a strong export business. (World Bank: Problems and Prospects for Industrial Development in Indonesia, Vol. II, page iv).

Indonesia is well endowed with limestone and other resources used for cement production. In 1979 domestic production of cement exceeded domestic consumption, leaving an export surplus of 500,000 tons. This contrasts strikingly to the situation in previous years, where domestic production did not keep pace with increasing demand, requiring substantial imports. During the period 1973/74 - 1977/78, domestic cement production increased from 750,000 tons to 3.7 million tons. Currently there are six manufacturing plants in operation with a total capacity of 4.7 million tons a year. The target for cement production at the end of Repelita III (1979 - 1984) is 6.85 million tons, 5.6 million tons for domestic consumption and 1.25 million tons for exports. Production will originate from the following factories:[1/]

	Factory	Production capacity per annum
1.	Padang I Cement Factory	0.33 m. tons
2.	PT Cement Gresik Surabaya	1.5 m. tons
3.	PT Cement Tonasa South Sulawesi	0.62 m. tons
4.	PT Cement Cibinong South Jakarta	1.2 m. tons
5.	PT Indocement	1.0 m. tons
6.	PT Cement Nusantara	0.6 m. tons
7.	PT Padang Cement	0.6 m. tons
8.	PT Cirebon Cement	0.5 m. tons
9.	PT Baturaja Cement	0.5 m. tons

Several projects for establishing additional cement production capacities are presently under study.

There is a growing domestic demand for cement in housing and construction programmes. Domestic demand is expected to increase as a result of various incentives offered by the Government, in Repelita III, to encourage private companies to build low-cost houses. During Repelita II, the Government planned the construction of 73,000 units of low cost housing. However as of March 1978 only 30,000 units had been completed. In regard to export demand the industry is envisaging capturing a share of the Middle East cement export market, after having

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1/ Asia Research Bulletin, February 1979.

reached self-sufficiency in cement production. The problems hampering such export is the high production costs coupled with the lack of regular transport services. Following the recent devaluation the competitive position has been improved and the traditional Southeast Asian cement exporters are not able to increase their exports to the Middle East.

Indonesia also produces small quantities of other minerals such as gold, silver, diamonds, manganese, phosphate rock, kaolin, asphalt, sulphar. Silver production has fallen sharply and is well behind plan target. Uranium was discovered in West Kalimantan in 1974 and exploration studies are being undertaken by French and German teams. Mining is expected to begin in 1985. An atomic testing reactor is being built in West Java. Following the increase in oil prices in 1973/74 ambitious plans have been prepared to expand the coal industry in an effort to develop alternative sources of energy.

The exploitation of Indonesia's mineral wealth has only begun very recently. Apart from coal nearly all of its present output of hard minerals is being exported as raw materials in an unprocessed form. The share of hard minerals experts in total exports, however, is still insignificant, around one per cent (1974). Forward linkages to domestic industries from the mineral sector is almost non-existent. Being highly capital intensive, with little employment impact, the mineral sector is heavily dependent upon foreign investment and technology. Since 1967, the mining sector has accounted for 17 per cent of all foreign investment in Indonesia. Thus, although investment in this sector may be substantial, the returns to the Indonesian economy has remained fairly small, and confined to narrowly defined locations.

Over the past few years considerable efforts have been made to explore and exploit new resources and to expand productive capacity. The mining sector forms a long-term basis for the building up of a heavy industrial base in Indonesia, and it constitutes a growth element in regional development efforts since resources are primarily located in the Outer Islands. Strong encouragment is therefore being given to the processing of mineral output within Indonesia for exports, and priority is given to investment proposals involving integrated pro-

cessing operations. The Government endeavours to increase Indonesian participation in regard to financing, management, employment, inputs and social amenities i.e. through the regulation of foreign companies by means of "contract of works".

Small- and medium-scale industries

In Repelita III small industries are expected to provide employment for 434,000 persons, create a total value added of Rp. 223 billion (US$ 356.5 million and effect a total investment of Rp. 90 billion (US $ 144 million).[1/] This compares with 343,200 persons engaged in small industries in 1975 and value added of 44.2 billion Rupiah also in 1975.

In 1973/74 the International Development Centre of Japan undertook a study of industrialization in Southeast Asian countries including Indonesia. In this study a selection was made of manufacturing industries in which promotional efforts might be concentrated. Table 7.11 gives a list of those industries that are considered to be suitable for small- and medium-scale enterprises in Indonesia. Each branch of industry has been assigned one of five ratings for each of the following criteria: i) anticipated growth in demand for its products; ii) degree of labour intensiveness in production - to cope with present factor endowment; iii) amount of skilled labour required - the smaller the requirement, the higher the rating; iv) optimal production size - the small the size, the higher the rating; v) rate of growth in import of such products by developed countries; vi) extent to which domestic respirces cam be utilized. The table includes those industries with one of the top two ratings in regard to the criterion of optimal size. The ratings were intended to give a comparative picture of each industry in regard to the six criteria. In this connexion it is noted that a further disaggregation of the branch classification may have affected the ratings and that other criteria i.e. technology, linkages, etc., could also have been applied.

Table 7.11 contains a few industries which rate high in terms of exports and other criteria. Nevertheless, the level of exports of small- and medium-scale industries in Indonesia is still low. This implies that there are many Industries in which exports have a great

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1/ Source: Asia Research Bulletin, 31 May 1979.

Table 7.11. Scores of Industrial Branches Suitable for Small- and Medium-Scale Operation

Commodity or service	Growth	Factor endowment	Skilled labor	Size	Exports	Resources	Total
Food industries							
Fish processing	I	I	I	I	I	I	6
Rice milling	I	I	I	I	I	I	6
Other cereals	I	II	II	II	I	V	13
Bakery products	I	I	II	I	I	V	11
Vegetable oil	III	III	III	II	I	I	13
Margarine	I	II	II	I	III	I	10
Coffee	III	II	II	II	I	I	11
Tea	V	II	II	I	I	I	12
Textiles							
Cotton fabric	II	I	II	II	I	V	13
Rope	I	I	II	II	I	I	8
Hemp	I	I	I	II	I	II	8
Knitting mill products	I	I	II	I	I	V	11
Wearing apparel	I	I	II	I	I	III	9
Leather							
Leather goods except footwear	II	I	II	I	I	III	10
Leather footwear	II	I	III	I	I	III	11
Wood, paper and related industries							
Sawmill	IV	I	II	I	I	I	10
Bamboo, vines & cork	III	I	I	I	II	I	9
Wood furniture	III	I	II	I	I	I	9
Other wood products	III	I	II	I	II	I	10
Paper boxes & containers	II	I	II	I	V	III	14
Corrugated board	II	I	II	I	V	III	14
Chemical industries							
Pigments	I	I	III	I	IV	I	11
Matches	I	I	I	I	V	III	12
Petroleum							
Lubricants	III	IV	IV	II	I	I	15
Briquettes	IV	I	III	I	V	I	15
Rubber industries							
Bicycle tires & tubes	I	I	II	II	I	I	8
Rebuilt tires	I	I	II	I	I	II	8
Rubber footwear	I	I	II	II	I	I	8
Rubber hose	I	I	II	II	V	I	12
Rubber-coated textiles	III	II	III	II	IV	I	15
Non-metallic mineral industries							
Tiles	II	I	II	II	V	I	13
Clay bricks	II	I	II	II	V	I	13
Clay products	II	I	I	I	V	I	11
Earthenware	II	I	I	I	V	I	11
Glassware	I	I	II	II	V	I	12
Cement products	I	II	II	I	V	I	12
Plaster & its products	III	I	II	I	V	I	13

Commodity or service	Trade	Factor endowment	Skilled labor	Size	Exports	Resources	Total
Iron, steel & other metals							
Molding and casting [illegible]	[illegible]	II	III	I	V	V	18
Aluminum second alloy	III	III	III	I	I	V	16
Molding of non-ferrous metals except aluminum	III	I	II	I	I	V	13
Metal products	I	III	II	II	II	V	15
Cutlery & tableware	II	I	II	I	I	IV	11
Farm implements	I	I	II	I	I	IV	10
Hand tools	II	II	IV	I	I	V	15
Bolts, nuts, nails, spikes, etc.	I	I	II	I	I	V	11
Aluminum alloy products	III	I	I	I	I	V	12
Metal furniture	II	III	II	II	V	V	20
Metal construction materials	II	II	IV	II	II	V	17
Machinery							
Non electrical power machinery	I	II	IV	II	I	V	15
Metalworking machines	I	I	III	I	I	V	12
Textile machines	I	I	III	II	I	V	13
General industrial machines	II	I	III	I	V	V	17
Light bulbs	I	I	II	II	I	V	12
Batteries	I	II	II	III	I	IV	13
Transport equipment							
Ships & boats	I	II	III	I	II	III	12
Railroad equipment	I	I	IV	V	V	V	21
Bicycles & parts	I	I	II	I	I	V	11
Truck body	I	II	III	II	V	I	14
Sundries							
Toys, sporting goods	III	I	II	I	I	I	9
Grass floor covering	II	I	I	I	I	I	7
Musical instruments	V	I	I	I	V	I	14
Ball point pens	II	III	II	I	I	II	11
Button	III	I	II	I	I	I	9
Plastic sheets & film	III	III	III	II	V	II	18
Straw products	II	I	I	I	I	I	7

Note: Scores are given in five points from I to V, I being the best in the context of the main text.

