Sri Lanka

Dispersed Industrial Pattern for Reducing Poverty and Regional Inequality in Sri Lanka

Alia Ahmad

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This report has been prepared by Alia Ahmad.

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Table of Contents

Executive summary

Sri Lanka enjoys the reputation of having high social indicators in spite of her low level of income. However, the regional patterns reveal wide disparities in income per capita and poverty levels. The differences are associated with geographical concentration of economic activities particularly manufacturing industries. This paper argues that a decentralised pattern of industrialisation in Sri Lanka is necessary for meeting social, political and economic goals. The two main objectives of this study are to explain the factors that determine the location of industries, and to suggest policies for the promotion of industrial clusters in a competitive global environment.

After a brief description of the regional pattern of poverty and the location of industrial enterprises, this paper reviews the current literature on industrial clusters. It is suggested that there are centripetal forces like external economies of scale, market size and labour market pooling behind industrial concentration. While the cumulative processes develop mainly due to market forces, policy decisions in a historical perspective play an important role. A low-productive agricultural sector and uneven development of transport/communications may lead to a core/periphery structure of industries.

In Sri Lanka, most of the industries are concentrated in the Western region near Colombo and Gampaha. Small industrial towns are few, and cottage industries cater to the needs of the rural poor. This pattern has emerged due to improved institutional, financial and physical infrastructure in the Western region with historical factors playing a role. The weak linkages between the main industrial region with the rest of the country, and the persistence of segmented markets are caused by poor networks of roads and railways. Government policies concerning investment in large, medium, small and cottage industries and in agriculture have also contributed to regional imbalance.

In recent years, considerable attention has been paid to private sector development that includes small and medium enterprises as well. There is, however, a need for a systematic approach. Experiences of other countries suggest that policies should aim at agricultural development to strengthen farm/non-farm linkages in a given region. Moreover, it is the small enterprises rather than cottage/micro enterprises that are considered to have the potential for growth and employment creation. While small industries will initially benefit from local domestic demand, they can gradually expand their market to distant places. The ability of small enterprises to venture into the international market depends on geographical clustering and networking. Clustering aims at collective efficiency defined as competitive advantage derived from external economies of scale and joint action.

The policy implications of the study are that state intervention should aim at the removal of barriers to competition, biases against small enterprises, and deal with the market failures that constrain agricultural development and the growth of industrial clusters/networks. To implement the strategy, it is imperative to collect benchmark information on industrial clusters in different regions that may help identify specific areas of intervention.

Dispersed Industrial Pattern for Reducing Poverty and Regional Inequality in Sri Lanka

Sri Lanka has achieved moderate rates of growth in GDP per capita, and her performance measured in social indicators is also noteworthy. However, the benefits of development are not shared uniformly across regions and districts. One of the reasons is the concentration of industries in the Western region. There are two main objectives of this paper. The first is to analyse the factors that work behind industrial concentration, and the second is to explore the policy implications for a dispersed industrial development in a global environment. The paper is organised as follows:

Section one contains a brief description of the extent of regional inequality and poverty on the basis of available studies. Section 2 presents official statistics on the industrial structure of Sri Lanka. Section 3 analyses the factors that determine the concentration of industries. A conceptual framework is derived on the basis of current theories and models. In Section 4, the pattern of industrial concentration in Sri Lanka is explained in terms of the framework developed in Section 3. Section 5 deals with policy implications for dispersed industrialisation in a global environment. The appendix consists of additional tables and a detailed description of the field survey.

1. Regional Dimension of Poverty and Inequality in Sri Lanka

There are two sources from which the regional pattern of income per capita, education, health and poverty level can be derived. The 1998 UNDP Report on Sri Lanka provides data for 1990 and 1994. The second source is the analyses of Household Income and Expenditures Survey 1995/96 (HIES), carried out by the Department of Census and Statistics, Ministry of Finance and Planning of Sri Lanka, and by Aturupane (World Bank 1998).

According to the UNDP Report, there are substantial differences in per capita incomes among the districts and provinces in Sri Lanka. Incomes in the four districts, Gampaha, Colombo, Nuwara-Eliya and Kalutara are more than double the incomes in Kandy, Matara, Monaragala, Kegalle, Galle and Puttalam (Table 1).

Given the low per capita income, all the districts have done reasonably well in terms of the opportunity to live a long and healthy life measured in life expectancy at birth. Regional differences in life expectancy between districts are comparatively small. Interestingly, the districts with higher per capita incomes are not ones that enjoy long life, and vice versa.

Another important dimension of human development is the access to knowledge and information. The standard measures are literacy and education enrolment. Among the districts, Gampaha has the highest literacy rate, 95 per cent; followed by Colombo, 94 per cent; and Puttalam and Kalutara, 93 per cent and 92 per cent respectively. Combined school primary, secondary and tertiary enrolment rates yield unexpected results. Enrolment is highest in Monaragala district, 48 per cent, one of the districts with the lowest income. Colombo has the lowest combined enrolment, 39 per cent followed by Gampaha with 40 per cent.

Comparable statistical data on the North-eastern provinces are not available due to the long-drawn ethnic conflicts. The UNDP report, however, presents some data on provincial GDP trends for this region. It indicates that compared to the overall economy that has grown during 1990-95 at the average annual rate of 5.5 per cent, the economy of this region has shrunk by 6.2 per cent (UNDP, 1998, pp.56-63). The North-western region has been more adversely affected than the North-eastern part. The war has affected not only the infrastructure and economic incentives, but has also caused heavy loss of human capital as well as its further investment. While it is difficult to compare the human development index (HDI) of the region with the overall HDI, it can be safely assumed that the low rate of growth of the region and the conflict in general must have affected negatively the economic and social indicators that constitute HDI.

The UNDP Report has also looked at human poverty and the differences among the districts. The Human Poverty Index (HPI) has been specifically defined for Sri Lanka. The poverty index has the following components:

- Survival deprivation- measured as the proportion of population dying before age 40.
- Deprivation in knowledge – rate of illiteracy, and the combined primary (grades 1-5) and junior secondary (grades 6-9) education non-enrolment rate.
- Deprivation in access to safe drinking water
- Deprivation in access to sanitation measured in toilet facilities
- Deprivation in access to adequate basic health care – measured in immunisation and births in institutions.
- Deprivation in access to electric power

According to the UNDP estimates, 18 per cent of the population in Sri Lanka experience deprivations in different dimensions of human poverty. There are wide differences in HPI at the district level. The ranking of the districts (Table 2) indicates that Gampaha and Colombo have the lowest level of human poverty while Nuwara-Eliya has the highest.

Table 1

Regional Dimension of Development Indicators

Districts	GDP per capita	Life expectancy	Literacy
Colombo	14545	72	94
Gampaha	14880	72	95
Kalutara	13480	81	92
Kandy	6664	71	90
Matale	7592	73	87
Nuwara Eliya	13987	70	78
Galle	7125	80	91
Matara	6780	80	88
Hambantota	7119	82	87
Kurunegala	8905	81	91

Puttalam	7314	74	93
Anuradhapura	10832	74	90
Polonnaruwa	9047	77	91
Badulla	7742	71	82
Monaragala	6659	80	84
Ratnapura	7315	81	87
Kegalle	7062	82	91

Source: Human Development Report Sri Lanka 1998.

The UNDP Report does not provide any data on the changes in the level of poverty. For this we turn to the data from the Department of Census and Statistics. According to the Household Income and Expenditure Surveys (HIES), average household income has increased by 7.5 times from 1980/81 to 1995/96 in nominal terms. However, at constant 1980/81 prices, it has increased only by 1.5 times in the same period. The highest income is observed in the urban sector and the lowest in the estate sector.

Table 2

Regional Pattern of Human Poverty, 1994

Province	Human poverty index	*Rank*
Western	13.980	1
Central	23.081	4
Southern	20.375	2
North Western	21.446	3
North Central	24.098	6
Uva	27.463	7
Sabaragamuwa	23.338	5
District		
Colombo	13.016	2

Gampaha	12.404	1
Kalutara	16.208	3
Kandy	17.391	4
Matale	21.581	9
Nuwara Eliya	30.545	17
Galle	18.611	5
Matara	19.324	7
Hambantota	23.333	11
Kurunegala	22.215	10
Puttalam	19.048	6
Anuradhapura	21.313	8
Polonnaruwa	27.685	15
Badulla	27.052	14
Moneragala	28.728	16
Ratnapura	25.300	13
Kegalle	24.076	12
Sri Lanka	**17.756**	

Source: UNDP, 1998, p. 30

Table 3

Mean Household per capita Income per Month by Sector 1995/96

Rs	
All island	6579
Urban	9921
Rural	6157

Estate	3871

Source: Summary Findings, Household Income and Expenditure Survey 1995/96

According to the Department of Census and Statistics, head-count poverty changed only marginally - from 30.4 per cent in 1990/91 to 26.7 in 1995/96. Poverty is highest in rural areas (28.7) followed by the estate sector (26.1), and

Table 4

Headcount Measures of Poverty by Regions

Percentage of poor households in each area

Area	1995/96	1990/91
Sri Lanka	26.7	30.4
Urban	13.4	18.2
Rural	28.7	34.7
Estate	26.1	20.5
Western	12.2	20.1
Central	35.4	33.5
Southern	32.5	32.6
North-Western	30.4	33.6
North-Central	26.1	29.0
Uva	33.9	38.1
Sabaragamuwa	40.0	36.7
Colombo	9.0	16.4
Gampaha	11.4	17.9
Kalutara	20.3	31.2
Kandy	36.3	37.4
Matale	45.7	36.6
Nuwara Eliya	28.7	22.6
Galle	32.1	30.7
Matara	34.8	32.2

Hambantota	30.3	36.8
Kurunegala	29.5	35.3
Puttalam	32.5	29.2
Anurdhapura	25.6	41.1
Polonnaruwa	27.3	34.1
Badulla	27.1	38.8
Monaragala	47.7	36.5
Ratnapura	44.1	31.6
Kegalle	35.5	42.2

Source: *Poverty Indicators* Household Income and Expenditure Survey 1995/96, Department of Census and Statistics

lowest in urban areas (13.4). Interestingly, the improvement occurred only in a few areas of the Western and Central provinces, while most of the districts experienced an increase in the number of poor households.

There are substantial regional differences. The three districts - Colombo, Gampaha and Kalutara have much lower poverty of around 9-20 per cent compared to other districts where poverty ranges between 26 and 48 per cent.

Changes in the poverty situation are also reflected in the adult equivalent calorie consumption. This was 2011 among poor households in 1995/96 compared to 1970 in 1990/91. For all households it was 2591 in 1995/96 and 2577 in 1990/91. There has been very little improvement.

The regional differences in calorie consumption among the poor households reveal that while the proportion of poor households in Colombo, Gampaha and Kalutara is much lower than in other areas, the average consumption of calories among the poor falls far behind the consumption in other areas, for example in Nuwara Eliya (Table 5). Calorie consumption is lowest in urban areas (1803), highest in estate sector (2454) and in rural areas it is 2012. The main reason behind the discrepancy in these two poverty measures may be that rural households consume more home-grown food. This not only raises the proportion of food/non-

food items but also affects their calorie level. From the welfare point of view, calorie consumption is a better measure, and according to this measure, the urban poor are worse-off than the rural poor.

These results, derived by the Department of Census and Statistics, are different from Aturupane´s estimates based also on the HIIES data for the first quarter of the year. Aturupane provides several poverty estimates - incidence of poverty, depth of poverty, severity of poverty and inequality estimates among the poor. All these estimates show that western and central regions have much lower poverty than other regions. Colombo and Gampaha districts fare better also in terms of energy consumption.[1]

Table 5

Average per adult equivalent energy consumption in each area for poor and all households (kilocalories)

Area	For poor households 1995/96	For poor households 1990/91	For all households 1995/96	For all households 1990/91
Sri Lanka	2011	1970	2591	2577
Urban	1803	1702	2402	2425
Rural	2012	2002	2601	2576
Estate	2454	2203	3164	3067
Western	1833	1537	2524	2499
Central	2075	1653	2620	2647
Southern	1950	1618	2490	2475
North-Western	2041	1805	2587	2670
North-Central	2194	1798	2908	2660
Uva	2150	1704	2836	2654
Sabaragamuwa	2004	1663	2552	2621

[1] The lack of description of the methods used makes it difficult to understand the reasons for discrepancy.

