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COUNTRY INDUSTRIAL DEVELOPMENT PROFILE  
OF SRI LANKA\*/

prepared by the

International Centre for Industrial Studies

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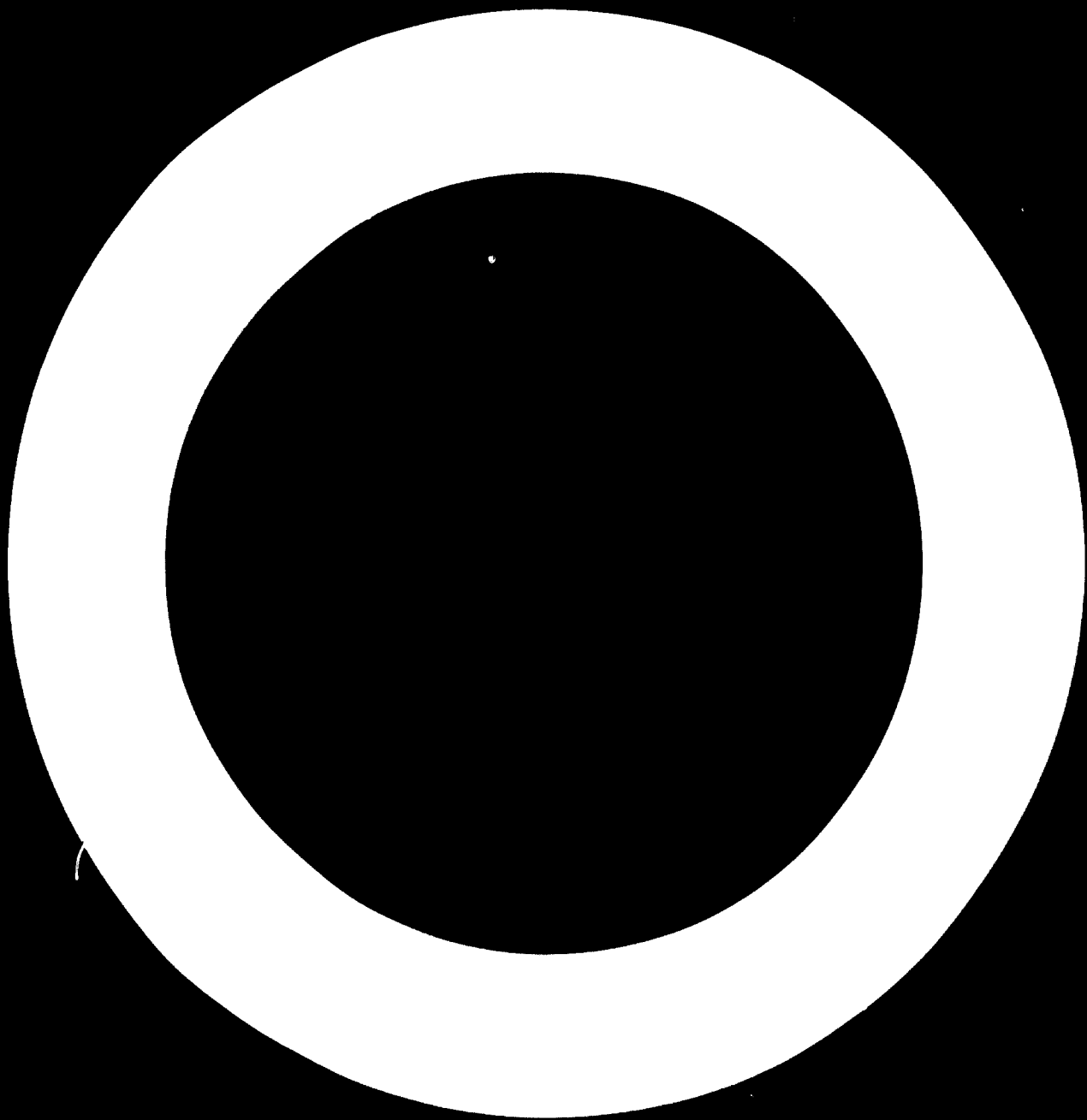
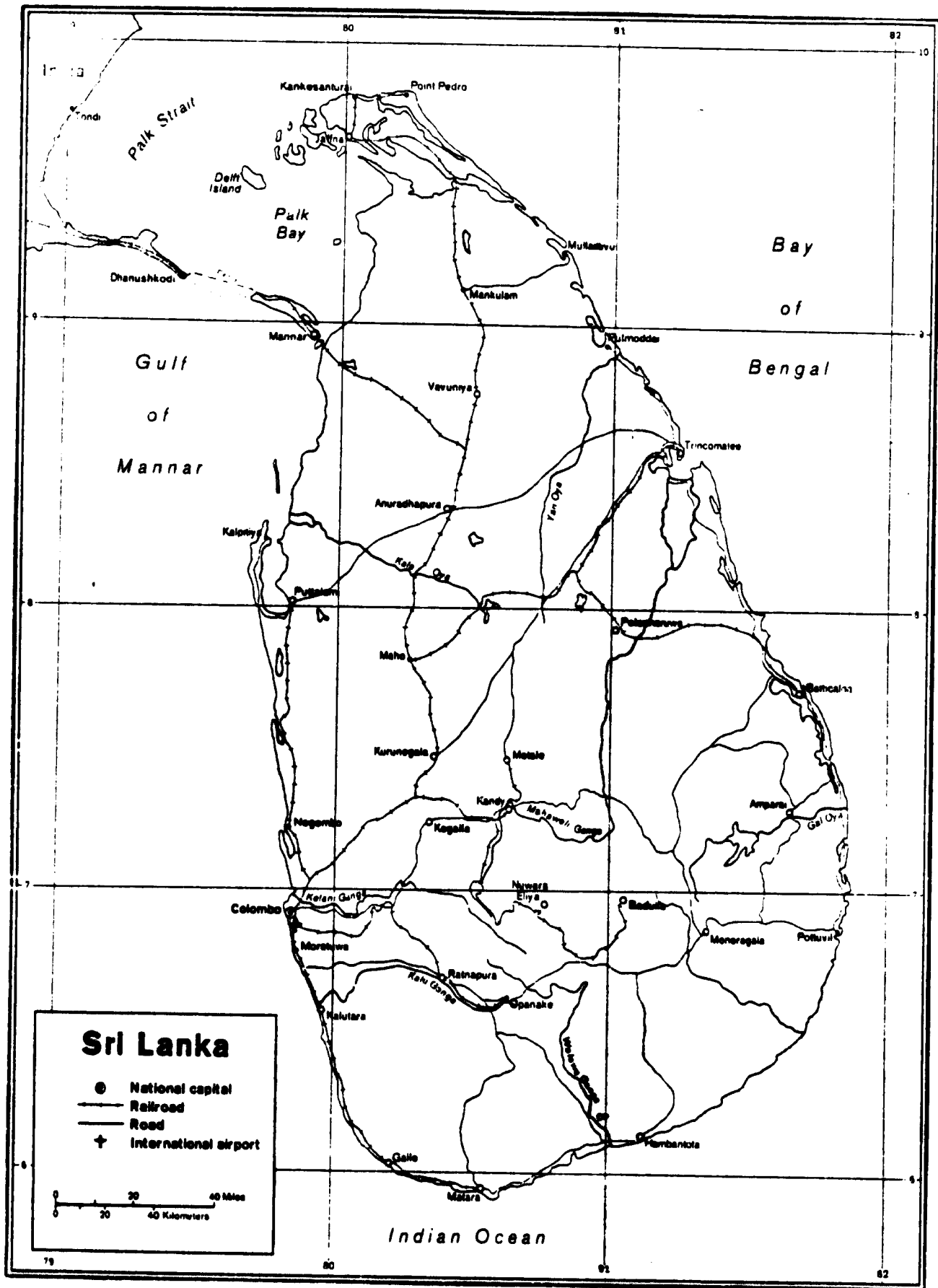


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Preface

The International Centre for Industrial Studies, Regional and Country Studies Section, has undertaken, under its 1978-1979 work programme, 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 cooperation activities.

This profile on Sri Lanka is 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 views and comments contained in this document do not reflect those of the Government of Sri Lanka nor do they officially commit the United Nations Industrial Development Organization to any particular course of action.

Explanatory Note

(i) Abbreviations Used

- CISIR - Ceylon Institute of Scientific and Industrial Research  
DDCS - Divisional Development Countries  
DFCC - Development Finance Corporation of Ceylon  
GCEC - Greater Colombo Economic Commission  
IDB - Industrial Development Board  
IPZ - Investment Promotion Zone  
NERD Centre - National Engineering Research and Development Centre  
NIM - National Institute of Management (formerly the Management Development and Productivity Centre)  
NSC - National Science Council

(ii) Currency Equivalents

Currency unit: Rupee (Rs)

Exchange rate (at mid-October 1978): US \$ 1.— = Rs 15.65

### Summary and Conclusions

It can be stated that Sri Lanka's industrialization efforts have significantly contributed to the progress that has been made in the country during the last 15 to 20 years in providing social services and redistributing income. The fact that the society has not yet succeeded in securing its welfare objectives along with sustained economic development is perhaps due as much to the difficulty of achieving simultaneously both income redistribution and "growth" goals in Sri Lanka's special situation, as to shortcomings in economic policy management.

Industrial policy since the early 1970s has been directed towards greater use of indigenous resources so as to lessen the reliance of public and private industries on scarce foreign exchange. Protection from foreign competition has buttressed domestic industries' lack of efficiency and contributed to capacity underutilization, and their export performance has been generally poor (except for certain branches).

Policies to diminish the heavy dependence of industry on imported raw materials include programmes to foster resource-based industries such as coconut products, cotton and silk for processing and leather products.

To attract domestic and foreign investment a wide variety of fiscal inducements has been devised. Furthermore, as a major measure an export processing zone to the north of Colombo, was established in 1978. During the period April-December 1978 50 projects were approved involving an estimated employment of 30,000 persons.

While having the need to increase export savings and diversity of manufacturing output as its chief policy objectives, the Government is continuing to bear in mind its responsibilities towards full employment to disperse investment throughout regions, to foster small-scale enterprises in appropriate sectors, and to adopt technologies best suited to the country's resource endowment. Indeed, it is clear from the experience of Sri Lanka - and other countries - that reliance on rapid growth is insufficient to take



care of unemployment. At the 1963-71 ratio of employment to output, output growth would have to be almost 7% annually just to absorb new entrants to the labour force. Thus what is needed is a concerted effort to make the growth process more labour-intensive through appropriate factor pricing, a more careful choice of investments and efforts to improve the working of the labour market.

In summary, it may be stated that the Sri Lanka industry's contribution to the attainment of the country's paramount objectives - employment for the rapidly growing labour force and an improved standard of living - requires an increased level of capital formation which in turn depends on the increased availability of capital goods and raw materials. This requires expanded exports and/or foreign assistance as well as progress in import substitution. There seems to be much scope for progress toward the more efficient utilization of resources and increasing production.

I. The general economic background and the role of manufacturing in the economy

1. Sri Lanka's per capita income level is relatively low; in 1977 its per capita GNP was Rs 2.084 (= US\$ 130). The country's economy is predominantly agricultural, with rural activity accounting for about 40% of GDP. About 70% of the country's 14 million people live in the island's southwestern quarter, which includes 3/4 of the cultivated land and around 80% of the industry. The manufacturing sector accounted for 14.7% of the GDP in 1977, with this share growing very slightly since the 1950's.

Table 1: Changes in GDP and its composition, 1960-1977  
(at constant 1959 factor prices as per cent of GDP)

(%)	1960	1970	1975	1976	1977
Agriculture	38.5	34.9	32.3	31.1	36.8
Manufacturing	11.5	13.6	13.1	13.0	14.2
Mining	0.5	0.7	2.2	3.1	1.2
Construction	4.4	5.9	4.5	4.6	3.6
Services	45.1	44.9	47.9	48.2	44.2

Source: Central Bank of Ceylon

2. In the period 1970-77, the GDP rose by an average of 3.0% per annum, while during the 1960s the average annual GDP growth recorded was 4.4%. The growth in 1977 was again 4.4% and estimates indicate that the GDP growth in 1978 will be close to 6%.

Table 2: Annual growth rates of total GDP, the agricultural and manufacturing sectors 1960-77 (based on constant 1959 factor prices)

(%)	GDP	Agriculture	Manufacturing
1960-70	4.4	3.4	6.2
1975	3.6	1.2	5.2
1976	3.0	-0.9	7.3
1977	4.4	8.8	1.1
1978 (tent.)	5.9	8.0	3.5
1979 (forecast)	6.9	8.0	4.5

Sources: Central Bank of Ceylon

1978 Economic Review of Sri Lanka, The Economic Intelligence Unit

3. About 55% of all labour force participants are in the agricultural sector while manufacturing accounts for about 11%. This relationship has remained fairly constant during the last 20 years as is indicated in the following table:

Table 3: Employment by sector

<u>% of total employed</u>	<u>1953</u>	<u>1963</u>	<u>1970</u>	<u>1973</u>	<u>1974</u>
Agriculture	53.0	52.9	50.7	54.9	54.9
Manufacturing	10.1	9.8	11.3	10.9	10.5
Others	36.9	37.3	38.0	34.2	34.6

Source: Department of Census and Statistics, Colombo

4. Before turning to a review of the role of the manufacturing sector in Sri Lanka's development and to the nature of possible further action in support of accelerated development, account should be taken of the efforts of Sri Lankan governments over several decades to achieve the nation's social objectives. They have included, above all, the aim of shaping a society all of whose members have an opportunity to improve their economic well-being and in which the benefits of material progress are shared by all. The fulfilment of these objectives has been sought through increased public ownership and operation of a broad range of economic activities (especially large-scale enterprises), in all major sectors, through the redistribution of income and in provision of basic social services on an extensive scale, and through efforts aimed at restricted population growth <sup>1/</sup>.

5. An appreciation of the current position of Sri Lanka's industrial development may be gained by first reviewing some of the main economic

1/ Population estimates 1963-1977:

	<u>Population mid-year</u>	<u>Annual growth from previous year</u>
1963	10.7 million	2.46%
1968	12.0 million	2.48%
1973	13.1 million	1.79%
1976	13.7 million	1.63%
1977	14.0 million	1.75%

Source: UN Monthly Bulletin of Statistics, January 1978.

developments of the past two decades, and the circumstances underlying recent years' difficulties in the economy. The Government's efforts to adjust to these circumstances and to foster agricultural and industrial production and exports must also be reviewed.

