Poverty Assessment for Sri Lanka

Engendering Growth with Equity: Opportunities and Challenges

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Table of Contents

Preface		
Acknowledgements		
Executive Summary		i - xiv
1.	Overview of Sri Lankan Economy in an International Context: Achievements and Challenges	1
2.	Poverty, Inequality and Vulnerability in Sri Lanka	11
3.	A Profile of Poverty in Sri Lanka: Poor Households and Lagging Regions	28
4.	Internal Migration, Remittances and Urban Concentration	47
5.	Human Development Challenges and the Poverty Nexus	64
6.	The Rural Challenge: Raising Agricultural Productivity and Non-Farm Incomes	78
7.	Social and Economic Situation in the Conflict Affected North and East	90
8.	Finding a Path out of Poverty in the Estates	102
References		123
Annexes		A-1

Preface

In recent years, there has been heightened concern among policy makers about the slow and uneven pace of growth and poverty reduction in Sri Lanka and on growing disparities between regions. The President's own election manifesto *Mahinda Chintana* explicitly seeks to address regional inequalities in incomes, human development outcomes, and access to economic infrastructure. Starting with the 2007 Budget, the Government is focused on strengthening the links between emerging policy priorities articulated in the *Chintana* and the budget, including the further development of its medium term budget framework (MTBF).

There has also been significant development *in deepening the understanding and debate on poverty issues* in Sri Lanka. Poverty research now involves a wide set of players which includes Government officials and producers of national household data – most notably the Department of Census and Statistics (DCS) and the Central Bank of Sri Lanka (CBSL); academics, independent research institutions, non-governmental organizations and donors. A diverse set of tools and methodologies have been employed, such as the use of qualitative techniques, geographic information systems (GIS), and case studies. One of the most important advancement in poverty measurement was the development and consensus on an official poverty line and trend for Sri Lanka by DCS based on the Household Income and Expenditure surveys (HIES).

This report is intended to add further to the debate and understanding of poverty in Sri Lanka, its trends, correlates and causes, with the objective of identifying key factors that constrain incomes. The report will also draw policy-relevant conclusions with a view toward contributing to policymaking as well as the Bank's engagement in supporting such policies.

The report builds on the *2002 World Bank Poverty Assessment on Sri Lanka* by updating the information on trends and profile of poverty in Sri Lanka. The 2002 report focused primarily on identifying household specific correlates of poverty and the accuracy of targeting of key public anti-poverty programs and safety nets. This report focuses more on taking a closer look at factors that constrain incomes in lagging regions and sectors, including the estates and the North and East.

The current report has been prepared in close collaboration with the DCS, particularly in all areas related to measurement of poverty and its correlates and poverty mapping. The report relies primarily on available national datasets. These include HIES, Demographic and Health Survey (DHS) and Labor Force Survey (LFS) for different years conducted by DCS, and Consumer Finances and Socio Economic Survey (CFSES) for different years conducted by CBSL. These data were supplemented by a qualitative study and household survey of the estate sector, conducted for the report by Center for Poverty Analysis (CEPA) and Sri Lanka Business Development Corporation (SLBDC) respectively.

While the available data sources provide significant insights into poverty in Sri Lanka, this report also made apparent the limitations imposed by the absence of a regular integrated household survey in the country. This report has attempted to compensate for this absence by finding ways to combine information from different sources and using recent innovations like poverty maps; but these cannot substitute fully for the insights an integrated survey (like the Living Standards Measurement Surveys conducted in many developing countries) can provide about the causes and determinants of poverty. The DCS, with support from the World Bank, is in the process of developing such a survey intended to cover a wide range of topics critical to a household's well-being, which will greatly enhance the future of poverty analysis in this country and its ability to inform policy.