Colombo	1821	1434	2491	2448
Gampaha	1805	1622	2570	2549
Kalutara	1874	1573	2503	2523
Kandy	1936	1584	2413	3480
Matale	1941	1807	2482	2717
Nuwara Eliya	2450	1714	3027	2981
Galle	1881	1555	2438	2456
Matara	2004	1653	2477	2473
Hambantota	1994	1670	2632	2511
Kurunegala	2041	1838	2651	2718
Puttalam	2042	1705	2440	2553
Anuradhapura	2190	1821	2885	2589
Polonnaruwa	2201	1733	2955	2822
Badulla	2221	1687	3008	2628
Monaragala	2082	1738	2530	2708
Ratnapura	2022	1649	2574	2682
Kegalle	1984	1677	2527	2546

Source: Same as Table 4.

Summing-up:

Available studies confirm that there has been very little improvement of the poverty situation in Sri Lanka, and there are substantial regional differences, especially in terms of income. Disparities in the social indicators such as education and health are much less acute. Since education in Sri Lanka (at least the number of years of schooling, not the quality of education) is quite uniformly distributed, regional differences in income cannot be attributed to differential educational achievement. This is contrary to the expectation of the theory of growth where human capital plays an important role. Aturupane´s analysis indicates that education at a lower level does not raise the level of income significantly, whereas at a higher level it has considerable positive effects. Most poor people with low education in Sri Lanka are engaged in small-holder agriculture, construction and plantation. The UNDP report

suggests that regional differences in per capita income are mainly due to differences in economic opportunities, and the latter is closely related to infrastructural facilities like electricity, telephones, water and roads. In the following section the regional distribution of non-farm activities, especially manufacturing industries that have a strong impact on income levels, is discussed.

2. The Industrial Structure of Sri Lanka

2.1 official statistics

Import substitution policies and the establishment of large-scale industries with the help of the Soviet Union and other socialist countries of East Europe were the dominant features of industrialisation in Sri Lanka. Many industries were in the state sector. With the change in policies towards more private sector development, the production structure has become more diversified. Many small and medium industries have emerged. The report, "Implementation Strategy for rural Industrial development of Sri Lanka" prepared by the Ministry of Vocational Training and Rural Industries, April 1999, finds that rural micro, small and medium enterprises account for 90% of the private industrial units, 70% of employment and 55% of the value-added to GDP. [2]

In terms of product items and the location of enterprises, the structure of manufacturing industries is still narrow. According to the Annual Survey of Industries 1996, the distribution of industries in terms of persons engaged is as follows:

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[2] Cited in UNIDO Programme document, Integrated Industrial Development Support programme, June 1999, p. 98. Disaggregated statistics are available on enterprises by size-class (in Annual Survey of Industries) but not for different regions.

Table 6

Distribution of Industries by Persons Engaged (all establishments)

	%
Textile, wearing apparel & leather	46.1
Food, beverages and tobacco	17.3
food alone 12%	
Wood and cork	1.6
Paper products, printing and publishing	2.8
Chemicals, petroleum, plastic rubber	11.1
rubber 6%	
non-metallic mineral products	4.9
Metal products including electrical	
machinery and transport items	8.9
Other manufacturing	4.0
Water works and supply	2.4
Total	100.0

Source: Annual Survey of Industries 1997, Preliminary Report, p. 7

Almost two/thirds of the manufacturing labour force are engaged in two branches - textiles and food, with textiles accounting for almost half. The same pattern prevails for the sample restricted to establishments with 25 or more workers. But a different picture emerges with respect to the establishments with fewer than 25 workers.

Table 7

Distribution of Industries by Persons Engaged (establishments with fewer than 25 workers and more than 25 workers)

	%	%
	Fewer than 25	More than 25
Textile, wearing leather	29.5	45.0
Food, beverages and tobacco	23.0	15.3
Other chemicals	3.5	1.7

Rubber	5.0	6.5
Fabricated metal products	2.0	0.8
Wood and cork	8.8	0.79
Other non-metallic products	10.7	2.0
Other manufacturing	0.4	4.5

Source: Annual Survey of Industries 1997, Preliminary Report, pp. 12-13

As revealed in Table 7, the importance of food increases to 23 per cent. Textile, wearing and leather group, although still the largest, loses its importance to 30 per cent, and, within the group, textile instead of wearing apparel becomes the dominant item. Smaller establishments produce more of wood, cork, non-metallic products and fabricated metal-products, presumably serving the needs of the rural population.

In terms of value-added, the lowest are found in the branches where small establishments are predominant, such as textiles, wood, cork and fabricated metal products. Among the small establishments with less than 25 workers, footwear, food manufacturing, rubber and non-ferous metal have high value added products.

Table 8
Geographical Distribution of Industrial Establishments- with 25 or more workers
(Number of establishments (1), Persons engaged (2), Value of Production (3) and Value of Inputs (4))

Provinces	(1)	(2)	(3)	(4)
Western	49.2	73.6	77.1	78.7
Central	15.0	5.1	4.0	4.3
Southern	10.0	4.8	2.6	2.6
North-west	12.5	4.9	4.6	4.0
North-central	2.0	-	-	-
UVA	4.5	3.2	3.4	1.5
Sabaragamuwa	7.0	6.8	4.6	4.2

Others	-	-	3.1	4.0

Note and source: Totals may not be 100.0 due to rounding. Calculated from the data in Annual Survey of Industries 1996- Interim Report, Department of Census and Statistics, Ministry of Finance and Planning, Sri Lanka, p. 8.

In Table 8 data on the enterprises with 25 or more workers are presented. A high concentration especially in terms of inputs used and the value of production is observed in the Western province near Colombo and Gampaha districts. Since small industries are more common in rural areas and in smaller towns, the concentration of enterprises in terms of the number of establishments is lower. Information regarding the establishments with fewer than 25 workers is not available. The Department of Census and Statistics (1995) provides data on non-agricultural activities in the rural sector covering all districts except the ones in Northern and Eastern provinces.

The geographical distribution of non-agricultural activities as presented in Table 9 indicates that the two districts, Kurunagela and Gampaha, have the highest share in industry and service/trade establishments. We have seen that the Western province where Gampaha is located, has the highest number of medium & large industrial establishments in the country as well as the highest GDP per capita index according to the National Human Development Report, Sri Lanka (1998, p. 8). In the case of rural areas where all establishments are included, Gampaha comes second to Kurunagela which belongs to North-western province.

Table 9
Percentage Distribution of Non-Agricultural Activities in the Rural Areas

	Housing units and Other buildings	Industrial establishments	Trade and services establishments
Districts			
Colombo	4.9	4.3	5.2
Gampaha	12.0	13.9	12.0
Kalutara	6.5	6.1	6.0
Kandy	8.5	9.1	8.3
Matale	3.4	3.8	4.9
Nuwara Eliya	4.8	1.9	4.0
Galle	5.1	3.8	4.9
Matara	5.0	6.5	5.5
Hambantota	4.2	5.0	4.5
Kurunegala	11.5	16.0	13.0
Puttalam	4.3	3.9	4.1
Anuradhapura	5.5	3.5	5.4

Polonnaruwa	2.6	1.9	3.2
Badullah	5.4	2.8	5.0
Moneragala	3.2	2.0	3.2
Ratnapura	7.0	7.1	5.9
Kegalle	5.8	8.2	6.3

Source: Calculated from the data in Department of Census and Statistics, Listing of Non-Agricultural Economic Activities (Rural Sector), 1995, p. 4.

On the other hand, Matale and Monaragala with low shares in industry have a very low GDP per capita index. Although some geographical concentration exists, rural manufacturing and trade/service enterprises are more evenly distributed than urban medium and large enterprises.

According to the Central Bank Report 1997, most of the private sector industries (registered) in the country are located in the Western province mainly in Colombo and Gampaha districts. Of the 1,228 enterprises registered under sections of 16 and 17 of the BOI Law and Two Hundred Garment Factory Programme in 1997, 69 per cent or 844 enterprises were located in the Colombo and Gampaha districts. Besides, 1,461 enterprises of the total of 1,684 enterprises registered under the Ministry of Industrial Development were also located in these two districts. In addition to these industrial parks, there are also Export Processing Zones through which concerted efforts are made to attract foreign investments. Three out of four export processing zones (EPZs) are located near Colombo where both foreign and domestic enterprises are concentrated.

The pattern of industrial concentration described above is based on aggregate statistics that conceal industrial clusters in different locations in the country. Moreover, the Department of Census and Statistics collects and compiles data according to provinces and districts. The growth of economic activities does not, however, follow any administrative line, but depend on the interaction of geographical and economic factors. Since statistics on the distribution of urban population in Sri Lanka is not available, a field visit was undertaken to gather information on the concentration of economic activities. The field trip covered Anuradhapura, Kandy and the tea estates in Hatton. Special visits were also undertaken in the EPZs in Katunayake and in the industrial town of Negambo. A detailed description of the field trip and interviews with the manager of a tea estate, a trade union leader, two garment manufacturers and several micro entrepreneurs are presented in the appendix. The main findings are

discussed in Section 4 in connection with explaining the factors working behind industrial concentration in Sri Lanka.

3. Driving forces behind industrial concentration

Economic geography models

Industries tend to grow in clusters. Sometimes small clusters are scattered all over the country, but more often huge concentrations with a core-peripheral structure take place. In developing countries, industrial agglomerations are usually located near big cities – the national capital or a seaport. Both market forces and conscious government intervention are involved in the process. According to the literature on urban economics and economic geography (Scott, 1995), both centripetal and centrifugal forces interact to determine the size and pattern of urban agglomerations. Thus, economic activities cluster in cities because of centripetal forces such as external economies in production, while centrifugal forces, rising land prices for example, counteract the tendency to localise (Henderson, 1974). There are three main approaches in geography - market potential, cumulative processes and central place theory that explain the agglomeration of cities and industrial activities. The market potential approach (Harris, 1954) states that a particular region is suitable for production depending on the market access that in turn can be measured in terms of purchasing power and the proximity to buyers and suppliers. The cumulative approach (Myrdal 1957) argues that industries once established in a given location, grow in a cumulative fashion. Industrial centres provide a large market and attract new industries that in turn further enlarge the local market. Lastly, the central place theory (Lösch 1940) explains the pattern of industrial location in terms of trade-offs between economies of scale and transportation costs. A hierarchical structure of activities emerges as firms with larger scale economies or lower transport costs are concentrated in a smaller number of higher-level sites, whereas high transport costs or limited scale economies promote numerous smaller centres widely spread.

These ideas are further developed by Paul Krugman (1991, 1992, 1998) into a coherent model having a microeconomic foundation. In Krugman's model, increasing returns in the production of manufactured goods, with strong implications for market structure characterised by imperfect competition, play the crucial role (Young, A. 1928). For an individual firm there are three considerations in deciding on the location of the firm. Firstly, because of increasing

returns it is advantageous to concentrate production in a few locations serving a large market. Secondly, the best locations are those where producers and consumers are concentrated, thus transportation costs are kept low. Low transport costs within an industrial region facilitate access to markets (backward linkage) and suppliers (forward linkage). Thirdly, a concentration of production attracts production factors to the area, and external economies of scale arise as the establishment of many firms in one location reduces the costs of infrastructure, factors and inputs (Marshall, A. 1920). On the whole, increasing returns to scale in the production of manufactured goods, especially for the less differentiated products, and lower transportation costs (also due to economies of scale) lead to a few large concentrations. A *larger* manufacturing sector also encourages agglomeration because of stronger backward and forward linkages. In a country with poor transportation facilities, a core/periphery structure may develop where mobile factors of production (skilled labour, capital) concentrate in the core, and enjoy higher income than in the periphery where immobile factors of production cannot take advantage of economies of scale.

Michael Porter (1998) also explains the emergence of industrial clusters due to an interaction of market access and external economies of scale. Porter´s ideas on building industrial competitiveness (the so-called competitive diamond) are being experimented on developing countries including Sri Lanka (USAID Study, 1998). The basic feature of Porter´s industrial clusters is sectoral, while Krugman´s economic geography model, which has implications for rural/urban equality, is spatial.

Farm and non-farm linkage studies

Krugman´s model predicts that the operation of centrifugal forces in the core, such as the rising prices of factors of production and congestion on the one hand, and improved transport in the rest of the country on the other, may lead to the formation of other industrial centres. Agricultural development can play an important role in such a process (Krugman 1998). But the model does not explore the linkage effects of agricultural development on industrialisation in developing countries. The works of development economists and economic geographers on rural development (Ranis & Stewart 1993; 1988; Boserup 1965; Ranis 1991; Rigg, J. 1997) are relevant here. The growth of non-farm activities is induced by demand that in its turn is

influenced by population density and income. Income is initially generated within agriculture, and population becomes dense in places where agricultural production thrives. It is no surprise that economic activities concentrate in places where agriculture is prosperous and the density of population is high. Agricultural prosperity provides three types of linkages - consumption, production and fiscal. Higher incomes create a demand for manufactured consumption goods. The production of consumption goods gives rise to a demand for intermediate goods, and finally, increased government revenues make improved infrastructure possible, thereby giving further impetus to industrial growth. Higher agricultural income can lead to higher surplus for investment not only for the farm but also for non-farm activities. There is a feedback process as non-farm activities start creating linkages towards agriculture.