6. For a considerable time after independence in 1948, the Government pursued a policy of laissez-faire towards industrialization while relying almost entirely on the agricultural and plantation sector. Indeed, the export earnings from the processing of three major commodities - tea, rubber and coconut - financed the country's entire import bill. The industrialization programme was based on a policy designed to "help the private sector to help itself". <sup>1/</sup>

7. In 1956, there was a sharp political reaction to the post-independence industrial policy and the new Government emphasized the establishment of large-scale public sector enterprises in strategic and basic industries while private enterprises, both local and foreign, were to be encouraged in consumer and intermediate goods industries. This demarcation of industries into basic and non-basic for state and private sector enterprises respectively seemed, however, not to have been established so much on a strategic growth-promoting rationale as on a pragmatic ad hoc basis. The question of a rational and quantifiable basis for the demarcation of state and private enterprises was left unresolved. <sup>2/</sup> In the 1970 Throne Speech, it was stated that "the heavy and capital goods industries and other suitable basic industries will be state-owned. Other industries will be assigned to the cooperatives and to private enterprise".

8. During the period 1956-65, the public sector expanded rapidly, supported through capital aid inputs. In 1956 the six existing state factories had a capital investment of Rs 92 million; by 1965 the then 19 state corporations together accounted for Rs. 487 million. The private sector too grew at a rapid rate but primarily in less

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<sup>1/</sup> Six-Year Programme of Investment. Planning Secretariat, Colombo, 1954.

<sup>2/</sup> See Dr. Nsil Dias Karunaratne, Techno Economic Survey of Industrial Potential in Sri Lanka, IDB, Colombo, 1973.

essential industries due to the absence of rational guidelines for desired growth and of industrial policies in general.

9. Beginning in the early 1960s the macro-economic constraints, in particular foreign exchange scarcities <sup>1/</sup>, became more critical. The import-substituting industrialization, established behind fiscal incentives and tariff protection, and based often merely on finishing and assembly of imported semi-manufactures and components, began to show its weaknesses. The industries were producing well below capacity, due to shortages of foreign exchange for raw materials, saturation of the domestic market and their inability to compete in the international market.

10. When, in 1965, a change of Government took place, emphasis was therefore again given to private enterprise and a new industrialization strategy, giving particular attention to the promotion of medium and small-scale industries, was initiated. New industrial policies also specifically encouraged agro-processing industries, on the basis of domestic raw materials and indigenous technology. The Industrial Development Board (IDB) was established and soon became the country's central institutional force for industrial development and promotion.

11. In 1971 - after another change in Government - the IDB was reconstituted and given a less ambitious role. Several other new institutions, devices and policy measures were also introduced, shifting the emphasis of industrial development once again from the private sector to the public sector. It was realized that, although the manufacturing sector had grown fairly steadily in the 1960s, a number of shortcomings in the industrial development programme were becoming more and more pronounced. Firstly, there was still the high import component - nearly 75% of all material inputs for the organized industrial sector had to be purchased abroad. Imported materials in the early 1970s represented about 2/5 of the value of industrial output, and some 30 times the foreign exchange receipts of the sector. Furthermore, the product mix did not

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<sup>1/</sup> The effect of adverse terms of trade on the real value of Sri Lanka's export earnings has been calculated to have resulted in a loss of approximately Rs 6,700 million for the period 1960-72; the annual losses ranging from 4 to 10% of the GNP. (Source: TD/B/C.6/6, Report by the Marga Institute of Sri Lanka entitled "Major issues arising from the transfer of technology - A case study of Sri Lanka", 1975).

fit emerging demand patterns, and this contributed to the low rate of capacity utilization. Finally, the continuous high costs of production made it difficult for industries with potentially exportable products to break into the overseas markets.

12. Attempting to deal with these problems, the Government outlined in its Five-Year Plan 1972-1976, a strategy comprising to a large extent a reversion to earlier industrial policies. It embraced several broad objectives. Industries with good export prospects were to be favoured; encouragement was to be given to small-scale industries and to industrial development in rural areas, and labour-intensive modes of production were to be promoted. Special emphasis was to be placed on establishing the basic industries capable of providing inputs for other industries, thus contributing to a reduction in the imports required for industrial production. Such backward linkages were to be especially exploited by the setting up of producer goods industries in the public sector.

13. There has, however, been limited success overall in increasing industrial output in recent years. The share of manufacturing in GDP has, as noted earlier, declined marginally from the peak of 1970, although some increase in employment, in particular in the small-scale sector, has occurred. Activity in the organized private sector - some 2,500 relatively large-scale units - is still characterized by a large degree of excess capacity and low level of investment. Similarly, many corporations in the public sector have been beset with a variety of problems which have inhibited the full utilization of capacity. In addition to foreign exchange shortages, there has, for instance, been a failure to adjust product prices in line with increased input costs.

14. Policy initiatives in the early 1970s to promote industrial exports were, however, quite effectful. Exports of manufactures, only Rs 57 million in 1971, increased almost five-fold in value between 1971 and 1974. In 1974 the expansion slowed down and, despite the intensified efforts of the Government, declined slightly in 1975. Exports of manufactures increased again significantly in 1976 and remained largely at same level in 1977 (see further para. 25 below).

15. Sri Lanka's industries have, no doubt, surplus capacity to meet an increase in demand when it materializes. However, although there is much idle capacity, the need for substantial imports of investment goods has been growing rapidly as the obsolescence of the existing equipment and the lack of spare parts have become additional bottlenecks to increasing capacity utilization. Also, attaining higher quality standards, which is of special importance for export industries, requires adjustments and adaptations in existing plants, which in turn depend on the availability of certain imported capital goods. It is against this background that the new Government is paying major attention to the maximization of output from existing industrial capacity, the speedy completion of projects under way and the creation of new capacities in accordance with present priorities.

16. Furthermore, Sri Lanka is among those countries which were most hit by the recent adverse developments in the world economy. Major efforts are being made to deal with the overwhelming fiscal problem and to adjust to world commodity price inflation which in Sri Lanka's case meant sharply deteriorating terms of trade in particular the years 1974-1976, as shown in Table 4 below.

Table 4: Terms of trade, 1960-1977  
(1967 = 100)

	Exports		Imports		Terms of trade
	Volume	Price	Volume	Price	
1960	87	122	133	83	148
1964	102	111	114	105	105
1967	100	100	100	100	100
1970	102	118	102	140	84
1971	99	117	90	150	78
1972	97	118	88	158	75
1973	98	137	79	209	65
1974	85	213	56	370	58
1975	102	199	69	433	46
1976	97	239	75	383	62
1977 (prel.)	89	382	97	471	81

Source: Central Bank of Ceylon.

17. As indicated in the table above an improvement in the terms of trade occurred in 1977, largely due to a sharp increase in the global price of tea <sup>1/</sup>. Indeed, for the first time since 1965 a surplus on the current account of the balance of payments was registered. This made possible the introduction, in November 1977, of significant import and exchange control relaxations in respect of capital goods and other inputs to industry.

18. In general it could be stated that the country's industrialization efforts have significantly contributed to the progress that has been made in Sri Lanka during the last 15 to 20 years in providing social services and redistributing income. The fact that the society has not yet succeeded in securing its welfare objectives along with sustained economic development is perhaps due as much to the difficulty of achieving simultaneously both income redistribution and "growth" goals in Sri Lanka's special situation, as to shortcomings in economic policy management. Indeed, one outcome of the advances made on the social front has been that, while they succeeded in eliminating the worst manifestations of mass poverty, they raised the aggregate demand without securing a corresponding increase in output or productivity.

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<sup>1/</sup> The traditional exports of Sri Lanka - tea, rubber and coconut - accounted for 72% of the country's export earnings in 1977.



## II. Structure and recent performance of the manufacturing sector

19. As of 1974, the industrial sector employed some 408,000 persons, or about 11 per cent of the total employed labour force. Of this number, about 125,000 were employed in private sector factory processing industries such as tea, rubber and coconut processing which account for a major portion of the value-added in the sector. The private sector also includes small-scale factories or units such as textile weaving units, potteries, carpenteries, and makers of ooir products. Estimates of the number of such units vary from 25,000 to 100,000. The 26 public sector corporations - contributing 23% of the value-added and 6% of the employment in manufacturing - produce a broad range of commodities, such as sugar, cotton textiles, leather products, paper, plywood, ceramics, cement, fertilizers, mineral sands, steel and hardware products.

20. The recent performance of the manufacturing sector was reviewed in the Budget Speech in November 1978, the highlights of which are reflected in following paragraphs:

The performance of the manufacturing sector, which was quite dismal in 1976 and 1977 with a mere 1.2-1.3 per cent increase each year in output, will improve considerably with an estimated increase of 5.6 per cent in 1978. This increase is attributable basically to a higher level of capacity utilization made possible by the freer availability of raw materials consequent to the liberalization of imports in November 1977 and the new economic and financial policies of the Government.

In the twelve months up to July 1978, 858 units in different industrial groups (excluding textiles) have been approved by the Government outside the free trade zone involving a total investment of Rs. 400 million and with an employment potential of about 20,000. This stands in marked contrast to the previous four years, where approvals averaged 165, actual investment Rs. 19.2 million and employment 2,670 per year. Among the major industries approved by the Government are polypropylene bag and film plants, aerated water plant, soft issue mill, activated carbon and transformers. The total foreign investment in manufacturing industries in the year 1977/78 amounted to Rs. 392 million in contrast to Rs. 43 million in 1976/77. Some of the projects with full or partial foreign collaboration were a flour mill in Trincomalee, a project to manufacture rubber latex thread for export, manufacture of boats for export, decortication of cashew kernel and extraction of cashew nut shell liquid for export.

In the public sector notable increases in production have been recorded during the year 1977/78. The production of rutile for instance amounted to 7.956 metric tons which represents an increase of nearly 85 percent over the previous 12-month period. The production of cement rose by 42 percent graphite by 11 percent, petroleum refined products by 27 percent, tyres by

13 percent, leather goods by 35 percent, ceramic tiles by 54 percent and mammoets by 48 percent. State manufacturing corporations also showed an increase of 26 percent in employment in the 12-month period ended July 1978.

In the textile sector, while there has been an expansion in capacity, actual production during the past few years has been well below installed capacity. This poor performance can be attributed to a number of factors such as managerial and organizational deficiencies, imbalances and bottlenecks in production facilities, intermittent shortages of inputs, centralized state imports and attendant rigidities and inefficiencies in the supply and distribution of raw materials, marketing deficiencies due to poor quality, and unnecessary and undesirable restrictions in regard to production, marketing and distribution. A number of policy changes have been introduced since July 1977 to remedy this unsatisfactory state of affairs in the textile industry. The centralized State import and supply of raw materials has been abolished and the Weaving Supplies Corporation which had the monopoly of the import of raw materials is under liquidation. The liberalization of import controls enabling the free importation of raw materials and spares, and machinery and equipment up to a value of Rs. 700,000 has also had a direct beneficial impact on the textile sector. The Government has also brought about a major change in the management of public sector mills by making use of the management expertise of the private sector. Finished textiles are also now being imported to bridge the gap between demand and domestic supply.

The private sector is engaged largely in the production of non-cotton textiles, for which the existing capacity in 1977 was 31 million yards while production was approximately 27 million yards. The projected demand for non-cotton textiles is about 70 million yards by 1980 and in view of this, action has been taken to attract new investment into this field and investment proposals amounting to Rs. 255 million involving a new capacity of 31 million yards have already been approved by the Government.

The garment sector has been the main exporter in the textile industry, with exports amounting to Rs. 125 million in 1977, and rising very considerably to Rs. 161 million in the first half of 1978. Several new units oriented to exporting garments have been approved and this sector is expected to show vigorous expansion once these new projects go into production. Import of machinery has been liberalized and the importation of material to meet export orders is being readily allowed.

21. The performance of the industrial sector since independence underlines the relationship between imports and production noted in Chapter I (para. 11). There are two aspects of this relationship to be noted. First is the high import content of industrial production. According to the Central Bank Review of the Economy in 1976, the cost of imported raw material accounted for 69.5% of the total cost of raw materials in the

industrial sector as a whole in that year. The situation in different branches of industry is indicated in Table 5 below. Secondly, most of the import substituting industries in the private sector are confined to the final stages of the manufacturing process and value-added in such industries is low. <sup>1/</sup> Foreign exchange savings in many such industries have been gradually eroded and even rendered negative. One reason for this is that import substitution was confined mainly to manufactures while tending to ignore raw materials and intermediate goods.

22. The still limited progress of local industries in general towards export orientation, which has prevented the industrial sector from reaching a self-supporting stage of growth, has exacerbated these two factors. The high protection afforded to local industries and the consequently diminished competition from imports has tended to inhibit these industries from reaching the level of efficiency necessary to achieve export growth.

23. The early phase of the development of manufacturing industries in Sri Lanka culminating in the early 1960s was characterized by a highly import-dependent, light consumer goods type of industrial structure. The changes in Sri Lanka's industrial structure in the period from the mid-1960s conformed to the traditional pattern of industrial development with increased emergence of metal working, engineering and chemical industries. The relative growth in different industrial sub-sectors since 1964 is shown in Table 6.

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<sup>1/</sup> In the report "Major Issues arising from the Transfer of Technology - A Case Study of Sri Lanka", prepared in 1975 by the Marga Institute of Sri Lanka it is noted that "with the main desire to retain the business turnover already enjoyed in the import trade, investors undertook the minimum processing needed to qualify for approval as an industry and escape the restrictions placed on the import trade. In some instances it was confined to the simple assembly of finished components or the compounding and packaging of material imported in bulk. This approach on the part of investors had two consequences for the structure of industry that developed. First, most of the industries that were set up had a large import content, and the foreign exchange cost of keeping the new industrial sector in production was very heavy. Import substitution in industry therefore did not bring the relief to the balance of payments that was expected. Second, in terms of technology the impact of the import substitution programme in the early 1960s was marginal. What was transferred in most cases were the end processes of manufacture. There was no systematic effort to increase progressively the local component in manufacture and find local substitutes for imported intermediaries."

Table 5: Manufacturing Survey 2/

Industrial Group	Number of firms	Employment ('000 persons)	Value of production (Rs mn)	Value added (Rs mn)	Daily wage (Rs)	Capacity Utilization (%)	Import content in raw material use (%)
Food, Beverages & Tobacco	158 (10.5)	23.7 (20.9)	1,715 (28.3)	701 (28.5)	26	75	37
Textiles, Wearing Apparel, & Leather Industries	602 (39.9)	30.5 (26.9)	680 (11.2)	266 (10.2)	20	56	74
Wood & Wood Products	17 (1.1)	6.5 (5.7)	129 (2.1)	78 (3.2)	24	45	43
Paper & Paper Products	58 (3.8)	6.4 (5.6)	203 (3.3)	54 (2.2)	22	58	60
Chemicals, Petroleum, Coal, Rubber & Plastic Products	220 (14.6)	14.6 (12.9)	2,336 (38.5)	937 (38.1)	32	66	94
Non-Metallic Mineral Products (except Petroleum & Coal)	72 (4.8)	12.5 (11.0)	360 (5.9)	219 (8.9)	20	76	32
Basic Metal Products	1 (-)	1.4 (1.2)	138 (2.3)	38 (1.5)	32	39	100
Fabricated Metal Product Machinery & Transport Equipment	358 (23.7)	16.5 (14.5)	474 (7.8)	153 (6.2)	22	53	83
Other Manufactured Products	22 (1.5)	1.3 (1.1)	26 (0.4)	16 (0.6)	16	45	77
T O T A L	1,508 (100.0)	113.5 (100.0)	6,061 (100.0)	2,462 (100.0)	24	64	70

2/ Figures in parentheses are percentage distribution.

