No.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF INDUSTRIAL DEVELOPMENT
THE DEMOCRATIC SOCIALIST REPUBLIC OF
SRI LANKA

MASTER PLAN STUDY

FOR

INDUSTRIALIZATION AND INVESTMENT PROMOTION

IN THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

(Phase I)

SUMMARY

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MASTER PLAN STUDY ON
INDUSTRIALIZATION AND INVESTMENT PROMOTION
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SUMMARY

1 INTRODUCTION

The Sri Lankan economy attained a steady growth in 1990~1997, with an average annual GDP growth rate of nearly 5%, and this growth was mainly contributed by the manufacturing sector (nearly 9% per annum). The major components of growth in the sector were textile, apparel, and leather which accounted for 55% of total employment in the sector and 49% of total export of Sri Lanka. Despite such a steady growth, a share of the manufacturing sector is still relatively low (16.4% of GDP), compared with India (20%) and the selected ASEAN countries (23~34%). Further, the Sri Lankan manufacturing sector works within the ambit of the free trade regimes promoted under WTO, SAFTA and Indo-Lanka free trade agreement. Expiration of MFA will also open the textile/apparel subsector to global competition.

In the light of the above considerations, this Study has been undertaken with the objectives of formulating a master plan for industrialization and investment promotion up to the year 2010. The master plan study is to be executed in two phases; i.e:

Phase I: Study for selection of target subsectors on which to base the master plan

Phase II: Formulation of the master plan for industrialization and investment promotion

The Phase I study is composed of the following major works:

(i) Review of sectoral and subsectoral performance;

(ii) Preliminary study on framework for industrial development in the coming decade, which will be referred to in selecting the target subsectors;

(iv) Selection of 5-7 target subsectors out of 28 manufacturing subsectors and information technology subsectors; and

(v) Recommendation for the Phase II study.

Manufacturing Subsectors (28) Identified for Phase I Study

ISIC Code	Subsector	ISIC Code	Subsector
311	Food manufacturing	353	Petroleum refineries
312	Other food products	355	Rubber products
313	Beverage industries	356	Plastic products
314	Tobacco manufactures	361	Pottery, china and earthenware
321	Textiles	362	Glass and glass products
322	Wearing apparel	369	Other non-metallic products
323	Leather and leather products	371	Iron and steel basic industry
324	Footware except rubber/plastic	372	Non-ferrous metal
331	Wood and cork products	381	Fabricated metal products
332	Furniture and fixture	382	Manufacture of machinery
341	Paper and paper products	383	Electrical machinery and supplies
342	Printing and publishing	384	Transport equipment
351	Industrial chemicals	385	Professional equipment
352	Other chemical products	390	Other manufacturing industries

2 ECONOMIC PERFORMANCE: An Overview

Key economic indicators show that Sri Lanka has achieved a noticeable improvement in the macroeconomic situation in the last decade, despite the prolonged ethnic conflicts.

The current account balance stands at a manageable level. Saving and investment performances are improving, though investment as a percentage of GDP hardly rises above 25%. GDP per capita stood at US$800 in 1997, which was much higher than the SAARC average of US$380.

Key Economic Indicators of Sri Lanka

	1976	*1986*	*1996*	*1997*
GDP (US$ billions)	3.6	6.4	13.8	14.8
Gross Domestic investment/GDP (%)	16.2	23.7	24.2	24.4
Exports of goods and services/GDP (%)	29.0	23.7	24.2	24.4
Gross domestic savings/GDP (%)	13.9	12.0	15.3	17.3
Current account balance/GDP (%)	-0.2	-6.5	-4.9	-2.6
Total debt/GDP (%)	25.9	63.7	67.5	61.0
Total debt service/exports (%)	24.4	20.9	13.6	16.2
Inflation, consumer prices (%)	na	8.0	15.9	9.6
Fiscal balance/GDP (%)	na	-12.2	-8.5	-7.1
	1976-86	*1987-97*	*1996*	*1997*
GDP growth (%)	5.3	5.0	3.8	6.4
GNP per capita growth (%)	3.8	2.8	2.1	5.8
Growth of exports of goods and services	4.7	9.1	3.2	11.6

Source: World Bank

From 1987 to 1997, agriculture grew at an annual average of 2.1%, while industry grew at 6.1%.Of the industry group, the manufacturing sector recorded an annual average growth of 8.8% in the same period. Although industrial growth declined slightly in 1994-96 following the political change in 1994, it recovered in 1997 with growth of 9.3%.

The annual average growth rate (AAGR) and industrial structure of Sri Lanka are compared with those of the selected SAARC and ASEAN countries in the following table:

GDP Growth and Industrial Structure of Selected SAARC and ASEAN Countries

		Sri Lanka	India	Pakistan	Indonesia	Malaysia	Thailand
GDP Structure (1996)	Agriculture	22%	28%	26%	16%	13%	11%
	Industry	**25%**	**29%**	**25%**	**43%**	**46%**	**40%**
	Manufacturing	**16%**	**20%**	**17%**	**25%**	**34%**	**29%**
	Services	52%	43%	50%	41%	41%	50%
AAGR:% (90-96)	**GDP Total**	**4.8**	**5.8**	**4.6**	**7.7**	**8.7**	**8.3**
	Agriculture	1.7	3.1	3.8	2.8	1.9	3.6
	Industry	**6.6**	**6.8**	**5.5**	**10.2**	**11.2**	**10.3**
	Manufacturing	**8.8**	**7.5**	**5.5**	**11.1**	**13.2**	**10.7**
	Services	6.1	7.0	5.0	7.4	8.5	7.9

Source: 1998 World Development Report

The export-led industrialization strategy of Sri Lanka has yielded some results. Agriculture which dominated the export sector has given way to industry, which surpassed agricultural exports in 1987.

3 INTERNATIONAL PERSPECTIVE

Since liberalization of trade and exchange policies in the late 1970's, Sri Lanka's industrial development has been facing the impact of changes in world economic environment. The major current and future impacts include the following:

a) Abolition of MFA: The planned phasing-out of Multi Fibre Agreement (MFA) in 2005 will open the apparel industry to global competition. Its termination could affect export performance, even though Sri Lanka is increasing non-quota exports in the apparel sector.

b) SAFTA and Indo-Lanka Free Trade Agreement: The formulation of SAFTA is in the pipeline. Preceding SAFTA, Sri Lanka and India signed a bilateral free trade agreement in 1999. Although the negative list for tariff removal is still under negotiation, the pact will have a major impact on the Sri Lankan industrial sector.

c) Acceleration of Free Trade Regime: The global move towards free trade under WTO has led to increasing competition in world markets. Local manufacturers will encounter direct competition in the domestic market; and export markets could experience stronger competition.

d) Liberalisation of Former Socialist Economies: The liberalisation of the economy and international trade in former socialist countries, as well as in China and Vietnam, will have an impact on global trade of industrial goods. Low cost labour and production potential of these countries will bring about greater competition in world markets now enjoyed by some developing exporters.

e) Financial Crisis in East Asia and Russia: Sri Lanka seems to have experienced only moderate adverse effects of the financial and monetary crises recently witnessed in East Asia. However, the negative impact may grow through the reduction of direct investment from these countries and through losing relative competitiveness of labour intensive goods.

Major Impacts Related to International Perspective

	Advantages/Prospects for Sri Lanka	Disadvantages/Challenges for Sri Lanka
Impacts of MFA Abolition in 2005	- Opportunities for increasing textile/garment exports without quotas - Opportunities for more investment in the garment subsector due to Sri Lankan good location.	- Losing protected USA/EU markets - Intensified competition without quotas - Drop out of some manufacturers/traders, particularly small and medium enterprises (SMEs)
Impacts of Free Trade Regimes	**Impacts by Tariff Reduction** - Cost reduction of imported raw materials - Cost reduction of imported machinery/equip. - Opportunities for/expansion of export based on integration of markets (e.g., SAARC) **Impacts by Free Trade/Globalization** - Relaxed FDI and JV with foreign partner - Progress of technology transfer - Liberalization of information	**Impacts by Tariff Reduction** - Intensified competition - Flooding of imports in Domestic market **Impacts by Free Trade/Globalization** - Protection of intellectual property rights - Limitation of monopoly (production) - Liberalization of market channel - Severe competition
Impacts of East Asian Financial Crisis	- Increase in purchasing power to import products manufactured in the East Asian countries	- Less competitive due to depreciation of the East Asian currencies - Intensified competition and decreasing investments

Source: JICA Study Team

4 STATUS OF MANUFACTURING SECTOR

It is recognised that Sri Lanka's industrial policy changed drastically after 1977, from the promotion of import substitution, including the expansion of public sector industries in the pre-1977 period, to the promotion of private sector-led, outward looking (export oriented) industries.

Textiles, wearing apparel, and leather, accounting for 40.6% of production and 36.3% of value added of the total manufacturing, showed remarkably high growth in 1997. The subsector's growth in production was 18.7%. This expansion is attributable to productivity improvement, capacity expansion, and increased foreign demand.

The growth of food, beverage and tobacco products subsector was moderate in 1997, with 3.4% growth in production. Nevertheless, the subsector accounts for 21.2% of total manufacturing output and 31.7% of value added in 1997.

Chemicals, petroleum, rubber, and plastic products subsector has the third largest share in manufacturing production, or 19.1% in 1997. The output grew by 4.6%. However, the subsector in private sector impressively grew by 14.9%.

The non-metallic mineral subsector has the fourth largest share (or 8.1% in 1997), with diamond processing, cement production, ceramic products, and building materials. The fabricated metal products, machinery, and equipment subsector accounts for 4.4% of total production and 5.3% of value added in the manufacturing sector.

Production and Value Added in Industry (1997)

(Rs. million: %)

ISIC		Production			Value Added		
		Value	Share	Growth	Value	Share	Growth
31	Food, beverages and tobacco	37,146	21.7	3.4	35,585	31.7	8.2
32	Textiles, apparel & leather	69,269	40.6	18.7	40,714	36.3	30.6
33	Wood products & furniture	1,334	0.8	1.0	1,257	1.1	0.6
34	Paper, printing & publishing	3,561	2.1	0.3	2,633	2.3	2.1
35	Chemical, rubber & plastic	32,582	19.1	4.6	10,745	9.6	20.0
36	Non-metallic mineral	13,914	8.1	4.1	11,600	10.3	10.1
37	Basic metal	1,671	1.0	2.1	598	0.5	32.9
38	Fabricated metal, machinery	7,434	4.4	18.9	5,924	5.3	23.2
39	Other manufacturing industries	3,904	2.3	13.4	3,157	2.8	14.3
	Total manufacturing	170,819	100.0	10.3	112,213	100.0	17.6

Note: Production at 1990 constant prices, and value added at current prices
Source: Annual Report 1997 (Central Bank)

The international comparison of cost structure highlights Sri Lanka's salient feature; the small share of intermediate input cost compared to other SAARC and ASEAN countries. Sri Lanka also enjoys relatively high ratio of gross operating surplus.