Source: International Development Center of Japan, A Study of Industrialization in Five Countries in Southeast Asia, March 1974, pp. 165-168.

potential and which are suitable for small- and medium-scale industries but in which small- and medium-scale industries in Indonesia do not appear to have seized such export opportunities. In this regard there seems to be much scope for promotional efforts.

The more serious deficiencies that may impair the more rapid development of light, small-scale industries are discrimination in the allocation of credit and the circumstance that the industrial incentives system and licensing procedures do not reward investments that have employment creation as a principal objective. More systematic planning efforts and revision of the licensing procedures are no doubt also required. Further a review of the development strategy to make objectives more operational and meaningful and more sharply related to policies is also urgently needed. Measures aimed at strengthening the financial institutions serving small-scale industryeare also required. This would lead to increased support for small-scale industries that offer opportunities for greater labour absorbtion, diffusion to locations other than Jakarta and the major cities and Java and which may also have opportunities for expansion of exports.

ASFAN regional industrial co-operation

The development of resource based industries is crucial for Indonesia's participation in regional industrial co-operation schemes within the framework of ASFAN (Indonesia, Malaysia, Philippines, Singapore and Thailand) and other South East Asian States. In the early 1970's two major United Nations studies[1/] recommended, among other things, a number of industrial investment opportunities in specific sectors based upon three different types of regional co-operation schemes appropriate to ASFAN conditions, in ascending order of commitment by individual states as follows: i) selective

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1/ "Economic Co-operation among Member Countries of ASEAN", Journal of Development Planning, Vol. 7, United Nations, New York, 1974; "Asian Industrial Survey for Regional Co-operation" Report prepared under the auspicies of ECAFE (now ESCAP) in co-operation with the Asian Development Bank and UNIDO. AIDC[9]/1, United Nations, New York, 1973.

trade liberalization, ii) complementation agreements, and iii) the package deal arrangment.

Political commitment to proceed with ASEAN regional industrial co-operation was confirmed by the ASEAN Heads of Government meeting for the first time in February 1976, in Bali, Indonesia. At this meeting a document entitled "Declaration of the ASEAN Concord" was adopted which states, among other things, that member states "shall co-operate to establish large-scale ASEAN industrial plants particularly to meet regional requirements of essential commodities", and that the "expansion of trade among member states shall be facilitated through co-operation in ASEAN industrial projects". The aim of ASEAN regional co-operation would thus be to enlarge the opportunities for expansion and diversification of industrial output, trade and development. Further, by taking advantage of the ASEAN market, certain industries can be established on a regional basis, which could not be feasible in any single ASEAN state on the basis of national markets alone. In the following, the Indonesian interest in regional industrial co-operation is analysed from the point of view of: i) selective trade liberalization: ii) industrial complementation schemes, iii) ASEAN industrial projects and co-ordination of national projects in selected industries, iv) harmonization for investment policies, joint export marketing and external trade negotiations.

In regard to selective trade liberalization, the future of industrialization in Indonesia is in some important way linked to whether ASEAN states can create a trade area in which ASEAN industrial products can move freely within the region and in which each state can specialize in industries according to the principles of comparative advantages. Although intra-regional trade is of limited importance to member countries at present, it represents a promising area of co-operation for the future. In recent years intra-ASEAN exports have remained below 20 per cent of total ASEAN exports and Indonesia's share of total ASEAN exports has ranged from 14 to 19 per cent. In February 1977, the ASEAN countries signed a Preferential Trading Arrangement (PTA) to encourage expansion

of intra-ASEAN trade involving extension of tariff preferences, liberalization of non-tariff barriers on a preferential basis, long-term purchasing contracts, financial support at preferential interest rates; preference in procurement by Government entities and other measures that may be agreed upon in the future. Under the preferential trading arrangement (PTA) a list of 71 industrial products have been identified for preferential treatment (see Annex).

In regard to complementation agreements a list of possible regional industrial products has been identified (Annex). As in the case of trade liberalization, the complementation agreements would at the present moment primarily be advantageous to the trans-national co-operations which are best prepared to take advantage of an enlarged market and, secondly, the more established enterprise in Singapore and the Philippines unless some particular type of joint ventures are established which would ensure participation by Indonesia's national enterprises. However, in response to the role envisaged by the private sector in achieving ASEAN industrial co-operation, the private sector has organized itself into ASEAN-Chambers of Commerce of Industry (ASEA-CCI) in 1971. At the ASEAN-CCI council meeting in 197', it was agreed that the principal vehicle for the ASEAN private sector efforts would be the regional industry clubs (RIC) of which seven have been given full recognition in 1977. Several others are in their formative stage. Their primary task is the identification of various products from existing plants in member coutries that can be subject to intra-ASEAN trade and to negotiate trade liberalization required to stimulate this trade. The RIC thus formulates and submits through ASEAN-CCI to the respective committees of the ASEAN Ministers of schemes for complementation in their respective industries.

In regard to ASEAN Industrial Projects (AIP), the Governments have agreed to study initially five ASEAN regional industrial projects as follows: an ASEAN amonia - urea project in both Indonesia and Malaysia; an ASEAN phosphatic fertilizer plant in the Philippines;

an ASEAN diesel engine project in Singapore: and an ASEAN rock-soda ash project in Thailand. The ASEAN market would become a preferential market for products from each of these industries. Since the ASEAN market requires the establishment of large-scale enterprises and since Government involvement is required, the public sector could play a leading role in this form of regional co-operation. In September 1977, the ASEAN Economic Ministers accepted the ASEAN amonia urea project in Indonesia being the first ASEAN industrial project. Steps are now being taken within the various ASEAN Governments to mobilize the financial resources required for the establishment of this project. Pre-feasibility studies are expected to be undertaken for a number of other ASEAN industrial projects including, heavy duty rubber tyres, metal working machine tools, newsprint, electrolytic tin plating, TV picture tubes, fisheries and potash. The ASEAN Governments have further agreed upon the exchange of information on national development programmes in steel, petrochemicals, pulp and paper and other industrial sectors which may be agreed upon. The primary purpose of this form of industrial co-operation is to achieve co-ordination of national projects in the same industry sectors. Such exchange of information has already been initiated in the steel and petrochemical industries.

Regional co-operation is also needed in the field of harmonization of foreign investment policies and joint external trade and aid negotiations with other countries. Common ASEAN investment policies may increasingly be needed due to the presence of transnational corporations, particularly in the field of resource based industries. Investment incentives must also be harmonized since competitive bidding among ASEAN states in offering incentives to the transnational corporations may be damaging to the national states. The formulation of a regional code of good conduct for foreign investors will increasingly be needed parallel with the growth of manufacturing. In this regard there is need for regional co-ordination of policies vis-à-vis transnational corporations operating in the extractive and mining industries to ensure that producer countries obtain what they consider a "fair share" of the proceeds. Joint ASEAN export marketing in the industrialized countries is also essential for the purpose of ensuring greater control of the market and better division of labour through regional speciali-

zation. In the absence of such harmonization of efforts, the industrialization of individual countries may develop in a haphazard way resulting in a possible conflict of interests and duplication of efforts, depriving the region of the potential benefits of a viable regional industrial base.

Finally, an important area of co-operation among ASEAN states is the ASEAN trade negotiations with external trading partners, in particular with EEC, Japan, Australia, New Zealand, and the United States. A system of trade consultations has been estabished between ASEAN and EEC. In this regard, ASEAN has established a Special Co-ordinating Committee (SCCAN) and an ASEAN Brussels Committee to deal with EEC matters. The EEC itself has also escalated its efforts to maintain a dialogue with ASEAN. Already in 1974, an ASEAN/EEC Joint Study Group was established in Brussels to work out possible areas of economic co-operation, including trade, which eventually may produce an EEC-ASEAN economic agreement. The fields which have received priority at the ASEAN-EEC Industrial Conference held in February 1979 were chemcial industries, industrial transformation of agricultural products, machinery and metal engineering industries, precision engineering industries, timber and timber-based industries; and transport and communications equipment[1/]. Similar efforts have been made vis-à-vis Japan and through the establishment of an ASEAN-Japan forum to examine ASEAN export opportunities to Japan and possible Japanese inputs to ASEAN industrial projects. In connexion with the ASEAN Summit in August 1977, in Kuala Lumpur, the Japanese Prime Minister pledged a total of US$ 1 billion in credits for ASEAN industrial projects provided they proved to be economically feasible. Discussions have also been held in 1977, between ASEAN and Australia in regard to ensuring better access to the Australian market for ASEAN manufactured and semi-manufactured products and on Australia's assistance in joint ASEAN research and development projects. In connexion with these external trade negotiations, consideration is being given to the establishment of an economic co-operation agreement with Japan, Australia and New Zealand similar to the Lomé Convention. According to this convention, EEC has extended trade preferences and industrial co-operation agreements with more than

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1/ Asia Research Bulletin, October 1978.