Source: Central Bank of Ceylon, Review of the Economy, 1976.

Table 6: Growth of Industrial Production in Major Sectors 1964-1973  
Index 1970 = 100

ISIC	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	Average annual rate of growth 1964-1973
311-2											
313	74	73	73	73	82	91	100	98	97	98	3.2
314	65	70	74	82	92	97	100	105	113	112	6.2
321	62	54	62	80	90	110	100	116	103	114	7.0
322 +											
324	72	64	67	83	94	108	100	105	107	88	2.3
323											
	70	79	79	98	134	118	100	114	120	114	5.6
331	111	77	80	81	106	82	100	96	122	176	5.3
332											
	56	77	80	81	106	82	100	...	...	...	8.7 a/
341											
	54	60	80	98	111	104	100	104	119	99	7.0
351-											
352	127	122	113	124	118	105	100	104	118	107	- 1.9
355	19	37	37	38	87	81	100	159	159	149	25.7
361, 362, 369											
	44	55	53	66	77	93	100	111	106	116	11.4
371-											
372	38	50	50	94	119	123	100	134	103	64	6.0
381	60	93	89	123	152	148	100	115	95	103	6.2
390	77	77	89	90	116	127	100	257	279	158	8.3
3	62	65	66	79	91	96	100	107	112	108	6.4

a/ 1964 - 1970

Source: UN Yearbook of Industrial Statistics 1974 and 1976, Volume I.

24. Intersectoral linkage effects have contributed markedly to a structural change in the industrial sector. Thus, due to a construction boom, the production of materials like cement and asbestos has recently expanded rapidly, the expansion of some other sub-groups was linked up with the vigorous agricultural development policies pursued during the mid-1960s; the expansion of chemical industries, machinery and transport equipment manufacturing, etc., arose to large extent due to demands for various industrial inputs of the agricultural sector.

25. A study of the pattern of industrial exports during the period 1972 to 1977 indicates that the efforts of the Government to expand and diversify Sri Lanka's non-traditional exports have been quite successful as the figures in Table 7, below, indicate.

Table 7: Value of industrial exports 1972-1977  
(US \$ million)

	1972	1973	1974	1975	1976	1977 Jan.-June
Food, beverages and tobacco	3.33	5.00	5.11	6.24	13.80	9.00
Textiles, wearing apparel and garments	1.17	3.59	4.96	4.96	9.20	6.41
Chemicals and chemical products	1.50	1.88	2.86	3.26	3.97	2.57
Wood and paper products						
Rubber and rubber products	1.17	2.34	2.71	2.27	3.64	1.63
Ceramics and porcelain ware	-	0.31	1.20	1.99	2.42	0.84
Metal products	1.50	0.63	0.30	0.43	0.23	0.11
Basic metal industries and machinery	0.33	0.94	1.05	1.70	0.56	0.45
Electrical machinery, appliances and supplies	-	-	0.45	0.43	1.44	0.07
Optical instruments, plastic goods, etc.	-	0.47	0.45	0.57	0.43	0.29
Naphta	-	3.59	12.18	11.49	11.46	4.60
Fuel oil	-	0.63	1.05	-	5.41	-
Graphite	5.83	1.72	2.56	1.70	2.04	1.28
Ilmenite	-	0.78	1.05	0.71	0.79	0.29
Rutile	-	0.31	0.45	0.99	0.52	0.40
Cement	-	-	1.95	0.71	0.02	-
Total (US \$ million)	14.50	22.19	38.35	37.45	56.93	27.94
(Rs million)	89	142	510	534	823	404

Source: Ministry of Industries and Scientific Affairs, Colombo.

26. From a meagre Rs 53 million in 1970, industrial exports rose to Rs 510 million in 1974, and, after a slowdown in 1975, to Rs 823 million in 1976. A significant feature in the expansion of industrial exports during this period has been the contribution made by the food, textile, chemical, wood, leather, electrical and machinery appliance sectors. Shirts, children's and ladies' garments, other wearing apparel, canned fruit, juices, sea foods (especially shrimps, prawns and lobsters), wooden products, etc. comprised the main components of the Sri Lanka product mix which spearheaded the export drive during the last seven years <sup>1/</sup>.

27. Significant characteristics of the private sector manufacturing industries, which surfaced in the report of the 1976 survey on manufacturing industries, are the position occupied by small-scale units (with a capital investment of less than Rs 1 million in each unit), accounting for 78% of all industrial units in the country's private sector manufacturing structure and 28% of the value of output, while about 55% share of the value of output is accounted for by 181 large-scale industrial units (with a capital investment of over Rs 1 million in each), constituting 8% of the total number of industries in the private sector. These characteristics are amplified in Table 8 below.

Table 8: Value of fixed capital assets (plant and machinery)

<u>Scale of industry</u>	<u>Establishments</u>		<u>Percentage value of output (ex-factory)</u>
	<u>Number</u>	<u>%</u>	
Over Rs 1	181	8	55.6
Less than Rs 1 million and over Rs 100,000	337	14	16.0
Less than Rs 100,000	1850	78	28.4
T o t a l	2368	100	100.0

Source: Ministry of Industries and Scientific Affairs, Colombo

28. The geographical distribution of industries is very uneven. About 90% of the manufacturing output is concentrated in the Colombo area,

<sup>1/</sup> Further details on various export items in 1976 are given in Annex II.

where the high market potential together with transportation and other urban infrastructure amenities naturally constitute a big gravitational pull for the establishment of industries. As at 1974, over 72% of all approved private industrial projects, but only about 35% of public sector industrial projects, were in the Colombo area.

29. Thus, the regional dispersal of industry (apart from very small, or cottage-type industrial units) occurred mainly through the public sector industrial corporations established in the last two decades. However, due to the absence of clear criteria for industrial location and the lack of adequate information about raw material and mineral resource inventories during the early stages of public sector development, location decisions were often not optimal ones.



III. Analysis of main constraints on the development of industry

30. The foregoing account of the structure and recent performance of Sri Lanka's industrial sector suggests that there continues to be a number of obstacles in the way of fuller and more competitive use of existing capacity. Many of these obstacles also attend any new industrial projects. The gravity of these can be judged from the fact that growth of real income from manufacturing has slowed down from 6.2% per year in the 1960s to an average of 2 - 3% per year in 1970-77. Central to this set of constraints has, however, been shortage of foreign exchange.

31. The economy's heavy dependence on imports for production and capital formation is only partly reflected by the fact that import content of gross capital formation and supply of intermediate goods is 20% and 35% respectively. The significance of imports to investments and production in certain industries, which supply others in turn, and which have much higher import ratios than the average, is particularly great. Bottlenecks in imported inputs for these industries would have repercussions in other industries with less direct dependence on imports.

32. The liberalization of imports of raw materials and machinery in November 1977 as well as the exposure of domestic industry to foreign competition brought about by the relaxation of import controls on a wide variety of consumer goods should make the industrial sector as a whole more dynamic, productive and efficient in the long run. An analysis of import orders placed since last November indicates a rapid increase in the import of investment goods machinery and transport equipment - all these adding to the production capacity of the country. Despite the ready availability of some consumer items on the market, letters of credit opened up to now for such imports have been less than 10% of the total. In this 10% again, more than half the imports have been textiles a basic utility item; luxury and semi-luxury items have been less than 2%.<sup>1/</sup>

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<sup>1/</sup> The Budget Speech November 1977.

33. It is at the same time to be noted that the share of foreign raw materials in total raw material consumption decreased from 70 percent in 1976 to 66 percent in 1977 indicating greater use of domestic raw material .

Table 9: Trends in import content of raw materials for selected industries, 1965-1970

	<u>1 9 6 5</u>		<u>1 9 7 0</u>	
	<u>local</u>	<u>foreign</u>	<u>local</u>	<u>foreign</u>
Food products - preserved and canned fruit, vegetables, meat, fish	77%	23%	76%	24%
Spinning, weaving, finishing of textiles	5%	95%	13%	87%
Knitted fabrics, made up garments, etc.	26%	74%	36%	64%
Footwear & leather products	36%	64%	54%	46%
Wood and wood products	85%	15%	82%	18%
Paper and paper products	30%	70%	44%	56%
Rubber products	26%	74%	32%	68%
Ceramics	14%	36%	24%	76%
Cement, cement prod., incl. asbestos products	17%	33%	59%	41%
Fabricated metal products other than machinery and equipment	7% (1967)	93% (1967)	13%	87%
Machinery (except electrical and transport equipment)	37%	63%	19%	81%
Electrical machinery, apparatus appliances	21%	79%	20%	80%

Source: Dr. N.D. Karunaratne, "Techno Economic Survey of Industrial Potential in Sri Lanka", 1973.

34. Two important consequences have followed from the foreign exchange constraints. First is the low rate of capacity utilization, to which reference has been made throughout this paper. This problem, in some cases,

reflects inappropriate investments in the past; it is also the result of the until recently very limited availability of foreign exchange needed for imports of raw materials and spare parts. Since, however, public sector enterprises generally received preferential treatment in the allocation of foreign exchange, their low rate of capacity utilization seems have been due, at least partly, to bottlenecks in the supply of locally produced raw materials. Capacity utilization in the public sector units remained until 1977 generally very low (although with some clear exceptions) at about 50 - 60%, as shown in Table 10. However, the increased economic activity during the last two years have stimulated greatly the production levels of major state industrial corporations. According to the Central Bank statistics the average monthly output index at the end of June 1978 was 19 percent higher than in June 1977. The largest gains were made in the following corporations: cement, sugar, leather products, textile, graphite and ceramics.

35. Low rates of capacity utilization in turn give rise to higher fixed costs per unit of output. This, of course, is one factor making the products of such enterprises unattractive. The statistics do not allow a thorough analysis of the cost structure of the subsector in manufacturing, but a rough indication of productivity is shown in Table 11.

36. When these high unit costs are protected by tariff and non-tariff barriers, as has been the case in Sri Lanka, there is less incentive to improve efficiency. And the process feeds of itself by virtue of high and protected prices diminishing export prospects, and this in turn reduces the availability of foreign exchange with which required inputs to improve capacity utilization can be bought.

37. Inadequacies of infrastructure are gradually being improved. Installed electric generating capacity rose 10% in 1976, and is sufficient to meet present demand. There are telegraph connections between the main centres on the island, and the road and railway systems are continuously being improved.

**Table 10: Production and capacity utilization  
in state industrial corporations**

Corporation	Product	Unit	Production				Capacity Utilization (%) <sup>a/</sup>		
			1974	1975	1976	1977 Jan-Jun	1974	1975	1976
Ceramics	Crockery	'000 tons	2.8	2.5	2.4	1.4	96	87	84
	Sanitaryware	"	0.6	0.6	0.5	0.3	101	129	108
	Wall tiles	"	0.3	0.4	0.3	-	95	117	77
	Kaolin	"	5.8	4.1	4.3	2.6	110	74	78
	Insulators	"	0.2	0.2	0.3	0.1	67	75	107
	Bricks & tiles	mm units	20.6	24.3	26.2	10.7	87	103	111
Cement	Cement	'000 tons	466	387	416	152	63	49	53
Hardware	Namoties	'000 units	342	301	200	153	86	75	50
	Cast iron products	'000 tons	3.1	3.6	2.1	0.5	52	60	34
Mineral sands	Ilmenite	"	79.8	63.0	54.9	23.4	89	69	61
	Rutile	"	3.0	3.1	1.0	-	72	77	26
Paranthan chemicals	Caustic soda	"	0.7	0.6	0.7	0.3	50	43	49
	Chlorine	"	0.7	0.6	0.7	0.3	50	43	49
	Hydrochloric acid	"	0.5	0.4	0.6	0.3	25	21	30
Leather	Shoes	'000 pairs	248	143	168	85	72	41	49
	Chrome leather	mm sq. ft.	1.2	1.0	1.2	0.5	99	79	100
	Bark leather	'000 lbs	215	191	200	46	54	48	50
Tyre	Standard types	'000 units	171	174	181	39	96	70	n.a.
Petroleum	Petroleum products	'000 tons	1,372	1,274	1,286	615	75	73	73
	Lubricating oil	'000 gals.	3,111	3,602	3,077	1,595	74	86	79
Steel	Roller products	'000 tons	28.9	21.2	28.3	13.8	40	30	39
	Wire products	"	5.6	7.0	6.0	3.7	47	59	50
Paper	Paper and paper board	"	17.3	18.7	17.3	9.9	76	83	77
Flour	Flour	"	85.8	96.1	130	51	99	98	106
Plywood	Plywood	mm sq ft	49.2	52.0	47.5	n.a.	45	47	43
Lanka porcelain	Porcelain table ware	'000 tons	-	.	1.4	n.a.	-	-	141
Textiles	Yarn	mm lbs	10.7	12.9	10.7	4.7	45	54	45
	Cloth woven	mm yds	14.8	19.0	17.4	7.1	36	46	43
	Cloth finished	"	39.7	48.4	45.7	n.a.	54	56	62

<sup>a/</sup> Production capacity defined as installed capacity on three shifts.

Source: Ministry of Industries and Scientific Affairs, Annual Review of Activities; Central Bank of Ceylon, Review of the Economy, 1976.

Table 11: Value added per person engaged in manufacturing, by selected manufacturing sub-sectors, 1970

ISIC		Number of persons engaged	Value added (1000 rupees)	Value added rupees per person engaged
311/ 312	Food products	12,345	79,000	6,399
313	Beverages	1,817	49,000	26,968
314	Tobacco	1,611	90,000	55,866
321/ 322	Textiles and wearing apparel	24,117	132,000	5,473
323	Leather products			
324	and footwear	3,403	24,000	7,053
331/ 332	Wood products, furniture and fixturer	2,695	17,000	6,308
341/ 342	Paper, paper products printing and publishing	4,499	31,000	6,890
351	Industrial chemicals	1,029	6,000	5,831
352	Other chemical products	6,723	85,000	12,643
353	Petroleum refineries	476	46,000	96,639
354	Petroleum and coal products	337	7,000	20,772
355	Rubber products	3,980	40,000	10,050
356	Plastic products	1,786	15,000	8,399
361	Pottery, china, etc.	1,526	13,000	8,519
362	Glass and glass products	1,046	17,000	16,252
369	Non-metal products	6,639	20,000	3,013
371	Iron and steel			
372	Non-ferrous metals	1,348	11,000	8,160
381	Metal products	6,943	46,000	6,625
382	Machinery, non-electrical	7,418	44,000	5,932
383	Electrical machinery	2,363	31,000	13,119
384	Transport equipment	2,365	22,000	9,302
385/ 390	Professional goods other industries	2,134	77,000	36,082
	TOTAL MANUFACTURING	96,600	901,000	9,327

Source: UN Yearbook of Industrial Statistics, 1973 and 1974.