International Comparison in Cost Structure in 1995

(%)

	Sri Lanka	*Bangladesh*	*India*	*Nepal*	*Pakistan*
Intermediate input	61	66	79	60	70
Wage and salaries	8	12	6	9	7
Gross operating surplus	31	23	14	31	23
Total	100	100	100	100	100
	Indonesia	*Malaysia*	*Philippines*	*Singapore*	*Thailand*
Intermediate input	61	74	62	69	66
Wage and salaries	5	7	8	10	7
Gross operating surplus	34	19	31	22	27
Total	100	100	100	100	100

Source: Industrial Development Global Report 1997 (UNIDO)

Sri Lankan Manufacturing Data in 1995

ISIC Code	DESCRIPTION	NO. of Establi-sments (1)	Persons Engaged (2)	Ootput (Rs. mill.) (3)	Gross Value Added (Rs. mill.) (4)	GVA Ratio (4)/(3)	GVA per Worker (Rs) (4)/(2)	RCA* Index 1994	CI* 1994	TFPG** 1981-93
3	Total Manufacturing	3030	477664	245,020	102,965	42%	215,560	1.00	-0.17	10.16
311	Food Manufacturing	193	17638	21,071	6,019	29%	341,260	2.65	-1.00	9.25
312	Other food products	461	45981	26,989	13,736	51%	298,730	2.65	-0.66	9.25
313	Beverage industries	17	5288	6,275	3,640	58%	688,310	2.65	0.00	18.29
314	Tobacco manufactures	159	6999	12,251	10,776	88%	1,539,704	2.65	1.00	6.43
321	Textiles	519	51629	20,216	7,644	38%	148,053	1.24	-0.28	17.55
322	Wearing apparel, except footwear	430	200887	46,600	20,992	45%	104,494	2.12	0.96	14.13
323	Leather and leather products	30	3959	2,092	515	25%	130,182	3.27	-0.88	10.19
324	Footwear except rubber/plastic	14	6654	3,801	2,004	53%	301,103	3.27	1.00	17.21
331	Wood and cork products	123	4030	1,319	999	76%	247,993	3.27	-1.00	5.44
332	Furniture and fixtures	68	2432	312	127	41%	52,028	3.27	0.00	10.82
341	Paper and paper products	30	5512	3,435	1,586	46%	287,751	3.27	-1.00	10.83
342	Printing and publishing	76	8521	3,138	1,261	40%	147,972	3.27	-0.60	6.19
351	Industrial chemicals	23	1750	2,591	926	36%	529,174	0.09	-0.89	14.09
352	Other chemical products	88	6614	11,290	5,769	51%	872,205	0.09	-1.00	6.42
353	Petroleum refineries	2	1230	20,195	1,599	8%	1,300,406	0.09	-0.39	N.A.
355	Rubber Products	213	31041	15,075	6,654	44%	214,353	3.27	0.58	0.1
356	Plastic Products	57	7164	3,375	1,326	39%	185,108	3.27	0.00	6.34
361	Pottery & China	34	7052	2,341	1,260	54%	178,734	3.27	1.00	5.74
362	Glass and Glass products	9	972	462	270	59%	278,164	3.27	-1.00	-13.59
369	Other non-metalic mineral products	155	9029	9,813	4,463	45%	494,293	3.27	-1.00	7.37
371	Iron and steel	12	2184	2,130	1,072	50%	490,702	0.00	-1.00	1.75
372	Non-ferrous metal	7	617	675	331	49%	536,952	0.00	-1.00	N.A.
381	Fabricated metal products	94	4985	2,412	900	37%	180,518	0.08	-0.29	4.21
382	Non-electrical machinery	42	4019	3,186	812	26%	202,159	0.08	-0.96	8.28
383	Electrical machinery and supplies	42	6793	3,777	1,803	48%	265,490	0.08	-0.83	3.61
384	Transport equipment	38	9544	5,478	2,668	49%	279,563	0.00	-1.00	0.21
385	Professional and scientific equipment	8	380	63	42	67%	111,096	3.27	-1.00	N.A.
390	Other manufacturing	86	24760	14,659	3,770	26%	152,254	3.27	0.33	14.35

Notes: RCA denotes revealed comparative advantage, and CI competitiveness index.
TFPG indicatetes annual compound growth rate (%) of total factor productivity.

Source: Annual Survey of Industry 1996 Interim Report for colums (1)-(4) which refer to enterprises with 25 employees or more; UN data for RCA Index and CI; Athkorala (1996) p.43 for TFPG data.

5 MANUFACTURING STRUCTURE

The structure of the manufacturing sector of Sri Lanka has been analysed by examining a 'skyline map', which visually represents a country's manufacturing structure in terms of domestic and international supply and demand.

The characteristics of manufacturing structure in Sri Lanka and neighbouring countries are summarized as follows:

- The export value (the area of a rectangle beyond 100 line) of food manufacturing is small in proportion to the value of domestic consumption (the area of a rectangle up to 100 line), while the value of imports (the area of the shaded rectangle) is less than half of the domestic production (the area of the white rectangle).
- The textile subsector is heavily dependent on imports, nearly equal to the half of total supply (domestic production plus imports) while it is simultaneously export dependent, as export accounts for about 40% of the total demand (consumption plus exports).
- The features of chemicals (mainly rubber products in Sri Lanka) are similar to the food processing (31), but the former is more import dependent than the latter.
- Basic metal (37) and machinery (38) scarcely provide exports and their domestic demand depends much on imports. Other manufacturing (39) is heavily export dependent as export and domestic consumption are nearly the same in value.
- It is apparent that Sri Lanka is more import dependent (with remarkable shaded area in the map) than other SAARC member countries.
- SAARC countries except India have common characteristics in their manufacturing structure: (i) food, textiles and apparel are their main products, and (ii) textiles and apparel are heavily dependent on exports. On the other hand, India's structure is almost self-reliant and diversified, with less dependence on either imports or exports.

The Sri Lankan manufacturing sector has the salient features as enumerated below:

(i) Small agglomeration of manufacturing industry due partly to Sri Lanka's small domestic market and its initial stage of industrialisation;

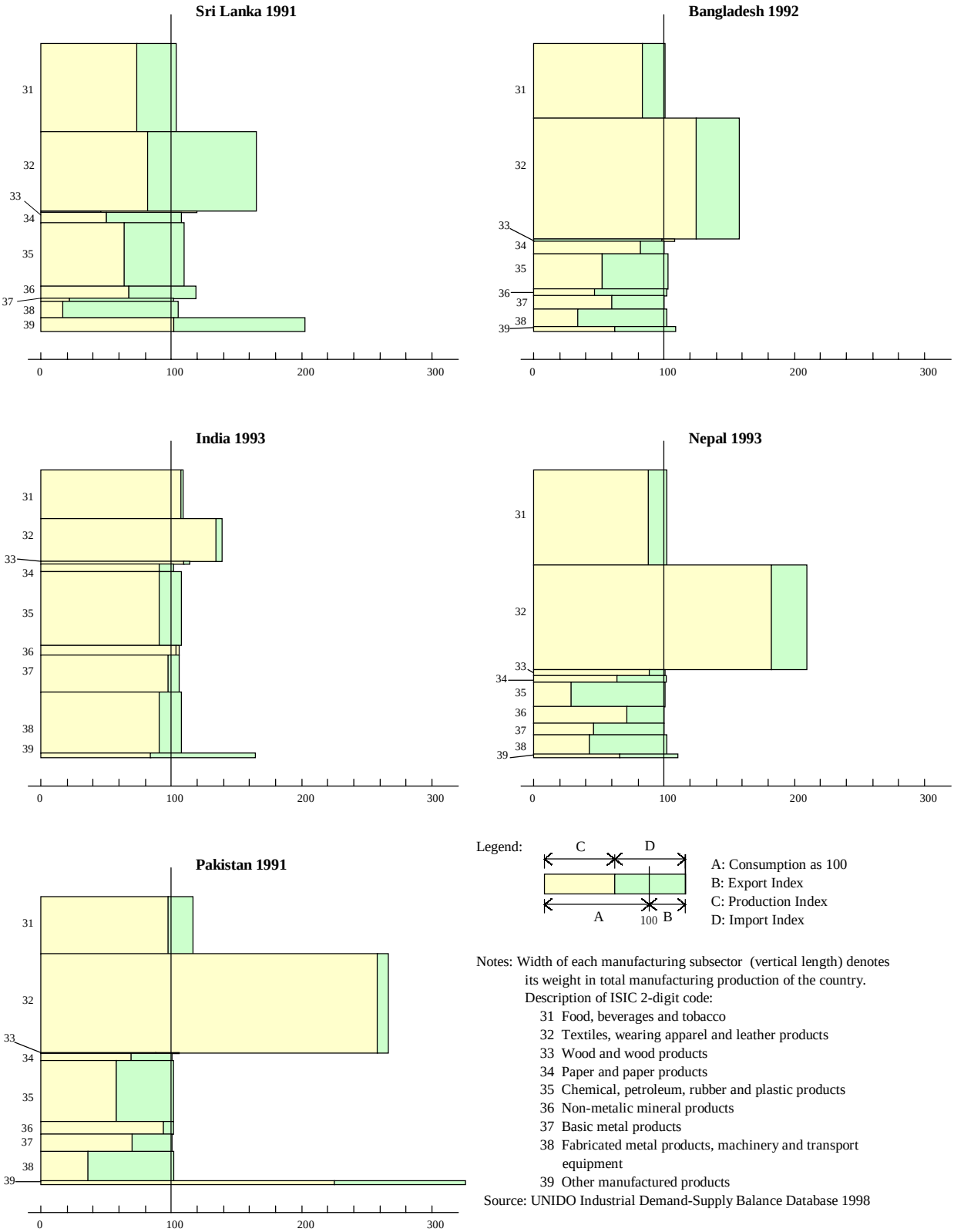
(ii) GVA generation dependent on a few local resource-based or labour-intensive subsectors such as food processing, tobacco, textiles, garments, and rubber products;

(iii) Limited export manufacturing products (processed tea, garments, rubber products, footwear, magnetic head, and jewelry);

(iv) Less developed engineering industries such as general machinery, electrical machinery, electronic products, and transport equipment; and

(v) Less developed material and intermediate-product industries resulting in Sri Lanka's heavy dependence of manufacturing production on imports.