40 developing countries for Africa, Caribbean and Pacific. There have also been discussions in 1977, with selected West Asian countries in regard to strengthening economic relations between West Asia and the ASEAN countries. An important element of all these external ASEAN negotiations in the future could be the prospects for redeployment of industrial capacities from developed countries to ASEAN countries.

Chapter VIII

REVIEW OF FOREIGN AID, GOVERNMENT DEVELOPMENT EXPENDITURE AND TECHNICAL ASSISTANCE PROJECTS RELATED TO INDUSTRY AND UNIDO'S INVOLVEMENT

Foreign aid and government development expenditure for industry

Indonesia is a significant rec pient of foreign aid and now ranks second among developing countries in this regard. Foreign aid to Indonesia has increased more than eightfold from 91 billion Rp. in 1969/1970 to 763 billion Rp. in 1977/1978, the equivalent of approximately US $1.3 billion. The significance of foreign aid can be visualized by the fact that in Repelita III the foreign aid and loan component of the Government's development budget is expected to be around 43 per cent. Almost all foreign aid now consists of project aid while programme aid has practically been phased out. The proportion of foreign aid allocated to industry and mining amounted to Rp 64.1 billion in 1974/1975, increasing to Rp 95.0 billion in 1977/1978, reflecting a relative decline from 27.6 per cent to 12.5 per cent of total foreign aid (Table 8.1).

The Inter-governmental Group of Indonesia (IGGI) composed of all donor countries approved in April 1979 US $1,925 million in soft loans and US $850 million in export credit totalling US $2,775 million to Indonesia to implement its developmental programme for fiscal 1979/1980. The contributions included, inter alia, the following donors: World Bank US $800 million; The Asian Development Bank US $238 million; The UNDP US $29 million; Japan US $262 million; United States US $205 million; Canada US $129,6 million; Federal Republic of Germany US $75.5 million; The Netherlands US $64.5 million; Australia US $40.4 million; Britain US $26.4 million and Belgium US $10.6 million. 1/ The significance of official transfers from the IGGI is illustrated by the fact that in 1977/1978 these transfers were equivalent to around one-fifth of all Indonesia's export receipts, oil as well as non-oil.

During the period 1974/1975 - 1977/1978 Government development expenditure more than doubled and the amount allocated to industry and mining increased from Rp 69.9 billion to Rp 148.0 billion. In the 1979/1980 development budget, the funds allocated to industry (excluding

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1/ Source: Asia Research Bulletin, 31 August 1979.

Table 8.1. Disbursement of foreign aid and Government development expenditure for industry and mining, 1969/70 - 1977/78

(Billions of Rupiah)

		1969-70	1974-75	1975-76	1976-77 a/	1977-78 a/
	Foreign Aid:					
[1]	Programme Aid	65.7	36.1	20.2	10.2	35.6
[2]	Project Aid	25.3	195.9	471.4	707.2	727.5
[3]	Total Foreign Aid [1+2]	91.0	232.0	491.6	717.4	763.1 b/
[4]	Project aid in per cent of total foreign aid [2/3]	27.8 c/	84.4 c/	95.9 c/	98.6 c/	95.3 c/
[5]	Project aid allocated to industry and mining	-	64.1	76.5	142.9	95.0
[6]	Project aid allocated to industry and mining in per cent of foreign aid [3/6]	-	27.6 c/	15.3 c/	19.9 c/	12.5 c/
	Government Development Expenditure:					
[7]	Total Government Development Expenditure	-	966.4	1425.2	2070.2	2168.0
[8]	Allocated to Industry and Mining	-	69.6	119.7	192.5	148.0
[9]	Government development expenditure for industry and mining in per cent of total [7/8]	-	7.2	8.4	9.3	6.8
	Foreign Aid/Government Development Expenditure:					
[10]	Foreign project aid allocated to industry and mining in per cent of total government development expenditure for industry and mining [5/8]	-	91.7	63.6	73.9	64.2

Source: Department of Finance.

a/ Budget

b/ 1979/80 budget Rp 1,493.5 billion, of which Rp 1,428.8 billion project aid and Rp 64.7 billion programme aid (Asia Research Bulletin, February 1979).

c/ Figures are indicated in per cent.

mining) has been increased to Rp 401.9 billion and in the five-year period covering Repelita III the development budget earmarked for industry (excluding mining) amounts to Rp 1,174 billion. The proportion of Government development expenditure being allocated to industry and mining has fluctuated between 6.8 - 9.3 per cent from 1974/1975 - 1977/1978; it has increased to 11.5 per cent in 1979/1980 but is expected to decline to 5.4 per cent during Repelita III. A substantial proportion of total Government development expenditure allocated to industry and mining consist of foreign aid, in 1974/1975, 91.7 per cent, but this has since declined to 64.2 per cent. This seems to illustrate the importance of foreign aid in the development of Indonesian manufacturing sector in particular in regard to the UNDP Country Programme and UNIDO's involvement.

UNIDO's past technical assistance to Indonesia

In 1978 UNIDO implemented 16 technical assistance projects in Indonesia for the equivalent of US $1.5 million compared with US $1.1 million in 1977. The expected delivery for 1979 has been estimated at US $1.7 million.[1/] More than 85 per cent of the projects implemented were financed through UNDP and around three-fourths of the expenditures were made up of experts.

UNIDO's past technical assistance activities have covered a wide range of development projects. At the more general level, assistance has been rendered in the field of industrial policies, administration; legislation, small-scale industries, entrepreneurship training, extension service, export product adaptation and development, standards, quality control and material testing, and packaging research. At the industrial branch level, assistance has been rendered to textile industries, metal industries, engineering industries, building materials industries, ceramics, agricultural machinery, coconut fibre processing industry, grain storage and drying equipment, polymer technology and repair and maintenance. Assistance has also been given to specific development projects such as the Pulo Gadung Industrial State in Jakarta and the Jakarta

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1/ Source: Quarterly Report on Indonesia provided by SIDFA, 22 October 1979.

Fair. Further in 1977, 13 Indonesian participated in UNIDO's fellowship programme. The number of fellowships increased to 25 in 1978. Further Indonesia has also participated in some of UNIDO's promotional activities, including, inter alia, investment promotion.

Indonesia's Second Country Programme and UNIDO's involvement

Indonesia's Second Country Programme covers the calender years 1979-83. The programme was submitted to the UNDP Governing Council in January 1979. The total UNDP resources available for programming were US $74.20 million of which US $11.16 million for ongoing projects; US $55.39 million for new projects and US $7.65 million for unprogramme reserve. The sectoral distribution of the UNDP Programmed Resources were: 21 per cent for agriculture; 15 per cent for industry; 25 per cent for human resources of manpower development; 12 per cent for regional development; 9 per cent for rural infrastructure; 5 per cent for social services; 11 per cent for Science and Technology and 2 per cent for others. The programmed resources earmarked for industry thus constitute US $10,184 million.

The list of industrial projects for the Second Country Programme encompasses five ongoing and five new projects. The ongoing projects include assistance related to: standards and quality control; medium- and small-scale textile industry; building materials industry; food processing research; and assistance in the development of small-scale industries. The five new projects include activities related to consultancy to small- and medium-scale public sector manufacturing enterprises, strategies for selected sub-sectors, assistance in the development of small-scale industries, extension services at leather research institute and pre-investment studies and post-investment assistance for industrial projects. The list of projects, including information related to their costs, duration and Government counterpart, is presented in Table 8.2.

A brief annotation to each of these projects is given as follows in ascending order of project value:

(i) "Pre-investment studies and post-investment assistance for industrial projects". In the last few years

Table 8.2. List of industrial projects, Second Country Programme, 1979-1983

Area of concentration	Government agency	Indicative total UNDP contribution (1979-1983)	Duration
Industrial development - Ongoing projects			
National consensus standards and quality control	Indonesian Institute of Sciences	124,000	1979
Textile industry development programme (medium- and small-scale)	Directorate General of Textiles	620,000	1979-1980
Assistance to industrial development of building materials manufacture	Department of Industry and Department of Public Works	1,045,000	1979-1980
Food processing research	Chemical Research Institute, Bogor	445,000	1979-1980
Assistance to the development of small-scale industries	Department of Industry	700,000	1979-1980
New projects			
Operational consultancies to small- and medium-scale public sector manufacturing enterprises	Department of Industry	800,000	1979-1982
Studies for industrial development/ promotion strategies for selected sub-sectors	Investment Co-ordinating Board	800,000	1979-1982
Assistance to the development of small-scale industries (Phase II)	Department of Industry	1,100,000	1980-1982
Establishment of extension services at Leather Research Institute	Leather Research Institute	550,000	1979-1980
Pre-investment studies and post-investment assistance for industrial projects	Department of Industry	3,000,000	1979-1983
Total		9,184,000	

regional industrial potentiality surveys (IPIP) have been undertaken by the Department of Industry in association with national universities. The objective of the project is to identify industrial opportunities emanating from these surveys. The project involves pre-investment studies for potentially viable industrial projects and also assistance for the establishment and initial operations of the projects:

(ii) "Assistance to the Development of Small-scale Industries [phase II]": An ongoing project which has recently commenced operation on a pilot basis in two provinces for the strengthening of a wider range of extension services through newly established small-scale industry extension service centres. The second phase of the project will aim at replicating and multiplying such centres in other parts of the country.