#### IV. Natural resources and prospects for resource-based industries

38. It was noted earlier that shortages of imported materials, stemming from balance of payments difficulties, have been a major cause of low capacity utilization and high costs in several industries. The long-term growth of the country's industry is likely to be severely constrained unless local materials can to a larger extent than hitherto be substituted for imports. Furthermore, the Government is committed to strengthening the linkages between the primary and secondary sectors, not only as a measure to stimulate economic growth but also to diffuse the benefits of industrialization more widely in the rural areas.

39. It has also been pointed out that the import content of the raw materials used in Sri Lanka's manufacturing sector is very considerable. The 1972-76 Development Plan concluded that the severe foreign exchange difficulties made it imperative that priority be given to reducing the foreign content of industrial raw materials. In the following analysis of individual product groups we have partly drawn upon Dr. Karunaratne's study.<sup>1/</sup> It shows that ample scope for increasing the domestic content of Sri Lanka's industrial inputs exists in several fields, in particular in respect of agro-based industries.

40. There is, however, one strategic issue which must first be raised in this connexion. The development of Sri Lanka's agriculture may have been unduly dominated by the three export products—tea, rubber and coconut—in the past. If such diversification were attempted too quickly, it might, however, result in a diffusion of scarce complementary resources so that the end result would be higher costs, inferior quality inputs and greater instability of supplies than at present.

##### (i) Coconut products

41. This sector comprises ancillary coconut-based industrial activity and is providing employment to a widely dispersed rural populace in the coconut growing regions. The traditional export-orientation of the sector is, so far as coir fibre and yarn products are concerned, facing declining

<sup>1/</sup> Dr. Neil Dias Karunaratne, Techno Economic Survey of Industrial Potential in Sri Lanka, IDB, Colombo. 1973.

prospects due to the emergency of competitive natural and synthetic fibres. Although the sector has ample scope for modernization, such as using new techniques in retting, the less encouraging export trends seem to have precluded their adoption. The need has been indicated for exploration of:

- possible production of bristle fibre (mattress fibre) for export markets;
- up-grading and diversification of coir yarn products for both domestic and export markets;
- establishment of factories for coir carpets, mats, cordage, bags and rope, for coir dust briquettes and for coir pith board; and
- utilization of coconut shell charcoal as filler for plastic products and possible substitute for manganese oxide in dry cell batteries.

42. The 1972-76 Development Plan stated that the expansion of industries based on coconut fibre would be a part of the programme for the small-scale sector. The Divisional Development Councils were to be called upon to play a leading role in developing the potential in the coconut-based industries. It has been suggested that, in view of existing substantial export demand for desiccated coconuts for confectionery and copra for animal feed, the sector needs modernization and improved techniques for the preparation of desiccated coconut and distillation of oil for export (see also para. 53 regarding coconut oil). In addition to expanding the traditional exports in this sector, there might be prospects for new manufacturing in areas such as:

- production of glycerine and fatty acids <sup>1/</sup> for exports;
- production of coconut cream for local and export markets;
- granulated coconut manufacture for export; and
- manufacture of coconut-based provender and cattle feed.

43. In the 1972-76 Plan, research and development programmes were called for, inter alia, in respect of industrial carbon and chemicals from coconut shell.

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<sup>1/</sup> Research on this is carried out by CISIR in collaboration with the Coconut Processing Board.

(ii) Sugar production

44. Between 1966 and 1973, annual per capita consumption of refined sugar was about 20 kg, equivalent to a total of 270,000 tons/year. During this period domestic production of refined sugar was negligible (not exceeding 10,000 tons/year), and imports ranged from 200,000 to 300,000 tons, accounting for around 10% of the total import bill. Following severe shortage of foreign exchange and high prices in 1974, imports were drastically reduced to about 43,000 tons. In 1976, 47,000 tons were imported and in 1977 96,000 tons.

45. The Sri Lanka Sugar Corporation is constituting a centralized planning and execution unit for all aspects of the country's sugar production and processing. Organized sugar development began in the late 1950s with the establishment of two sugar factories (and associated plantations) at Hingurana and Kantalai with a combined capacity of 38,000 tons of sugar. However, due to various problems ranging from low cane yields and low sugar content to factory breakdowns, the total output did not in any of the years 1960-72 exceed 10,000 tons, or about 25% of capacity. The corporation undertook recently an extensive programme for improvement of cane cultivation and factory management resulting in an increase in the combined production from both plants to about 50% of capacity.

46. The usual problem of spare parts has been present and both factories have found it necessary to establish large workshops to manufacture many of the required replacement parts. However, in the case of Kantalai, even though the workshop has been in operation for several years, some essential pieces of equipment are still lacking (according to a recent World Bank report). With limited additions it would be possible to improve timely availability of spare parts and thus keep the factory in operation. At present, harvesting continues during periods of factory breakdowns, necessitating the prolonged stocking of cane with consequent reductions in sugar content.

47. The Asian Development Bank is currently assisting in improvements at the Hingurana project, while an IDA credit has been obtained for the Kantalai scheme.

48. While for the immediate future, emphasis is being given to better utilization of partially developed cane land and of existing factory



capacity, the long-term potential for further expansion into new areas for sugar production in the dry zone (in the north and east of the island) with irrigation, may be subject to further investigations.

49. It has also been indicated that there seems to be good prospects for establishing of coconut and kitul jaggery manufacturing units.

(iii) Other processed food products

50. A number of possibilities for expanded industrial activity in respect of various processed food products such as the establishment of units for canned and preserved fruits (pineapples, passion fruit and mangoes) and vegetables have been indicated. The 1972-76 Plan foresaw the establishment of canning plants on a regional basis under the Divisional Development Council Programme. Such a development may necessitate a strengthening of the facilities for quality testing as the initiation of specific applied research projects.

51. The 1972-76 Plan foresaw a doubling of the 1971 level of production of cashew requiring expansion of existing as well as establishment of new processing centres.

(iv) Vegetable oil and fats

52. Coconut oil, being the dominant product in this sector, is produced by two large-scale public sector corporations and by about 40 smaller private oil mills. The oil production in the large-scale factories is carried out by the modern solvent process, while the other producers use the less efficient mechanical expulsion process. There would seem to be rich opportunities for the adoption of suitable technologies and the upgrading of production.

53. It has, furthermore, been noted that there exist several other oil-bearing indigenous raw materials that could be commercially exploited for domestic and export markets such as rice bran oil, gingelly oil, groundnut oil.

54. The 1972-76 Development Plan indicated planned research on a new process for oil and protein extraction from the coconut kernel. CISIR is

active on this as part of a research programme to find uses for vegetable oils currently in use and application for oils not hitherto used.

(v) Natural silk production

55. In noting that there is a firm export market for natural silk, the 1972-76 Development Plan indicated a major expansion both for production and multiplication of mulberry and silk worms, and for research and extension work in sericulture.

(vi) Cotton production

56. The 1972-76 Plan noted that in a situation where cotton has to be imported, the foreign exchange benefits of the textile industry were negligible. The production of cotton constituted accordingly an important part of the import-substitution programme. Major cotton schemes totalling 24,000 acres were foreseen in the 1972-76 Plan with a production by 1976 of 18,009 tons of cotton. <sup>1/</sup> The Plan also noted that the important by-products cotton seed and linters would be put to further industrial use. <sup>2/</sup> The excess capacity in coconut oil mills would be used to extract cotton seed oil.

(vii) Leather and leather products

57. Sri Lanka has adequate resources to meet the entire local demand for raw hides if better flaying and recovery techniques are organized. The sector could expand the capacity to import substitute in chrome leather and bark-tanned leather (in Ceylon Leather Products Corp.). Possibilities have been identified such as:

- expansion of the footwear industry to meet growing internal demand coupled with good export prospects;
- leather products manufacturing units could be established on a regional basis to meet local demand for products like purses, belts, handbags, straps, etc.;
- leather cloth and fashion wear production for export;
- production of sport goods for export;
- manufacture of glue from tannery wastes. <sup>3/</sup>

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<sup>1/</sup> This would correspond to about 28% of the anticipated demand by that year.

<sup>2/</sup> Ref. UNIDO project SRL/74/050 (SIS) - Integrated Processing of Cotton and Cotton Seed.

<sup>3/</sup> Ref. UNIDO project SRL/74/061 (SIS) - Industrial Manufacture of Glue from Tannery Waste.

(viii) Rubber products

58. Export of natural rubber account for a large portion of Sri Lanka's total export trade. The local industries consume only about 2% of the value of total rubber production in the country. Intensified investigations, mainly in the form of market research and product development and design, might foster an expansion of the local rubber goods producing industry. Earlier studies have identified potential rubber goods industries such as:

- manufacturing of rubber footwear for the domestic market;
- rubberized coir production for upholstery and mattresses for domestic and export markets;
- rubber toys; and
- rubber components for the automobile industry.

59. It has been noted that attempts at exporting rubber tyres by the Ceylon Tyre Corporation has met a good response and that there might be scope for establishing another project exclusively for exporting.

(ix) Wood products

60. Nearly 60% of Sri Lanka's surface is covered by forest, from which about 10 million cubic feet of timber are extracted annually. A further 2 million cubic feet of timber are imported. It has been noted that, although Sri Lanka's wood resources are capable of yielding the entire requirements of demand, due to inefficient and wasteful processing, many wood-based industries operate well below capacities because they are getting inadequate supplies of timber. Provided the methods of timber extraction are modernized and made more effective, in order to eliminate in particular present considerable waste, there seem to be good prospects for secondary wood processing industries, such as:

- expansion of tea-chest manufacture (import substitution) in the public sector Ceylon Plywoods Corp. <sup>1/</sup> (In the Gintota factory - from 1.04 million tea chests in 1970 to 1.2 million in 1976 - and in the new Avissawella factory - 3.25 million by 1976 according to the 1972-76 Plan);
- chip board and particle board manufacture for domestic market mainly (small furniture makers, etc.);

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<sup>1/</sup> UNIDO assistance to the Ceylon Plywoods Corporation is provided under project SRL/75/014.

- veneer manufacture for export (as well as domestic use);
- manufacture of railway and bus-bodies (domestic);
- manufacture of knock-down furniture for export (incl. carved furniture);
- manufacture of wooden textile accessories (shuttles, bobbins, etc. for domestic use);
- production of wooden packaging materials (other than tea chests);
- manufacture of matchsticks to meet expanding local demand;
- manufacture of forest products like tannin (of wattle) for the leather industry, eucalyptus oil, oil resins, gums, etc. <sup>1/</sup>

61. One specific area in which UNIDO assistance has been sought, by the Department of Small Scale Industries, is the development and processing of cane and rattan for use as building materials and in furniture making.

(x) Paper pulp

62. The 1972-76 Development Plan envisaged a programme for the development of kenaf, its fibre being a good substitute for jute in the manufacture of gunny bags. The potential use of kenaf for long fibre paper pulp (as substitute for conifers and bamboo) would also be explored. <sup>2/</sup> Development efforts would also be directed to the possible use of sunhemp for high quality paper pulp. Other potential materials include rubber wood <sup>3/</sup> and bagasse. Specific applied research programmes were to be initiated for the development of these fibres for paper making.

63. At present the manufacture of several grades of paper using rice (paddy) straw is carried out by the Eastern Paper Mills Corporation. The Corporation has been intensifying its experimental activities to break into new indigenous fibrous raw materials and has been successful in respect of several wood varieties. New species and trees for pulp and paper are being successfully cultivated on a large scale. Two pulp and paper mills are operating, producing about 20,000 tons (representing about 30% of the country's total demand) and a third is planned in the North-Central Province with a capacity of 91,000 tons/year. It may also be mentioned that a newsprint mill based on eucalyptus with a rated capacity of 30,000 tons/year has been identified as a feasible potential project.

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<sup>1/</sup> Research on this is carried out by CISIR.

<sup>2/</sup> Ref. UNIDO project UNIDO SRL/74/059 (SIS) - Development of Kenaf Cultivation and Industrial Processing of Pulp.

<sup>3/</sup> Research on this is going on at CISIR. Furthermore, it may be noted that a large potential export market would seem to exist for rubber wood chips as raw material for paper pulp.

(xi) Mineral resources and products

64. Sri Lanka possesses iron ore deposits which so far have been exploited only to limited extent. Development is now under way (through bilateral aid) on the basis of backward integration to raw materials processing.

65. Important deposits of titaniferous heavy mineral beach sands are being exploited; ilmenite concentrate is being produced and exported while the Government is seeking ways and means of increasing the added value and export potential of titanium products, to be produced from this raw material. Since 1970 UNIDO has been assisting the Government in the elaboration of technological alternatives for the utilization of ilmenitic concentrates; <sup>1/</sup> industrial scale electrosmelting tests at a plant in the USSR have been undertaken.

66. Of greatest significance are the graphite deposits found over a wide area in the southwestern part of the island. As early as 1968 it was noted in the Government publication "Ceylon Investment Guide", that while the country was the world's leading graphite producer, with practically the entire output of around 10,000 tons being exported as crude graphite (plumbago) "little so far had been done to exploit this valuable natural asset for local manufactures". <sup>2/</sup>

67. Contact has been recently been taken by the State Graphite Corporation with UNIDO concerning possibilities of exploring local apatite resources for fertilizer manufacture. <sup>3/</sup>

68. Salt is produced by solar evaporation and further large-scale development programmes are being coordinated with the development of salt-based chemical industries.

69. CISIR has been carrying out development work on the preparation of triple super phosphate from rock phosphate. CISIR is also conducting a programme on the analysis and evaluation of local raw materials (such as mica) for use in the indigenous electronics and allied industries.

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<sup>1/</sup> The project document for further UNIDO assistance to the Ceylon Mineral Sands Corporation in the processing of ilmenite sands and the production of rutile and zircon at Pulmoddai is currently under consideration.

<sup>2/</sup> It has been noted that the possibilities for developing local industries, using graphite, like crucibles, carbon rods, etc., might be investigated.

<sup>3/</sup> Ref. Quarterly report on Sri Lanka of 23.1.1979, by Dr. A.P. Shahbenderian, SIDFA, Colombo.

70. Other raw materials of importance as local industry inputs are various clays, kaolin, quartz, feldspar and silica sands. Import substitution prospects have been indicated with respect to the manufacture of sheet glass. It may also be noted that the Sri Lankan ceramics industry <sup>1/</sup> has reached a standard that permits prospecting for export markets for ceramic ware. Other potential products include sanitary ware, wall tiles, decorative glass, salt glazed sewer pipes and ceramic insulators.