Skyline Map of Selected SAARC Countries



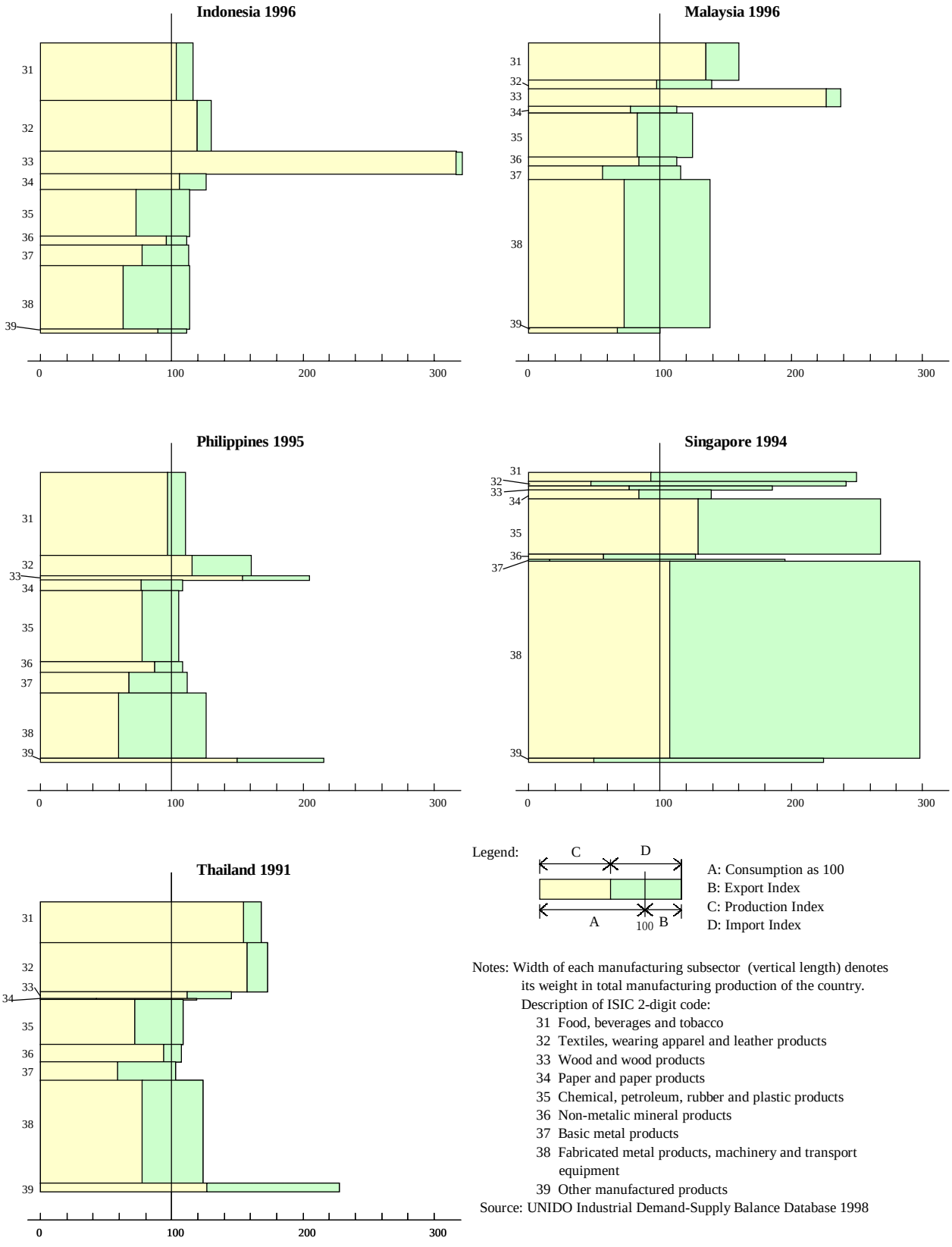
Notes: Width of each manufacturing subsector (vertical length) denotes its weight in total manufacturing production of the country.

Description of ISIC 2-digit code:

- 31 Food, beverages and tobacco
- 32 Textiles, wearing apparel and leather products
- 33 Wood and wood products
- 34 Paper and paper products
- 35 Chemical, petroleum, rubber and plastic products
- 36 Non-metalic mineral products
- 37 Basic metal products
- 38 Fabricated metal products, machinery and transport equipment
- 39 Other manufactured products

Source: UNIDO Industrial Demand-Supply Balance Database 1998

Skyline Map of Selected ASEAN Countries



Legend:

A: Consumption as 100
B: Export Index
C: Production Index
D: Import Index

Notes: Width of each manufacturing subsector (vertical length) denotes its weight in total manufacturing production of the country.

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- 39 Other manufactured products

Source: UNIDO Industrial Demand-Supply Balance Database 1998

6 INVESTMENT IN MANUFACTURING

Foreign direct investment (FDI) is actively encouraged in all areas of the economy in Sri Lanka. Restrictions that prevented majority foreign ownership were eliminated in the late 1980s, though there still remains a ceiling on certain types of investment. The Government encourages FDI by offering fiscal and other incentives.

Compared with the incentives granted in the SAARC and ASEAN countries, Sri Lanka's investment promotion policies are relatively more attractive in the following:

- Sri Lanka's basic corporate tax for private companies (35%) is lower than India (40 to 55%), Pakistan (46%), and Bangladesh (37.5 to 50%).
- Tax holiday (20 years at maximum) is more attractive than other SAARC and ASEAN countries.
- The depreciation allowance offered by Sri Lanka is higher than other countries.

On the other hand, Sri Lanka's investment promotion policies are less competitive in:

- Sri Lanka, like India and Pakistan, offers a bewildering array of tax incentives. The complexity of tax incentives confuses foreign investors.
- India and Pakistan increase their tax incentive package with the provision of specialized infrastructure, and increased sales to domestic markets.
- In India, specialized fiscal incentives are provided for industrial and service activities to be promoted, without a mandatory export obligation.

A certain social unrest caused by recurring labor conflicts in 1995 had an adverse impact on foreign investment in Sri Lanka. Ethnic conflict and violence have negative impacts on foreign potential investors. The political stability and social security are more important in attracting FDI than the availability of investment incentives.

Advantages and Disadvantages of Investment Environment in Sri Lanka

Issues	Advantages	Disadvantages
1. Attitude towards FDI	- One of the most liberal approaches to FDI in Asia	
2. Fiscal incentives and Legal Framework	- Relatively attractive, particularly tax incentives	- Many non-working days - Labor-friendly labor laws
3. Human resources	- Easily trainable unskilled workers with cheaper wages - High literacy rate - Relatively dextrous and diligent worker-speaking English	- Lack of managers class - Lack for spirit of originality and invention in workers
4. Market	- Role of transit base due to geographical location	- Relatively small domestic market - Relatively far from Japan
5. Infrastructure	- Satisfactory facilities inside major industrial estates	- Less developed transportation facilities (e.g., roads) - Shortage in stable power supply
6. Political Stability and National Security	- No coup since independence	- A certain risk of political stability - Terrorism/ethnic conflicts

Amount of Realized Investments

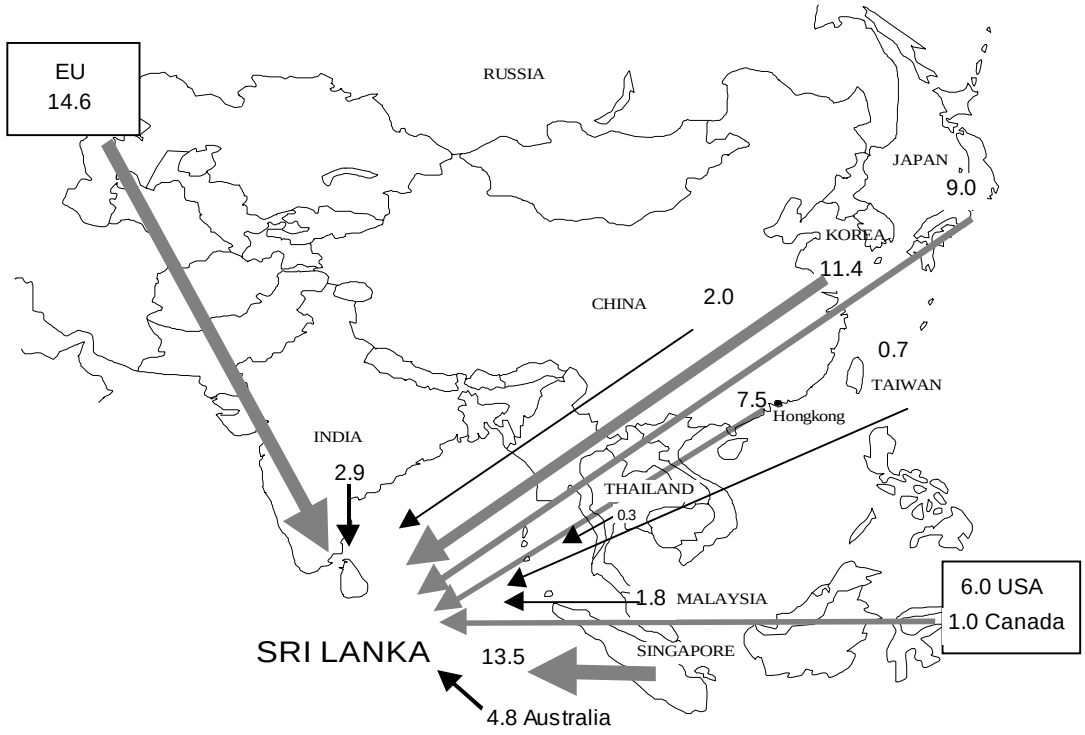
(Million Rs.)

Industrial Category	Foreign Investment		Local Investment		Total Investment	
	1995	1997 *	1995	1997 *	1995	1997 *
1 Food, Beverage & Tobacco	1,290	4,253	684	3,670	1,974	7,923
2 Textile, Wearing Apperal & Leather	11,064	15,456	1,757	6,387	12,821	21,843
3 Wood & Wood Products	488	515	63	174	551	689
4 Paper, Paper Product, Printing & Publishing	167	438	195	250	362	688
5 Chemicals, Petoleum, Coal, Rubber & Plastic	4,945	5,921	688	1,252	5,633	7,173
6 Non-Metalic, Mineral Products	774	1,035	1,571	950	2,345	1,985
7 Fabricated Metal, Machinery, & Transport Equipment	615	1,186	363	631	978	1,817
8 Manufactured Products (not elsewhere specified)	2,919	4,207	1,149	1,972	4,068	6,179
9 Services (Includes Horticulture)	28,108	45,680	15,379	25,020	43,487	70,700
TOTAL	**50,370**	**78,691**	**21,849**	**40,306**	**72,219**	**118,997**

* : Provisional in 1997

Source : BOI

Investments in BOI Approved Projects



7 OBJECTIVES OF MANUFACTURING SECTOR DEVELOPMENT

The Government announced the "Six-Year Development Program (1999-2004)" in November 1998. The principal objectives of this medium-term plan are set: (i) to accelerate economic growth, (ii) to distribute the fruits of such growth equitably among all classes of people, and (iii) to ensure a higher quality of life for all. The Government also announced the "New Industrialization Strategy for Sri Lanka" in November 1995. Under this industrial policy, the objectives for industrial development were set in the following manner: (i) expansion, diversification, and upgrading of the industrial base; (ii) efficient management of physical and manpower resources; (iii) employment and income generation in both rural and urban sectors; (iv) export orientation; and (v) promotion of regional industrialization.