Studies on Rural industrial clusters

Agriculture is characteristically a dispersed economic activity due to the immobility of land. Hence, industries linked to agriculture tend to be localised. Empirical literature on rural industries provides evidence that, with agricultural prosperity the character, organisation and location of industries change (Saith, 1992; Johansson and Ronnås, 1995). During the process of development, three types of industries may be found depending on their ability to adapt to a new situation. Firstly, there are industries that are able to change from their traditional status of rural industries to modern ones linked with agriculture. Secondly, the supply-driven, cottage industries continuing with traditional methods of production exist in those economies where agricultural development is not sufficiently rapid and equitable. The third type of industries include small enterprises in urban centres, well-connected with the villages so that the links with agriculture remain strong.

It is the third type of enterprises in a smaller agglomeration (may grow out of the first type) that has become an important area of development research. Current literature on small and medium enterprises indicates that the ability of these industries to exploit the international market depends crucially on *collective* efficiency (Schmitz, 1995, 1997; Nadvi and Schmitz 1998, 1999). This is defined as competitive advantages derived from external economies of scale out of market-induced or incidental forces on the one hand, and conscious joint action of the enterprises, on the other. The disadvantages of being small and isolated are obviated

through clustering and networking. Clustering helps firms to specialise and make effective investment in small steps. The problems of technological indivisibilities and huge investment can also be dealt with through joint action. An important research issue is to understand the possibilities and constraints to clustering and networking so that appropriate policies may be formulated.

So far we have concentrated on the market forces and incidental factors that determine the location of industries. The pattern of location of industries is, however, largely shaped by economic policies. In the next section we explain the reasons behind government intervention in industrialisation in developing countries.

The role of economic policies in rural industrial development

Problems of externalities, complementarities and lock-in effects:

Development theories argue that the reasons behind the lack of investments in industrial activities are market failures that occur both on the demand and supply sides. Complementarities in demand arise when the market for manufactured goods depends on the concentration of economic activities and income growth in the area. A number of firms established in the same area can benefit from each other. However, initially, there may be a co-ordination failure as a single firm lacks information on whether other firms will start or not (Rosenstein-Rodan, 1943).

On the supply side of an undeveloped economy, firms individually face the problems of increasing returns in production, externalities in skill and technology markets, and information asymmetries in factor markets. In the 1950s and ´60s, many developing countries attempted to cure these market failures through active government intervention, for example, through import substitution policies. These efforts were mainly directed to large industries concentrated in the already developed metropolitan areas. Import substitution policies did not promote rapid industrialisation in the long run due to lack of competition. In most of the countries that followed state-induced industrialisation, the cottage and small industries suffered stagnation as a result of slow growth of the rural economy.

Poor infrastructure, lack of land development, irrigation/ drainage have hindered agricultural development and induced the persistence of subsistence production in many countries. In such an environment, the basic needs for non-farm goods are limited, and are met by local firms that are highly inefficient because of their small size and geographical isolation. Since market failures often occur with respect to the supply of infrastructure, knowledge of improved technology, land and credit market, economic policies for agricultural development have a strong impact on industrial development in rural areas.

The conceptual framework for the study of Sri Lanka

The review of literature on the forces behind industrial location brings out the following conclusions. First of all, industries have the natural tendency to concentrate around already established towns and cities because of market potential, skilled labour and external economies of scale with respect to access to inputs, services, new knowledge of products, processes and markets, etc. Once a few industries are established, and transportation/ transaction costs within the region become low, cumulative forces develop to make the agglomeration even bigger.

Secondly, the centripetal forces causing an extreme core/periphery structure may be counteracted by centrifugal forces within the region, and the growth of centripetal forces in other areas. The latter forces may be visible in smaller agglomerations that develop with agricultural development. High agricultural productivity together with improved transportation and population density promotes localisation of industries with multiple interactions with the farm economy first, and later on with distant markets (example of Taiwan in the early stage of its development, Ranis & Stewart, 1993; Ranis 1991). The success of small enterprises in entering international markets depends on clustering and networking.

Thirdly, low productive, subsistence agriculture, on the other hand, is dominated by supply-driven, rural distress industries. These industries often survive due to natural protection from competition as result of isolation under poor transport condition, and secondly, due to external support of the government and donors.

Lastly, economic policies with respect to industry, agriculture, transport, communications, technology, and regional development play an important role in reinforcing the centripetal and centrifugal forces towards concentration of economic activities.The Sri Lankan industrial pattern will be analysed in terms of these four points.

4. Explaining the pattern of industrial concentration in Sri Lanka

Official statistics and our field observations suggest that there is a core/periphery structure of economic activities with highly concentrated industrial centres in the Western part of the country, and local rural markets and a few urban centres serving the rest of the country. The development of this structure may be explained in terms of centripetal and centrifugal forces on both demand and supply sides specific to Sri Lanka.

Industrial concentration in the Western region

For historical reasons, the Western region has developed into an urban centre with good transport and communications. The location of the capital city, Colombo, the international airport and the seaport have contributed to this development. It may be argued that industrial activities concentrate in urban areas to take advantage of market potential, low costs of transport within the region and the pooling of production factors including technology information.

Market potential:

The greater market potential in the Western region compared to other regions is mainly due to urban concentration and high per capita income. There are no statistics on the distribution of *urban* population in Sri Lanka. The distribution of overall population and its density per square km at the district level indicate a high concentration of population in the Western part. Twenty six per cent of the total population live in this region and population density in Colombo and Gampaha districts are 3201 and 1199 respectively compared to overall density of 296 per square km (Economic and Social Statistics of Sri Lanka 1998, pp. 13-14).

High per capita income creates the demand for various non-farm goods and services as confirmed by the Household income and Expenditure Surveys conducted by the Department of Census and Statistics. The share of food and drinks in total household expenditure declined from 65 per cent in 1980/81 to 53.2 per cent in 1995/96 (Appendix Table 1). On the other hand, the share of housing increased from 5.4 per cent to 12.6 per cent. These figures are for the whole island including urban, rural and estate sectors. Changes in the expenditure pattern are more dramatic in the urban areas. Disaggregated data by regions are available only for 1993 and 1995/96. Survey data presented in Table 2 in the appendix show that the share of food and drinks in urban areas was not only lower than in rural areas, but it had also declined during 1993 and 1995/96, whereas it had risen in rural areas.

The decline in the expenditure on food and drinks in urban areas has been compensated by housing. The share of housing expenditure is more than double in urban areas (22.4 per cent) compared to rural areas (10.2 per cent). The income elasticity of demand for housing is found to be generally higher in urban areas than in rural areas (Appendix Table 3). The high demand for housing can create strong linkage effects for construction material such as cement, wooden fixtures, metal fixtures, bathroom fittings, etc. These are intermediate goods, and the import structure of Sri Lanka shows that 55 per cent of the import consists of intermediate goods (Appendix Table 6). Although part of the demand for intermediate goods for housing construction may have come via imports, a large proportion seems to be supplied by domestic producers. Income elasticities of demand for consumer durables are also high in urban areas especially among the low-income deciles compared to rural areas (Appendix Table 3). The demand for some consumer durables and most of the processed food items in urban areas is met by the domestic producers in the import substituting sector (Ahmad 1999).

There are rural-urban differences with respect to the demand for food items as well. Within food & drink items, there are products with different income and expenditure elasticities. Rice is a staple food, and hence, expenditure elasticity is higher among the low expenditure deciles compared to high ones (Appendix Table 4), especially in the rural areas where incomes as well as expenditures are lower. The share of rice is, therefore, much lower in urban areas than rural areas and declined sharply between 1980/81 and 1995/96 (Appendix Tables 5a, 5b, 5c and 5d).

Although the proportion of food and drinks in total expenditures has declined with higher income in urban areas, the demand for processed food has increased as reflected in the pattern of expenditures on different food items in total household expenditures such as milk products, flour preparations and condiments. The share of other food and drinks in urban areas is higher than in rural areas and the estate (except 1990/91), but has not increased since 1980/81. Expenditure elasticities for "other food and drinks" are found to be much higher as well in most of the income groups, (Appendix Table 4).

In addition to the domestic market potential, the industries in the Western region benefit from foreign demand through exports especially in garments. Sixty per cent of Sri Lanka´s exports are from the garment sector (Appendix Table 7). This industry also benefits from the localisation of enterprises as the cost of information regarding foreign demand becomes low. One important source of information is FDI operating in the EPZs, and as mentioned before, most of the EPZs are concentrated in the Western region.

Market potential induced by higher income and high population density in the Western province keeps transport costs low, and a large market has enabled the producers to attain economies of scale. Cumulative processes seem to be in operation as the concentration of economic activities creates higher income and high demand for more sophisticated products, and this attracts new industries that again enlarges the market. These processes are reflected in the expansion of the Colombo/Gampaha industrial region, growth of income and the changes in the pattern of income and expenditure.

Labour market pooling:

Pooling of educated labour and specialised skills often develops with the concentration of industries. This works through skill formation within the firms as well as drawing of educated workers from other regions. Table 8 in appendix shows that 70.6 per cent of the urban labour force is concentrated in the Western region. Firms, therefore, have easy access to skilled labour where industries are concentrated. This has been reported by the managers of some firms in Gampaha, Negambo industrial area and in Katunayake EPZs. The labour market pooling effects are visible in a high proportion of high-level educated workers in the Western

province, 40 per cent compared to less than 25 per cent in other provinces (Appendix Table 9). The Western province has the highest proportion of university students (Appendix Table 10), and Gampaha has the highest literacy rate (Table 1 in Section 1). It should be mentioned that the combined enrolment rates (primary, secondary and tertiary) are lower in Colombo and Gampaha (UNDP, 1999). The UNDP report explains this in terms of higher opportunity costs of remaining in school, as employment opportunities in this region are greater than in other regions.

The Western region has a diversified occupational structure that also reflects the existence of an active labour market. A high percentage of employed labour force is engaged in personal service, manufacturing and trade & hotels, and a very low proportion in agriculture. The share of manufacturing in Western province is 24 per cent, and it is particularly high for female workers, 38 per cent. The corresponding figure for males is 18 per cent. This is due to the impact of the garment industry where female workers are mainly employed. Manufacturing employment in the Southern and North Western Provinces varies between 13 and 16 per cent, and in North-Central, Uva and Sabaragamuwa, between 3 and 10 per cent. For the whole island, the Western province accounts for 51 per cent of total manufacturing workers (Appendix Table 13).

Other production factors including infrastructure:

Colombo and Gampaha districts enjoy good roads, telephone networks, banks, insurance, energy, security and the proximity to administrative services compared to other districts. Much of this has been affected by economic policies discussed below.

Limits to urban industrial concentration

The problem of demand:

Although the growth of manufacturing industries, especially in the Western region of Sri Lanka has picked up since the beginning of the 1990s, there are several structural problems that prevent the momentum of growth, and limit the linkage effects in the economy. The

industrial sector is concentrated on the production of consumer goods for both domestic and international market. Most of the intermediate goods and capital equipment are imported.

The export market is heavily concentrated on the garments. However, rapid development of the garment sector for export market has failed to create sufficient backward linkages. Some of the reasons are as follows: (1) As the legacy of import substitution continues, the input-supplying industries work under a protective environment but without the technological support delivered to export industries by the BOI. Hence, they are not efficient enough to supply quality products demanded by the export-oriented industries. (2). The factor proportions in input-supplying industries are inconsistent with Sri Lanka's factor endowments. They involve high capital costs, economies of scale in production, need technological upgrading, a reliable supply of energy and skilled labour. (3) Theoretically, the problem of economies of scale should not arise in an open economy. But, in practice, international demand is conditioned by the fact that multinational companies control the market as they have knowledge about foreign suppliers who can compete in price and quality (Kelegama and Foley, 1997).

The reasons behind the small domestic market for different consumer goods and related intermediate goods lie primarily in the slow growth of agricultural income, and secondly, in the poor communications with other regions such as the districts of the southern province, UVA (UNDP 1998; World Bank, 1999). This may be one of the reasons why linkages through sub-contracting between large and small enterprises are very weak in Sri Lanka (Lall, S., 1996).