(iii) "Assistance to Industrial Development of Building Material Manufactures": This is an ongoing project which has provided support to applied research on the development of local building materials, having important impact upon the development of rural industries and on the provision of basic needs.

(iv) "Operational Consultancy to Small- and Medium-scale Public Sector Manufacturing Enterprises": The objective of this project is to provide direct consultancies to selected enterprises for improving their operations in respect of production planning, market research, marketing, product design, product diversification, financial and management controls etc. and to create a capacity among national staff to carry out such functions. The aim is to improve the efficiency, profitability, and competitiveness of the state enterprises segment.

(v) "Studies for Industrial Development/Promotion Strategies for Selected Sub-sectors". The objective of this project is to rationalize and refine the Government's incentives and investment attractiveness by carrying out detailed analysis of selected sub-sectors where Indonesia appears to have a comparative advantage.

(vi) "Textile Industry Development Programme [Medium- and Small-scale Industries]". This project is an ongoing activity under the Bimbingan Pengembangan Industri Kecil (PIPIK) Programme which has been focussing upon small-scale enterprises and also covered some medium-scale enterprises in the past.

(vii) Finally, the preliminary list of projects in the Second Country Programme includes two projects entitled "Establishment of Extension Services at the Leather Research Institute", and "Food Processing Research", which both focus on technological support. A third project entitled "National Concensus Standards and Quality Control" is aimed at assisting the Government in establishing a unified national standard system.

Each of the above projects are at various stages of project preparation or implementation. While some projects are already operational and defined in terms of objectives, work plan, expected output, resource inputs, etc., others are at the preparatory stage requiring further elaboration. In this regard "Preparatory Assistance" has been undertaken in 1978 and 1979 for completing the formulation of the following three projects:

(i) Pre-investment Studies and Post-investment Assistance for Regional Industrial Development;

(ii) Studies for Industrial Development/Promotion Strategies in Selected Industry Sub-sectors;

(iii) Operational Consultancy to the Small- and Medium-scale Public Sector Manufacturing Enterprises.

The expected delivery of UNIDO technical assistance projects during 1979, the first year of the Country Programme, is projected at $1.7 million which compares with a plan budget of $2.3 million. The rate of actual delivery in relation to plan budget thus is expected to be around 75 per cent. In addition to those projects already included in the Second Country Programme, the list contains two new

projects entitled: (i) Development of Low-cost Housing Industry, (ii) Assistance in Establishing a Centre for Sawdoctoring.

A number of other technical assistance projects in the field of industry have been carried over from previous years or have emerged recently. Some of these are financed outside the Indicative Planning Figure (IPF). Further some new projects are being developed in consultation with the Government including, inter alia: Study on the Establishment of a Packaging Centre in Indonesia; Product Design and Development for Small-scale Rural and Handicrafts Industries; Technical Assistance to the Directorate General of Multifarious Industries, Department of Industry; and a Master Plan for the Iron and Steel Industry in Indonesia. A complete list of all approved and operational UNIDO projects in Indonesia as of the end January 1980 is given in Table 8.3.

Industrialization and rural development

UNIDO's International Centre for Industrial Studies undertook in 1976 and 1977 a number of case studies and convened an expert group meeting on Industrialization in relation to Integrated Rural Development in December 1977[1/]. On the basis of an extensive analysis of the main issues, the expert group meeting adopted certain conclusions and proposals for further action which are highly pertinent to the industrialization of Indonesia having regard to the Government's overall objectives of employment opportunities in rural areas, providing basic needs, reducing existing disparities between regions and between groups of society.

The specific assistance components which emanate from this meeting are as follows:

(i) the formulation, implementation and evaluation of industrial plans, policies and programmes consistent with overall rural development objectives;

1/ UNIDO, Industrialization and Rural Development, 1978. (ID/215; F.78.II.B.10).

Table 8.3. APPROVED AND OPERATIONAL UNIDO PROJECTS [AS OF END JANUARY 1980]:

DP/INS/74/002	National consensus standards and quality control (total allotment: US$ 421,457 a/)	US$ 186,085 a/
DP/INS/74/018	Textile industry development programme (Phase II) (total allotment: US$1,586,887 a/)	US$1,377,905 a/
DP/INS/74/034	Industrial development of building materials manufacture (total allotment: US$2,180,424)	US$1,356,309 a/
DP/INS/76/001	Strengthening of the Chemical Research Institute, Bogor (total allotment: US$ 550,036 a/)	US$ 85,501 a/
DP/INS/77/004	Assistance to small-scale industry development (total allotment: US$ 684,983 a/)	US$ 432,169 a/
DP/INS/78/001	Improve of extension service at the Leather Research Institute (total allotment: US$ 559,450 a/)	US$ 16,937 a/
DP/INS/78/002	Pre-investment studies and post-investment assistance for industrial projects - prep.ass. (total allotment: US$ 181,000 a/)	US$ 67,162 a/
DP/INS/78/004	Operational consultancy to the small and medium-scale pulbic sector manufacturing (total allotment: US$ 94,800 a/)	US$ 19,156 a/
DP/INS/78/077	Development of low cost housing production industry (total allotment: US$ 45,000 a/)	US$ - a/
DP/INS/79/006	Assistance in establishing a centre for sawdoctor training (total allotment: US$ 106,500 a/)	US$ 26,288 a/
SI/INS/77/803	Pre-feasibility study on the establishment of coconut coir fibre processing industry (total allotment: US$ 9,500 a/)	US$ 8,824 a/
SI/INS/79/801	Assistance to the National Agency for Export Development (NAFED - Department of Trade -) in the field of export product adaptation (total allotment: US$ 19,000 a/)	US$ 15,105 a/
SI/INS/79/802	Assistance in sawdoctoring (total allotment: US$ 28,900 a/)	US$ 17,505 a/
SI/INS/79/803	Master plan for the iron and steel industry (total allotment: US$ 80,000 a/)	US$ - a/
TS/INS/75/002	Assistance to the industrial development of building materials - associate experts (total allotment: US$ 425,896 a/)	US$ 340,164 a/
TS/INS/76/002	Textile industry development programme - associate experts (total allotment: US$ 41,286 a/)	US$ 28,272 a/
TF/INS/79/003	Support project for Indonesia building materials projects (total allotment: US$ 38,303 a/)	US$ 27,221 a/
TF/INS/79/004	Support project for building materials industries project in Indonesia (total allotment: US$ 67,383 a/)	US$ 35,355 a/
TF/INS/79/005	Support project for Indonesian building industries (total allotment: US$ 33,482 a/)	US$ - a/
TS/INS/76/002	Textile industry development programme - associate experts (total allotment: US$ 41,28... a/)	US$ 28,272 a/

a/ Based on computer printout UNIDO-UMAP02 dated 8.1.1980 ('Status of allotments for projects as at 31.12.1979')

(ii) the mobilization and organization of decentralized industrial services and institutions to support rural industries;

(iii) the establishment of rural industrial programmes and projects on a pilot demonstration basis;

(iv) the development and application of more appropriate training techniques of officials concerned with rural industrialization programmes and of entrepreneurs and employees of rural enterprises;

(v) the exchange of information, experience and expertise through seminars, study tours, workshops, training courses, and other forms of consultation as an element of technical co-operation among developing countries and other interested parties.

In the detailed formulation and implementation of projects in the Second UNDP Country Programme, UNIDO's ongoing and prospective projects could usefully incorporate these and other essential elements emanating from the expert group meeting; and also establish a link to the World Bank Programme of Rural Development and Small Industry in Indonesia, and to the ESCAP Pilot Projects in support of integrated industrialization in non-metropolitan areas.[1/]

Redeployment of industrial capacity from developed countries

UNIDO's International Centre for Industrial Studies has also conducted a number of studies on industrial redeployment from developed to developing countries. These studies have implications for the industrialization of Indonesia within the context of a new international economic order. The large domestic market and the availability of raw materials from agriculture, forestry, petroleum, and mining make Indonesia an attractive recipient country for redeployment of certain types of industrial capacities from developed countries. This may be envisaged in spite of the weak competitive position of many Indonesian industries, caused by high cost of domestic production and the importation of certain raw

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1/ ESCAP: Indonesia: Establishment of Pilot Projects in Central Java in Support of Integrated Industrialization in Non-metropolitan Areas, Vol. II, Bangkok, 1979. (INA Series No. 2).

materials. A large portion of the analysis contained in this Profile impinges directly or indirectly upon the prospects for industrial redeployment to Indonesia.