The manufacturing sector will continue to be a main player in the attainment of the objectives of national and industrial development plans in the coming decade. Accordingly, the objectives of manufacturing sector development up to the target year 2010 will be provisionally set as follows, in terms of economic and social development, as well as environmental conservation of Sri Lanka:

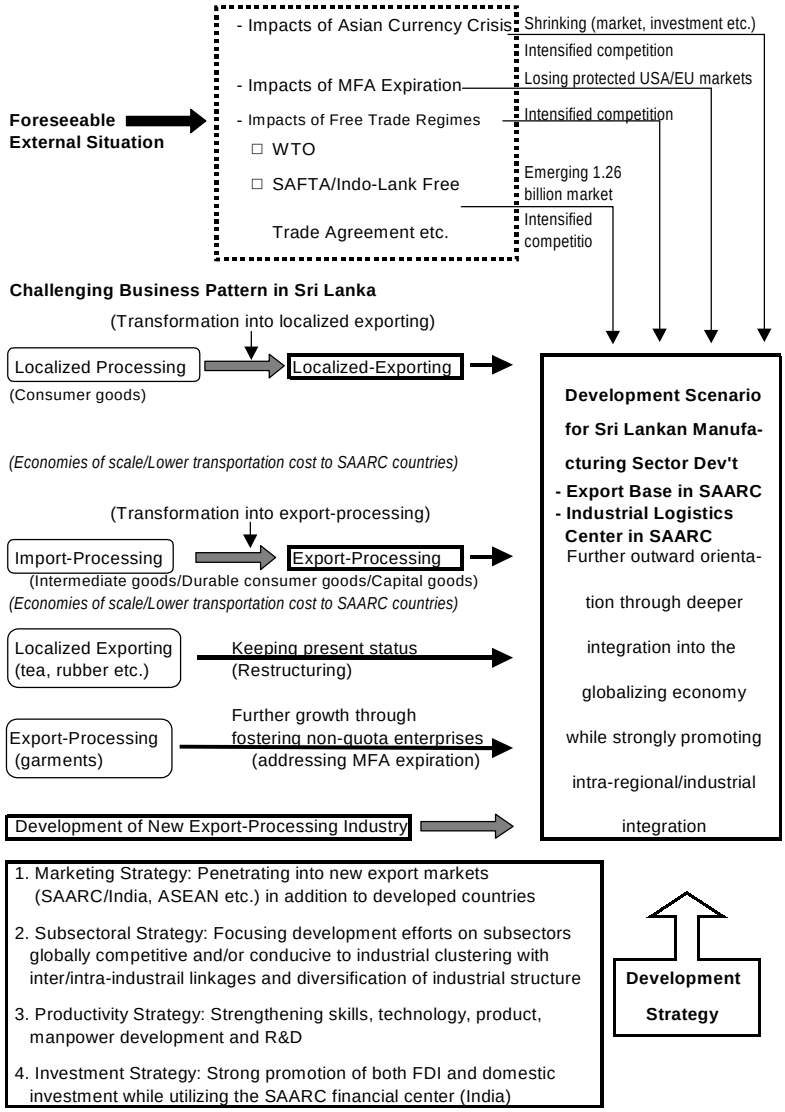
1) The manufacturing sector is developed to provide a solid foundation for sustainable development of Sri Lanka in the first decade of the 21st century.
2) The manufacturing sector is developed to contribute to generation and stabilization of employment opportunities conducive to higher income and better quality of life for Sri Lankan people, irrespective of gender, in both urban and rural areas.
3) The manufacturing sector is developed to contribute to enhancement of Sri Lankan productivity and competitiveness through diversification and specialization in the context of globalization and free trade regimes.
4) The manufacturing sector is developed to contribute to creation of an environment-friendly and sustainable society.
5) The manufacturing sector is developed to contribute to cultural and ethnic reconciliation through promotion of social integration by means of industrialization.

8 DEVELOPMENT SCENARIO (PROVISIONAL)

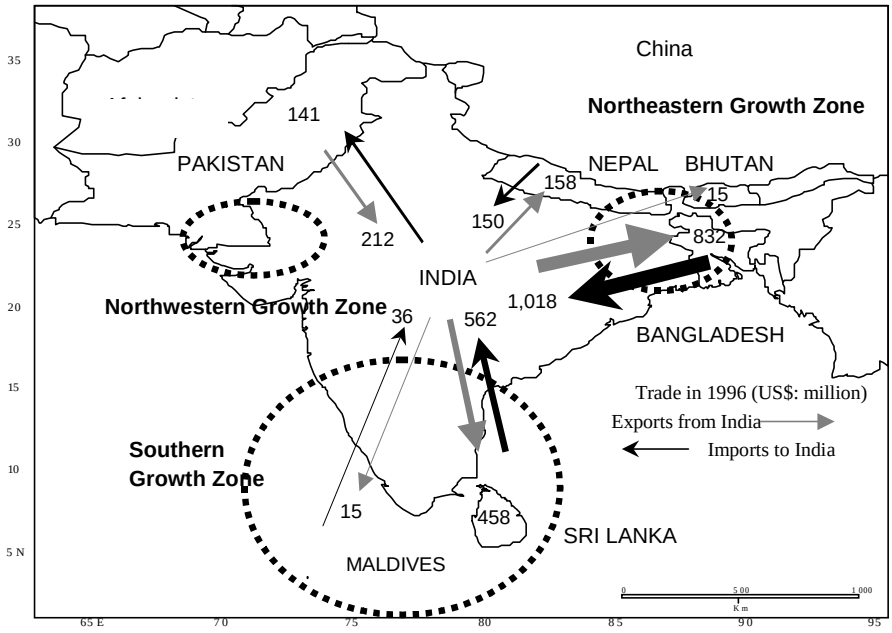
The Sri Lankan manufacturing sector should appropriately address the international perspective as discussed in Section 3, deploying relevant scenario towards its sustainable development. The manufacturing sector is expected to contribute to structuring a solid foundation in the first decade of the 21st century.

The figure below illustrates a development scenario proposed for the Sri Lankan manufacturing sector towards the year 2010. The focal point of this scenario is how Sri Lanka can survive in the global economy. In this context, a combined outward orientation and outsourcing is considered to be the way for its survival. Basically, a scenario is defined for Sri Lankan manufacturing sector development to further advance outward orientation through deeper integration into the global economy while promoting intra-regional/industrial integration, particularly in the SAARC region.

Development Scenario for Sri Lankan Manufacturing Sector towards the Year 2010



Growth Zones in SAARC

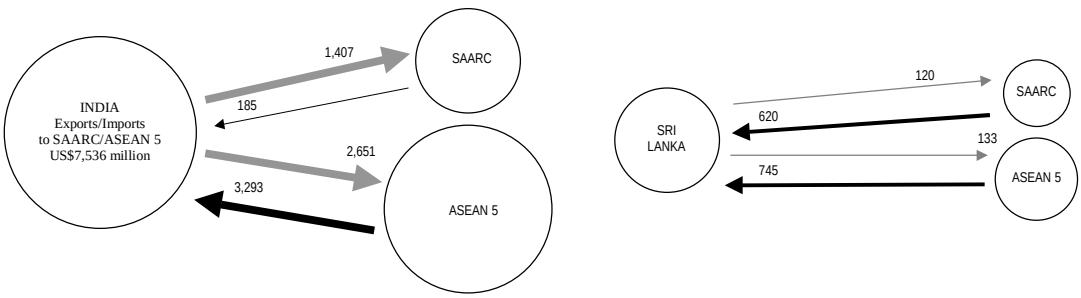


The proposed SAARC Investment Area (SIA) and the SAARC Growth Zones (SGZs) are fairly attractive. The SIA is intended to form a common base for global FDI and to facilitate technological, production and trade integration within the region. The SGZs are proposed to evolve a framework of cooperation for subregional development. The Southern Growth Zone is designed in the subregion comprising southern India, Maldives, and Sri Lanka. The SGZs may form a "Growth Triangle" in the SAARC region through complementary linkages: border trade, production, and resource-based development.

Horizontal integration of production and exports is also attractive and realistic based on an emerging common market (SAFTA). In this context, Sri Lanka can play a vital role in leading the growth of the Southern Growth Area.

Inter-regional integration will also be envisaged in the development scenario. In 1997, Sri Lankan exports to five ASEAN countries (US$133 million) were much smaller than Indian exports (US$2,651 million), as shown below. Promotion of trade and inter-regional integration with ASEAN will become a focus under the globalizing economy.

Export and Import between India/Sri Lanka and Five ASEAN Countries in 1997



9 ECONOMIC FRAMEWORK (PROVISIONAL)

An economic framework is discussed to preliminarily set up Sri Lankan manufacturing sector's gross value added (GVA) by subsector (ISIC 2-digit code) in 2004 and 2010 based on the macroeconomic framework. Projection of the manufacturing GVA is one way of expressing the development scenario. Therefore, it is not a forecast nor prediction but a guideline for future development and investments in the manufacturing sector.

By referring to the Six-Year Development Program (1999~2004) announced by the government in November 1998 and the World Bank Baseline Forecast for South Asia (November 1998), Sri Lankan GDP growth could be set up as follows:

During Stage 1 (1999~2004): 6.2% per annum

During Stage 2 (2005~2010) 7.2% per annum

The GDP growth during Stage 1 (6.2%) basically follows the Six-Year Development Program (6.5%), reflecting a recent slowdown of GDP growth rates (4.9% in 1997-1998 and estimated 4.5% in 1998-1999).

The estimated GDP growth rates correspond to a forecast and scenario of the World Bank, namely a slow growth in the medium term and a higher growth in the long term. Likewise, the Sri Lankan growth rates are predicted to be higher than that of the South Asian region as forecasted by the World Bank. This estimate appears to be reasonable, since openness of the Sri Lankan economy has been the greatest in the region and economic fundamentals are in line with the global trend.