There are conflicting views about the state of road and railway transport in Sri Lanka. According to the World Bank study, the country as a whole is well-covered by second-quality roads (measured by road density). But the situation with the motorways is precarious as they are unable to carry heavy traffic, and the village roads are not well-connected with the main roads. Other studies mention that rural roads are quite inadequate. The core/periphery industrial structure is an outcome of the poor transport situation.

Problems in the labour market:

In spite of the more flexible labour market situation in the Western region compared to other provinces, enterprises face the problem of high labour turnover especially in the EPZs. Firms find investment in the training of female workers too costly as they leave once they get married. There are also problems of competition among firms for skilled workers and rising wages. Our interview with the manager of an enterprise in the Negambo industrial area indicates that *enterprises outside the EPZs* experience fewer problems with respect to labour. As young girls come from the nearby villages, they do not have to leave their homes or to interrupt work after their marriage. The competitiveness study of Lall indicates that

"high skilled exports have only begun to emerge and a handful of low skilled exports still dominates. Its contribution to poverty alleviation through creation of employment for unskilled and semi-skilled labour has been quite substantial. During the last few years, however, labour turnover appears to be very high among shop floor level workers especially in textiles and garments, wooden toys, rubber products, electric and engineering. This has been mainly attributed to low wages, high living costs, poor living conditions and inadequate transport to the work place. The high rate of labour turnover could be considered as a major disincentive to skill accumulation and upgrading in industry". (Chandrasiri (1998, p. 18, World Bank Poverty Alleviation Study).

Chandrasiri´s study (1998, p. 6) further states that formal sector wages are lower than wages in the informal sector. These problems are also reflected in the pattern of migration and the occupational structure of the labour force. Rural to urban migration is not high and the proportion of casual and self-employed workers has increased compared to regular formal-sector jobs (Consumer Finance Survey, 1999).

Growth of other industrial centres -interaction of centripetal and centrifugal forces

High transport costs to far away areas has, to a certain extent, constrained the size of the industrial complex in the Western province by limiting the linkages, and has induced indirectly the growth of smaller centres in other parts of the country. Centrifugal forces such as the high price of land, labour and other services may have played a role as well. The growth of smaller industrial centres, however, has to be explained in terms of centripetal forces that operate in the specific region.

As argued in Section 3, the growth of industries in *smaller towns* depends on the interaction of agricultural development, infrastructure and population size. The effects of these factors should be reflected in the distribution of non-farm activities in terms of number of enterprises and non-farm employment in rural areas. An analysis of the data on non-agricultural activities (Department of Census & Statistics 1995) indicates a strong association between population size and the number of industrial, trade and service establishments. The regression lines of industrial establishments and trade/services by districts against population size are shown in Figures 1 and 2. The R^2 for industry is 0.699 and for trade/services it is 0.909. A comparable regression estimate against employment and agricultural development could not be done due to the lack of district-level statistics on agricultural development and non-farm activities. The following comments are based on provincial statistics.

According to the UNDP report, the most prosperous agricultural region is the North Central Province. The overall economy of this province grew at 9.9 per cent annually during 1990-95, the highest rate achieved in the country, and agriculture has contributed to this development.[3] The development in the North Central Province is mainly due to the large investment in infrastucture, the Accelerated Mahaweli River Diversion Scheme. However, the positive effects of agricultural development are not reflected in aggregate statistics on non-farm employment. The data on the occupational distribution of labour force (Department of Census and Statistics 1996) indicate that the share of manufacturing employment in North Central province (4.9%) is one of the lowest.

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[3] "Forestry sector growing at 75% per year, the other food crop sector by 49%, minor food crop sector at 29% per year and coconut production at 28% per year (UNDP, 1998 p. 16).

Figure 1.

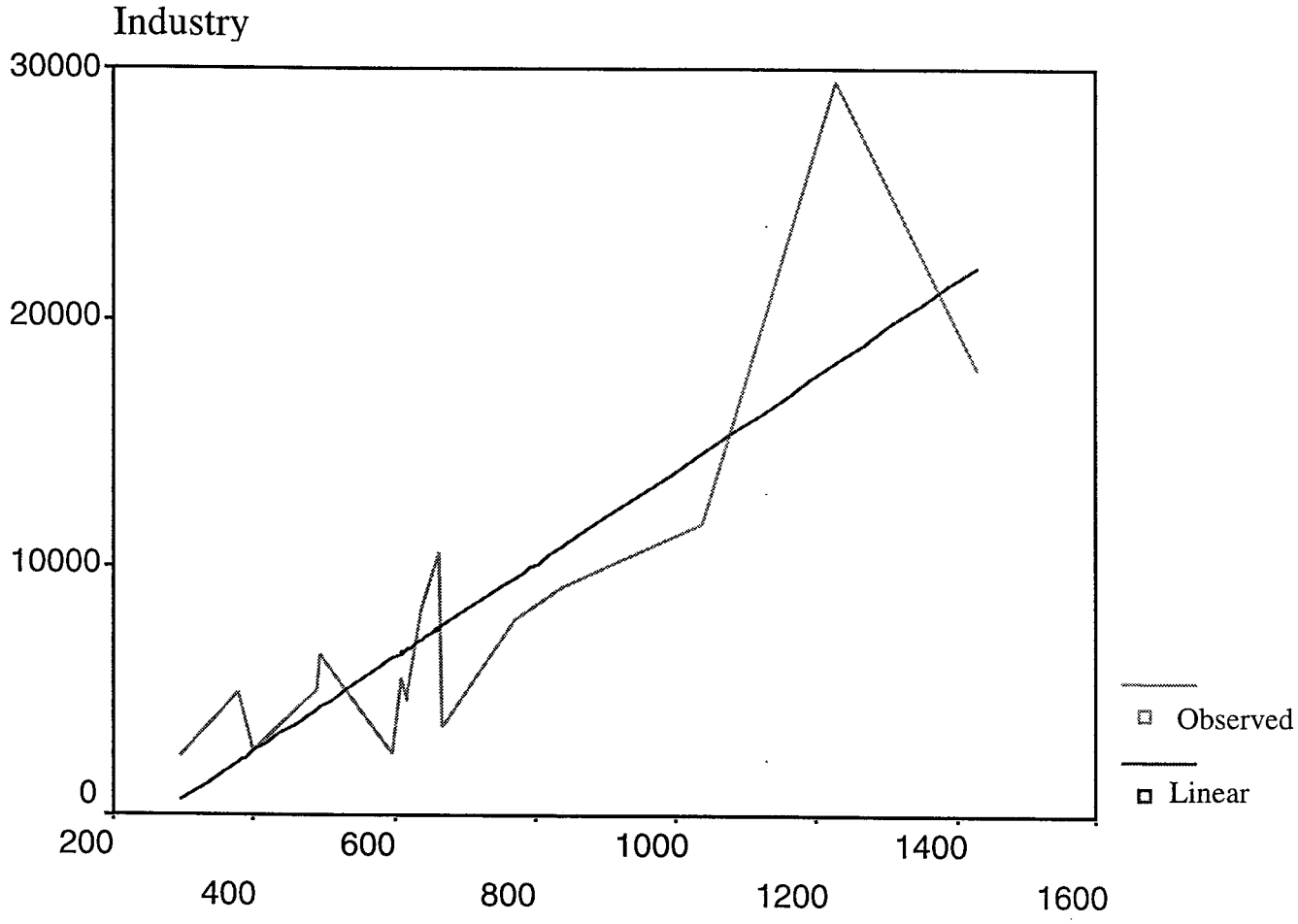
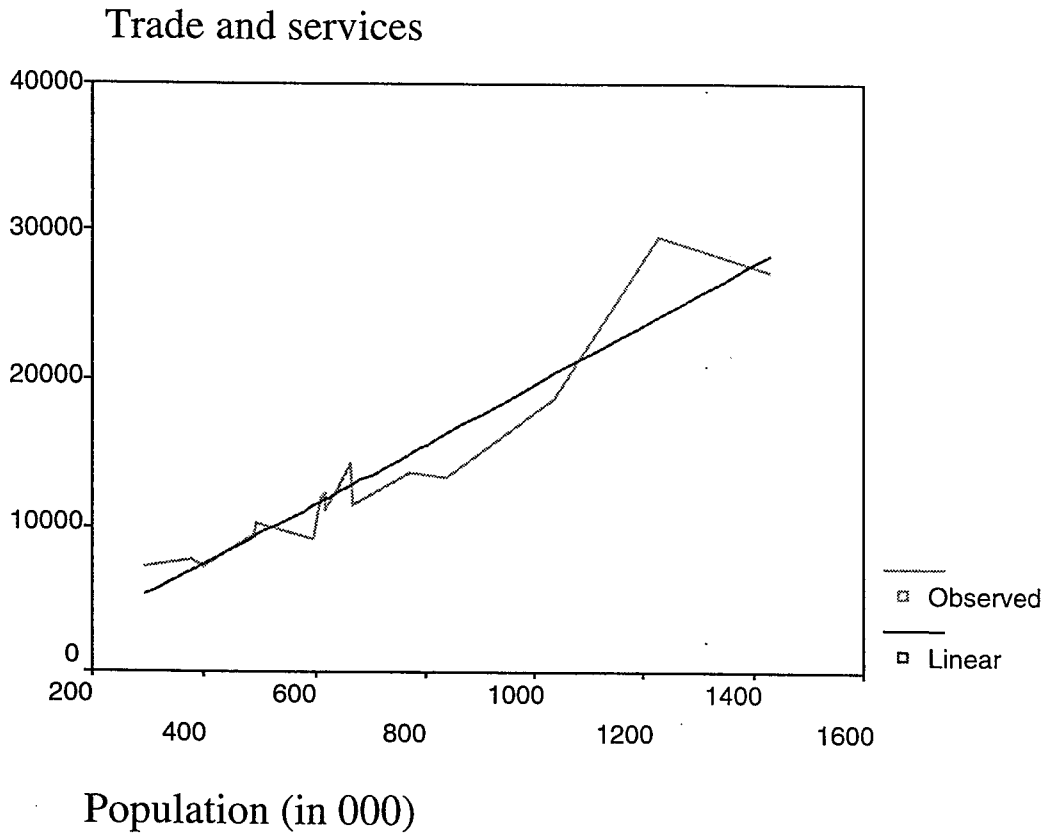

Industry
30000
20000
10000
0
200
400
600
800
1000
1200
1400
1600
Observed
Linear
Population (in ooo)

Figure 2.



The poor association between agricultural development and non-farm activities in the North Central province is also reflected in its low proportion of industrial enterprises (see Tables 8 and 9).

There may be two reasons behind the lack of farm-non/farm linkages. First of all, agricultural development has not benefited a large section of the rural population (Nakamura, Ratnayake and Senanayake, 1997). Although the poverty situation has improved recently, the North Central Province ranks as one of the lowest in the Human Poverty Index constructed by the UNDP (see Table 2 in Section 1). The low income of the population in the region implies weak consumption linkages that are important for the growth of non-farm activities. The second reason is the subsistence nature of agricultural production in Sri Lanka that creates few backward and forward linkages (Abayasekara, 1998, World Bank Poverty Alleviation Study).

Some positive effects are, however, observed in trade, hotels and personal services (See Tables 9 and Appendix Table 11).

Micro-level observations:

Linkage effects of agricultural development may be quite localised, as our field observations suggest. Infrastructure for agricultural development contributes to the growth of urban centres and non-farm activities. For example, Dambulla, a prosperous town has grown in recent years because of irrigation facilities promoting agricultural development, and possibly the highway carrying war supplies to the conflict-ridden North Eastern province.

Smaller towns also develop due to historical reasons. Kandy, an old town has the advantage of many tourists, a university and surrounding agriculture. There are several industrial clusters around Kandy some of which need revitalisation according to SMED. A new and very prosperous township, Gambola, has developed in recent years near Kandy. The prosperity seems to have come from Muslim traders and the remittances from migrant workers in the Middle East. Generally, villages near main roads indicate prosperity, and many industrial clusters of timber, pottery, brick-fields and metal fabrication works are observed along the main from Kandy to Hatton.

Our field observations suggest that there are several factors that have worked towards the formation of small urban concentrations. First of all, government investment in infrastructure and, consequently, an increased agricultural income have created a demand for various consumer goods and services. These are mainly supplied by small and micro enterprises. Available statistics confirm that a substantial proportion of the Sri Lankan rural population is engaged in non-farm activities. Although many of these activities are supply-driven, and characterised by low productivity (Abayasekara, 1998), some activities are demand-driven, and increased agricultural surplus may have induced such activities. The high income elasticities for non-consumption expenditures even for rural areas indicate such a possibility (see Appendix Table 4).