The Government of Indonesia has clearly spelled out the specific areas where foreign collaboration is needed and will be supported. This is partly reflected in its investment incentives policies, and priorities. The Government has also indicated the specific locations where such collaboration is desired. There is a well developed system of financial institutions to promote redeployment with domestic finance, either entirely or as a supplement to foreign capital. In a wider context, ASEAN co-operation may be a positive element in redeployment, in particular of regional industries. Though administrative obstacles remain a constraint to redeployment, the new investment applications procedures introducing a "one-stop-investment-service" will, no doubt, facilitate and simplify the process of redeployment vis-à-vis the Government bureaucracy. The specific forms which redeployment may take are affected by the "pribumi" regulations specifying the requirements in regard to Indonesian participation and training and the "production-sharing contract" system or "contract of work" being applied in the petrochemical and mining sectors. The interests of the redeploying companies are in some way protected by; "investment protection agreements" concluded with certain developed countries, regulations against "nationalization" and regulations regarding "repatriation of profits". On the other hand, there is no denying the fact that the present tariff structure designed to protect domestic industry may impede the prospects for redeployment due to the high tariffs imposed on capital equipment needed by redeploying companies. This obstacle is further compounded by a weak physical and institutional infrastructure and by the lack of domestic raw materials in certain sectors, e.g. textiles.

To become operational in the Indonesia context the concept of redeployment needs to be specific rather than general. In this regard redeployment could be incorporated into UNIDO's activities in Indonesia with a view to promote those redeployment opportunities already identified by UNIDO through the UNIDO/World Bank Co-operative Programme and through UNIDO's planned

projects under the Second Country Programme, in particular (a) "Pre-investment Studies and Post-investment Assistance for Regional Industrial Development"; and (b) "Studies for Industrial Development/Promotion Strategies and Selected Industry Sub-sectors".

UNIDO's investment promotion programme

Indonesia is also benefitting from various UNIDO promotional activities. Within the framework of the UNIDO/World Bank Investment Co-operative Programme a number of investment proposals are under consideration or preparation for implementation in Indonesia. A summary list of UNIDO's investment proposals as of the end of 1979 is presented in the following Table 8.4.

Table 8.4. List of UNIDO investment prospect proposals[a/] in Indonesia, as of end 1979

Branch of industry	Number of company proponents	Total estimated investment (US$ million)
Chemical industries	11	134.0
Electrical and electronic industries	6	11.5
Industrial transformation of agricultural products	8	109.6
Machinery and metal engineering industries	10	12.8
Timber and timber-based industries	6	43.9
Precision engineering industries	4	n.a.
Transport and communication equipment manufacturing industries	3	9.6
Export crops processing	27	245.1
Other	14	135.0
Total	89	701.5

a/ Includes joint ventures, technical know-how, additional capital and market outlets.

Reference should be made here to the large number of investment proposals in the field of chemical industries, industrial transformation of agricultural products, timber and timber-based industries and, in particular export crops processing. The important feature of these investment proposals is that they are closely connected with the important objective of a higher degree of industrial processing of agricultural and other natural resources in Indonesia.

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Annex I

Gross domestic product by sector of origin, 1971-77, constant 1973 prices

(Rp b)

Sector of origin	1971	1972	1973	1974	1975	1976	1977
Agriculture, forestry, fisheries	2,441	2,479	2,710	2,811	2,811	2,944	3,044
Food crops	1,436	1,415	1,573	1,681	1,696	1,756	1,771
Smallholder crops	302	329	323	307	312	325	338
Estate crops	154	160	152	174	183	188	212
Livestock products	160	169	173	186	202	216	216
Forestry	258	276	355	325	274	310	351
Fisheries	131	130	134	138	144	150	156
Mining and quarrying	551	674	831	859	828	952	1,068
Manufacturing	490	564	650	755	848	930	1,040
Electricity, gas and water	25	26	30	37	41	46	52
Construction	171	222	262	320	365	385	405
Trade	924	1,028	1,118	1,224	1,294	1,351	1,424
Transport and communications	210	229	257	288	303	343	388
Banking and finance	64	75	85	88	102	117	130
Rentals	93	121	143	174	198	209	220
Government and defence	326	393	405	443	564	590	720
Services	250	256	264	270	277	284	291
Gross domestic product	5,545	6,067	6,753	7,269	7,631	8,156	8,770
Rate of change (%)		9.42	11.31	7.63	4.98	6.89	7.53

Source: Biro Pusat Statistik (Central Statistical Bureau).

Annex II

Expenditure on gross domestic product, 1972 - 1977

(Rp billion)

		1972	1973	1974	1975	1976	1977
I.	Current Prices						
	Private consumption expenditure	3,401	4,791	7,259	8,744	10,464	12,845
	Government consumption expenditure	414	716	844	1,254	1,590	2,069
	Gross domestic capital formation	857	1,208	1,797	2,572	3,205	3,597
	Exports of goods and services	754	1,354	3,105	2,851	3,430	4,119
	Less: Imports of goods and services	-862	-1,316	-2,294	-2.778	-3,222	-3,583
	Gross domestic product	4,564	6,753	10,708	12,643	15,467	19,047
	Net factor income to abroad	-160	-245	-507	-556	-432	-627
	Gross national product (market prices)	4,404	6,508	10,201	12,087	15,035	18,420
	Less: net indirect tax	-236	-328	-447	-519	-307	-795
	Less: depreciation	-296	-439	-626	-822	-1,006	-1,238
	National income	3,872	5,741	9,058	10,746	13,722	16,387
II.	Constant Prices (1973)						
	Private consumption expenditure	4,276	4,791	5,454	5,679	6,031	6,277
	Government consumption expenditure	561	716	841	836	897	1,040
	Gross domestic capital formation	1,032	1,208	1,440	1,650	1,749	1,838
	Exports of goods and services	1,123	1,354	1,403	1,267	1,425	1,579
	Less: Imports of goods and services	-925	-1,316	-1,669	-1,801	-1,946	-1,964
	Gross domestic product	6,067	6,753	7,269	7,631	8,156	8,770
	Net factor income to abroad	-171	-245	-369	-360	-336	-391
	Gross national product (market prices)	5,896	6,508	6,900	7,271	7,790	8,379
	Less: net indirect tax	-294	-328	-352	-371	-399	-429
	Less: depreciation	-394	-439	-472	-496	-531	-570
	National income	5,208	5,741	6,076	6,404	6,860	7,380

Source: Central Statistical Bureau.

Annex III

Macroeconomic aggregates for 1978/79 and Repelita III

(Rp billion)

	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
GDP						
GDP (current prices)	23,165	26,920	30,675	34,955	39,835	45,390
GDP (1978/79 prices)	23,165	24,671	26,274	27,982	29,801	31,738
GDP deflator(index)	100	109.12	116.75	124.92	133.67	143.01
Rate of inflation (percentage)		9.12	6.99	7.00	7.00	6.99
Government development budget (current prices)	2,455	3,488	3,892	4,350	4,778	5,341
Other investment (current prices)	2,460	2,707	3,453	4,100	4,922	5,804
Total investment (current prices)	4,915	6,195	7,345	8,450	9,700	11,145
Total investment (1978/79 prices)	4,915	5,677	6,291	6,764	7,257	7,793
Government savings (current prices)	1,598	1,955	2,245	2,510	2,759	3,104
Private savings (current prices)	2,487	2,916	3,519	4,131	4,898	5,782
Total savings (current prices)	4,085	4,911	5,764	6,641	7,657	8,886
Resource gap (current prices) = foreign capital inflow	830	1,284	1,581	1,809	2,043	2,259

ICOR

$$= \frac{\text{Cumulative investment 1978/79 - 1982/83 (1978/79 prices)}}{\Delta\text{GDP 1978/79 - 1983/84 (1978/79 prices)}} = \frac{30,904}{8,573} = 3.6$$

Source: Anne Booth and Amina Tyabji: Survey of recent developments; Bulletin of Indonesian Economic Studies, Vol.XV, No.2, July 1979 based on Rancangan Rencana Pembangunan Lima Tahun Ketiga 1979/80 - 1983/84.