Acknowledgements

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The analysis of poverty using data from numerous surveys and the Population Census produced by the Department of Census and Statistics (DCS) was conducted in collaboration with the DCS. In particular, the team is grateful to Mr. A. G. W. Nanayakkara, Mrs. Suranjana Vidyaratne, Mr. Yasantha Fernando, and Mr. Tillakaratne from DCS for valuable advice and contributions to the analysis. The team also gratefully acknowledges advice and comments received from Dr. Anila Bandaranaike and Rocio Castro (World Bank) during various stages of preparation; and Harsha Aturupane and Kumari Vinodhani Navaratne (World Bank) for guidance on human development issues. Research assistance was provided by Fei Gao and Gozde Isik (World Bank); Malathi Ratnayake and Oxana Bricha (World Bank) provided excellent assistance in handling numerous logistical and contracting arrangements for the report.

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Executive Summary

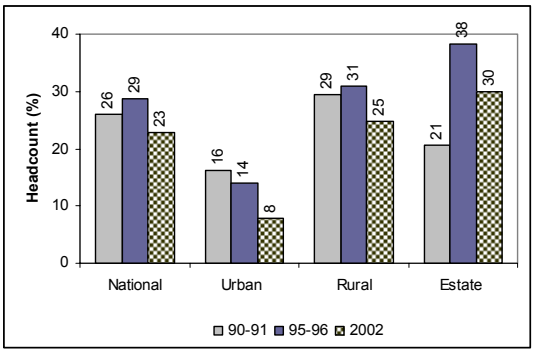
1. Sri Lanka's development experience has been a story of mixed success. The country has made impressive gains in human development that are comparable to those achieved by middle-income countries. Furthermore, in some areas – like universal primary school enrollment, gender parity in primary and secondary school enrollment, and universal provision of reproductive health services – Sri Lanka is set to meet the Millennium Development Goals (MDGs) well before 2015. At the same time, significant challenges remain in reducing consumption/income poverty, as well as on some key non-income dimensions of welfare, such as malnutrition.

2. This report will look into the range of factors that are responsible for the uneven geographic distribution of growth and poverty, and contribute to the challenges in reducing poverty in Sri Lanka at both regional and household level. And beyond these crosscutting issues, there are special combinations of factors that conspire to create poverty traps among groups who, because of historical reasons or recent events, are isolated from much of the development in Sri Lanka, such as in the estate sector and the conflict affected North and East. The analysis will show that a number of interrelated factors constrain the poor from accessing opportunities offered by more dynamic sectors of the economy. These indicate the multifaceted nature of challenges the poor face, which necessitate policy interventions along multiple dimensions.

I. Poverty, Growth, and Inequality Trends in Sri Lanka

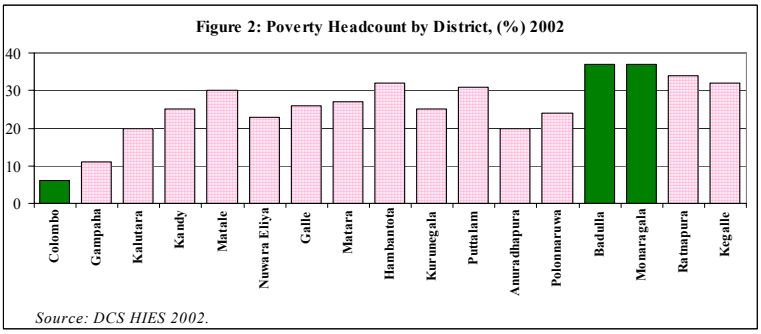
3. *Reduction in income poverty in Sri Lanka has been modest* - about 3 percentage points (from 26 to 23 percent) from 1990-91 to 2002 (Figure 1).[1] Poverty reduction has also been uneven across sectors: while urban poverty halved between 1990-91 and 2002, rural poverty declined by less than 5 percentage points, and poverty in the estates increased by about 50 percent - making this sector the poorest in the country (Figure 1).

Figure 1: Poverty Headcounts in Sri Lanka



Source: HIES (different years), using official poverty line.

4. The growing *urban-rural gap* is largely due to *economic growth* being *concentrated* in the *Western Province*. For instance, while the Western Province GDP grew by an average of 6.2 percent annually during 1997-2003, the rest of the provinces grew by only 2.3 percent.[2] The Western Province's share in national GDP increased from 40 percent in 1990 to 48 percent in 2002, while that of Uva and Sabaragamuwa fell from 16 to 11 percent. As a result, Western Province experienced the steepest reduction in poverty, so that poverty incidence was 11 percent in 2002 compared to 35 percent for Sabaragamuwa and Uva.