71. The structural clay products sector covers, in addition to the public sector National Small Industries Corporation's five modern brick and tile factories, kilns in the rural areas which are providing important supplementary incomes in the agricultural off-season. Potential new products have been indicated involving:

- the devising of new techniques of manufacturing products such as clay roofing and re-inforced clay tiles <sup>2/</sup> in order to compete with asbestos (which is based on imported materials);
- manufacturing of refractories and fire clay bricks for use in industrial kilns;

72. New possibilities among cement products have been identified as follows:

- cement and concrete pipes to replace cast iron sewer and drainage pipes;
- telephone and telegraphic poles (might also be made of wood) and re-inforced railway sleepers;
- prefabricated building blocks.

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<sup>1/</sup> UNIDO is providing assistance to the establishment of a central quality control and research laboratory at the Ceylon Ceramics Corporation under UNIDF.

<sup>2/</sup> Research is being carried out by the State Engineering Corporation.

V. The institutional infrastructure for industry

73. Sri Lanka has a reasonably well developed institutional machinery which provides a wide range of services in support of the industrialization effort. It has proved to be relatively flexible in adjusting itself to the changes in industrial strategy and policy emphasis which have occurred during the last two decades.
74. In preparation for the current development effort and in order to streamline the machinery for planning, the Ministry of Planning and Economic Affairs has been merged with the Ministry of Finance. This is intended to ease problems of coordinating the capital budget and foreign exchange management with the general budgetary process. The enlarged ministry has been responsible for preparing a medium-term investment programme for the period 1979-83. A newly constituted Committee of Development Secretaries under the chairmanship of the Cabinet Secretariat coordinates decisions on the capital budget and will review progress on the preparation of projects and sector plans. A review of sector programmes and policies is being undertaken by nine ministries with the assistance of the Ministry of Finance and Planning. Consideration of foreign investments is carried out by the Foreign Investment Advisory Committee. Before being considered by the interministerial committee, industrial project proposals are screened by the Ministry of Industries.
75. The availability of basic data will be a vital factor in project evaluation and the setting up of an information bank for this purpose is planned. However, just as important is the establishment of quantifiable and empirically testable planning goals. Although deficient, the statistical base that is available for industrial programming could, it is believed, be used at sector level to evolve quantifiable guidelines for the best allocation of scarce capital and foreign exchange resources and for the identification of those sectors that offer the largest scope for private enterprise.
76. A "one-stop" investors' service is to be established in connexion with the promotion of foreign investment to the export processing zone (see para. 79 below). Foreign investors will have all their requirements met by a single authority, removing the need for potential investors to shuttle between numerous ministries and government agencies for investment approvals and services.

77. Investors will also have recourse to higher authorities in the event of any disagreement. In the case of a dispute arising out of an agreement between GCEC (see para. 80) and the investor, the dispute will be referred to arbitration by the International Centre for Settlement of Industrial Disputes. The other important safeguard is the provision of government-to-government guarantees to the investor against arbitrary action by the host country. Already such agreements for the protection and promotion of foreign investment in Sri Lanka have been signed with the US and the Federal Republic of Germany, and a similar agreement with Britain is under negotiation. Sri Lanka also has double taxation relief agreements with the Federal Republic of Germany, Japan, Sweden, Norway, Denmark, Malaysia, India and Pakistan. Similar agreements, subject to ratification, have been negotiated with Britain, US, France, Canada, Poland and Czechoslovakia.

78. The Industrial Development Board, established in 1966, as a statutory body under the Ministry of Industries, is playing a vital role in particular in the support and promotion of small industries development. Specifically, it undertakes feasibility studies for small industrial projects and provides technical services to such projects. The IDB is also responsible for the development of industrial estates; in fact it commenced its operations in 1966, by taking over the Industrial Estate at Ecala which had been set up in 1960 to provide custom-built factories, infrastructure and service facilities to support small-scale industrial enterprise.

79. Responsibility for different aspects of the country's export drive is diffused amongst several Ministries. The production programmes for export are the concerns of the Ministries of Industries, Agriculture and Plantations; commercial policy and trade promotion fall within the Ministry of Trade; promotional functions connected with tea and coconut remain with the Ministry of Plantation; export incentives, customs facilities and exchange control measures are the concern of the Ministry of Finance; while overall export targets and the crucial role in planning and managing the foreign trade sector rests with the Ministry of Planning.

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The coordinating role is entrusted to an Export Promotion Council composed of the Ministries concerned and serviced by the Export Promotion Secretariat. Implementation of Government policy, however, has been carried out through existing machinery with the cooperation of the public and private sectors of the economy. In its development programme high priority was given to the development and diversification of the non-traditional export sector - the industrial sector being one of the principal areas in this programme of export development. A separate Export Promotion and Development Division was set up in October 1971 as the focal point of efforts of the Ministry of Industries to formulate and implement a strategy aimed at stimulating and aiding industrialists in Sri Lanka to enter overseas markets and to achieve export targets for manufactures and semi-manufactures.

80. A single legal authority, the Greater Colombo Economic Commission (GCEC) has been set up, inter alia, to develop a 200 sq. mile export processing area at Katunayake, near Colombo airport. The GCEC Law which was passed in January 1978 constitutes in effect a free trade zone law. Zone layout design for the area, being termed Investment Promotion Zone (IPZ), has recently been prepared with the assistance of experts from the Shannon Free Trade Zone <sup>1/</sup> under UNIDO contract. The GCEC has jurisdiction not only over its geographical area but also over licensed enterprises located anywhere in the country. The development of one or two more IPZs is under active consideration.

81. The National Institute of Management (NIM), initially called the Management Development and Productivity Centre, was established in April 1968 as a part of the Industrial Development Board. In October 1971, in accordance with the recommendations of a Committee appointed by the Ministry of Industries and Scientific Affairs to study the working of the Industrial Development Board, it was detached from the Board and continued to function as an independent agency under the Ministry. In 1972, the Centre was re-named, with Cabinet approval; the National Institute of Management.

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<sup>1/</sup> Project SI.SRL.78.801, and continued under project SRL/78/021.

82. The objectives of the NIM are as follows:

- (a) to develop management consultancy as a professional service to industrial and commercial organizations in both the public and private sectors;
- (b) to provide training in and application of modern management techniques, planning and control systems;
- (c) to initiate research into management problems as they exist in the socio-cultural environment in Sri Lanka;
- (d) to assist in the future training of managers so as to improve the practices of management at corporate level in association with the University of Sri Lanka; and
- (e) to work in cooperation with other Institutions set up with similar objectives, like the Academy of Administrative Studies, Cooperative Management Services Centre, Agrarian Training and Research Institute, etc.

83. NIM has recently completed the initial phase of a multi-country research programme on the Performance of Public Enterprises (Asia) funded by the International Development Research Centre of Canada. The macro programme comprised a study of the emergence of growth of public enterprises in Sri Lanka, and their organizational structures and control mechanism, production, capital formation and savings, and the structure of inter-dependency and employment in public enterprises. Parallel with the macro study the action programme on the micro area was also initiated with a study of the Ceylon Cement Corporation.

84. The National Science Council, established in 1968, coordinates and promotes research activities in Sri Lanka. <sup>1/</sup>For instance, it is responsible for coordinating the country's preparation for the United Nations Conference on Science and Technology for Development. The Council has been appointed by the Minister of Industries and Scientific Affairs as the coordinating agency for the working programme of the Scientific and Technical Cooperation Agreement between Sri Lanka and India. Eighteen areas for joint research projects have been identified.

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<sup>1/</sup> The National Science Council of Sri Lanka has recently prepared a report, entitled "A Survey of Expenditure on Research and Experimental Development in Sri Lanka 1966-75", which indicates that about 85% of total research funds have been allocated to the productive sector, mainly to the research institutes. Funds coming from private organizations constitute about 3% of the national R & D total. Although research was mainly concentrated in the fields of agriculture, the percentage of national R & D expenditure on manufacturing industries increased from 5% in 1966 to 16% in 1975.

85. The multi-disciplinary Ceylon Institute of Scientific and Industrial Research (CISIR) was established in 1955 to further the country's industrialization efforts through applied research and technology development and adaptation. Its attention has been concentrated on research into indigenous materials utilization, although considerable work on, for instance, the development of appropriate technologies has also taken place. <sup>1/</sup>

86. The National Engineering Research and Development Centre of Sri Lanka was established in 1974. It has amongst its objectives the function of carrying out and promoting research and innovations in the technological field and the task of developing the results up to and including commercialization. The NERD Centre is, for instance, carrying out consultancy in electrical and mechanical work in a number of new projects involving design and development of a specialized nature. Another important function of the NERD Centre is stated as follows in the 1972-1976 Plan: "Further, this institution will in future examine the technical details of new projects in the industrial sector with a view primarily to determining the possibilities of local manufacture of components items in such projects". In co-ordinating with the Ministry of Industries and Scientific Affairs the NERD Centre has made a start on this aspect and has planned systematically to expand its capabilities to meet the requirement in relation to all major new projects. Preliminary proposals have been considered for a 6-year development programme of work to enable the NERD Centre to realize its objectives fully.

87. A further objective of the NERD Centre is "to examine direct and indirect mechanisms of technology transfer..." and to ensure by adoption and adaptation the choice of technologies that would be consistent with the country's resource endowments and national planning objectives". In addition to collaboration with industries in the public sector the NERD Centre has been able to establish links with various important industrial and engineering establishments in the private sector. This has enabled the accumulation of knowledge and data pertaining to various fields of the industry needing technological development. The data is also vital from the point of view of formulation of plans and policy especially with regard to strengthening the engineering capability of the country.

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<sup>1/</sup> Further details regarding the work of CISIR are given in Annex I.

88. The Sri Lanka Bureau of Standards, established in 1965, prepares standards for manufactured products and a standardization marking scheme is being introduced. According to the Country Programme 1972-1976 Background Paper, the facilities for testing of products and inspection of quality are not adequate.

89. Note should also be made of the various agricultural research bodies, whose work in developing suitable raw materials is of greatest importance for the agro-based processing industries. These bodies include the Central Agricultural Research Institute, the Rubber Research Institute,<sup>1/</sup> the Tea Research Institute and the Coconut Research Institute.<sup>2/</sup>

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1/ Large-scale UNDP assistance is provided to the Rubber Research Institute with the objective of increasing rubber yields and the value of such projects as latex, raw rubber and manufactured goods.

2/ It might be noted, as example of TCDC activity, that the experts from the Coconut Research Institute have recently undertaken a survey of the potential of the Maldives in developing its coconut production and are providing continuing guidance on this matter. (Pakistan Economist, 21.10.1978).

VI. Industrial financing

90. Until now Sri Lanka has emphasized present consumption at the expense of the capital formation which would make possible higher levels of employment and consumption later. The pursuance of these objectives requires an expansion of the supply of savings. While foreign savings are to provide part of the finance to support higher level of capital formation, this source has its practical limits in terms both of availability and of the implications for the country's debt service capacity. There is therefore no escape from the need to increase domestic savings substantially and this, in the Sri Lankan context, places a special burden on the need for a significant level of public savings. The public sector corporations must provide more savings than they now generate themselves, directly or indirectly, for today there is excessive reliance on the transfer of resources from the Central Government and inadequate internal generation of savings. A major effort appears to be needed in order to accomplish this objective, which is itself dependent upon improved efficiency in some public sector corporations.

91. Through the years there has been a strong inclination among private entrepreneurs for self-financing with financing institutions playing a relatively minor role. In 1967, only 9% of private investment in the manufacturing sector (including inventories) was financed by institutions, whereas 53% came from firms' own funds and 38% from trade credits and other non-institutional sources. While statistics for more recent years are not available there are no indications that this financing pattern has changed significantly.

92. The bulk of the institutional financing is provided by commercial banks (in 1975: 4 domestic and 7 foreign). Their aggregate outstanding lending to the industrial sector - public and private - was Rs 517 million at the end of 1973, of which more than 3/4 was lent by two Government-owned banks, the Bank of Ceylon and People's Bank. Since the commercial banks have no access to foreign exchange resources, these are handled directly by the Central Bank.

93. The commercial banks lending which is predominantly short-term, is generally conservative and based primarily on the adequacy of the

security. The Development Finance Corporation of Ceylon (DFCC), <sup>1/</sup> established in 1955 in response to World Bank recommendations and subsequently having had both World Bank and ADB loans, is for all practical purposes the only long-term credit institution whose lending criteria are primarily concerned with project viability [and which has sufficient expertise to perform project appraisals]. Since the early 1970s the investment climate in Sri Lanka has improved gradually, and due to the resurgence of investment interest DFCC's activity has been projected to increase rapidly.

94. As an institutional device to spearhead the development efforts of the Government, a National Development Bank is to be set up shortly which will be responsible particularly for generating a wide variety of commercially viable projects in the rural areas and to assist in the drive towards self-employment. The Bank will also finance investment by public corporations which hitherto had been financed through the Budget the objective being to make investments by public corporations stand the test of economic and financial viability. Rs. 600 million have already been set apart as capital for this Bank. <sup>2/</sup>

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<sup>1/</sup> DFCC is concerned with the financing of private enterprises (defined in the DFCC Act to include enterprises in which Government ownership does not exceed 20%) in industry, agriculture, commerce, construction and engineering.

<sup>2/</sup> The Budget Speech, 16 November 1978.

VII. Main features of industrial development objectives and strategy

95. In the past, as noted earlier, the industrial development strategy was for a long period geared towards import substitution, in some cases without much attention to economic efficiency and comparative advantage. These industries tended to be capital intensive and were based on the use of imported raw materials and foreign technology. The outward looking development strategy now called for will require some re-orientation of the production structure towards fuller consistency with the factor endowments of the country.

96. In the words of the Government, its main policy objective is to "encourage export-led industrial development in preference to import-substitution oriented industrial development that has characterized the period since the late 1950s, since the latter has proved to be both uneconomic and incapable of generating employment"<sup>1/</sup> While the precise policy framework designed to bring about this restructuring is still in the process of formulation, most of the elements in the package were included in the Budget Speech in November 1978. The main beneficiary of import liberalization is intended to be the industrial sector. The shift away from quantitative import restrictions greatly reduces the administrative burden of import licensing and eases the task of business planning. Easier availability of imported raw materials, spares and machinery will ease one major constraint on capacity utilization; the elimination of most price controls will remove another. With the liberalization of imports the Government has also taken steps to ensure that reasonable tariff protection is given to local industry, safeguarding at the same time the interests of the consumer. The new Tariff Commission provides an opportunity to construct an improved tariff structure now that the two-tier exchange rate has been abolished. The Greater Colombo Economic Commission (GCEC) has been established, with the major function to administer the country's export processing zone(s) designed to provide domestic and foreign investors with strong incentives for efficient export production (see paragraph 122 below).

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<sup>1/</sup> Government of Sri Lanka "Greater Colombo Economic Rehabilitation Area", 1 November 1977.