Annex IV

Repelita III Balance of Payments Projections
($ million)

	1979/80	1980/81	1981/82	1982/83	1983/84
A. Goods and Services					
(1) Exports	8,984	9,832	11,065	12,350	14,010
Non-oil (fob)	4,046	4,712	5,759	6,649	7,680
Oil and LNG (net)	4,938	5,120	5,306	5,701	6,330
(2) Imports (cif)	-8,711	-9,765	-10,990	-12,335	-13,870
(3) Services (net)	-1,697	-1,873	-2,079	-2,292	-2,499
(4) Current balance	-1,424	-1,806	-2,004	-2,277	-2,359
B. Government Borrowing	2,551	2,763	3,074	3,308	3,650
(1) Program aid	220	258	288	200	185
(2) Project aid	2,331	2,505	2,786	3,108	3,465
C. Government Debt Repayment	-630	-724	-890	-992	-1.255
D. Other Capital Inflows	-147	67	200	411	414
E. Reserve charges	-350	-300	-380	-450	-450
F. Resource gap	2,054	2,530	2,894	3,269	3,614

Source: Anne Booth and Amina Tyabji: Survey of recent developments; Bulletin of Indonesian Economic Studies, Vol. XV, No.2, July 1979 based on Rancangan Rencana Prmbangunan Lima Tahun Ketiga 1979/80 - 1983/84.

Annex V

Planned Investment, and Government receipts and revenues as Percentage of GDP in 1978/79 and Repelita III

	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Planned Investment						
Domestic savings	17.6	18.2	18.8	19.0	19.2	19.6
(Government)	(6.9)	(7.4)	(7.3)	(7.2)	(6.9)	(6.9)
(Private)	(10.7)	(10.8)	(11.5)	(11.8)	(12.3)	(12.7)
Foreign inflow	3.6	4.8	5.1	5.2	5.1	5.0
Total investment	21.2	23.0	23.9	24.2	24.4	24.6
Government						
Non-oil domestic revenues	8.2	7.8	8.2	8.3	8.2	8.2
Total domestic revenues	17.1	20.2	19.9	19.5	18.9	18.5
Aid inflows	3.6	5.5	5.4	5.3	5.1	4.9
Routine expenditures	10.2	12.8	12.5	12.3	12.0	11.7
Development expenditures	10.6	13.0	12.7	12.4	12.0	11.8

Source: Anne Booth and Amina Ayabji: Survey of recent developments; Bulletin of Indonesian Economic Studies, Vol.XV, no.2, July 1979, based on Rancangan Rencana Pembangunan Lima Tahun Ketiga 1979/80 - 1983/84.

Annex VI

Value of imports by major economic groups, 1969/70 - 1975/76

(in millions of US$)

	1969/70	Share	1970/71	Share	1971/72	Share	1972/73	Share	1973/74	Share	1974/75	Share	1975/76	Share
Consumption goods	364.5	35.3	346.7	28.8	288.1	26.6	524.8	30.7	1,001.7	34.1	980.4	23.2	774.8	17.4
Rice	146.6		103.5		96.3		294.7		547.9		439.4		139.4	
Wheat grain	55.4		50.2		37.9		0.7		2.8		-		-	
Textile	22.9		39.2		27.4		22.0		21.1		98.6		23.4	
Others	139.6		154.0		104.5		247.4		429.9		452.4		609.9	
Raw materials & Inter-mediate goods	365.5	35.5	426.4	35.4	446.4	41.3	657.9	38.5	1,163.0	39.6	2,074.9	49.8	3,227.4	72.4
Cloths	10.3		27.7		27.4		40.4		92.0		97.8		99.4	
Chemicals	47.0		63.0		34.7		63.1		99.9		133.1		140.3	
Chemical Products	11.1		13.2		14.1		16.4		24.7		35.1		36.6	
Paint	10.4		18.6		21.2		28.7		42.4		56.9		65.7	
Fertilizer	24.9		27.4		44.5		61.2		235.5		1,036.2		89.2	
Paper	22.2		20.7		23.7		32.3		40.6		55.4		72.5	
Yarn	66.2		39.8		49.1		82.4		95.5		95.6		87.2	
Gastric & shirting	10.6		4.4		2.7		1.7		0.4		0.1		-	
Cement	10.4		15.7		11.8		21.3		29.9		64.1		47.9	
Metal Products	33.6		54.8		54.0		90.8		177.4		142.9		191.0	
Others	118.8		135.1		163.0		213.6		369.8		473.7		445.7	
Capital goods	300.9	29.2	431.7	35.8	368.0	34.1	328.1	30.8	774.6	26.5	1,147.5	27.3	2,400.2	31.2
Iron pipes	9.6		7.3		10.2		25.8		11.7		12.8		6.6	
Machinery	29.4		48.3		56.1		117.7		211.3		233.8		396.1	
Transport equipment	8.8		12.0		24.8		25.6		63.4		68.1		84.3	
Other transport	24.2		76.5		45.5		63.5		116.5		167.0		244.8	
Others	228.8		287.6		231.4		295.5		369.7		705.8		1,674.2	
TOTAL	1,030.8	100.0	1,204.8	100.0	1,080.5	100.0	1,710.8	100.0	2,941.3	100.0	4,202.8	100.0	4,402.5	100.0

Source: Bank Indonesia.

Annex VII

INDONESIA

Production of Selected Industrial Goods, 1969/70-1977/78

Product	Unit	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78 /a
Vegetable Oil	000 tons	290	284	287	293	293	294	299	309	308
Cigarettes	Bill. pieces	30	34	36	41	51	52	57	61	64
Textile Yarn	000 bales	182	217	239	262	316	364	445	623	678
Fabrics	Mill. meters	450	598	732	852	927	974	1,017	1,240	1,3[illegible]
Paper	000 tons	17	22	30	40	47	43	47	54	84
Urea	000 tons	85	103	108	120	116	209	387	412	990
Salt	000 tons	153	58	41	183	86	70	147	561/b	780/b
Caustic Soda	000 tons	1	1	2	3	3	4	9	8	7
Al-Sulphate	000 tons	-	3	7	12	17	14	14	15	19
Sulphuric Acid	000 tons	-	4	9	11	18	9	15	24	20
Oxygen	Million m^3	2	3	4	4	5	5	5	6	8
Acetylene	000 m^3	-	-	-	12	99	124	242	289	197
Matches	Mill. boxes	269	322	349	475	556	707	760	772	5[illegible]
Soap	000 tons	133	132	132	132	131	149	165	176	1[illegible]
Toothpaste	Mill. tubes	15	25	26	30	32	46	105	104	104
Car Tires	000 pieces	366	401	507	858	1,361	1,704	1,796	1,892	2,119
Bicycle Tires	000 pieces	2,205	2,164	1,850	2,632	5,880	6,279	7,129	7,297	7,362
Glass Sheet	Sq. Ft.	-	-	-	-	50	60	62	69	74
Glass Bottles	000 tons	12	11	7	17	37	35	32	57	54
Reinforcing Iron	000 tons	5	10	74	75	120	110	202	296	250
Zinc Plate	000 tons	9	34	67	70	70	70	145	156	155
Steel Pipes	000 tons	2	3	6	34	80	94	97	107	120
Steel Cables	000 tons	-	-	-	15	30	30	43	85	94
Car Batteries	000 pieces	32	56	262	130	140	180	220	480	575
Dry-cell Batteries	Mill. pieces	54	55	72	72	132	144	240	420	464
Radio Sets	000 pieces	364	393	416	700	900	1,000	1,100	1,109	1,000
Television Sets	000 pieces	5	5	65	60	60	135	166	211	482
Sewing Machines	000 pieces	14	14	262	340	500	400	520	400	484
Automobiles	000 units	5	3	16	23	37	66	79	75	84
Motorcycles	000 units	21	31	50	100	150	251	300	267	272

/a Preliminary estimates
/b Includes domestic production

Sources: Ministry of Industry

Annex VIII

INDONESIA

Principal Agriculture Products by Subsectors, 1969-77
('000 tons)

Product	1968	1969	1970	1971	1972	1973	1974	1975	1976 /a	1977 /a
Food crops										
1. Rice	11,667	12,249	13,140	13,724	13,183	14,607	15,276	15 185	15,845	15,935
2. Corn	3,166	2,292	2,825	2,606	2,254	3,690	3,011	2,909	2,572	3,030
3. Cassava	11,356	10.917	10,478	10,690	10,385	11,186	13,031	12,546	12,191	12,169
4. Sweet potato	2,364	2,260	2,260	2,211	2,066	2,387	2,469	2,433	2,381	2,455
5. Soya beans (shelled)	420	389	389	516	518	541	589	590	522	527
6. Ground nuts (shelled)	298	267	267	284	282	290	307	380	341	403
Fishery										
1. Saltwater fish		785	808	820	836	889	9.9	997	1,043	1,099
2. Freshwater fish		429	421	424	433	389	388	393	405	427
Meat & Dairy										
9. Meat		309	314	332	366	379	403	435	449	469
10. Eggs		58	59	68	78	81	98	112	116	123
11. Milk (in million liters)		29	29	36	38	35	57	51	57	61
Cash crops										
12. Rubber		778	802	804	808	845	818	782	785	818
13. Palm oil		189	217	249	270	289	348	397	439	496
14. Coconut/copra		1,221	1,200	1,149	1,311	1,237	1,341	1,375	1,527	1,447
15. Coffee		175	185	196	214	150	149	160	179	183
16. Tea		62	64	71	51	67	65	70	73	80
17. Cloves		12	15	14	13	22	15	15	16	26
18. Pepper		17	17	24	18	29	27	23	25	39
19. Tobacco		84	78	76	79	80	77	82	88	101
20. Cane sugar		922	873	1,041	1,133	1,009	1,237	1,227	1,332	1,353
21. Cotton		3	3	2	2	3	7	5	5	2
Forestry										
22. Teakwood ('000 M^3)		520	568	770	597	676	620	595	480	22,360
23. Other timber ('000 M^3)		7,587	11,856	12,968	17,120	25,124	22,660	15,701	20,842	

.. = Not available.