Further, GVA by economic sector is estimated as summarized below

GVA by Economic Sector

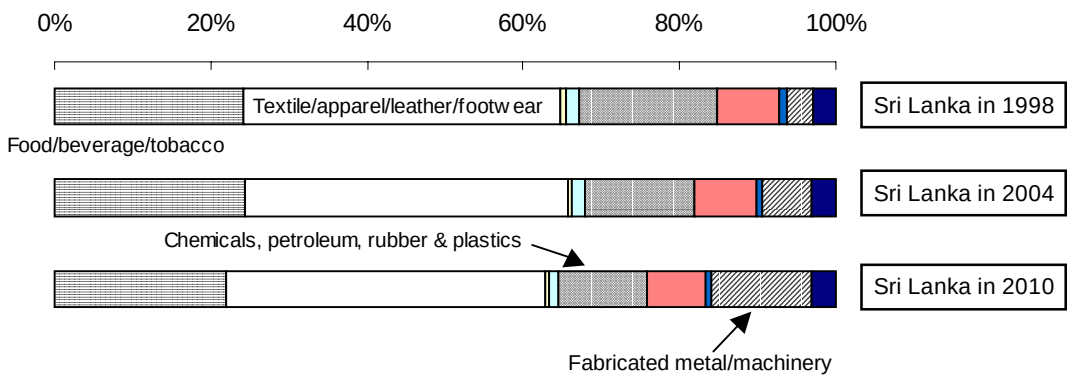
	Rs. Million in 1982 constant prices				Annual Average Growth Rate (AAGR)		
	1992	1998	2004	2010	93-98	99-04	05-10
GDP (GVA Total)	**140,990**	**194,758**	**278,968**	**423,743**	**5.5%**	**6.2%**	**7.2%**
Agriculture	30,090	34,353	39,954	44,424	2.2%	2.5%	1.8%
Manufacturing Industries	26,059	42,180	66,236	119,260	8.4%	7.8%	10.3%
Non-Manufacturing Industries	14,962	17,779	26,628	40,112	2.9%	7.0%	7.1%
Services	69,879	100,447	146,150	219,947	6.2%	6.4%	7.0%
	GDP Structure				Increase / Decrease		
	1992	1998	2004	2010	92-98	98-04	04-10
GDP (GVA Total)	**100.0%**	**100.0%**	**100.0%**	**100.0%**			
Agriculture	21.3%	17.6%	14.3%	10.5%	-3.7%	-3.3%	-3.8%
Manufacturing Industries	18.5%	21.7%	23.7%	28.1%	3.2%	2.1%	4.4%
Non-Manufacturing Industries	10.6%	9.1%	9.5%	9.5%	-1.5%	0.4%	-0.1%
Services	49.6%	51.6%	52.4%	51.9%	2.0%	0.8%	-0.5%

Source 1: Past data (Central Bank of Sri Lanka)
Source 2: Stage 1 figures (Six-Year Development Program, modified by IPS)
Source 3: Stage 2 figures (estimated by JICA Study Team/IPS)

Estimate of Manufacturing GVA by Subsector

	Stage 1 (1999-2004)	Stage 2 (2005-2010)
World Economy *(outlook by the World Bank)*	*- Still slow growth (about 3% per annum)*	*- Restoring growth (more than 3% per annum)*
South Asia Economy *(outlook by the World Bank)*	*5.4% per annum during 1998-2007* *- Higher growth than that of the world* *- not so affected by the global financial crisis*	
Sri Lankan Economy	- Grow higher than other South Asian countries (outlook by IPS)	
GDP (Gross Domestic Product)	Rs. 278,968 million	Rs. 423,743 million
GDP Growth (average)	6.2% per annum (based on Six-Year Development Program)	7.2% per annum - Saturated agriculture growth - Restoring manufacturing growth i) Fostering non-quota enterprises in the garment sector) ii) Further outward orientation/ export expansion iii) Increase in productivity - Service sector liked with manufacturing growth and tourism dev't
	(MFA Expiration in 2005) →	
Sri Lankan Manufacturing		
Manufacturing GVA-1	Rs. 66,236 million	Rs. 119,260 million
- already set up as the total manufacturing GVA	7.8% per annum - Slow down compared with 8.4% during 1993-1998	10.3% per annum - Restore and grow rapidly

Manufacturing GVA Structure in Sri Lanka



10 FRAMEWORK FOR INVESTMENT PROMOTION

Foreign direct investments (FDI) is crucial for the industrial growth of Sri Lanka due to its relatively small domestic savings. It is reported that GDP growth rate of 5% per annum in Sri Lanka will require investments corresponding to 25% of GDP. Accordingly, an annually averaged GDP growth of 6.7% (1999-2010) set in the foregoing Section 9 (6.2% during 1999-2004 and 7.2% during 2005-2010) will have to be supported by investments corresponding to 36% of GDP, of which two-thirds are expected to derive from FDI. Significance of FDI is not limited to investment *per se*, as technology transfer and expansion of market channels are concomitant to FDI.

For promotion of investment, a good business environment should be created and maintained. In this context, the following points should be taken into account:

(i) Maintenance of political stability and social security

(ii) Maintenance of open market economic system

(iii) Creation of financial supporting system

(iv) Improvement of power supply and other infrastructure

BOI is an autonomous statutory agency of investment promotion, and many other organizations are cooperating with BOI in Sri Lanka. For more effective and reliable promotion, some institutional arrangements would be preferable; e.g.:

(i) Integration and coordination between BOI and other concerned organizations for more effective investment promotion;

(ii) Expansion of promotional network to foreign countries (e.g.: BOI foreign offices in the target countries and SARRC);

(iii) Expansion of promotional network throughout the country for local investment promotion and rural development;

(iv) Application of more transparent and simple procedures for BOI incentives; and

(v) Expansion of business support services.

In line with the selection of target subsectors, countries to be targeted for promoting of investments will be selected preliminarily in the following manner:

- Food processing: (e.g.: India, EU, Japan for processed tea, and canned/preserved fruits and vegetables etc.)
- Garment industry: (e.g.: USA, EU, China, Hongkong, Korea, and Japan)
- Leather industry: (e.g.: India, EU including Germany, UK, and Australia)
- Plastic/Rubber: (e.g.: India, Singapore, Korea, and Japan)
- Non-electrical: (e.g.: India for tea processing machinery, Japan for mold and die)
- Electrical/electronic: (e.g.: India, Malaysia, USA, EU, Korea, and Japan)
- IT industry: (e.g.: India, USA, EU, and Japan)

Although India ranked ninth in FDI in Sri Lanka until 1995, India is one of the target countries for investment promotion in the context of SAARC. As identified by BOI, Sri Lanka is the "Gateway" to South Asia. In this regard, Sri Lankan economic systems and business environment, which are more liberalized than India, will practically offer a suitable location for foreign investors to penetrate into Indian market.

The Study Team interviewed 10 Japanese associations and organizations to verify attractiveness and constraints for investment in Sri Lanka. Some of them appreciate Sri Lankan advantages such as cheaper labor, manufacturing base for export, and transit base for export. However, all associations interviewed worry about ethnic conflict and social unrest as shown in the table below.

Attractiveness and Constraints Pointed out by Japanese Investors

Attractiveness	Nos. of Pointed-out	Constraints	Nos. of Pointed-out
・ Cheap labor cost	7	・ Political and social instability	10
・ Manufacturing base for export	3	・ Lack of information on Sri Lanka	8
・ Transit base for export	2	・ Shortage in infrastructure	7
・ Sourcing of raw materials	2	・ Insufficient supporting industries	6
・ Attractive tax incentives	1	・ Low technology level	4
・ Skillful with fingers	1	・ Shortage in engineers and skilled workers	3
・ Understanding Japanese language	1	・ Difficult access to large markets	2
・ Good eyesight of workers	1	・ Low competitiveness of products	1
・ Possibility of market expansion	1	・ Low quality of raw materials	1
		・ Far from Japan	1

Note: Interviewees are 10 associations or organizations.
Source: Interviewed associations and organization in Japan.

On the other hand, the Study Team interviewed six industrial associations in Sri Lanka to identify prospective subsectors in terms of technical partnership with foreign enterprises. Through the interview surveys, it is understood that local enterprises have higher possibility of technical partnership (mainly consigned production and JV) with foreign enterprises in the subsectors below. These prospects will be referred to in screening of the target manufacturing subsectors.

- Rubber products;
- Electric/electronics products;
- Ceramics (pottery, china/erathware);
- Agro-industry;
- Textile/garments; and
- Packaging including canning.

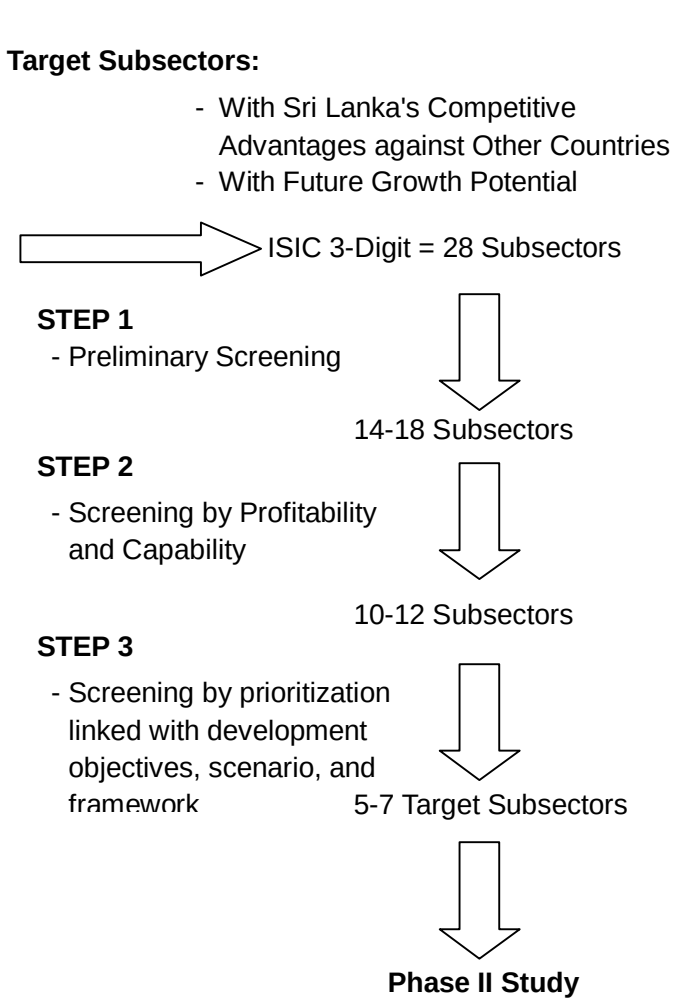
11 SCREENING OF TARGET SUBSECTORS

The Phase I study is to select the target subsectors in which Sri Lanka has and will have competitive advantages against other countries in the SAARC and ASEAN regions, and in which Sri Lanka has future potential for growth.