97. With the assumption of office of the present Government the activities of the public manufacturing sector have been confined to the industries already allocated to it. Future developments in this sector, it was announced in the Budget Speech of November 1978, will relate to the maximization of output from existing capacity, the speedy completion of projects already in hand technical improvements and expansion of existing units where additional production could be achieved expeditiously, creation of new capacity in accordance with present priorities, and the initiation of advance action on long gestation projects. <sup>1/</sup>

98. In the private sector, outside the area of authority of the Greater Colombo Economic Commission, the Government is extending all assistance to promote and encourage the rapid growth of the small and medium scale industrial sector while simultaneously attracting such industries to backward and less developed areas of the country. To achieve these objectives a liberal policy of approvals has been adopted and a new credit guarantee scheme to ensure ready availability of finance has also been introduced. Foreign investment is permitted where manufacture is largely for overseas markets or where such collaboration is considered the only available means of obtaining modern technological knowhow to improve the quality of manufactured goods.

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<sup>1/</sup> The Government has formulated a Medium Term Investment Programme for the Public Sector covering the period 1979-1983. Industrial output during this Medium Term Investment Programme is projected to grow at an annual rate of 8% at constant prices. [Source: The Sri Lanka Government response on the second (1978/79) exercise of monitoring the progress achieved towards the implementation of the Lima Declaration and Plan of Action].



VIII. Policy measures and their implementation

99. During the last few years the increasing complexity of the industrialization process has made new demands on policy. The import substitution potential in consumer goods has not yet been fully exploited and there has been a serious fragmentation of production contributing, inter alia, to the current phenomenon of under-utilized capacity. The incentives structure has been adjusted so as to better alleviate the severe foreign exchange shortage, by giving encouragement to export-oriented manufacturing and by promoting increased use of domestic raw materials and other local inputs to industry. Indeed, the principal criteria employed in granting new approvals for industrial projects have for some years been the ability to export, the use of locally available raw materials and employment generation.

100. Fiscal inducements which are offered to industry include a five-year tax holiday <sup>1/</sup> to:

1. Approved new enterprises in the Free Trade Zone and also for investment in the shares of such enterprises. These tax concessions have been since further extended considerably by the Greater Colombo Economic Commission Act and the Regulations thereunder (see para. 102 below);
2. Companies engaged in food production, horticulture, fishing, and animal husbandry;
3. Small and medium scale industries established outside municipal limits;
4. Ricemillers for the setting up of new rice mills;

There is also provision for allowance of the full cost of plant, machinery and equipment against the income of the first year to promote modernization of industry.

101. To complement these efforts, the Government has since mid-1972 encouraged joint ventures with private foreign enterprises, in which local partners (public or private) hold majority ownership and retain effective control. In exchange, the Government gives assurances that full compensation for the investment will be made in the event of nationalization, and that remittances of profits and repatriation of capital will be allowed.

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<sup>1/</sup> Inland Revenue (Amendment) Act 1978.

102. In March 1978 the Government announced a new package of incentives designed to attract foreign investors to its proposed export processing zones located just north of Colombo. In addition to a skilled but inexpensive labour force, the Greater Colombo Economic Commission - which is responsible for administering the zones - offers the following incentives to investors:

- (a) All licensed enterprises will be eligible for five-year tax holidays. Upon expiry, firms would be required to pay a turnover tax at the rate of 2% on export sales and 5% on sales in Sri Lanka. In addition a 10% withholding tax will be levied on all remittances of royalty and technical service fees when the holiday expires.
- (b) All foreign personnel attached to licensed enterprises will be exempt from Sri Lankan taxes for the five-year period during which the company benefits from the tax holiday.
- (c) All dividends paid to non-resident shareholders will be free from all taxes and exchange controls.
- (d) Although companies will have to be locally incorporated, shares can be transferred within and outside Sri Lanka to residents or non-residents with the country of payment being fixed by the buyers and sellers. Such transfers will not be subject to Sri Lankan taxes.
- (e) Agreements signed by the Commission and investors would provide guarantees for the free transfer of capital and earnings and proceeds from liquidation.

103. Of particular interest in connection with the country's efforts to attract foreign investment is an envisaged close cooperation with Singapore which was promoted through a visit to Sri Lanka in April 1978 by the Singapore Prime Minister Lee Kuan Yew. Emphasis was laid on bilateral level discussions and agreements concerning possible direct investment by Singapore as well as on technical assistance.

104. The following paragraphs examine industrial policy measures as they relate to sub-sector allocation, regional dispersion, small-scale industries, export efforts, technology choice and manpower.

(a) Resource allocation by industry sub-sectors

105. Particular attention has been given to the development of the country's engineering sector, since no sizeable programme of industrialization can get under way as long as all machines, spares and accessories continue to be imported. While the scope for import substitution of the heavy machinery

needed for the large-scale units is slight - at least in the short term - a wide range of spares , accessories and simple machinery offers possibilities for further expansion of the emerging Sri Lanka capital goods industries.

106. An important role for the development of the engineering industries sector is expected to be played by the National Engineering Research and Development Centre of Sri Lanka. <sup>1/</sup> It was established in 1974 with the tasks of examining the types of machines which could be made locally and of designing prototypes for their manufacture. Furthermore, the new Centre is to examine the technical details of new projects in the industrial sector with a view primarily to determining the possibilities of local manufacture of components in such projects.

107. Construction materials constitute major production inputs or requirements in developing economies. <sup>2/</sup> One-half to two-thirds of the capital investment required in such economies is generally spent on cement, steel, aluminium parts, lumber and other materials required in the construction sector. Although in the case of Sri Lanka the building materials are already to a large extent of local origin, some further import substitution might be possible, in particular through use of alternative materials. A well coordinated programme for applied technological research - and subsequent investment - aiming at fullest possible utilization of locally available materials is of the greatest importance in this field.

108. Consumer necessities are another major category of goods for which demand will grow following wider income distribution. The production of these consumer necessities is in most cases highly labour-intensive and

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<sup>1/</sup> See para. 86 above.

<sup>2/</sup> For instance, the demand for cement is forecast to rise to over 700,000 tons per annum in the early 1980s. Cement production in 1977 was 480,000 tons though the capacity of the country's three plants was officially 710,000 tons. However, since output from existing capacity is not likely to exceed 600,000 tons per annum the Government is planning to increase annual capacity by 200,000 tons.

could thus be a major component in the country's employment programme, in particular as the production units can often be located in smaller regional industrial centres. Such consumer necessities would include clothes, blankets, footwear, processed foods, matches, cooking utensils, bicycles and fuels. These products, which should be produced at low prices, would be aimed at low income groups throughout the countryside as well as in urban areas. Less attention might be given to increased production of other consumer products whose import content is more significant, for instance radios, TV-sets, refrigerators, air conditioners, etc.

(b) Industrial dispersal within the context of regional development programme

109. The concentration of industry in the Colombo area with consequential urban congestion and pollution is of major concern to the new Government, and the establishment of the Greater Colombo Economic Commission can be seen as a major step towards more orderly development. At the same time growing regional inequality, even in a relatively small country such as Sri Lanka with a high degree of literacy and increased awareness of all the people, brings demands towards a redress of regional imbalances. It is clear that the problem of regional development is a very important socio-political and economic problem that needs to be tackled on many fronts.

110. Hitherto, the major vehicle of industrial dispersal has been the state corporations while private ventures were largely left to locate in the Colombo area since fiscal, tariff and other inducements for industrial ventures were not used to direct industrial location. If industrial development is to be spread more evenly throughout the country, it is essential that poles of industrial growth be planned to initiate the process of creating external economies, setting off a chain of growth throughout each region. Such a growth pole may be created around a major industrial project whose location may be determined by proximity to an important raw material source, or it may be established through the building up of an industrial estate attracting a variety of small-scale industries. The main factors determining the latter type of growth pole are of course the availability of labour supply and an adequate market, often derived from a well developed agricultural area.

111. Several integrated regional development projects are presently being nurtured within the Ministry of Plan Implementation, to help in various districts, including the following:

- Kurunegala District Integrated Rural Development Project (proposed to be developed in cooperation with the World Bank);
- Matara Rural Development Project (initiated as a result of bilateral cooperation agreement between Sri Lanka and Sweden);
- Hambantota District Integrated Rural Development Project (proposed to be developed in cooperation with NORAD).

(c) Promotion of small-scale industry development

112. As noted earlier, the progress of the industrial sector in the period 1960-70 was not conducive to the optimal development of the economy as a whole. The manufacture of commodities, with high import content and of a non-essential nature, entailed a continuing drain on foreign exchange. Furthermore, adequate account of the resource situation of the country was often not taken and emphasis was placed on the expansion of capital-intensive industries, to the relative neglect of the small-scale sector.<sup>1/</sup> The services needed for the development of small-scale industry, such as credit facilities, extension services in marketing and technical know-how and the general institutional support necessary for the growth of a viable small-scale sector were not provided.

113. In the 1972-76 Development Plan it was recognized that, by virtue of its high employment potential and relatively low requirements of foreign exchange for machinery, the small-scale industry sector is basic to the development programme. That sector would be the main carrier of the required expansion of the production of essential commodities for mass consumption to meet the increase in demand consequent to the planned rise in incomes of the low income groups. It would also be the main vehicle for bringing industrial activities to the rural areas and thereby supplementing rural incomes by giving employment and by providing a demand for

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<sup>1/</sup> The definition of small-scale industries in Sri Lanka was recently changed from Rs 200,000 of fixed assets excluding land to Rs 500,000 of investment in machinery and equipment. Even the new definition, which corresponds to about \$42,000, covers only the informal sector and the low end of the organized sector.

raw materials - agricultural and others - originating there. At the same time, while small-scale industry is often particularly suited to rural location, it has an equally important role to play in the urban areas, for it has a greater employment-generating potential than large-scale industry for a given amount of investment and it can serve as a training ground for entrepreneurship.

114. The increased attention to the development of the small-scale industries sector has no doubt contributed to the fact that the share of small-scale industries in total value added of manufacturing industry has considerably risen in recent years - from 6.4% to 14.2% between 1970 and 1975.

115. A UNIDO adviser was attached to IDB in 1975-77 to assist in the preparation of a programme to develop small-scale industries. He assisted in carrying out a detailed resources study and the preparation of an inventory; in identifying and planning small-scale industry projects based on the resources study; in designing promotional measures for the rapid development of small-scale industries within the framework of the IDB, including measures to be adopted for developing the technology suited to rural areas, with a view to generating employment. His conclusions and recommendations are reflected in a paper published in ESCAP's Small Industry Bulletin.<sup>1/</sup>

116. The new Government has fully recognized the importance of small-scale enterprises in industry. The 1978 budget grants a five-year tax holiday for small- and medium-scale industries outside the Colombo district, although no clear definition of such industries has yet been specified.

117. As regards finance for small-scale enterprises, the commercial banks with extensive branch networks in rural areas should be encouraged to play a leading role. This will be facilitated by a new credit guarantee scheme, due to come into effect in 1978. Apart from normal sources of finance such as commercial banks, small-scale industries receive special attention from a number of institutions such as:

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<sup>1/</sup> Ram K. V. pa, Small industry in Sri Lanka: Plan and policies for rapid development. Small Industry Bulletin for Asia and the Pacific, No. 14, 1977 (ESCAP).

(i). The Department of Small Industries under the Ministry of Industries. With some exceptions, the Department is responsible for units with plant and machinery of less than Rs 25,000. In particular, it operates handloom and powerloom centres and training centres, provides tools and raw materials to registered enterprises, and markets small-scale industry products through 12 retail outlets.

(ii). Divisional Development Councils (DDCs). The DDCs are scattered all over the country. Each Council consist of several GOSL officials and local community leaders, with the function of identifying and promoting local projects in industry and agriculture. Last year, the 550 DDCs were reduced in number to 154 by enlarging the authority area of each DDC. During the five years of their existence (through 1975) the DDCs have helped to start 1,680 projects (of which 563 in 1975 alone), with total employment of 20,500 persons. A total of 889 projects have been classified as industrial, with total production in 1975 of Rs 18.6 million. To a large extent, these projects were financed through the People's Bank.

(iii) The Industrial Development Board (IDB). IDB prepares feasibility studies, provides technical assistance, and operates industrial estates. Since October 1972, it has also operated a joint scheme with the People's Bank for small-scale industry financing, with the IDB and the bank doing the appraisal and the latter providing the financing. The maximum assistance per project has been Rs 50,000. As of March 1976, 171 loans had been granted under the scheme, with 68 loans in arrears with more than two instalments. The scheme is now being expanded with the addition of the Bank of Ceylon and DFCC (see para. 118 below).

118/ It should be noted that the Development Finance Corporation of Ceylon (DFCC), in response to the emphasis given by the Government to the need to develop small-scale industry, has indicated its intention to move gradually in that direction. DFCC's appraisal capabilities are, however, not as relevant for small-scale industries lending as for its normal operations, since it is necessary to apply simplified procedures for lending to small-scale industries. In addition, the commercial banks are better suited

for such financing in view of their branch network, working capital lending, and other banking services. For this reason, DFCC has done very little lending to small-scale industries.

119. | The IDB/People's Bank scheme for small-scale industry financing is now being expanded to include the Bank of Ceylon as well as DFCC. The main features of the expanded scheme will be as follows:

- (i) Applications under the scheme will be received and processed by IDB and one or the other of the two banks;
- (ii) Rupee finance will be given by the commercial banks, while applications for foreign exchange will be submitted to DFCC;
- (iii) DFCC will normally undertake a desk review of the appraisal prepared by the other institutions, but will have the right to request more information from these institutions or from the clients. Applications under the scheme will be decided by DFCC's General Manager;
- (iv) The follow-up work will be undertaken by IDB and the commercial bank;
- (v) The credit limit per project will be Rs 400,000 with a foreign exchange limit of Rs 150,000; and
- (vi) Simplified appraisal requirements have been drawn up, and normal banking security will not be insisted upon. DFCC's foreign exchange loans will be guaranteed by the commercial banks.

120. | The utilization rate under the scheme will depend primarily on the demand for finance. DFCC's role will be to provide foreign exchange, and in addition to utilize its appraisal expertise on certain projects, and thereby help upgrade the appraisal skills of the IDB and the commercial banks. However, it will be inconvenient for the small-scale industry clients to establish loan documents with several institutions. Therefore, for foreign exchange, it would be advantageous to let the scheme work as a re-finance arrangement, so that clients would only have to establish loan documents with the bank involved. A credit guarantee scheme for small-scale industry has recently been introduced with the Central Bank aiming at reducing the risks of small-scale industry lending and thereby reduce the minimum spread necessary.



(d) Export industries development

121. As noted above, one of the major ingredients in the Government's 1972-76 Development Plan strategy, involving a shift away from its early industrial policies, was the strong encouragement of those export-oriented industries which were using local raw materials. During the late 1960s, exporting had been unattractive because of an over-valued exchange rate and difficulties in obtaining tax rebates and other concessions from the Government. In 1972 and 1973, the package of incentives was enlarged by providing exporters with a customs rebate, a convertible rupee account, tax holidays and investment relief. A main push for export industry development came in November 1977 with the liberalization of imports.