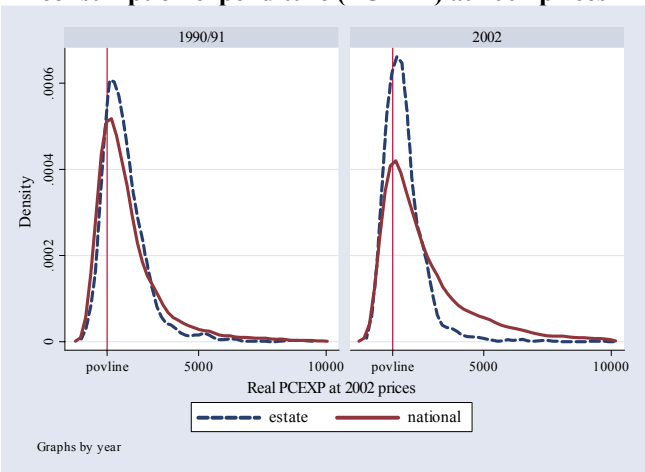
5. Similarly, *districts* that already had low incidence of poverty in 1990-91 (like 16 percent in Colombo and 15 percent in Gampaha in the Western Province) also experienced the largest poverty reduction by 2002 (by 10 percentage points in Colombo and 4 percentage points in Gampaha). At the same time, poverty rates have even increased in some

[1] Poverty rates do not include the North and the East since household surveys were not possible in these areas at that time.
[2] Excluding the North and East. Source: Peace Secretariat using Central Bank Provincial GDP numbers.

districts that were among the poorest in 1990-91. As a result, by 2002, poverty in the poorest districts of Badulla and Monaragala was more than six times that in Colombo (Figure 2).

6. Poverty and vulnerability (the risk of falling into or deeper into poverty) are also closely linked, since the poor or those just above the poverty line are more susceptible to a community or household level shock. Figure 4 shows that the population in Sri Lanka is highly concentrated around the poverty line, implying that even small shocks can cause large increases in poverty incidence. A recent World Bank report (draft) finds a number of sources of risk for households in Sri Lanka: sickness, and death of a family member and unemployment at the individual level; and drought, crop failure, and other natural disasters (like the recent tsunami) at the community level.[3]

Figure 3: Distribution of real per capita monthly consumption expenditure (PCEXP) at 2002 prices



Source: Staff estimation based on HIES 1990-91 and 2002

7. Safety net or social welfare programs have a critical role to play in protecting consumption in the aftermath of a shock. While Sri Lanka has had a long history of publicly funded welfare programs, much of the evidence suggests that current safety net programs do not adequately protect the vulnerable and the poor. The largest cash transfer program, Samurdhi, covers more than 40 percent of the population, but still misses a large proportion of the poor, and transfer minimal amounts – monthly average of a little above Rs. 90 (less than $1) per capita in 2002.[4]

8. The *tsunami* that struck Sri Lanka on December 26, 2004 is likely to have worsened poverty outcomes. Although poverty numbers are not available for the hardest hit districts in the East, the impact on the poor would have been significant given that the average monthly per capita income in the East is close to that of the poorest provinces of Uva and Sabaragamuwa.[5] In the South, where poverty data is available, the most affected districts have higher poverty incidences than the national average – 32 percent in Hambantota, 27 percent in Matara, and 26 percent in Galle.