Screening is made in three steps and will finally sort out five (5) to seven (7) subsectors out of 28 subsectors classified by ISIC 3-digit code. Step 1 will sort out 14-18 subsectors based primarily on competitiveness. Step 2 will select 10-12 subsectors by the three criteria of profitability, capability and investment potential. Finally, Step 3 will identify five (5) to seven(7) target subsectors by prioritization in line with the development objectives, scenario and framework of Sri Lankan manufacturing sector that have been discussed before.

Basic Structure of Identifying Target Subsectors

311	Food Processing/Manufacturing
312	Other Food Processing
313	Beverage
314	Tobacco
321	Textiles
322	Wearing Apparel/Garments
323	Leather and Leather Products
324	Leather Footwear
331	Wood and Cork Products
332	Furniture and Fixture
341	Paper and Paper Products
342	Printing and Publishing
351	Industrial Chemicals
352	Other Chemical Products
353-4	Petroleum Refineries
355	Rubber Products
356	Plastic Products
361	Pottery, China/Earthware
362	Glass and Glass Products
369	Other Non-Metallic Mineral Products
371	Iron/Steel Basic Industries
372	Non-Ferrous Metal Basic Industries
381	Fabricated Metal Products
382	Non-electrical Machinery
383	Electrical Machinery and Equipment
384	Transport Equipment
385	Professional and Scientific Equipment
390	Other Manufacturing Industries

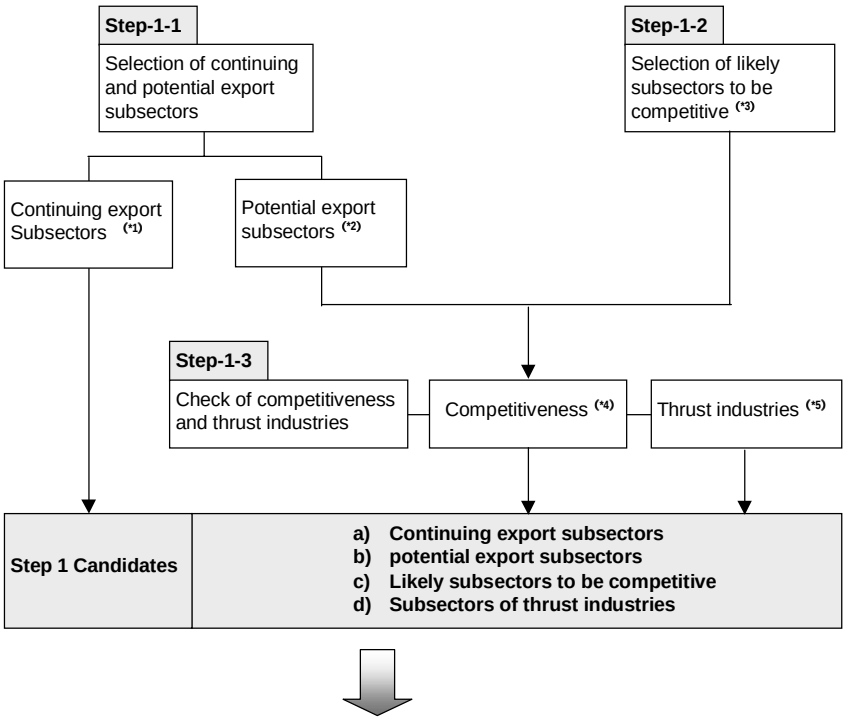


Source: JICA Study Team

12 STEP I SCREENING

Step 1 is the preliminary screening of 14-18 candidate subsectors out of all the 28 subsectors. The subsectors to be screened at Step 1 may be competitive internationally and is likely to grow in the future. The figure below illustrates screening procedures at Step 1.

Screening Procedure at Step 1



Step 2 Screening (14-18 subsectors)

(*1) : Analysis based on RCA
(*2) : Prospective exporting subsectors in the context of SAARC and ASEAN regions
(*3) : Analysis based on CI
(*4) : Analysis based on labor productivity
(*5) : Thrust industries prioritized by industrial policy

At Step 1-1-1, exporting subsectors with continuing strength (ECS) are selected on the basis of historical change of the revealed comparative advantage (RCA). Eight (8) subsectors are screened, comprising 16 export products whose RCAs are over plus 1.

At Step 1-1-2, prospective subsectors for intra-trade with SAARC (PITS) are selected on the basis of Indo-Lanka trade statistics. Seven (7) subsectors comprising eight exportable products are selected as prospective through this process.

At Step 1-1-3, prospective subsectors for export to ASEAN (PEA) are selected by analysing trade statistics of the five ASEAN countries. Two (2) subsectors are screened as prospective for export to ASEAN in promoting horizontal integration.

At Step 1-2, subsectors likely to be competitive (LC) are selected by calculating competitiveness index (CI). Two (2) subsectors are screened to be competitive, which are additional to subsectors screened through Step 1-1-1.

At Step 1-3, labor productivity of potential and likely competitive subsectors are compared between Sri Lanka and competing countries so as to check their real competitiveness. Through this Step, two subsectors are screened, and a subsector is excluded from the likely or potential subsectors.

Result of subsector screening at Steps 1-1 to 1-3 is summarized in the table below.

Subsector Screening at Step 1

	Step 1-1				Step 1-2	Step 1-3	Go to
	1	2	3	Selec-	4	5	Step 2
	ECS	PITS	PEA	ted	LC	ECLP/TI	Screening
311 Food Processing/Manufacturing							
312 Other Food Processing	☐			☐			→
313 Beverage							
314 Tobacco							
321 Textiles	☐	☐	☐	☐			→
322 Wearing Apparel/Garments	☐			☐			→
323 Leather and Leather Products		☐		☐			→
324 Leather Footwear	☐			☐			→
331 Wood and Cork Products							
332 Furniture and Fixture							
341 Paper and Paper Products							
342 Printing and Publishing							
351 Industrial Chemicals							
352 Other Chemical Products	☐	☐		☐			→
353-4 Petroleum Refineries					☐	excluded	
355 Rubber Products	☐			☐			→
356 Plastic Products		☐		☐			→
361 Pottery, China/Earthware	☐			☐			→
362 Glass and Glass Products						☐	→
369 Other Non-Metallic Mineral Products							
371 Iron/Steel Basic Industries							
372 Non-Ferrous Metal Basic Industries							
381 Fabricated Metal Products		☐		☐	☐		→
382 Non-electrical Machinery						☐	→
383 Electrical Machinery and Equipment		☐	☐	☐			→
384 Transport Equipment							
385 Professional and Scientific Equipment							
390 Other Manufacturing Industries	☐			☐			→

Source: JICA Study Ream

In conclusion, 14 subsectors (ISIC 3-digit) or 23 products (SITC 3-digit) have been selected at Step 1 screening, as they are put forward to Step 2 screening

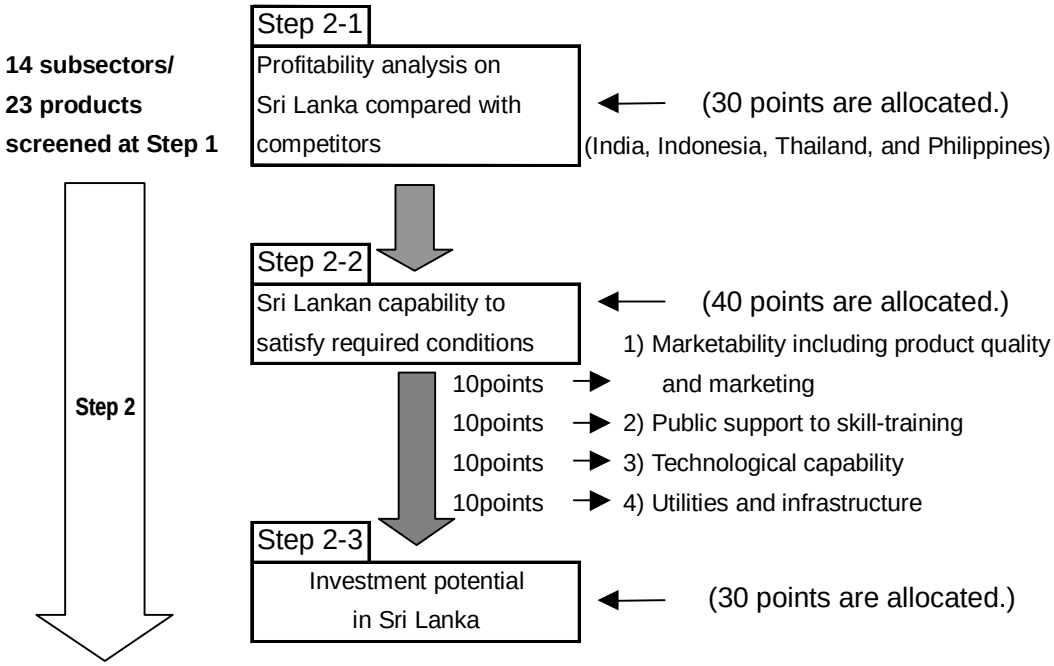
Subsector Screened at Step 1

ISIC		SITC
ISIC	Subsector	Products
311-2	Other Food Products	1) Processed tea
		2) canned fruits/vegetables
321	Textiles	3) Spinning
		4) Weaving
322	Wearing Apparel/Garments	5) garments
323	Leather Products	6) Leatehr tanning
		7) Leather goods
324	Footwear	8) footwear
352	Other Chemical Products	9) drugs and medicine
		10) fertilizer
355	Rubber Products	11) rubber tires/tubes
		12) other rubber products
356	Plastic Products	13) plastic products
361	Pottery, China etc.	14) pottery, china etc.
362	Glass and Glass Products	15) glass and glass products
381	Fabricated Products	16) fabricated products including packaging such as cans
382	Non-electrical Machinery	17) agricultural machinery
		18) mold and die
383	Electrical Machinery	19) computer, etc
		20) electrical appliance
		21) electrical/electronic parts
390	Other Manufacturing	22) Jewelry
		23) Toys

13 STEP 2 SCREENING

The subsectors selected at Step 1 are further screened to select 10-12 subsectors through three sub-steps in terms of profitability, capability, and investment potential as shown below.

Procedure of Step 2 Screening



Source: JICA Study Team

At Step 2-1, gross profit of 23 products (SITC 3-digit) in 14 subsectors (ISIC 3-digit) selected through Step 1 screening has been calculated on the basis of number of workers, value of output, gross value added (GVA), compensation (salaries, wages, and other expenses for workers), total cost (input), and electricity/fuel cost. The value of output and raw material cost are fixed in comparison between Sri Lankan products and products of competitors (India, Indonesia, Philippines, and Thailand). The compensation and energy (electricity) cost are calculated on the basis of indices in each country (with Sri Lanka at 1.00). The gross profit, therefore, represent difference in GVA, compensation, and energy cost. When gross profit in Sri Lanka is higher than the competitor by more than 40%, full score of 30 points are marked. When it is higher by 20~39%, 25 points are marked. Likewise, 20 points are given to 0~19% higher products, and 10 points to other products.