/a Preliminary estimates.

Sources: Ministry of Finance.

Annex IX

INDONESIA

Agricultural Production of Major Crops by Type of Product
('000 tons)

Product	1969	1970	1971	1972	1973	1974	1975	1976 /a
Smallholders								
Rubber	558	571	572	559	599	571	536	539
Coconut/copra	1,220	1,198	1,147	1,308	1,233	1,335	1,370	1,521
Coffee	126	170	178	196	130	132	144	162
Cloves	11	15	14	13	22	15	15	16
Tea	22	21	24	7	14	15	14	16
Sugar	220	196	221	247	199	250	223	250
Tobacco	75	69	69	74	69	69	74	76
Pepper	17	17	24	18	29	27	23	25
Cotton	2	3	2	2	3	7	5	5
Palm oil	-	-	-	-	-	-	-	-
Palm kernel	-	-	-	-	-	-	-	-
Private Estates								
Rubber	110	113	114	128	109	108	109	111
Coconut/copra	1	2	2	3	4	6	5	6
Coffee	5	6	7	6	4	7	6	6
Cloves	1	..	..	..	..	..	..	..
Tea	9	9	10	7	10	11	10	10
Sugar	72	74	122	130	118	127	126	130
Tobacco	-	-	-	-	-	-	-	-
Pepper	-	-	-	-	-	-	-	-
Cotton	-	-	-	-	-	-	-	-
Palm oil	60	70	79	81	82	104	126	145
Palm kernel	13	15	18	17	18	21	24	31
Government Estates								
Rubber	110	118	118	121	137	138	137	135
Coconut/copra	-	-	-	-	-	-	-	-
Coffee	8	9	11	12	6	10	10	11
Cloves	-	-	-	-	-	-	-	-
Tea	31	34	37	37	43	40	46	47
Sugar	630	603	708	756	693	860	878	1,012
Tobacco	9	9	7	5	11	8	8	12
Pepper	-	-	-	-	-	-	-	-
Cotton	-	-	-	-	-	-	-	-
Palm oil	123	147	170	189	207	271	271	294
Palm kernel	28	33	39	42	46	52	57	64
TOTAL								
Rubber	778	802	804	808	845	818	782	785
Coconut/copra	1,221	1,200	1,149	1,311	1,237	1,341	1,375	1,527
Coffee	175	185	196	214	150	149	160	179
Cloves	12	15	14	13	22	15	15	16
Tea	62	64	71	51	67	65	70	73
Sugar	922	873	1,051	1,133	1,009	1,237	1,227	1,392
Tobacco	84	78	76	79	80	77	82	88
Pepper	17	17	24	18	29	27	23	25
Cotton	2	3	2	2	3	7	5	5
Palm oil	189	217	249	270	289	348	397	439
Palm kernel	41	48	57	59	64	73	81	95

.. = Not available.

/a Preliminary estimates.

Source: Department of Agriculture

Annex X

Volume of production and exports of major hard minerals

(1969/70 - 1976/77)

('000 tons)

	Tin		Nickel		Bauxite		Iron		Coal		Silver			Copper concentrates	
	Prod.	Exp.	Prod.	Exp.	Prod.	Exp.	Prod.	Exp.	Prod.	Exp.	Prod.	Exp.	Domestic	Prod.	Exp.
1st 5-Year Plan															
1969/70 (April/March)	17.9	16.4	311.0	232.0	907.0	863.6	-	-	176.0	-	10.9	-	-	-	-
1970/71	19.1	17.4	689.0	538.4	1,207.7	1,182.2	53.8	-	175.4	-	9.2	-	-	-	-
1971/72	20.5	19.1	850.0	764.7	1,288.1	1,211.7	298.5	242.7	198.8	-	8.1	9.3	-	-	-
1972/73	21.5	20.8	971.5	737.5	1,240.2	1,255.0	237.6	276.2	177.2	-	9.2	6.7	2.6	9.7	8.3
1973/74	22.6	21.3	989.9	830.4	1,240.2	1,266.4	323.7	283.6	145.9	-	8.5	7.3	3.8	126.9	114.2
2nd 5-Year Plan															
1974/75	24.8	23.6	781.1	853.2	1,284.3	1,267.3	349.2	348.0	171.6	-	6.1	4.0	2.1	212.6	207.2
1975/76	24.3	20.9	751.2	707.6	935.8	919.8	346.2	290.1	204.0	-	4.2	1.0	0.3	204.9	193.4
1976/77 (January/July)														135.7	138.5

Source: Department of Mines

Annex XI

Regional distribution of approved domestic investments 1968-76

(in millions of Rupiahs)

	1968-1974 1/		1975		1976 (July)		Total	
	Projects	Invest.	Projects	Invest.	Projects	Invest.	Projects	Invest.
Java	1,575	1,069,975	134	189,748	25	107,886	1,734	1,367,609
D.K.I. Jaya	631	409,422	34	79,458	5	19,626	670	508,506
West Java	464	385,368	58	56,612	9	7,436	531	449,416
Central Java	193	76,994	10	10,189	1	2,300	204	89,483
D.I. Yogyakarta	37	22,772	4	1,902	-	-	41	24,674
East Java	250	175,419	28	41,587	10	78,524	288	295,530
Outside Java	693	473,535	50	66,315	11	9,095	754	548,945
D.I.Aceh	22	9,108	2	2,466	-	-	24	11,574
North Sumatra	143	88,392	12	25,514	2	2,390	157	116,296
West Sumatra	34	13,320	3	2,990	-	-	37	16,310
Riau	42	15,690	1	207	1	1,432	44	17,329
Jambi	28	10,821	1	25	-	-	29	10,846
South Sumatra	33	58,510	2	10,049	-	-	35	68,559
Bengkulu	7	5,597	-	-	-	-	7	5,597
Lampung	41	17,926	5	5,743	2	1,235	48	24,904
West Kalimantan	63	19,198	-	-	-	-	63	19,198
East Kalimantan	109	88,107	9	5,790	1	469	119	94,366
Central Kalimantan	53	35,797	2	1,323	1	463	56	37,583
South Kalimantan	21	8,465	2	1,596	-	-	23	10,061
North Sulawesi	17	29,064	2	3,348	1	1,261	20	33,673
South East Sulawesi	5	37,559	-	-	-	-	5	37,559
Central Sulawesi	3	1,902	1	1,181	1	1,245	5	4,328
South Sulawesi	37	19,067	6	5,613	-	-	43	24,680
Maluku	17	9,794	1	420	1	300	19	10,514
Bali	9	2,789	1	50	-	-	10	2,839
West Nusa Tenggara	2	238	-	-	-	-	2	238
East Nusa Tenggara	3	1,303	-	-	-	300	4	1,603
West Irian	4	888	-	-	-	-	4	888
Total	2,268	1,543,510	184	256,063	36	116,931	2,488	1,916,554

Source: Investment Co-ordinating Board.

1/ Revised estimates.