122. As noted in paragraph 80 the Government through the Greater Colombo Economic Commission (GCEC) is launching a major programme of export processing zone development to promote manufactured exports. The GCEC announced late 1978 that as of October 1978, 46 projects involving a total investment of Rs. 1.6 billion had been approved for the first zone located at Katunayake near Colombo's international airport. Of the approved projects, 24 had already signed agreements and at least six have commenced construction work. The GCEC estimated that once all 46 projects are operating at full capacity, they will generate about Rs. 4.46 billion per year in export earnings and will employ some 26,000 Sri Lankans.

Table 12: Projects approved by Greater Colombo Economic Commission  
as of 31 October 1978

Industry	Number of projects	Project cost (Rs million)		Output (Rs. million)		Employment*
		Foreign	Local	Domestic	Exports	
Garments	23	71.84	122.66	11.87	1,995.47	14,265
Textiles	2	26.0	23.5	53.2	64.2	740
Gloves	1	1.0	4.5	-	26.5	233
Lapidary	2	1.96	3.37	-	143.7	576
Footwear (excluding leather)	2	76.0	53.5	1.7	374.3	862
Leather goods	1	415.74	83.46	-	1,100.74	6,389
Rubberised products	4	27.67	14.13	0.5	29.32	423
Industrial chemicals	1	11.1	4.3	-	13.2	78
Coir products	1	21.0	14.9	-	140.96	378
Building materials	1	100.0	48.3	-	93.0	228
Glass	1	387.2	37.28	80.76	80.76	604
Packing material	2	2.11	6.58	14.9	36.44	166
Sailing craft and accessories	1	0.8	3.6	-	241.9	160
Fishing gear and accessories	1	8.2	1.6	5.4	14.8	395
Tea bags	1	2.1	2.8	-	28.5	56
Cashew processing and oil	1	6.2	7.2	-	49.7	483
Warehousing and trading	1	0.7	9.0	-	30.0	37
Total	46	1,159.62	440.68	168.33	4,463.49	26,073

\* at full capacity operation.

123. As can be seen from Table 12 garment manufacturers have shown the greatest interest in establishing in the export processing zone thus far, accounting for half of the approved projects. Besides attractive investment incentives, Sri Lanka's low labour costs and its greater access as a developing country to the EEC and US markets are the main lures for clothing manufacturers. However, fearing that investment would become too concentrated in one industry, the GCEC has announced that no new garments projects will be approved for the time being. Other projects include gloves, textiles, gem cutting and polishing, non-leather footwear, leather goods, rubberized products, industrial chemicals, building materials, glass, packing materials, fishing gear, tea bags, and cashews. Of the 46 approved projects, 38 are joint ventures involving foreign equity, while eight are entirely owned locally. The greatest number of investors are based in Hong Kong (14), followed by Western Europe (8), the US (7), ASEAN (4), India (2), the Middle East (2), and Korea (1). It has been reported that, although the GCEC had expected more interest from electronics manufacturers, electronics firms have shied away, mainly due to lack of liquid nitrogen (the sole Sri Lankan manufacturer is the state-owned Ceylon Oxygen Co., which is unable to meet anticipated requirements) and from the fact that female workers, who are generally used for this type of work, are not allowed to be employed on night shifts. One US firm which is interested in an electronics project, is reported to be considering tackling the liquid nitrogen problem by setting up a joint venture with an Indian firm to produce it.

124. Legislation is under way for the establishment of a Sri Lanka Export Credit Insurance Corporation with the tasks of issuing insurance policies to exporters and guarantees to banks and other financial institutions in connexion with exports of goods; undertaking market studies abroad for promotion of exports from Sri Lanka; helping exporters to diversify and expand exports, find markets and sell their goods abroad on competitive terms. Finally, it should be noted that in the 1972-76 Development Plan indications were given as to potential new industrial export products as shown in Table 13.

Table 13: Potential new industrial export products as identified  
in the 1972-76 Development Plan

<u>Textiles, wearing apparel</u>	<u>Non-metallic mineral products</u>
Garments	Ceramic ware and sanitary ware
Batik	Graphite products
Leather cloth	Cement
<u>Chemical products</u>	<u>Metal products</u>
Glycerine and fatty acids	Implements and tools
Vegetable oils and fats	Country products
Paints and polishes	
Soaps and detergents	<u>Machinery</u>
<u>Leather, rubber, wood and paper products</u>	Tea and rubber machinery
Footwear	Rice millers, threshers, grinders
Tanned hides and skins	Water pumps
Tyres and tubes	Boats
Other rubber products (gloves, rubber mattresses, flooring, toys, hose)	<u>Electrical Goods</u>
Plywood and sawn timber	Dry cell batteries, transistor radios
Parquet flooring and other wood products	Electric cables

(e) Selection and acquisition of technologies

125. The existing organizations responsible for acquisition, adoption and development of technology in Sri Lanka may be categorized into:

- (i) Institutions under the purview of the Ministry of Industries and Scientific Affairs; and
- (ii) Institutions under other Ministries.

Within the Ministry of Industries and Scientific Affairs two Divisions - the Policy Division and the Project Evaluation Division - are the main organs responsible for the adaptation and development of technology in the country. Besides these two Divisions there are several agencies set up under the purview of the Ministry to deal with the screening and adaptation of technology, such as CISIR, the NERD Centre, the National Science Council and the Bureau of Standards (see paragraphs 84 - 88 above). The work on some other agencies under other Ministries also touch the issues relating to the acquisition and development of technology, including:

- (i) Under the Ministry of Plantation Industries
  - the Tea Research Institute
  - The Rubber Research Institute
  - the Coconut Research Institute
- (ii) Under the Ministry of Education
  - the Engineering Faculty of the University of Sri Lanka.

126. One of the main aspects stressed by the ILO Employment Mission to Sri Lanka in 1971 <sup>1/</sup> was that technology was biased towards excessive capital intensity due to a variety of reasons such as an over-valued exchange rate for capital goods, too generous a tax treatment for investment, very low interest rates; and, perhaps above all, lack of controls on the introduction of foreign technologies that involve heavy foreign exchange costs. In addition, the conclusions from a more recent study, undertaken in 1975 by the Marga Institute of Sri Lanka and sponsored by UNCTAD, point in general to the inappropriateness of the technology transferred to Sri Lanka and to its excessive cost in relation to the benefits accruing from such transfer. <sup>2/</sup> The initial absence of any machinery to effect a proper choice of technology on the one hand and the absence of institutions adequate to regulate and adapt technology transfer on the other, have been among the factors responsible for the shortcomings of technological development in the country. The issue of technology choice is also pertinent in forging linkages between the industrial and agricultural sectors of the economy. <sup>3/</sup>

127. Besides the study by the Marga Institute, other reports <sup>4/</sup> have pointed at the need for a national centre for the transfer and development of technology. The main functions which may be attributed to this centre have been proposed to include the following:

- (i) Assist in the identification of technological requirements in all economic sectors;

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<sup>1/</sup> "Matching Employment Opportunities and Expectations - A Programme of Action for Ceylon", ILO, 1971.

<sup>2/</sup> "Major Issues arising from the Transfer of Technology - A Case Study of Sri Lanka", document TD/B/C.6/6 of 7 October 1975, by the Marga Institute of Sri Lanka.

<sup>3/</sup> As illustrative example of the attention given to the search for appropriate technology may be mentioned the background study, entitled "Appropriate Technology in the Textile Industry of Sri Lanka" prepared by Iftkhar Afzal for the UNIDO sponsored International Forum on Appropriate Industrial Technology held in India in November 1978 (ID/WG.282/1).

<sup>4/</sup> Such as H.R. Perera (Ministry of Industry and Scientific Affairs, Colombo), "Technology Transfer in Sri Lanka", paper presented at the Workshop for the Directors/Officers-in-charge of Focal Point of the Regional Centre for Technology Transfer (RCTT) held in April 1978 in Bangalore, India organized by RCTT in collaboration with ESCAP and UNIDO.

- (ii) Assist in the acquisition and analysis of information on alternative sources of technology from all available sources, domestic and foreign and its delivery to users; (The Centre would be a guide-post to information and not necessarily in itself an information centre);
- (iii) Assist in the evaluation and selection of technologies suitable for the different jobs to be done; (The task of this centre in this respect would be to ensure that the appropriate part of the R and D system is brought effectively into the evaluation process so that the technological factor is invariably considered in the appraisal of every project; and that the question is always asked how far the technology required, or part thereof, can be supplied or developed locally);
- (iv) Assist in the unpacking of imported technology, including the assessment of suitability, the direct and indirect costs and the conditions attached;
- (v) Assist in the negotiation of the best possible terms and conditions where it is decided that the technology should be imported;
- (vi) Act as registry for recording and classification of all technology imported in whatever form, including both existing and new contracts as well as a continuous record of the results of the evaluation undertaken;
- (vii) Become the focal point for the development of indigenous technology on a continuous basis;
- (viii) Play a central part in evolving a technology policy, and, in time, a technology plan; (This has to be derived in the first instance from the industrial policy, ultimately it would extend to the Ministry of Planning and make it possible for the National Plan to have not only its customary components; projects, the use of natural resource, finance, manpower, but also the corresponding technological inputs);
- (ix) Act as the link with the Asian Regional Centre for the Technology Transfer (RCTT).

(f) Manpower for industry

128. The Government has quite rightly placed employment generation high on its policy agenda since the rapid growth of Sri Lanka's labour force has not been accompanied by an equally rapid increase in productive employment. The total labour force grew during the period 1965-1974 by an average of 2.33% per annum, while the number of unemployed (persons actively seeking jobs) grew by 11.68% per annum. The 1973 labour force participation rate survey of the Central Bank puts the number of unemployed at 793,000. Current unofficial estimates put it between 1.2 and 1.4 million of which 80% are thought to be in the 19-28 age group. <sup>1/</sup> Agriculture, in particular the plantation

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<sup>1/</sup> Quarterly Economic Review of Sri Lanka. Annual Supplement 1978. The Economist Intelligence Unit Ltd.

sector, probably offers the best chance for absorption of the backlog. A significant although limited, contribution of the industrial sector, including the IPZ, is expected to be felt towards the end of 1979.

129. It is now clear from the experience of Sri Lanka and other countries that reliance on rapid growth is insufficient to take care of unemployment. At the 1963-71 ratio of employment to output, output growth would have to be almost 7% annually just to absorb new entrants to the labour force. Thus what is needed is a concerted effort to make the growth process more labour-intensive through appropriate factor pricing, a more careful choice of investments and efforts to improve the working of the labour market.

130. There are large reservoirs of unutilized manpower resources in all categories of occupational groups: professional technical personnel, skilled and semi-skilled workers as well as unskilled workers. <sup>1/</sup> The increase in unemployment has, however, during the last two years for which statistical information is available, largely been limited to the unskilled category, as shown in Table 14.

131. In the field of technical training it should be noted that UNDP is providing assistance under a large-scale project on industry oriented training at Katubedele Campus. The objective of the assistance project is to assist the country's industrial development by establishing industry related technical courses in rubber, textile and marine engineering and starting post-graduate and industry related research activities in various engineering departments.

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<sup>1/</sup> Since the Free Education Scheme was introduced in 1945, there has been a rapid expansion of educational facilities at all levels. While pointing out that on the part of the Government the chief concern was to satisfy the unprecedented demand for schooling by quantitative expansion of facilities at every stage, the 1972-76 Development Plan noted that this unplanned expansion had led to the present problem of the educated unemployed, due to the failure of the economy to provide a meaningful and a productive role for the output of the educational system. It has become evident, the Plan notes, that an educated population become a national asset only to the extent it is able to fit into the productive occupations that the economy is capable of providing. The training, the skills, the attitudes and aspirations that are the product of the educational system must be related to the socio-economic environment and conform in broad outline to the country's occupational profile. To that end a strengthening of the country's manpower planning and forecasting might be called for.

Table 14: Sri Lanka manpower resources and unemployment

YEAR	Population (mid-Year) (thousands)	Labour force (thousands)	Unemployment by occupational groups				Total	Unemployed as % of total labour force (percentage)
			Professio- nal and clerical workers	Skilled workers	Semi- skilled workers	Unskilled workers		
1963	10,650	3,633	48,050	18,556	43,193	71,029	181,128	5.0
1966	11,440	3,714	62,362	20,906	55,709	85,760	224,737	6.1
1967	11,700	3,798	70,523	22,456	64,673	91,845	249,467	6.6
1968	11,990	3,883	73,703	24,055	69,353	98,516	265,627	6.8
1969	12,250	3,970	80,159	27,852	78,237	119,702	303,930	7.7
1970	12,520	4,059	93,228	34,636	94,509	158,589	380,962	9.4
1971	12,610	4,149	96,156	39,764	96,730	187,029	419,679	10.1
1972	12,860	4,812	91,420	43,087	100,576	205,250	440,342	10.4
1973	13,090	4,337	86,425	43,402	105,188	222,657	457,671	10.6
1974	13,280	4,435	89,087	44,818	112,574	242,869	489,348	10.9
1975	13,510	4,741	96,450	47,323	120,379	237,562	521,714	11.0
1976	13,730		103,993	49,836	127,728	265,687	547,244	
1977	13,970		110,644	52,564	134,787	274,588	572,583	

Sources: UN, Monthly Bulletin of Statistics  
ILO, Yearbook of Labour Statistics, 1975, 1976, 1977 and 1978.



IX. Possible areas for UNIDO and other external inputs

132. Following from the discussion in Chapters VI and VIII, some areas for UNIDO involvement would seem to have particular merit in the short-term. The first of these concerns the ramifications of the Export Processing Zone. Projections of potential output, employment and foreign exchange benefits can be drawn from other countries' experiences. But if the linkages from this zone to the rest of the host economy can be developed, the net benefits could be far greater. Although the rationale for these zones lies in their differential tax, tariff and labour conditions, links such as sub-contracting of production and the provision of ancillary and other services should not be overlooked. Advice into the forging of such linkages must therefore be offered.

133. Secondly, the use of small-scale industry as a tool of regional dispersal policy has attractions of which the Government is well aware. Less well known, however, are the type of constraints which exist on the growth and diversification of such enterprises. Policies so far have focused on the provision of institutional services such as credit banks, market information, etc. While these are in some circumstances important, evidence from cross-country small-scale studies <sup>1/</sup> suggests that the major constraints arise through the small-scale firms' interaction with others in the economic landscape - with oligopolistic wholesalers, for instance, who are in a position to reduce the surplus retained by small producers. Thus, some careful thought above the constraints external to small industries (particularly where they are planned to operate far from Colombo where factor markets will be even more imperfect) rather than solely upon those internal to small industries, is a priority.