At Step 2-2, the Sri Lankan capability to satisfy conditions required for profitable operation has been evaluated. Out of 40 points allocated to this sub-step, 10 points are marked in accordance with marketability of products, judging from product quality and price competitiveness, as well as from marketing functions. 10 points are allocated in

evaluating functions for public support to skill-training. A high score is given when training center is available for specific products. 10 points are allocated for technological capability, judging from availability of R & D functions or institutions, as it is one of the essential factors for Sri Lanka to survive in the global economy. Finally, 10 points are marked in accordance with availability of utilities and infrastructure, particularly electricity and transport conditions.

As Step 2-3, investment potential is evaluated in terms of the world-wide investment trends, presence of leading company, economies of scale, necessary investment for production, and potential partners. 30 points (full) to 6 points (least) are marked for each product, judging from the investment environment and potential.

In conclusion, total score of each product is counted by adding scores evaluated at Steps 2-1, 2-2, and 2-3, and it is appraised into Rank 1 (more than 85 points), Rank 2 (75~84 points), Rank 3 (65~74 points), Rank 4 (55~64 points), and Rank 5 (less than 54 points). The subsectors evaluated to be Ranks 1, 2 and 3 (except for capital-intensive subsectors) are selected for further screening at Step 3. Consequently, 11 subsectors are screened at Step 2, as shown in the table below.

Result of Step 2 Screening

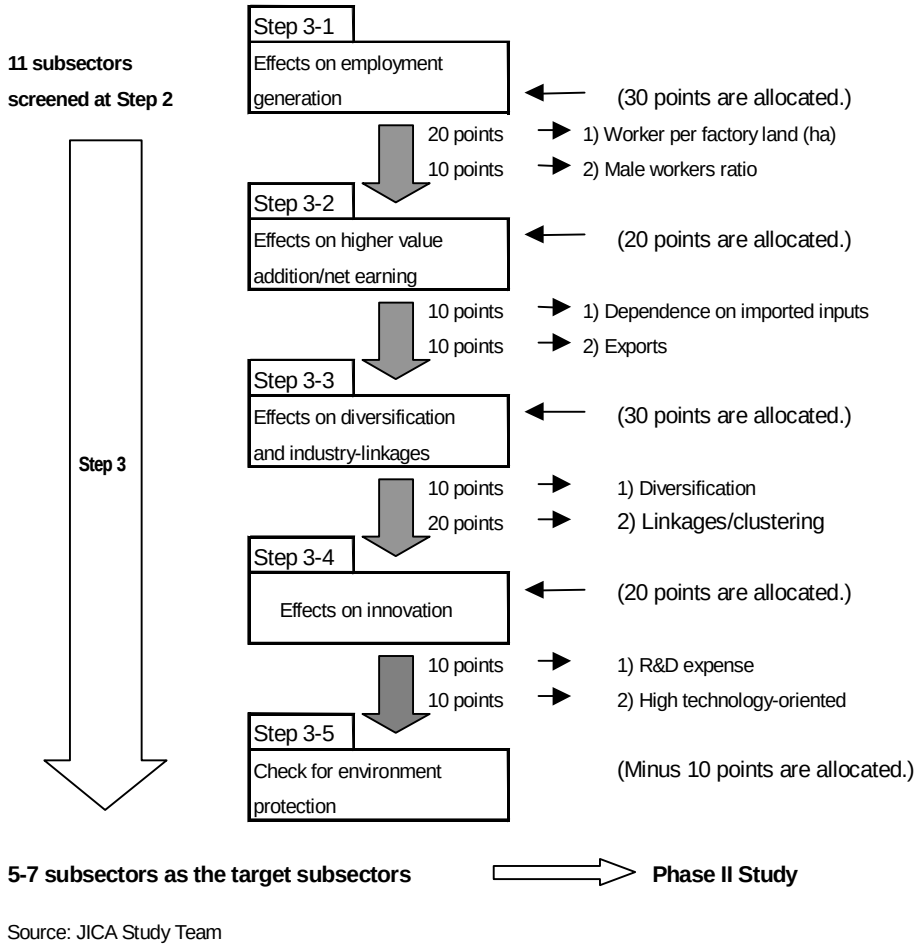
	1. Profitability	2. Capability	3. Investment Potential	Total Points	Rank-ing	Go to Step 3 Screening
312 Other Food Products/Processing						→
1. Processed Tea	20	30	24	74	**3**	
2. Canned Fruits/Vegetables	25	25	24	74	**3**	
321 Textiles						
3. Textile Spinning	20	10	6	36	**5**	
4. Textile Weaving	20	29	18	67	**3**	
322 Wearing Apparel/Garments						→
5. Garments	30	33	24	87	**1**	
323 Leather and Leather Products						→
6. Leather Tanning	20	20	18	58	**4**	
7. Leather Goods	25	29	24	78	**2**	
324 Leather Footwear						→
8. Footwear	30	30	24	84	**2**	
352 Other Chemical Products						
9. Drugs and Medicine	25	24	12	61	**4**	
10. Fertilizer	20	19	6	45	**5**	
355 Rubber Products						→
11. Rubber Tiers/Tubes	25	32	24	81	**2**	
12. Other Rubber Products	20	31	24	75	**2**	
356 Plastic Products						→
13. Plastic Products	20	31	18	69	**3**	
361 Pottery, China/Earthware						→
14. Pottery, China etc.	25	31	24	80	**2**	
362 Glass and Glass Products						
15. Glass and Glass Products	20	23	12	55	**4**	
381 Fabricated Metal Products						→
16. Fabricated Metal Products	25	22	18	65	**3**	
382 Non-Electrical Machinery						→
17. Agricultural Machinery etc.	30	19	18	67	**3**	
18. Mold and Die	30	17	18	65	**3**	
383 Electrical Machinery/Equipment						→
19. Computer etc.	30	19	30	79	**2**	
20. Electrical Appliance	10	21	12	43	**5**	
21. Electrical/Electronic Parts	20	25	30	75	**2**	
390 Other Manufacturing Industries						→
22. Jewelry	20	24	24	68	**3**	
23. Toys	30	32	24	86	**1**	

Source: JICA Study Team

14 STEP 3 SCREENING

Step 3 screening is the final step to select the target subsectors. Selection is made through five sub-steps as shown in the figure below.

Structure and Procedure of Step 3 Screening



Source: JICA Study Team

At Step 3-1, effects on employment generation are evaluated (30 points) on the basis of numbers of workers per factory land (employment absorption; 20 points) and a worker ratio by sex to improve an unbalanced unemployment rate (10 points).

At Step 3-2, effects on higher value addition (net earning) are evaluated on the basis of dependence on import (full 10 points for less dependent subsectors) and export performance (full 10 points for larger export subsector). In general, export industries utilizing local resources get higher points in Step 3-2 evaluation.

At Step 3-3, effects on diversification and industrial linkage/clustering are evaluated. A high score (full 10 points) is marked for subsectors that would contribute for diversification of the manufacturing structure. Likewise, a high score (full 20 points) is marked for supporting industries prospective for inter/intra-industrial linkages.

At Step 3-4, effects on innovation are evaluated on the basis of R&D expenses (full 10 points for high R&D expenditure subsectors) and high technology orientation (full 10 points for high-tech subsectors).

At Step 3-5, subsectors with environmental constraints are marked by minus score, though such constraints may be solved by appropriate pollution control measures. There subsectors include food processing, leather and leather products, and plastic products.

Through Step 3-1 to 3-5 scoring, 11 subsectors screened at Step 2 have been evaluated by total score, as summarizes below, and nine (9) subsectors become the target subsectors.

Target Subsectors Selected through Step 3 Screening

	Scoring by Development Effects					Check for Env. Protection	Final Total	Target Sub-sector Selected
	1. Employment generation	2. High Value Addition	3. Diversification /Linkages	4. Innovation	Total Points			
312 Other Foof Products/Processing	15	16	18	6	55	△ 2	53	□
322 Wearing Apparel/Garments	21	12	14	4	51		51	□
323 Leather and Leather Products	16	12	18	6	52	△ 2	50	□
324 Leather Footwear	21	10	18	6	55		55	□
355 Rubber Products	15	16	21	9	61		61	□
356 Plastic Products	11	6	30	10	57	△ 2	55	□
361 Pottery, China/Earthware	10	12	18	6	46		46	
381 Fabricated Metal Products	15	6	22	6	49		49	
382 Non-Electrical Machinery	14	6	26	13	59		59	□
383 Electrical Machinery/Equipment	21	8	30	20	79		79	□
390 Other Manufacturing Industries	19	12	17	6	54		54	□

Source: JICA Study Team

Further, selection has been processed to identify target subsectors to be further studied in the Phase II. The rubber product subsector has been studied by various organization, including JICA study in 1993. This subsector may possibly be studied together with the plastic product subsector. Likewise, most of footwear products utilize leather as raw materials, and the footwear subsector will better be grouped into the leather product subsector. On the other hand, other manufacturing industries, which are represented by jewelry, has a limitation in supply conditions of raw precious stone, and this subsector may be excluded from the list.

Consequently, the following six (6) subsectors have been identified as adequate manufacturing subsectors to be further studied in the Phase II.

Target Manufacturing Subsectors Recommended for Further Studies

ISIC	Target Subsector
312	Food Processing
322	Wearing apparel/garments
323/324	Leather products (including leather footwear)
355/356	Rubber/Plastic products
382	Non-electrical/general machinery
383	Electrical/electronic industry

15 INFORMATION TECHNOLOGY SUBSECTOR

In addition to screening of the target subsector from 28 manufacturing subsectors, the information technology (IT) subsector has been studied to evaluate whether the IT subsector should be further studied in the later phase of this master plan study.

The expansion of IT markets is rapid and worldwide, and the services are often export-oriented. Although available data are quite limited on the activities of IT industry in Sri Lanka, key indices of IT industry are summarized as shown in the table below.

Key Indices - IT Service in Sri Lanka

Universities*	7	IT related Companies	52
No. of Graduates (Degree)	300	Of which Export experience	13
No. of PC**	39,967	Training Organizations***	15
IT related Organizations	6	Software Sales Amount****	Rs.153 m.

Note: * Universities have subjects relating to the IT. ** Excluding University and individuals. Including Minis and WS *** Members of ACTOS **** Data prepared by SLCVA

Some IT enterprises were set up to avail of incentives provided by the government for the export-oriented IT industry. There are 13 companies which are exporting software to the Middle East and EU (especially UK).