Annex XII

INDONESIA

Nonoil Exports, 1971/72-1977/78

	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78
1. Timber							
Value	170	275	720	615	527	985	854
Volume	8,840	12,701	15,704	12,434	11,335	15,770	14,336
Price	19	22	46	49	46	56	60
2. Rubber							
Value	215	211	483	425	381	577	560
Volume	809	826	902	842	846	892	846
Price	266	255	535	505	450	647	662
3. Palm oil							
Value	45	42	89	184	142	147	214
Volume	212	245	279	303	417	415	426
Price	212	171	319	507	341	354	527
4. Coffee							
Value	54	83	79	92	112	330	630
Volume	72	111	96	105	142	143	188
Price	750	748	823	876	789	2,308	3,351
5. Tea							
Value	31	31	31	50	50	64	131
Volume	46	46	46	51	61	64	60
Price	674	674	674	980	820	1,000	2,183
6. Tobacco							
Value	20	32	46	36	40	41	92
Volume	19	27	35	26	23	21	41
Price	1,053	1,185	1,314	1,385	1,739	1,952	2,300
7. Pepper							
Value	21	21	31	22	25	55	85
Volume	24	24	25	14	17	33	39
Price	875	875	1,240	1,571	1,471	1,667	2,179
8. Palm kernel							
Value	5	4	6	8	4	4	7
Volume	59	51	37	30	41	30	28
Price	85	78	162	267	98	133	236
9. Copra							
Value	8	6	3	-	-	-	-
Volume	67	61	21	-	-	-	-
Price	119	98	143	-	-	-	-
10. Copra cake							
Value	12	14	19	22	29	36	27
Volume	236	303	224	236	263	375	244
Price	51	46	85	93	80	96	112
11. Tapioca							
Value	14	12	7	30	17	10	14
Volume	434	304	117	455	234	133	185
Price	32	39	60	66	73	75	76
12. Other food stuff							
Value	28	26	49	47	37	52	53
Volume	640	604	1,047	926	731	834	808
Price	44	43	47	51	51	52	66
13. Animal & product							
Value	23	42	90	92	105	146	179
Volume	294	101	84	76	70	82	86
Price	78	416	1,071	1,211	1,500	1,780	2,077
14. Tin							
Value	64	70	98	166	158	181	241
Volume	20	21	22	24	22	21	25
Price	3,200	3,333	4,455	6,917	7,182	8,619	9,640
15. Copper							
Value	-	13	56	102	74	95	94
Volume	-	28	126	222	189	230	210
Price	-	464	444	459	392	413	400
16. Other mineral							
Value	18	19	21	28	25	44	45
Volume	2,176	2,432	2,418	2,515	1,869	2,281	2,556
Price	8	8	9	11	13	19	18
17. Miscellaneous							
Value	56	76	77	114	144	196	283
Volume	184	228	239	202	286	278	770
Price	304	333	324	564	503	705	367
Total							
Value	784	977	1,905	2,033	1,873	2,961	3,489
Volume	14,132	18,113	21,551	18,461	16,730	21,502	20,308
Price	55	54	89	110	112	133	182

Value: In billions of US$
Volume: In thousands of tons
Price: US$/ton

Source: Bank Indonesia.

Annex XIII

INDONESIA

Estimated Cement Production and Capacity through 1980

Plant	Design capacity ('000 tons)	Mechanical completion	Commercial production	1976	1977	1978	1979	1980
				('000 tons)				
PT Semen Padang								
Rehabilitasi	330	6/76	8/76	297	330	330	330	330
Indarung II	600	1/79	3/79	-	-	-	375	600
Indarung III	600	4/82	6/82	-	-	-	-	-
	1,530			297	330	330	705	930
PT Semen Baturaja	500	9/79	10/79	-	-	-	200	500
PT Semen Cibinong								
Phase I	500	7/75	10/75	414	450	500	500	500
Phase II	500	10/77	12/77	-	-	375	450	500
Phase III	-	-	-	-	-	-	-	-
	1,000			414	450	875	950	1,000
DICE								
Phase I	500	-	8/75	527	450	475	500	500
Phase II	500	-	8/76		400	425	450	500
Phase III	1,000	12/78	2/79	-	-	-	400	700
	2,000			527	850	900	1,350	1,700
PT Semen Nusantara	600	3/77	6/77	-	240	550	600	600
PT Semen Gresik								
Pros Basah	500	-	-	406	460	475	475	500
Pros Kering	1,000	5/78	7/78	-	-	250	750	950
	1,500			406	460	725	1,225	1,450
PT Semen Tonasa								
Tonasa I	120	-	-	117	110	110	110	110
Tonasa II	510	6/79	9/79	-	-	-	60	375
Tonasa III	510	6/82	9/82	-	-	-	-	-
	1,140			117	110	110	170	485
Total Production	8,270			1,761	2,440	3,490	5,200	6,665

Source: LPEM, 1978.

Annex XIV

INDONESIA

Forest-Based Industries in Indonesia

	Sawmills		Veneer & Plywood		Pulp and Paper		Board Mills	
	Units	Capacity (cu m)	Units	Capacity (cu m)	Units	Capacity (cu m)	Units	Capacity (cu m)
Western Indonesia	769	2,334,540	8	446,300	1	100,000	1	
Public	8	82,940	2	900	-	-	1	
Private	761	2,251,600	6	445,400	1	100,000	-	
Central Indonesia	245	4,751,600	7	635,000	2	75,000	1	12,000
Public	2	33,000	-	-	2	75,000	1	12,000
Private	243	4,718,000	7	635,000	-	-	-	-
Eastern Indonesia	20	94,104	-	-	-	-	-	-
Public	5	14,160	-	-	-	-	-	-
Private	15	79,944	-	-	-	-	-	-
Total	1,043/a	7,179,644	15	1,081,300	3	175,000	2	12,000
Public	15	130,100	2	900	3	175,000	2	12,000
Private	1,019	7,049,544	13	1,080,400	-	-	-	-

/a Capacity: 157 mills with capacity greater than 1,000 cu m/month.
226 mills with capacity of 200-1,000 cu m/month.
657 mills with capacity less than 200 cu m/month.

Source: National Progress Report on Forestry, DGF, May 1977.

Annex XV

Sectoral percentage breakdown of the development budget

	1974/75[a/]	1975/76[a/]	1976/77[a/]	1977/78[a/]	Repelita III
Agricultural and irrigation	36.0	23.0	19.5	17.6	14.0
Industry, mining and energy	6.1	9.3	8.6	16.8	18.9
Transport and tourism	10.6	9.2	9.8	16.4	15.5
Trade and co-operatives	0.5	0.3	0.7	0.3	0.9
Manpower and transmigration	0.6	1.2	2.0	2.8	5.7
Regional development	17.7	18.6	14.7	11.6	9.8
Education and religion	5.5	11.8	10.6	10.1	10.9
Health, social welfare and family planning	2.3	3.3	3.3	3.3	3.8
Housing and drinking water	0.7	1.1	2.1	4.1	2.4
Defence, law and order	3.2	4.4	5.2	3.1	7.7
Government capital participation	11.9	11.7	17.0	8.8	1.7
Other	4.9	6.1	6.5	5.1	8.7
Total	100.0	100.0	100.0	100.0	100.0

Source: Statistical Pocketbook, 1977/78; Lampiran Pidato Kenegaraan, 1978; Repelita III.

a/ Excludes project loans.

Annex XVI

ASEAN: List of products for preferential trading

Indonesia: Certain tyres and tubes for off-road vehicles, calcium carbide, portland cement, certain parts for motorcycles and side cars and certain electrical measuring instruments.

Malaysia: Twine, cordage, ropes and cables, plaited or not of Manila hemp, portable electric typewriters and vermicelli and noodles made from rice.

Philippines: Parafin wax, glass jars for baby food, portable electric typewriters and certain cast, rolled drawn or blown glass.

Singapore: Kain lepas and kain sarong batek, shampoo, raw beet and cane sugar and certain handbags, purses, wallets, briefcases, portfolios and satchels.

Thailand: Quinine (including its salts), margarine, twine cordage, ropes and cables, plaited or not of manila hemp, and ball bearings.

ASEAN: Voluntary list of products for preferential treatment

Indonesia: Maize, canned vegetables, cutlery, jewelry, filter blocks, facial tissues, sanitary towels, sorghum, white rice flour and clinker.

Malaysia: Soda ash, live animals (cattle), vegetables, potatoes, onions, extracts (concentrate of coffee), rice, maize, certain salts, gypsum, certain raw sugar and sharks fins.

Singapore: Undergarments (cotton knitted or crocheted, not elastic), undergarments (other articles not knitted or crocheted, not elastic), shirts (knitted or crocheted), outergarments for infants, shirts (not knitted or crocheted), stockings, socks (knitted or crocheted, not elastic), cotton-made handkerchiefs, and brassieres.

Thailand: Sawed timber, other nonconiferous lumber, certain vegetables (except garlic and onions), lead-base rods, solder, insecticides, nutmeg not powdered, chili not powdered, parafin wax and certain other chemicals for agricultural use.

Philippines: Meat from offal or bovine cattle, maize, green and yellow mango beans, crude and refined palm oil, palm kernel oil, crude gypsum, antracite coal, graphite and carbon electrode, tractor tyres and ball bearings.

Annex XVII

List of possible ASEAN Regional Industrial Projects

Complementarity arrangements

1.	(a)	Thailand	Tyres (automotive and bicycles)
	(b)	Malaysia	
	(c)	Sri Lanka	
	(d)	Indonesia	
2.	(a)	Iran	Motor-car components
	(b)	Pakistan	
	(c)	India	
3.	(a)	Malaysia	Household appliances
	(b)	Singapore	
	(c)	Indonesia	
4.	(a)	Malaysia	Diesel and kerosene engines and pumps
	(b)	Pakistan	
	(c)	Iran	
5.	(a)	Bangladesh: Jute products	Packaging products
	(b)	Thailand: Plastics & paper	
	(c)	Malaysia: Tin Canning	
6.	(a)	Sri Lanka	Ceramic products
	(b)	Indonesia	
	(c)	Iran	
	(d)	India	
7.	(a)	Philippines	Sheet glass
	(b)	Thailand	
	(c)	Indonesia