Income generated from the war economy, increased income among the workers in some tea estates (Annefield in Hatton, for example), and tourism (Kandy, Anuradhapura) have also contributed to smaller urban centres. Dunham and Edward´s research indicates that army recruitment in Sri Lanka has been an important source of youth employment, and the transfers as a percentage of rural poverty line have increased from 5 in 1985 to 32 in 1997.[4] However, the impact on the peasant economy has been small. Tourism has also been affected adversely by the war.

It should be mentioned that we mainly observed the growth of urban centres rather than industrial clusters. It is the latter we are interested in, and more time and resources are needed to explore the potential of rural industrial clusters in Sri Lanka. Our interview with the Project Director of Small and Medium Enterprises Development (SMED) confirms that there are many natural industrial clusters that are in the process of extinction due to the neglect of the government. SMED suggests that, instead of establishing new clusters, the natural clusters should be revived through upgrading of technology. Some of the clusters mentioned by SMED are included in the appendix. Empirical study on the growth of non-farm activities in the Mahaweli region may provide useful information on the linkage effects of agriculture on industry.

Scattered local markets in remote areas - failures in clustering and networking

In spite of our observations of urban centres and industrial clusters, the fact remains that the main problem in Sri Lanka is the absence of small industrial towns. High transport costs because of the lack of good roads has prevented the growth of a few industrial centres that could serve a larger market covering the remote areas. We have also observed that the industrial centres in Dambulla or Kandy cannot have a larger market to exploit economies of scale due to transport difficulties. The accessibility to remote areas is difficult because of the

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[4] Cited in Kenneth Bush´s unpublished paper "The Use of Development Incentives and Disincentives in Influencing Conflict or Civil Violence - Case Study Project", OECD, 1999 p. 25.

geo-physical condition of Sri Lanka which has been exacerbated by the lack of investment in roads as observed in the Kandy area. Pockets of extreme poverty prevail down in the valleys. There is very little land for the households in the area. Production conditions are harsh, and most households depend on homestead gardens. The access to daily necessities for the population of this area is extremely difficult due to poor infrastructure.

Weak linkages between the small urban concentrations and villages have led to local markets that serve the population in the immediate vicinity. These markets cannot expand due to poverty, and low income caused by slow agricultural development. This is clearly reflected in the existing data. The districts with low intensity of manufacturing, trade and service establishments such as Moneragala, Badulla, Matale, Puttalam have poor agricultural potential. The first two districts belong to Uva Province with the lowest rate of growth (3.5 per cent per year during 1990-95), and the lowest share of manufacturing workers (3.2 per cent compared to the national average 15 per cent).

Our field survey in the dry regions around Anuradhapura indicates that some of the needs are met from products coming from large centres (plastic and aluminium household products), but most of the basic needs are provided by local producers (housing-building material out of coconut trees, home produced processed food, etc.). The locally produced items use simple technology that does not entail any economies of scale and cannot benefit from other industrial centres. The following passage expresses this succinctly:

"The economic dynamism that the national economy experienced during the last twenty years left large parts of rural hinterland relatively untouched and stagnant despite all efforts at rural development. The continued segmentation of urban and rural markets has forced micro entrepreneurs supported by programme to depend on their relatively isolated, village or Division level, input and output markets. They have not been able to link up with, or enjoy the spin-offs from, the more dynamic urban sector. One key reason appears to be as Kumarage (1998) points out, the lack of limited access-high mobility roads linking up lower-order urban centres with higher-order urban centres. Difficulty in accessing larger urban markets and centres of dynamic economic activity has circumscribed what a programme of this nature can achieve" (Gunatilaka, 1998, p. 52, World Bank Poverty Alleviation Study).

In the absence of a vibrant local demand, the expansion of entrepreneurial activities depends crucially on the traders that establish links with distant markets. While the lack of formal rules that raises uncertainty and transaction costs may constrain the expansion of the enterprise

(Ramamurthy and Ronnås, 1995), informal institutions such as trust and social sanctions may play an important role. For example, the Indonesian study (Weijland, H. 1999) shows that the ability of the rural industrial sector to reach far away domestic and international market depends on the trading links (networks with the traders) and the institutions (social trust) that reduce transactions costs. Such networks are not very common in Sri Lanka although isolated cases exist for example, the trading relationship between the seamstress and the trader in Anuradhapura (see field observations in the appendix).

The effects of economic policies

The pattern of growth of non-farm activities and the concentration of manufacturing enterprises has emerged not only out of market forces, but economic policies have played an important role. During 1950-1977, Sri Lanka followed import substitution industrialisation strategy, and the industrial structure was dominated by state-owned large enterprises. Since 1977 the economy has been liberalised with intensification after 1990 (see Ahmad 1999 for changes in the industrial structure). While most of the enterprises have been privatised, and export-oriented activities are being promoted through various fiscal, commercial and financial measures, discrimination against the small enterprises remains. The study on the effects of the structural adjustment programme on the small and micro enterprises by SMED indicates that small enterprises face far more problems with respect to finance and administrative rules than large enterprises.

Government industrial policies have contributed to the uneven growth of industrial centres. For example, industrial estates both within export processing zones and outside have been established around the Colombo and Gampaha districts. These estates are provided with various facilities such as electricity, water, banks, insurance, inputs through imports and general security. EPZs are established in order to attract foreign investors that may contribute to technology and market development (Edwards, 1997).

The government is aware of the problems of regional inequality, and has, therefore, undertaken measures. One of the objectives of the New Industrial Policy of 1995 was

regionalisation (Ministry of Industrial Development, 1998). In accordance with this objective, out of the 324 acres covered by the estates, only 31 acres are in Colombo and Gampaha districts.[5] The Two Hundred Garments Factories Programme (THGFP) also underscores that enterprises are established in the difficult areas. Under this programme, "164 factories were in commercial operation in 21 districts by the end of 1997. Of these 164 factories, 86 per cent or 142 factories, were established outside the Colombo and Gampaha districts" (Central Bank Annual Report 1997, p. 63). There are other regional development programmes undertaken by different authorities such as Southern Development Authority (see Central Bank Annual Report 1997 for details).

Industrial development outside the Western region has also been adversely affected by slow agricultural development in general. Agriculture in Sri Lanka has benefited from infrastructure development in certain parts (Mahaweli area), and support to rice and other crops in terms of tariffs. However, many parts of the dry zone suffer from the lack of irrigation facilities, and in the wet zone uneconomic size of the farms has led to the persistence of subsistence production. Sri Lanka's problem in agriculture lies mainly in the rigid land market (see Ahmad, 1999) and low investment in infrastructure.

The government together with the donors has undertaken various programmes (IRDP) for the alleviation of poverty. These programmes, while successful in helping the poor through micro finance, building of rural roads and institutional development, could not however, compensate for the lack of a vibrant agriculture. The incomes generated under these programmes are too low to create substantial linkage effects for industrial development.

5. Policy implications for dispersed industrialisation in a global environment

Arguments for dispersed industrialisation

Poverty and regional disparities in income in Sri Lanka are associated with an uneven development of non-farm activities, especially manufacturing industries. From social,

[5] Central Bank Annual Survey 1997; Industrial Development Programme in Sri Lanka.

political, environmental and economic points of view, a decentralised pattern of industrial development with strong linkages to the farm is desirable in Sri Lanka. First of all, the majority of the population lives in rural areas, and agriculture is the largest sector in employment terms. Nearly 40 per cent of the labour force have agriculture as their main occupation, and 45 per cent of the labour force having agriculture as secondary occupation (Gamage, 1998). Hence, the growth of industries in surrounding small towns can benefit the rural population in an equitable manner. This may have modifying effects on ethnic conflicts. *The availability of employment opportunities in the private sector as alternatives to military jobs that have been fuelled by ethnic conflicts may contribute to a demand by the population for a resolution of the conflict.* A consensus among the private sector actors- employers, employees, trade unions and business associations may develop.[6] Other social conflicts such as the JVP in the south could be abated through a reduced gap in rural and urban development. Environmental problems of crowded cities can be kept under control as well.

An integrated rural development with a balance between agriculture and industry at an early stage of development is also economically a rational strategy. Agriculture is still a large sector in terms of its share in GDP. Sri Lankan agriculture is quite diversified, and has the potential to generate savings, foreign exchange, provide raw materials and a market for industrial products. However, as land is scarce in Sri Lanka, and the size of farms is a main constraint to agricultural development in the small-holder sector, a two-pronged strategy with the creation of non-farm activities on the one hand, and increasing the productivity of existing farms on the other is essential.

The proposed approach for dispersed industrialisation

Traditionally, rural development with support to cottage and micro enterprises has been pursued for poverty alleviation in Sri Lanka. The approach taken in this paper is different in three respects.

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[6] Ceylon Chamber of Commerce has expressed the need for such a consensus, (Ceylon Chamber of Commerce, 1999).

1. Promotion of *small and medium enterprises* (SMEs) is advocated instead of cottage industries that employ mainly family members. Small enterprises are supposed to fulfil the goals in a sustainable manner because of their greater prospect of growth and the ability to create productive employment compared to cottage industries. They have certain advantages in terms of technological upgrading and flexibility in meeting customer demand. At the initial stage, such enterprises may respond to domestic demand mainly from agriculture. Later on, they should be serving distant markets both domestic and international.

2. Since small enterprises face several problems due to their small size and isolated nature, geographical **clusters and networks** are considered the prerequisites of growth.[7]

3. Basically, cluster and network formation should take place in response to market forces. However, empirical studies on other countries indicate that clustering and networking are more difficult for small firms in developing countries (Schmitz and Nadvi, 1995, 1998,1999). The reason is, there are market failures that affect small enterprises more than the large ones. While market failures call for state intervention, intervention in a liberalised economy has to be carefully designed in order to avoid inefficiency. We clarify below the development strategies and policies that are required for implementing the approach presented above.

Strategies and policies

a. Promoting competitive environment:

The promotion of agriculture and rural enterprises does not mean that they will be protected from foreign competition through tariffs and direct subsidies. From an efficiency point of view, it is important that the economy is exposed to competition from imports right from the beginning. For example, Sri Lankan farmers and textile producers should be exposed to cheap imports from India. In competing with India, Bangladesh or other cheap suppliers even for the domestic market, efficiency and improvement in quality may be achieved that will be of help

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[7] This was also stressed in the competitiveness study of Lall (1996).

to sell in the distant market. Instead of direct subsidies that help inefficient and stagnant enterprises to survive (for example, handloom textiles, see Gunatilaka, 1997), institutional, financial and technology support is needed especially for small enterprises and farmers.

b. Removing biases against small enterprises and the role of industrial policy:

While the policy should be to expose the firms to competition to gain efficiency, *levelling the playing field for different actors is extremely important.* In this respect industrial policy can play an important role. By industrial policy we do not mean policies directed to selected strategic industries (picking winners) as was practised in some East Asian countries. Industrial policy has three objectives: Besides (1) providing a supportive framework,[8] and (2) promoting technological capability through investment in human capital, technology information and research, *industrial policy may (3) target certain sectors such as small and medium enterprises.* The first two would affect all enterprises uniformly, the third one, while selective, may be justified on the grounds that SMEs have a strong impact on the economy in terms of linkages and employment. *In Sri Lanka the argument for SME development is especially strong because of its potential impact on social and ethnic conflicts.*

The first move in this direction is to remove policy biases against small enterprises. As mentioned above, Sri Lanka has successively liberalised its economy through tariff reduction, privatisation and relaxed control of exchange rates that started in the early 1980s and intensified in the 1990s.These are also supplemented by various export promotion measures. In spite of these attempts, biases against small enterprises vis-à-vis large enterprises both in the export sector and those that serve the domestic market (Ahmad, 1999; SMED, 1998) prevail (Chandrasiri 1998; Lall, 1996). For example, large enterprises in the export sector

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[8] " property rights and system of justice which ensures the enforceability of contracts; macroeconomic stability and predictabilities reflected in low inflation, tax, interest rates and a competitive exchange rate; market-supportive institutions to ensure competition and factor mobility; an elastic supply of infrastructural and industrial services; and a policy and regulatory regime encouraging of private sector development and which establish the basis for national firms to operate globally in an increasingly open environment" (Frischtak, C. 1998, p.50).

receive much more assistance in terms of infrastructure, capital, market information and technology. These problems have a regional dimension as well. The constraints related to raw materials, energy, skilled labour and production technology are more frequently reported by enterprises in less developed areas like Matara than in Kurunagela which is a more developed region (Appendix Table 15). While discriminatory policies have to be corrected, it is important to understand the nature of market failures specific to small enterprises so that intervention can be effected optimally.

c. Specific constraints and market failures faced by SMEs:

Small enterprises in developing countries often face problems due to their size and geographical isolation. Listing of these problems would help us identify the areas of potential market failures (Cegile, G. and Dini, M. 1999, UNIDO, p. 4):

- inability to take advantage of market opportunities that require large production quantities, homogenous standards and regular supply;[9]
- inability to benefit from economies of scale in inputs like equipment, raw material, finance and consulting services;
- inability to internalise the functions such as training, market intelligence, logistics, technology innovation;
- lack of internal division of labour and specialisation; and
- fierce competition and scarce profit prevent capital formation and growth.