Based on the interview survey in Sri Lanka and India (Bangalore), basic conditions for promotion of software industry have been evaluated as summarized in the table below. It should be noted that India began promoting IT industry 15 years ago.

Comparison of Basic Conditions to Strengthen IT Services

Items		Sri Lanka		India (Bangalore)	
Manpower	Quality	Potential Experience	H M	Potential Experience	H H
	Quantity	Small No. both Degree & Diploma	L	Large No. both Degree & Diploma	H
Market	Domestic	Small (P &F)	L	Small (P) Large (F)	M
	International	Small	L	Large	H
Infrastructure		Shortage	L	Not Sufficient	M
Incentives		BOI Scheme	H	SPTI, GoK Scheme	H
Industry Scale		Small	L	Enough	H
Hardware Industry		Small	L	Good	M
English Communication		Good	M	Excellent	H
Recognition		Fair	L	Excellent	H

Note: H high, M middle, L low; P present, F future; SPTI Software Technology Park India; GoK Government of Karnataka; Recognition indicates whether the client in the world recognizes it as the software venders base.
Source: JICA Study Team

Manpower is one of the most important locational factors for IT industry. Quality of manpower is quite different from manpower required by the manufacturing industry. The success in attracting international IT enterprises in India is attributable to abundant

manpower with science and technology education. Fore reference, in the Karnataka State where Bangalore is located, 6,000 IT engineers and more than 20,000 diploma level engineers are supplied every year. While, the supply capacity of IT engineers in Sri Lanka is limited; seven (7) universities provide 300 potential IT engineers per year. One of the problems is a shortage of educators or instructors for computer science.

According to the lessons learned from other countries such as India, Japan, and USA, the computer software industries have been initiated by and promoted along with electronics or computer hardware industries. Though Bangalore is highlighted as a software development town, agglomeration of hardware makers in this town is quite notable. The co-existence of software and hardware is advantageous for development of IT industry.

The IT services industry is a "resource-oriented" industry and manpower is the only resource (for reference, the manpower cost accounts for about 25% of total turnover in IT service enterprises in Japan). The resources for IT services industry, or manpower with IT knowledge, are "producible" and "reproducible" through education and training. The manpower resources "with IT knowledge" depends entirely on education and training. Therefore, the potential for IT services development in Sri Lanka depends on the supply capacity of educational institutions. IT services development is possible without industrial or related agglomeration. It is concluded, in this context, that Sri Lanka has potentialities for IT service development.

For the IT service industry, the telecommunications network is crucial. In the case of Bangalore, in order to attract the global software industries, the Software Technology Parks, India (STPI) is cooperating with the Indian Telecommunications Industry (ITI) to provide special services of high speed and low cost international telecommunications. If the Government of Sri Lanka adopts a policy to develop export-oriented IT service industry, the international telecommunications access at a competitive price will become one of the most crucial issues. Designation of a restricted area for deregulated telecommunications services (e.g. Special Information Service Area or Software Park) will be one of strategies to promote IT industries in Sri Lanka.

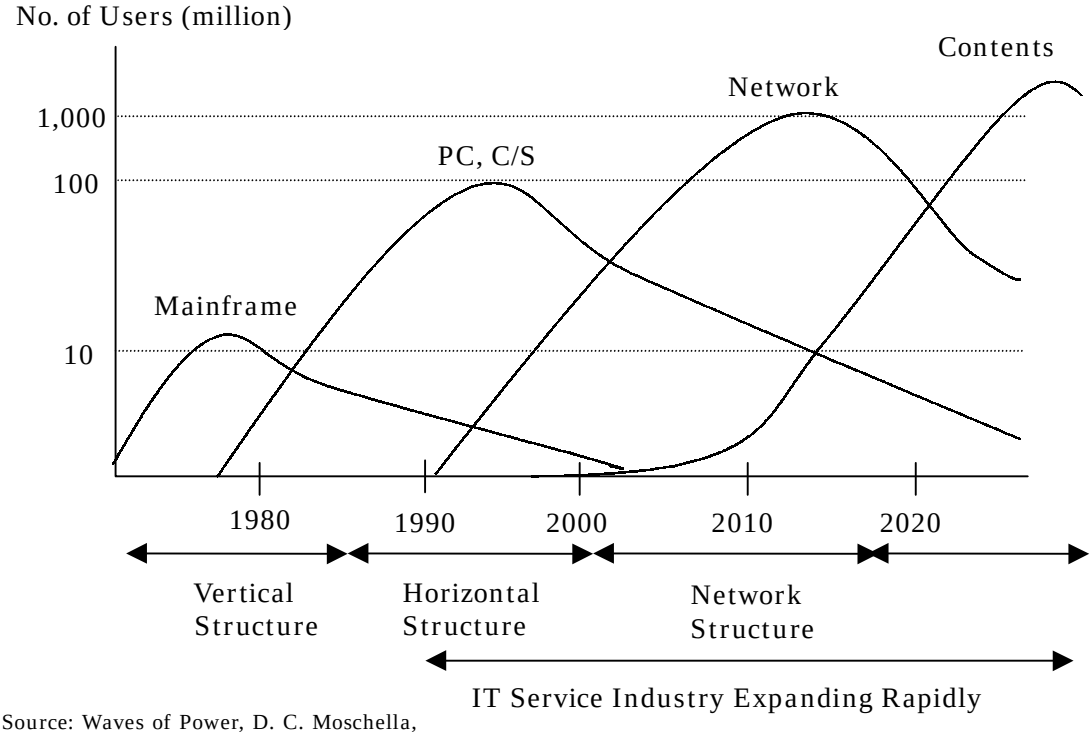
The market of IT services in the world has been rapidly expanding to seek a new frontier. Thanks to the development of telecommunications technology, the distance between market place and producers becomes negligible. Foreign markets, therefore, are considered to be the same as domestic markets for the IT services companies. There are 13 enterprises in Sri Lanka having experiences in exporting software to UK and the Middle East. Since there are bigger markets in North America, the Far East and EU, market channels to access such markets should be found strategically.

One of the strategies to promote the export-oriented IT services industry is to attract foreign software companies, as it has been adopted by the Indian Government. In the case of Singaporean software venders, more than 60% of these venders have development bases located out of the country, and these enterprises will be potential investors to Sri Lanka. Indian software companies are also potential investors and some of them have already contacted with Sri Lanka software companies. Japanese companies are looking for foreign venders.

Establishment of market channels in USA, Japan and EU is another important strategy. Some Sri Lankan companies of IT services, which have experience in software export, are facing with difficulties in a lack of market information. In order to access to the global market, each market should be carefully analysed. In USA and Japan, for example, a shortage of multimedia engineers is getting more and more serious, because multimedia service markets in these countries are growing rapidly. As far as such circumstances continue, Sri Lankan software venders will be able to respond to such market demand. In order to open market channels in USA, Japan and EU, the matching services by the public sector should be encouraged.

In formulating strategies for IT service industry, it is advisable to take it into account that the world trend of the growth of IT industry is now network-oriented, as illustrated in the figure below.

Trend of IT Industry



Source: Waves of Power, D. C. Moschella,

In view of the potentialities for IT service industry as discussed above, it is suggested that the IT subsector be further studied in the later phase of this master plan and that measures be worked out for promotion of the IT and knowledge industry in Sri Lanka.

16 RECOMMENDATIONS

As a result of this Phase I study, various constraints and prospects have been identified for industrial development in Sri Lanka, at the sector and subsector levels. It is now recommended that the following points be taken into consideration in proceeding to the Phase II of the master plan study on industrialization and investment promotion:

1) Through screening of the target subsectors, six (6) subsectors have been selected as the target manufacturing subsectors; i.e., (i) food processing (ISIC312), (ii) wearing apparel/garments (322), (iii) leather products including leather footwear (323/324), (iv) rubber/plastic products (355/356), (v) non-electrical/general machinery (382), and (vi) electrical/electronic industry (383). Total GVA of the selected six subsectors represents 52% of the country's GVA, and a total number of employment in these subsectors accounts for 68% of the Sri Lankan workers. In the event that the strategies for development of these six selected subsectors are worked out, they would serve well as a basis for formulation of the sector strategies to be elaborated for the master plan of the industrial sector in Sri Lanka.

2) Of the selected six subsectors, UNIDO is interested in cooperating in the study on the wearing apparel subsector (ISIC 322) and the leather subsector (323). It is also understood that GTZ is cooperating in the study on the footwear subsector (324). Further, USAID has been cooperating in the promotion of agro-based industries (311/312). It is desirable that the results of cooperation by UNIDO, GTZ an USAID be incorporated into the master plan study. When cooperation of these international agencies is integrated, the JICA study on the manufacturing subsectors should focus on the three (3) industries; i.e., the rubber/plastic industry (355/356), the general machinery industry (382), and the electrical/electronic industry (383).

3) The information technology (IT) industry is still at the initial stage of development in Sri Lanka. However, IT service industry has a potential for development as far as human resources are developed. Besides, IT service is regarded as a basic requirement for social and economic development of the country. It is therefore recommended that the IT industry be also studied further to work out strategies specific to the Sri Lankan IT service industry.

4) Consequently, it is recommended that the four (4) industries be focused in the JICA Phase II study for formulation of a master plan of industrialization and investment promotion in Sri Lanka. Four industries are:

355/356	Rubber/Plastic industry
382	General machinery industry
383	Electrical/Electronic industry
-	Information Technology industry

The Phase II study on the four industries is expected to work out the subsectoral development strategies.

5) In the Phase II study to work out strategies of the four selected industries, special attention should be paid to the circumstances which are surrounding each subsector, including the trends of free trade regimes (particularly the Indo-Lanka FTA) and the inter/intra-industrial linkages. The subsectoral strategies should focus on the marketing strategies, productively strategies, and investment strategies. The provisional framework for the subsectoral GVA, studied under the Phase I, should be reviewed and refined through the Phase II study based on the subsectoral strategies.

6) In addition to the formulation of strategies by industries, the sector strategies should be worked out through the Phase II study. The sector strategies should address institutional strengthening, human resources development, and technological development, as well as financial support for accelerated industrial sector development. Investment promotion should also be addressed at the sector and subsector level.

7) The sector strategies should be incorporated into the refinement of the framework and scenarios for the industrial sector which have been developed provisionally during the Phase I study. Through the Phase II study, a scenario for industrial sector development up to the year 2010 should be recommended in a more refined form.

8) The master plan for industrization in Sri Lanka will be elaborated on the basis of the refined framework and scenario, the sector strategies, and the subsector strategies of the selected four subsectors, as well as subsectors studied by other international agencies. The master plan will propose programs to be implemented stage-wise; the first stage (2000~2004) and the second stage (2005~2010). It is suggested that the JICA Phase II study be programmed in view of the recommendations summarized herein as a result of the Phase I study.