134. In the context of the envisaged strengthening of the country's investment planning and promotion functions, possible technical cooperation might be considered, for instance, at the branch-of-industry project identification level. It might take the form of development of

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<sup>1/</sup> Such as those carried out under the aegis of the ILO World Employment Programme.

programme for fuller utilization of existing productive capacities in various branches combined with project identification surveys and/or comprehensive fellowships training programmes for industrial sector planners and project analysts. Assistance in the field of project analysis and evaluation and in respect of industrial information requirements and facilities might also be needed.

135. Particular attention should be given to possible assistance requirements in further support of the country's export drive, for instance through advisory assistance for development, design and up-grading, quality-wise, of specific products, as indeed has already been the case in respect of ready-made garments, rubber products, leather goods and furniture, ceramics, etc. Such assistance should be complementary to the aid provided since 1974 by SIDA in cooperation with ITC in this field of export promotion.

136. In recognition of the priority accorded to local manufacture of industrial inputs for agriculture and industrial development in non-metropolitan or rural areas, specific support might be given to the promotion and development of local engineering design and production capabilities, in particular in connexion with manufacture and assembly of agricultural machinery and implements.

137. In the field of agro-based and mineral industries a number of specific areas have already been identified or indicated in Chapter IV above, as requiring external assistance at the product research and development level as well as at the production and marketing levels. One specific area where follow-up of initial UNIDO assistance might be required is in the setting up of a cassava processing industry with particular attention to the production of industrial starches. <sup>1/</sup>

138. As noted earlier in the paper, construction materials constitute major production inputs in the economy and a formulation of a comprehensive programme (incl. assistance requirements) for research and development of new products for the building industry aiming at fullest possible utilization of locally available materials, including industrial wastes, might be considered.

139. The packaging industry in Sri Lanka is particularly important in relation to agricultural products for the domestic market and for exports. Some materials for packaging such as wood, paper and fibres can be developed from resources on hand. These materials are however at present not manufactured in sufficient quantity and in the varieties needed for the packaging industry. Indeed only 25% for instance, of the paper needs for

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<sup>1/</sup> See project IS/SRL/74/875 "Integrated Industrial Processing of Manioc".

packaging are met from domestic sources. Other materials such as aluminium or other metals are not available locally. Consideration may be given to the undertaking of a techno-economic analysis on the country's future packaging needs in the context of fullest possible utilization of local resources. <sup>1/</sup>

140. Consideration might also be given to possible assistance in the development of long-term training programmes for management and technical personnel at the various public sector industrial corporations. Such programmes should be developed as a complement to the programmes for the management cadres undertaken by the National Institute of Management with UNDP/ILO large-scale assistance (73/013 and 77/001) up to 1980.

141. Assistance, (e.g. by way of training in corporate management techniques and performance monitoring) might be required in connexion with the development of an institutional framework for the systematic evaluation of the performance of public sector corporations referred to in the 1972-1976 Development Plan.

142. Assistance might also be required for the programme, aiming at the promotion and support of entrepreneurship specifically in the rural areas of the country, now being developed under the auspices of IDB. In this connexion it might be noted that the Government of India has 1974-78 provided assistance of the establishment of Rural Technical Centres to promote the development of District Development Council projects of factories for small-scale industries and agro-industries.

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<sup>1/</sup> For more detailed information see the paper "Packaging Situation in Sri Lanka" prepared by Mr. Stanley Wickremeratne, President, Sri Lanka Institute of Packaging for the Second UNIDO Inter-Regional Seminar for Cooperation in Packaging among Developing Countries held in Seoul in November 1975.

ANNEX I

Ceylon Institute of Scientific and Industrial Research

The Ceylon Institute of Scientific and Industrial Research was established in 1955 under the CISIR Act No. 15 of 1955. The Institute was provided with a initial grant of Rs. 5,000,000 but no further funds were released till 1962/1963 when Rs. 750,000 was provided annually till 1965/1966. The meagre funds provided during the first 10 years prevented the development of the Institute both as regards staff and equipment. By 1966, the scientific staff had increased only by two over the number in 1956.

The ill effects of this shortsighted policy are now being felt by the Institute in that there is a shortage of experienced research scientists to head the various research sections and to guide the younger research workers. This problem is expected to become more acute in the near future, when the few remaining senior officers retire.

Financial support increased after 1966, and the Institute was able to begin expanding. Further steps were taken after 1971 when the Cabinet approved a scheme of reorganization and expansion based on the recommendations of a team scientists from USSR. The scheme provided for an increase in the number of research sections including the setting up of sections in Food Technology, Agro-Industries, Minerals Technology and Economic Evaluation and a considerable expansion of the Engineering and Pilot Plant sections. Additional laboratory space and equipment was provided for together with a considerable increase in the research and supporting technical staff. Legislation was also introduced in 1973 to increase the Governing Board and to provide for a Research Planning Council to advise the Governing Board.

The graduate research staff has been increased from 45 in 1970 to 76 by the end of 1976. It has to be borne in mind though that the larger number among them will take about 5 years time before they can engage in useful research activity.

The research activities of the CISIR centre round the use of local raw materials, both vegetable and mineral, in industry, the development of new technology and improvements to existing technology. In the choice of research projects, the development of industries suitable for rural and of labour intensive technology is taken into account. In the past the work of the Institute had been directed more to chemical and bio-chemical studies than to physics and engineering. An attempt is being made to arrive at a more even balance between the disciplines. Delay in the transfer of technological processes successfully worked out at laboratory bench scale level to commercial industry has been a major problem at the CISIR. Steps have been taken to strengthen the area of pilot plant activities to transfer bench scale work to industry.

Several of the Institutes research results have been applied to industrial use. The process for bottling toddy developed by the CISIR in its early years is now in use at several factories both for the bottling of coconut toddy and palmyrah toddy. The Government derives considerable revenue from this industry. The experimental work done by the CISIR on sugar and jaggery production has been made use of in several small projects and a bicycle centrifuge for small scale manufacture of sugar has been developed and is in use. A carbonated tea beverage made by a process starting with the green leaf is now in commercial production, while a formulation for scented tea is being used by Consolidated Exports. Duplicating inks now used in the country are made to a formulation worked out by the CISIR. Two major projects, namely a process for bottling coconut cream and a formulation for ceramic floor tiles, are ready for pilot plant scale operation.

Besides carrying out research, the CISIR provides a number of services to industry and to public organizations. An important area of work is the repair and maintenance service for a wide variety of electronic equipment in hospitals, research institutions and industry. Calibration and testing of other measuring instruments is also done. Perhaps the best known service provided by CISIR is the physical testing and chemical analysis of a wide range of materials and manufactured products. CISIR also maintains consultancy services and CISIR staff serve on numerous Drafting Committees of the Bureau of Ceylon Standards and on ad hoc Committees appointed by the Ministry.

ANNEX II

Performance of selected manufactured export items 1976 <sup>1/</sup>

Sector I - Food, Beverages and Tobacco

This sector, which comprises sea foods, live fish, canned foods, fruit juices, tea in tea bags, leaf tobacco, cigarettes, wheat bran, cocoa and its products recorded an increase of Rs. 66.3 million over the target of Re. 50 million set for it in 1976. Sea food (shrimps, prawns and lobsters) made a particularly good contribution towards this rapid growth. Instant tea and tea in tea bags showed a decline but wheat bran and canned fruit items doubled the preceding year's performance.

Sector II - Textiles Wearing Apparel and Made-Up Garments

Exports in this sector, which had been growing steadily over the years, showed only a marginal increase in 1975. But it regained its earlier promise in 1976 by turning in Rs. 77.6 million as against Rs. 35.2 million in the previous year. The main item of export in this sector is ready-made garments. A leading joint venture garment manufacturing unit exported slacks for Rs. 2.3 million whereas ladies' and children's wear brought in Rs. 33.6 million. Exports of batiks, however, declined to Rs. 2.6 million as against Rs. 3.5 million in the previous year.

Sector III - Chemical and chemical products

Though this sector exceeded by Rs. 3.6 million the target set several factors contributed adversely to its growth. Vegetable ghee, a major item, contributed only 50% of its performance in 1975, due largely to labour problems. A shortage of coconut oil in the local market and as a consequence the very high coconut oil prices prevailing in the world market had serious repercussions on the structure of Sri Lanka's economy, which led to a ban on imports of coconut oil and derived products. The export of vegetable ghee contributed only Rs. 4.4 million. In contrast soap, whose major constituent is coconut oil, registered an export figure of Rs. 10.8 million. Soap thus made a contribution of over 30% of the performance of this sector and also improved on its own performance in 1975 substantially. Four new items which helped this sector's performance are: (i) activated carbon - Rs. 1.7 million (ii) animal feed base - Rs. 2.9 million, (iii) curcator

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<sup>1/</sup> Based on information given in "Review of Activities 1976" by the Ministry of Industries and Scientific Affairs, December 1977.

(an insecticide) Rs. 1.3 million and (iv) lead peroxide obtained from scrap lead batteries - Rs. 1.2 million.

Sector IV - Wood and Paper Products, Leather and Rubber Products

The export performance in 1976 in this sector was below target. Items of export in the sector comprise footwear, rubber products, leather and leather products, wooden products and handicrafts. New joint venture industrial units expected to go into operation did not do so.

Sector V. Non-Metallic Mineral Products

The main export items in this sector are petroleum products which comprise naphtha, fuel oil, marine bunkering and aviation fuel, lubricants, and products like porcelain ware, graphite, ilmenite, rutile and mosaic tiles. Naphtha showed an increase of Rs. 24.1 over the preceding year while fuel oil indicated an increase of Rs. 54.5 million. Porcelain ware, graphite and ilmenite recorded earnings of Rs. 4.6 Rs. 5.3 and Rs. 2.2 million respectively over 1975 while rutile showed a decrease of Rs. 2.1 million. A new unit, M/s. Lanka Wall Tile Ltd., has exported mosaic tiles to the value of Rs. 1.6 million, and is expected to make a substantial contribution in the future towards the growth of this sector.

Sector VI - Ferrous and Non-Ferrous Metal Products

The performance of this sector fell short of the target. The main items of export are motor spares, refrigerators, water pumps, fittings and tin canisters, which depend mostly on markets in the Middle East, Malaysia and Singapore.

Sector VII - Base Metal Industries and Machinery

A shortfall of Rs. 5.3 million was registered by this sector against its target. The items comprising this sector of non-traditional industrial exports are tea machinery, yachts, boats and ship repairs. Tea machinery was exported by two leading firms in this field but these exports were on the basis of tenders awarded by Indonesia, Egypt and Kenya - the bulk going

to Indonesia where the demand for such machinery has been met. The demand now is only for spares. Although there is now a decline in the export of tea machinery, the sector will be boosted by items like yachts and boats in the future. Two new units have been approved for the manufacture and export of luxury yachts.

Sector VIII - Electrical Machinery, Appliances and Supplies

The target set for this sector was exceeded. Almost the entire export by this sector was done by M/s Electronics Ceramics Ltd., which exported flat glass display tubes to the value of Rs. 11.6 million.

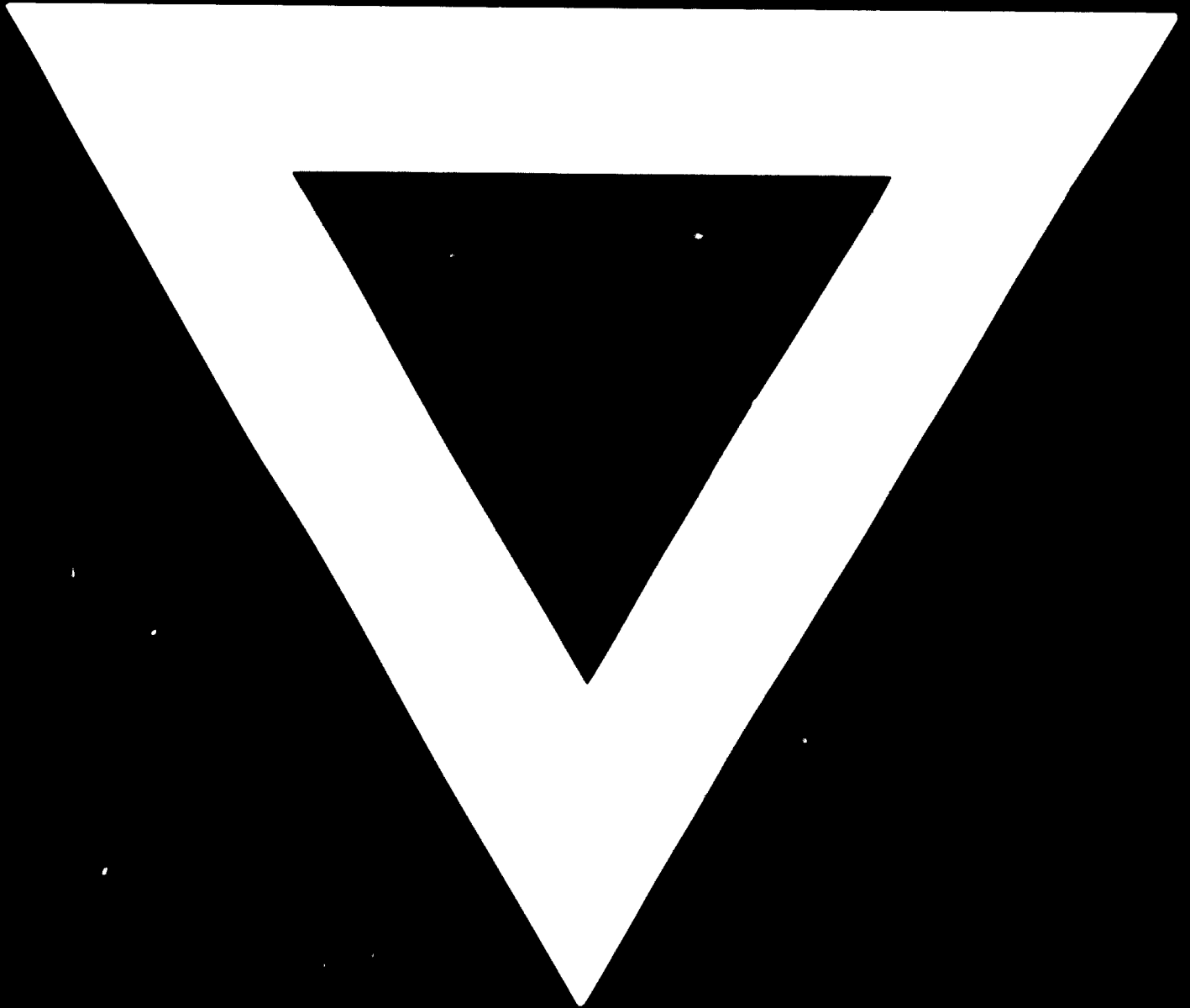
Sector IX - Optical Instruments, Plastic Goods, Pens, Clocks, etc.

This sector comprises only miscellaneous items like PVC products, costume jewellery, brassware, clocks, fountain pens, ball pens, lead for lead pencils, polythene bags, etc.





**B-34**



**79.11.30**