Many of the problems listed above are inherent to the small size, for example, high fixed costs associated with training, acquisition of technology and market information. Market failures,

[9] Increasing competition in an open trading system requires not only technological upgrading but also "a new form of industrial organisation (mass customisation) which both provided for large scale production and met customer requirements for increased product quality and diversity" (Kaplinsky, R. 1995).

on the other hand, are reflected in the existence of *public goods, externalities and complementarities.*

One important type of *public good* with the characteristics of non-rivalry and non-excludability is information. Unequal access to strategic information leads to market power

and imperfect competition. Asymmetries in information and the lack of its free flow due to its public good character, can create bias especially against small enterprises. For example, lack of information about the creditworthiness of small enterprises may raise the cost of lending by formal institutions, and, consequently, may raise the cost of loans to the borrowers. In Sri Lanka, in spite of various credit programmes, the problem of finance, both access and the cost, has been cited as the most serious constraint to the growth of small enterprises (Chandrasiri, op. cit; Lall, 1996).

The problem of *externality* arises in training since a private firm incurs losses when the worker trained within the firm takes up a job with another firm. This leads to under-investment by private firms. While this applies to both large and small firms, the latter group often faces greater loss because of the higher fixed costs. The problem of skilled labour in Sri Lanka is mainly due to under-investment in worker training by private firms and the public education system that fails to produce the type of skills demanded. In spite of high performance in education, Sri Lanka has problems in producing a highly educated and skilled labour force. Less than 2 per cent of students in the relevant age group can obtain university places (UNDP 1998, p. 21). Only 16 percent of eligible students were admitted to university in 1995/96 (Economics and Social Statistics of Sri Lanka 1998, p. 103). A high percentage of university graduates are from liberal arts and social sciences. The number of pupils enrolled in A/L for science, arts and commerce was 2.3 million in 1997 and out of which 43 per cent were registered for science courses. Only 13,444 were enrolled in technical education at different levels. In 1995, 1572 students received a Higher National Diploma (Table 14 in appendix). Part of the reasons for low investment in technical education is the incentive problem in the labour market (Kelly 1992; Ahmad 1999). Too low wages for factory jobs discourage young people from investing in vocational education.

There are also cases of *positive externalities* with respect to learning and "spill-overs" that can happen when SMEs interact with other small firms (horizontal linkages) or large firms (vertical linkages" Hallberg 1999). Moreover, "many kinds of infrastructure have public goods characteristics, including certain types of "market infrastructure" that increase SME access to markets, finance, information and support services" (Hallberg, op. cit). Existing studies on small enterprises in Sri Lanka point to weak horizontal and vertical linkages that may be due to under-supply of market infrastructure.

In cases of *complementarity*, a specific form of *externality,* the returns to an investment by an individual investor depend on simultaneous investment by other actors. *Such complementarity in the actions of economic agents may arise due to co-ordination failure,* and this ultimately can lead to lack of investment and growth. The problem of low investment and the isolated nature of enterprises in Sri Lanka are reflections of these problems. One of the ways to solve this problem is to boost demand through agricultural development. Government intervention in the supply of public goods (infrastructure, education and research) may also generate "crowding-in" effects.

On the whole, government intervention can deal with market failures, for example, direct provision of training or subsidies to training-led firms, investment in innovation and institution-building. *Our main argument is that the provision of services like information on distant markets, technology, SME creditworthiness through registries, credit scoring techniques, etc, training of labour and management, and promotion of spillovers can be more cost-effective when directed to clusters and networks of enterprises.* The problem of high fixed costs may also be tackled through collective action.

Collective efficiency literature suggests that clustering takes place in response to market forces. We also observed this during our field trip (pottery, carpentry, building material clusters by the roadside). On the other hand, the formation of clusters may be too slow or the benefits from clustering may remain limited due to the lack of joint action that may be termed *collective failure.* From the policy point of view, it means that while the government should not actively establish clusters, they can promote existing or emerging clusters or networks. Empirical studies on other countries indicate that problems faced by enterprises may differ from cluster to cluster (UNIDO, 1998; Nadvi, 1998). In order to provide efficient, demand-

driven services to small enterprises, business development agencies should, first of all, study the clusters closely. This is a new area of empirical research, and considerable groundwork needs to be done as information on the process of cluster and network formation is lacking in Sri Lanka.[10]

d. Integration with agriculture:

Regional development programmes such as in Matara or Hambantota should stress agricultural development since the initial stimulus for small enterprise development has to be generated within agriculture. Integrated rural development programmes and private sector development try to address the problem of poverty through micro finance, institution building, skill development and marketing information. Although these approaches have been successful in reaching the poor, they do not necessarily address the problem of weak linkages in the local economy. Instead of a piecemeal approach to help micro enterprises, intervention should aim at the development of a regional economy in general and industrial clusters in particular. As far as regional development is concerned, measures to promote agricultural development should be adopted first.

Most of the donor-supported projects, for example, the UNIDO Project, emphasise capacity building, skill development and technology promotion that are mainly supply-side policies. These are important issues no doubt, but they are important only when sufficient demand for industrial products is created. As we discussed above, the demand is largely dependent on agriculture. The UNIDO report recognises the problem of a declining or stagnating agricultural sector and its impact on poverty in different regions in Sri Lanka. But it assumes that the growth of cottage industries and micro-enterprises would solve the problem. As stated in the report,

"The programme proposed here, will, facilitate the creation of growth-oriented cottage and micro-enterprises as well as the expansion of existing micro and small scale entrepreneurial endeavours to small-scale industrial enterprises." (UNIDO, 1999, p.100).

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[10] The US AID Competitiveness Study has identified several successful industrial clusters in Sri Lanka on the basis of Michael Porter's model. These clusters refer to product type, not their geographical concentration. On the other hand, studies related to micro and small enterprises do not analyse the problem from the perspective of collective efficiency.

There is no recognition of the fact that rural industries cannot develop without agricultural development. The Regional Division of the Ministry of Plan Implementation of the Government of Sri Lanka is currently working on a new concept, the Rural Economic Advancement Programme (REAP) for regions like Matara and Hambantota. While REAP's emphasis on integrated development is an improvement over the IRDP, intervention should take place only to promote private initiatives.

Once the importance of agricultural development in an *open environment* is underscored, market failures in agriculture should be identified in order to improve efficiency. In Sri Lanka, market failures in agriculture generally prevail in the land market, the supply of infrastructure, technology and credit. Local conditions, however, may differ so that the collection of benchmark information is necessary for initiating any project.

Summing-up main policies

1. Promote competition through import liberalisation and removing barriers to competition in domestic economy. Instead of direct subsidies, support should be given in terms of efficient legal and administrative framework, financial, marketing and technology support to agriculture and small industries.
2. Remove discrimination against small enterprises.
3. Support should be directed to cluster and network of enterprises instead of individual enterprises.
4. Clusters should not be established with government initiatives, instead promote emerging industrial clusters through technology and market information, improved infrastructure, education, and keeping information about the enterprises. On the whole, effective intervention should be *customer-oriented* to enable firms to learn about, and from, the needs of their customers, should be *collective* aiming at groups of firms, and *cumulative,* so that the firms, in the process of upgrading learn to be independent of intervention. This is the renowned triple-C approach suggested by Humphrey and Schmitz (1996).
5. Promote agricultural productivity through investment in technology, infrastructure and liberalising the land market.
6. Collect base-line information on enterprises in a given region with a view to identifying specific areas of intervention.

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List of Tables

Tables in the text:

Tables in the appendix:

Appendix 1

Table 1

Household Expenditure per Month by Major Expenditure Groups and Survey Period (percentage)

Item	1995/96	1990/91	1985/86	1980/81
Food & drink	53.2	59.2	57.6	65.0
Liquor & tobacco	3.7	3.8	3.8	4.4
Housing	12.6	8.6	7.4	5.4
Fuel & light	4.4	6.4	5.0	5.4
Clothing & textiles	6.7	4.6	4.6	4.3
Personal care & health	4.8	3.7	3.8	2.8
Transport & communications	6.1	4.2	5.1	5.0
Consumer durable	2.4	4.4	00	2.0
Other	9.1	8.5	12.3	5.7

Source: Summary Findings of the Household Income and Expenditure Survey, 1995/96

Table 2

Household Expenditure per Month by Major Expenditure Groups in Urban and Rural Areas

HIES 1993, 1995/96 (percentages)

	All island		urban		rural		estate
	1993	1995/96	1993	1995/96	1993	1995/96	1995/96
Average total							
Rupees	*6334*	*6247*	*8989*	*9835*	*5723*	*5753*	*4701*
				(%)			
Food and drink	51.3	53.2	48.8	44.3	52.2	55.2	64.2
Liquor and tobacco	2.5	3.7	1.7	2.5	2.8	3.9	6.5
Housing	11.3	12.6	19.4	22.4	8.2	10.2	2.6
Fuel and light	3.2	4.4	3.7	4.5	3.0	4.4	5.1
Clothing and textiles	3.3	3.7	2.7	3.7	3.5	3.6	5.6
Personal care & health	5.1	4.8	4.1	4.2	5.5	4.9	4.4
Transport &							
communications	9.2	6.1	6.0	6.5	10.4	5.9	3.3
Consumer durables	1.9	2.4	1.8	2.0	1.9	2.5	-
Others	-	9.1	-	9.6	-	9.0	7.3

Sources: Summary Report of HIES 1995/96, HIES 1993, Department of Census and Statistics, Sri Lanka

Table 3

Income Elasticities for Non-food Items in Rural and Urban Areas Based on 1993 HIES Data

(Rural areas)			
Income deciles	Elasticities		
	Housing	Consumer durable	Non-consumption expenditure
1-2	1.29	0.47	7.7
2-3	0.44	0.47	-1.0
3-4	0.74	3.2	0.91
4-5	-1.28	-2.9	5.8
5-6	1.49	1.3	No change
6-7	1.25	3.9	1.16
7-8	2.6	0.83	4.04
8-9	1.7	0.12	0.75
9-10	1.08	1.0	14.5
	(Urban areas)		
1-2	2.35	6.96	5.8
2-3	2.06	3.48	6.1
3-4	0.41	0.98	-0.8
4-5	-2.5	-1.8	2.0
5-6	2.69	29.9	11.8
6-7	0.28	-3.98	1.56
7-8	0.72	14.2	0.02
8-9	0.42	-1.34	2.0
9-10	7.6	5.4	4.19

Note: Elasticities are calculated as follows. Percentage change in expenditure in each category divided by percentage change in average income or expenditure between two deciles. The lowest and highest incomes are assumed - in rural areas 800 and 12000, and for urban areas 1000 and 15000 respectively. See Tables 14 and 15 of the Household Income and Expenditure Survey 1993.

Table 4
Expenditure Elasticities for Rice and Other Food & Drinks Based on 1993 HIES Data

(Rural areas)

Expenditure deciles	Elasticities	
	Rice	Other food and drinks
1-2	1.2	0.76
2-3	0.76	-0.40
3-4	0.74	3.4
4-5	0.70	1.2
5-6	No change	-0.12
6-7	0.55	1.03
7-8	0.24	No change
8-9	0.20	1.05
9-10	-0.11	0.79
	(Urban areas)	
1-2	1.03	1.48
2-3	0.90	-0.32
3-4	0.42	3.38
4-5	-0.20	1.46
5-6	-0.68	1.48
6-7	-1.8	3.1
7-8	0.17	-0.74
8-9	0.18	1.8
9-10	0.60	4.3

Note: The lowest and highest incomes are assumed - in rural areas 1000 and 15000, and for urban areas 1500 and 20000 respectively. See Tables 8 and 9 of the Household Income and Expenditure Survey 1993.

Table 5 a Expenditure on different food items as a percentage of total household expenditure on food and drink for 1980/81, 1985/86, 1990/91 and 1995/96

All island

Item	1995/96 %	1990/91 %	1985/86 %	1980/81 %
Total food and drink	100.0	100.0	100.0	100.0
Rice	19.9	22.4	25.3	31.5
Wheat flour	1.1	1.4	2.6	2.4
Bread	4.1	4.2	5.3	4.7
Flour preparations	2.3	1.3	1.0	0.9
Condiments	10.5	9.1	10.4	8.0
Pulses	3.7	4.4	3.6	2.4
Vegetables	10.0	8.8	9.9	7.5
Coconuts	6.8	8.6	5.9	8.2
Meat	4.6	3.1	2.5	1.8
Fish	6.7	5.1	5.8	4.9
Dried fish	4.3	4.0	4.0	3.2
Milk	0.3	0.5	0.9	0.9
Milk products	6.9	4.2	3.4	2.4
Eggs	1.2	1.1	0.9	0.8
Fruits	1.9	1.4	1.2	1.2
Sugar	5.3	6.2	6.3	7.8
Other food and drink	10.6	14.1	11.0	11.4

Table 5 b Expenditure on different food items as a percentage of total household expenditure on food and drink for 1980/81, 1985/86, 1990/91 and 1995/96

Urban

Item	1995/96 %	1990/91 %	1985/84 %	1980/81 %
Total food and drink	100.0	100.0	100.0	100.0
Rice	14.4	17.6	18.5	23.2
Wheat flour	0.4	0.8	1.5	1.6
Bread	4.8	6.3	7.1	7.5
Flour preparations	3.1	2.0	1.7	1.4
Condiments	9.8	9.9	10.2	7.2
Pulses	3.2	4.4	3.3	2.3
Vegetables	8.5	8.4	8.7	6.6
Coconuts	5.3	3.9	4.8	6.9
Meat	6.9	5.2	4.4	3.5
Fish	8.7	7.8	6.8	7.8
Dried fish	2.5	2.8	2.8	2.1
Milk	0.4	0.4	1.0	1.5
Milk products	9.4	6.3	5.0	3.4
Eggs	1.3	1.3	1.2	1.2
Fruits	3.0	1.7	1.7	1.8
Sugar	4.7	6.2	6.3	8.1
Other Food and Drink	13.7	14.9	13.0	13.9

Table 5.c Expenditure on different food items as a percentage of total household expenditure on food and drink for 1980/81, 1985/86, 1990/91 and 1995/96

Rural

Item	1995/96 %	1990/91 %	1985/86 %	1980/81 %
Total food and drink	100.0	100.0	100.0	100.0
Rice	21.0	23.9	27.9	33.9
Wheat flour	0.8	0.9	1.9	1.8
Bread	4.0	3.7	4.9	4.0
Flour preparations	2.2	1.2	0.8	0.8
Condiments	10.6	9.0	10.6	8.3
Pulses	3.8	4.2	3.6	2.4
Vegetables	10.3	9.0	10.4	7.8
Coconuts	7.0	10.6	6.2	8.7
Meat	4.0	2.3	1.9	1.3
Fish	6.5	4.6	5.1	4.3
Dried fish	4.8	4.3	4.5	3.6
Milk	0.3	0.4	0.8	0.7
Milk products	6.4	3.7	2.8	2.2
Eggs	1.2	1.0	0.8	0.7
Fruits	1.7	1.3	1.1	1.1
Sugar	5.4	6.4	6.5	7.7
Other food and drink	10.0	13.4	10.2	10.7

Table 5.d Expenditure on different food items as a percentage of total household expenditure on food and drink for 1980/81, 1985/86, 1990/91 and 1995/96

Estate

Item	1995/96 %	1990/91 %	1985/86 %	1980/81 %
Total food and drink	100.0	100.0	100.0	100.0
Rice	22.8	23.6	25.7	33.5
Wheat flour	12.6	8.6	14.4	12.0
Bread	1.4	2.7	2.0	2.4
Flour preparations	0.4	0.8	0.5	0.4
Condiments	9.6	8.3	9.3	7.7
Pulses	5.9	5.4	4.9	3.0
Vegetables	8.6	8.9	10.2	7.4
Coconuts	7.5	4.4	6.2	7.9
Meat	5.5	3.6	1.7	1.2
Fish	1.2	1.5	1.1	1.4
Dried fish	3.2	4.0	3.3	3.2
Milk	0.9	1.5	1.1	1.0
Milk products	5.8	1.9	3.2	1.6
Eggs	1.3	1.6	0.9	0.5
Fruits	0.4	0.6	0.5	0.5
Sugar	4.9	4.6	4.6	6.5
Other food and drink	7.9	18.1	10.4	9.8

Table 6

Imports by Category, 1997 (percentages)

Consumer goods	*18.5*
Food and drinks	11.0
Rice	1.3
Flour	0.1
Sugar	3.1
Milk and milk products	1.6
Dried fish	1.3
Other fish	0.5
Other food	3.6
Other consumer goods	*7.5*
Motor cars and cycles	1.3
Radio receivers and compounds	0.4
Rubber tyres and tubes	0.4
Medical and pharmaceutical products	1.2
Others	4.2
Intermediate goods	*55.1*
Fertilizer	0.9
Petroleum	9.2
Chemical elements and compounds	2.3
Dyeing, tanning and colouring materials	0.7
Paper and paper boards	2.5
Wheat and meslin	2.4
Textiles	23.7
Others	13.4
Investment goods	*27.7*
Building materials	4.6
Transport equipment	3.6
Machinery and equipment	12.7
Other	1.8
Total	96.2
Unclassified imports	3.8

Source: Central Bank Annual Report 1997, Table 84

Table 7
Composition of Exports, 1997 (percentages)

Share of industrial exports in total exports	74
Of which	
Garments	60
Yarn and other textile items	6.6
Petroleum products	2.8
Diamonds	3.6
Agricultural exports	22.8
Of which	
Tea	15.5
Rubber	1.7
Coconut	2.5
Other agricultural products	3.1

Source: Central Bank of Sri Lanka 1997 Annual Report pp. Table 74

Table 8

Distribution of Labour Total Urban and Rural Labour Force by Province (percentage of the total)

	All sectors	urban	rural
Western	31.5	70.6	24.8
Central	15.1	12.5	15.6
Southern	14.5	7.6	15.6
North-West	12.9	2.6	14.7
North-Central	7.0	1.9	7.9
Uva	7.6	2.0	8.5
Sabaraguma	11.3	2.6	12.8

Source: Provincial Profile of Labour Force, Sri Lanka -1996, Tables 10-18

Table 9 - Percentage distribution of currently employed population by educational attainment for provinces - both sexes

Province	Total	Level of education				
		No schooling	Grades 0 - 4/ Years 1 - 5	Grades 5 - 10/ Years 6 - 11	GCE (O.L)/ NCGE	GCE (A.L)/ HNCE and above
Total	100.0	5.3	24.2	43.3	16.9	10.3
Western province	100.0	2.3	12.3	44.7	23.9	16.8
Central province	100.0	9.5	28.1	40.5	13.8	8.1
Southern province	100.0	6.0	27.6	43.5	15.0	7.9
North Western province	100.0	3.2	27.4	47.7	13.9	7.7
North Central province	100.0	3.0	28.3	46.2	16.6	5.9
Uva province	100.0	10.3	35.5	38.8	10.0	5.3
Sabaragamuwa province	100.0	7.8	33.6	38.6	12.7	7.4

Table 10

Geographical Distribution of University Students, 1995/96

Western	28.3
Central	10.5
Southern	14.9
Northern	12.9
Eastern	5.4
North Western	10.9
North Central	4.1
Uva	4.7
Sabaragamuwa	8.0

Source: Economic and Social Statistics of Sri Lanka 1998, p. 104

Table 11 Percentage distribution of Currently employed population by major industrial group for provinces - both sexes

Province	Major industry										
	Total	Agricult-ure etc	Mining & quarrying	Manufact-uring	Electri-city,gas & water	Construc-tion	Trade & hotels	Transport storage & communi-cation	Insurance & real estate	Personal service	Not defined
Total	100.0	37.4	1.6	14.6	0.5	5.4	12.0	4.9	2.0	18.2	3.5
Western	100.0	9.3	1.3	23.7	0.8	7.0	16.8	8.4	3.8	25.9	3.0
Central	100.0	47.7	0.9	9.8	0.3	4.4	12.3	2.7	1.0	17.9	3.0
Southern	100.0	47.6	0.5	13.3	0.4	6.3	10.2	3.8	1.7	13.2	2.9
North Western	100.0	41.5	1.9	15.9	0.7	5.0	9.0	4.5	1.0	15.0	5.4
North Central	100.0	61.3	1.2	4.9	0.3	4.6	8.7	2.1	1.0	15.3	0.5
Uva	100.0	73.8	0.4	3.2	0.1	1.9	7.0	2.3	0.9	9.6	0.8
Sabaragamuwa	100.0	43.4	5.2	9.9	0.2	4.5	9.4	3.4	1.1	15.3	7.7

Table 12

Distribution of Agricultural Labour Force (as main occupation) by Province

	Both sexes	male	female
National	23.5	23.4	23.9
Western	7.5	7.2	6.6
Central	19.2	18.6	20.4
Southern	30.0	30.2	29.5
North-Western	31.2	29.0	36.8
North-Central	53.9	52.5	57.4
Uva	49.0	51.6	43.4
Sabaraguma	20.0	20.5	19.3

Note: Proportions of persons employed in agriculture as the "primary as well as predominant industry" is much higher than the figures in the above table where agriculture is shown as the main occupation. See pages 38-50 in Provincial Profile of Labour Force Sri Lanka - 1996. According to Gamage´s study, 45% of the small-holder farmers are engaged in other occupation besides agriculture.

Table 13

Percentage Distribution of Manufacturing Workers in the Provinces in Sri Lanka

Province	**Male**	**Female**
Western	51.0	51.0
Central	11.0	9.5
Southern	12.0	1.3
North-Western	15.0	13.8
North-Central	2.5	2.3
Uva	1.9	1.4
Sabaragamuwa	6.7	8.5

Source: Same as above

Table 14

Distribution of University Graduates by Subjects, 1996

Arts & oriental studies (B. A. /B. A. Special)	36.0
Commerce & Mgt Studies - B.Sc./B. Com./B.B.A.	19.0
Law L.L.B.	2.5
Science B.Sc	21.5
Engineering B.Sc.	6.9
Medicine M.B.B.S.	8.9
Dental surgery B.D.S.	Negligible
Agriculture B. Sc.	3.0
Veterinary science B.V. Sc.	Negligible
Architecture and Quantity Surveying B. Sc.	negligible
Total numbers	6,233

Source: Economic and Social Statistics of Sri Lanka 1998, p. 102

Table 15

Production Related Constraints Faced by the Small Industrialists

Constraints	No. of	industrialists		
	Kurunegala	Kalutara	Matara	Total
Lack of quality raw materials	09	68	46	123
Difficulty to obtain power/energy	04	10	09	23
Lack of skilled labour	08	21	25	54
Difficulty to obtain Production technology	13	09	28	50

Source: Chandrasiri, 1998, p.

Appendix 2

The field trip – May 1999

The field trip covered Anuradhapura, Kandy and the tea estates in Hatton. Special visits were also undertaken to the EPZs in Katunayake and the industrial town of Negambo.

On our way to Anuradhapura through Gampaha and Kurunegala districts, we passed the industrial zone specialising in rubber products near Colombo. This is one of the successful industrial branches constantly upgrading its technology. Substantial non-farm linkages are observed in many manufacturing and service activities. However, linkages with agriculture seem to be less important. This is a wet zone area where traditionally rice is grown. Now most of the fields are lying idle mainly because the availability of more profitable non-farm activities than rice has led to a change of behaviour among farmers.

The wet-zone rice growing area is followed by a coconut plantation area. Coconut plays an important role in the Sri Lankan economy on account of its different uses such as food items, roofing material, fuel-wood, timber, etc. In some cases, the demand seems to be income inelastic, for example, for food, roofing material and fuel wood. According to recent statistics, coconut production and the area under coconut in Sri Lanka are declining (Statistical Profile, 1997). One of the reasons is the increasing use of land for housing and other non-agricultural purposes. Given the high demand for coconuts in the domestic market, the possibility of cultivating coconuts in other areas is being considered. As Sri Lanka still is a poor country, promoting coconut production may be a rational strategy in the short-run. However, the low income elasticity of demand for coconut products means that other industrial uses for coconut plantations have to be innovated.

In the intermediate zone between the coconut area and the dry area several crops - rice, coconut and rubber are grown. In the dry zone, rain-fed areas show significant variations. Some areas are very dry, barren, sparsely populated and have few economic activities.[11]

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[11] See Aturupane´s article for agricultural prosperity in the coconut area.

In the areas near the old tanks of Anuradhapura, rice is cultivated. Rice farming takes place only on a subsistence basis. This is complemented with income from other activities such as brick and building work, mat-making, pottery, etc. The scale of operation is extremely small. Families in this area survive with the help of government handouts in terms of cash, subsidised bus services, etc. Income also comes from people recruited by the army and migrant workers in the Middle East. Still, the lack of demand due to both sparse population and low incomes seems to constrain the growth of non-farm activities. The reason for low incomes and the sparse population is the poor resource endowment of the area. There is a severe problem of water supply both for production and consumption purposes. Women have to carry water for household use from far away places.

Traditional pottery is receiving help from a donor-supported project in terms of technological improvement in machines, product design and marketing. Some efforts toward industrial clustering are evidenced here. However, the production environment, work and living conditions of the potters are not encouraging. They have to grow their own rice, and pottery is undertaken as a subsidiary occupation. The demand for pottery products among the poor is not very high as there are plastic and aluminium substitutes available. In order to be viable, pottery should produce high-quality luxury products. The consumers for such items may be found in the prosperous areas and abroad. Hence, considerable marketing skill is needed for this industry. Amidst this difficult situation, there are, however, some signs of entrepreneurial activities.

The seamstress, the entrepreneur and the trader:

By the side of the main road, we found a man selling petrol, motor oil and other items in bottles and cans. Along with this trading, he is also building a house that is going to be an extension to the present tailoring establishment of his wife. She has three sewing machines and three workers already. She is taking orders from a trader who supplies all her materials. She started this business completely on her own after getting the idea from her sister who has a similar establishment in Kandy. She has been able to save from her business and is reinvesting the surplus for expansion.

Our question is how far can she expand? Will this enterprise be large enough to create many employment opportunities? Some development practitioners are quite pessimistic about it.[12] It is argued that this woman, in spite of her entrepreneurial talent would not venture to expand on a large scale because of her lack of knowledge about how things work in the formal sector, for example, labour laws, industrial laws, taxes, banking system, etc. It may be interesting to visit this place again after 4-5 years.

The pessimistic picture of the dry zone area has a counterpart. The government of Sri Lanka has invested in irrigation and land development in some parts of the dry zone. Although we had no opportunity to visit the Mahaweli resettlement area, we passed through Dambulla, a prosperous town that has grown in recent years because of irrigation facilities promoting agricultural development, and possibly the highway carrying war supplies to the conflict-ridden North-eastern province.

Urban concentration in and around Kandy:

Kandy, an old town, has the advantage of many tourists, a university and surrounding agriculture. Matale has diversified agriculture, dense population that supports various non-farm activities. The condition of the houses indicates prosperity among the households, most probably due to the location by the side of the main road. A new and very prosperous township, Gambola, has developed in recent years near Kandy. The prosperity seems to have come from the Muslim traders and the remittances from the migrant workers in the Middle East. Pockets of extreme poverty, however, exist in the Kandy area down in the valleys. There is very little land for the households living in the area. Production conditions are harsh, and most households depend on homestead gardens. . The infrastructure is very poor and they have to come up a long way for the purchase of basic goods and services.

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[12] Informal discussion with a programme officer of Sida during the field survey

Plantation sector - tea estates in Hatton:

Poverty is especially acute among plantation workers. However, in recent years some improvements have been noticed because of the increase in productivity following privatisation and other interventions. For example, Sida has been engaged in the education of estate children some time, and considerable success has been achieved in literacy. However, problems exist with respect to the higher level and quality of education. Most students do not complete OGL, and are very weak in mathematics and English. In spite of this, Sida´s intervention in the education sector has indirectly contributed to a lot of improvement in the estates. The access to education has made young people conscious of other possibilities outside the estate, and this has exerted pressure on the employers to raise wages and improve the employment condition of the workers. This was reflected in the conversation with the Manager.

Management´s view about the estate

In the first few years after privatisation, the company made losses. Recently, it has been making profits. Improvements have been made in production technology and worker skills. Although technology development is not fully introduced in this estate, some of the operations are being mechanised due to an alleged shortage of labour - partly due to smaller families and partly to increased education among the workers. The mechanisation has also improved efficiency. Several measures are being taken to improve the motivation of the workers such as improved housing, co-operative stores, child-care facilities and private latrine units on a loan basis to promote the sense of responsibility with respect to maintenance. Wages have also been raised to Rs 115 per day, and with overtime, each worker can earn Rs 3000 a month. It means that the income of a household of four workers becomes 12000 a month, much higher than the average household income for the whole country.

Other efforts include an ADB programme that has developed guidelines and handbooks being used by the Plantation Management Institute. They provide training in management at all levels except the workers. No programme concerning the workers or trade unions is contemplated. The management is quite happy to deal with any problem of workers individually and informally.

On the whole, the Manager is optimistic about the prospect of Sri Lankan tea in the world as Sri Lanka is maintaining its competitive position.

Interview with the trade union leader:

The trade union leader is quite positive about higher wages and better housing conditions, etc. However, he pointed out that they work long hours, especially women who sometimes work 12-14 hours a day. Women seem to be the victims as men usually spend the extra income on alcohol. Those who are employed have a better deal, but unemployment is high. With privatisation many were encouraged to retire with compensation. The compensation made the workers happy, and hence no open conflict arose with retrenchment. There are people who are involuntarily unemployed i.e. they want to work on the estate but cannot get jobs. There are, however, workers who do not want to work there.

Now, after privatisation, the trade union can communicate with the top management, something that was not very common before. The role of trade unions at the lower level has weakened because, with decentralised management, some issues are settled at estate or local levels. According to the trade union leader, the management is happy about the direct relationship with the workers and the weak power of the union. The weakening of the organised labour movement is not good because if a problem should arise, the unorganised groups may try to solve their grievances by resorting to violent means.

On the eve of privatisation, the company denied its responsibility of providing housing which was a legal requirement for the state to provide for its workers. Now the company has started a loan-financed housing scheme, and claims it as one of their achievements. However, it is not widely practised yet. It depends on the local manager's attitude and ability. On Annfield estate, which we visited, a lot of improvement has taken place due to the personal initiative and ability of the manager.

Garments enterprise within the EPZ in Katunayake

An interview was carried out with the Manager of *Jaqalanka* which exports 90 per cent of products to the US. The company was established in 1978 by a Sri Lankan entrepreneur with

10 machines and 10 workers. Now it has expanded to 300 machines and 400 production workers. It recruits mostly women aged between 18-25. They start as trainee/operator with a monthly salary of Rs. 2700 reaching up to Rs. 3700. Some of them are promoted to the post of supervisor. In addition to salaries, they receive free breakfast, subsidised lunch, free accommodation and lump sums for marriage, funerals, etc. The labour turnover is said to be 10% (seems low given the low age range of the workers). The manager admitted that 60 to 70 per cent of the female workers come from remote villages and it is difficult for them continue working after getting married and having children.

Technological upgrading is observed in cutting, pressing, sewing buttons, checking needles, checking buttonholes, and they maintain ISO regulations. Technologies are introduced to save labour and improve quality. Most of the machines are from Japan and technology information is acquired through trade fairs.

Linkage effects

Production linkage effects are limited as most of the machines and intermediate goods are imported. It is alleged that Sri Lankan companies cannot meet the quality demanded in the international market. However, consumption linkages work through the employment of workers and the increased wages in recent years.

Product demand and marketing channels

Most of the orders are from large chain stores like Gap, OREX. They provide the styles, designs and any new ideas. There is little scope for local producers to go for fashion items and compete in high-value products. Tough competition is faced from India, Bangladesh and Pakistan, Vietnam, China and, in the past, Indonesia.

Management skills

The present director has a technical education and has been with the company since its inception. More facilities are provided in the EPZs than outside of the zones, for example, 10 years tax holiday for the former as against 5 years for the latter. Infrastructure, power and security services are provided to attract foreign investors. These locational advantages are present not only in the EPZs but also in other industrial locations as was observed in Negambo described below.

Garment industry outside the free trade zone in Negambo

The enterprise, Kane Apparels was established in 1994. It operates with 150 sewing machines with three production lines working on sewing, finishing, ironing and packaging, and engage 325 workers, 90 per cent girls. There are daily output production targets for each line. 100 per cent of the production is for export and the enterprise receives exactly the same BOI facilities including the bonded warehouse, as the enterprises in the free trade zone.

The enterprise has mechanical and electrical sections. Technically qualified boys and girls are put on production lines. Unlike the free trade zone enterprise, this enterprise does not have a trainee period. There is a private organisation, Clothing Industry Training Institute, CITI which provides a 3-6 months course. Training is provided for operators, quality controllers, production trainees and production management. Other management courses are also provided by the Garment Industry Management Institute, GIMI. There are four garment factories in this area, and they have no difficulty in recruiting local trained workers. The problem of labour turnover is less acute as the workers are not removed from their homes. Costs are lower for the employers as no accommodation is needed. There is less of a social problem as well. There are four grades at the production level. Grade one starts with a salary of Rs. 3100 and reaches Rs. 3500 at grade four. They also receive free breakfasts, subsidised lunch, lump sums from the benevolent society in cases of the death of parents, marriage, annual bonus, festival allowance, leave pay and unutilised leave pay.

Korean assembled machines are used and ISO rules are followed. Production in this enterprise is less mechanised and machines are not as modern as in the enterprise in free trade zone. Quality checking as not as thorough as in the other enterprise. It follows AQL, acceptable quality label and meets the highest requirement, 2.5 point.

The production, specialised in shorts, pants and skirts, goes to the US and UK markets. Besides the orders from a few known chain stores, the managing director tries to explore markets to fulfil the quota received from the BOI. In contrast to the free trade zone enterprise, this enterprise is not wholly dependent on imported inputs. For some orders, it uses Sri Lankan fabrics. One US company, Koruite Manchester Factory, ensures the quality of the

local fabrics. It also uses Sri Lankan thread. Buttons and zips are imported from China and S. Korea.

This enterprise seems to be acquiring technological capability in production and marketing gradually. The management is confident of maintaining competitiveness without quota and BOI facilities. It is more integrated with the domestic economy as it is located in an industrial area where there are other enterprises. There are three garment factories - Orit Apparels, Kane Apparels, 2 Union Apparels, batik for export and the local market, saw mills for the local market, fishing for the local market, coconut husk for export and a factory for desiccated coconut for export.

An important issue for policymakers is whether free trade zones are needed in Sri Lanka. Edward's study shows that the social rate of returns to investment in free trade zones are very high. Free trade zones are important for attracting foreign investment. However, Lall's study and our observation indicate that, in spite of foreign technology, industrial deepening is lacking, and integration with the local economy is weak.

Other industrial clusters named by SMED

In Webode 32 km from Kandy, blacksmiths and goldsmiths started their enterprises before 1977 under the light manufacturing industries programme. There are skilled workers, but quality problems are present. The existing potential can be utilised through investment in infrastructure, technology upgrading and marketing. Other clusters are brass-casting in Kandy and Agulmadawa down south, historically-developed clusters in Pilimaltalawa, carpentry cluster in Morotawa, and pottery in Kego.

Kotmali is famous for blacksmiths. Heat treatment technology was originated by the provincial district authority. The enterprises have good worker organisation. They produce for tea estates. They have problems in producing or obtaining good quality raw material. They need semi-finished raw material to do the finishing at which they are skilled.

In many of these clusters, environmental problems are becoming acute, for example, Ratmanada's disposal of waste problem. SMED is helping these clusters to upgrade

technologies to make them environmentally sound. They co-operate with a German organisation, and are willing to co-operate with Sida.

Summing-up:

Our field visits indicate that various forces have worked towards the growth of small towns and industrial complexes.

- agriculture-led growth with agriculture supported by natural conditions, and agriculture supported by government interventions like irrigation and land development.
- migration-induced growth - the effects of worker migration on the rural economy through investible resources, changes in attitudes and behaviour, acquisition of knowledge such as business ideas, etc.
- growth arising from improved functioning of the economy - indirect effects of privatisation of tea estates, technological changes and increased worker income on the demand for different goods and services.
- the growth of peripheral towns due to proximity to large industrial centres, around Gampaha.
- reducing market and government failures - indirect effects of donor (Sida) intervention in education and family planning among plantation workers on their standard of living and changing attitudes.

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