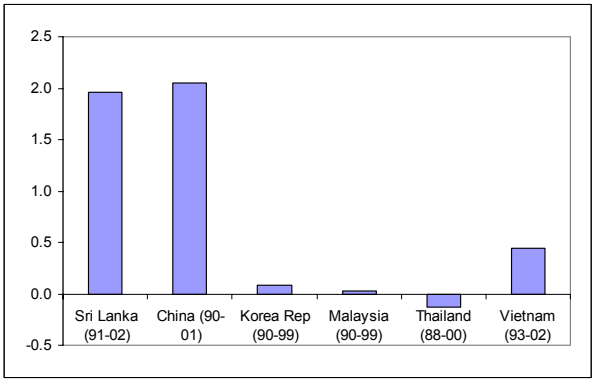
9. A quick *comparison of Sri Lanka with East Asian countries* shows that Sri Lanka's growth performance has been below potential, especially when considering its early achievements in human development. While Sri Lanka's per capita income in the 1960s was comparable to that of many East Asian countries, it is currently less than one tenth of Korea's, one fourth of Malaysia's, and half that of Thailand. China – that lagged far behind Sri Lanka in the 1960s – has recently overtaken Sri Lanka.

10. Sri Lanka's slower growth despite its early gains in human development indicates missed opportunities. This is particularly evident when looking at regions outside the Western Province where growth has been slower and income per capita substantially lower. While the Western Province fares better than the rest of the country in terms of human development outcomes, these differences are not as sharp as the differences in growth and per capita income, suggesting that Sri Lanka's below potential growth is mostly the result of other factors constraining growth, particularly in non-urban areas.

[3]World Bank (2006a, draft)
[4]Glinskaya (2000), using data from SLIS (1999-2000)
[5] CFSES 2003-04.

11. In addition to disparities in growth between the Western Province and the rest of the country, the slow pace of poverty reduction in Sri Lanka is also linked to *rising inequality among income groups*. Average per capita consumption grew by 50 and 25 percent for the top two richest quintiles but only by 2 and 6 percent for the poorest two quintiles.[6] Consumption inequality (measured by Gini coefficients) increased at an annual rate of 2 percent in Sri Lanka, which is much higher than in comparator East Asian countries, with the exception of China (Figure 4). Thus, for every 1 percent annual growth in GDP per capita, poverty headcount ratio declined by 0.4 percent in Sri Lanka, compared with 0.9, 1.4 and 2.6 percent in Korea, Vietnam and Thailand respectively.

Figure 4: Average Annual Growth of Gini Coefficient



Sources: China-Ravallion and Chen (2004); Korea-World Bank (2004); Malaysia-Government of Malaysia (2001); Thailand, Vietnam-PovCalNet at the World Bank; Sri Lanka-HIES (2002)
Notes: Gini coefficients of per capita consumption for China and Sri Lanka, of per capita income for the rest

12. *How much has the increase in inequality hurt poverty reduction?* If consumption distribution had remained unchanged from 1990-91, the 30 percent growth in average consumption that took place by 2002 would have reduced poverty by more than 15 percentage points nationally instead of the observed 3 percentage points. The rising trend in inequality also has direct implications for Sri Lanka's prospects of attaining the *MDG* of halving poverty by 2015.[7] It is estimated that if GDP continues to grow at the rate of the last two years (5.7 percent) and the Gini coefficient of consumption increases at the average rate of the last decade (2 percent annually), the poverty headcount in 2015 will be close to 15 percent, much above the MDG goal of halving income poverty. With inequality increasing at the current rate, Sri Lanka will need to grow at an annual rate of around 10 percent to achieve the MDG target.

II. The Correlates of Poverty: Household Characteristics and Spatial Factors

13. In Sri Lanka, poverty is strongly associated with attributes of individuals/households such as education attainment, employment status and family size. At the same time, even after these individual differences have been accounted for, the likelihood of being poor appears to depend on a range of spatial factors, such as poor regional growth and employment opportunities, and the availability of infrastructure such as roads and electricity. A multivariate regression of the probability of a household being poor on a range of potential factors shows these results quite clearly.

A. Household and Individual Specific Factors

14. To start with, certain *household demographics* appear to be important. Larger households, especially those with children, are more likely to be poor;[8] and having a household member working abroad is associated with a significantly lower likelihood of being poor.

15. *Human development:* The challenges that face Sri Lanka in human development are quite different from those that face most developing countries. Primary enrollment and literacy, that remain priority challenges for many developing countries, are near-universal in Sri Lanka. Similarly, basic indicators of health – like life expectancy, maternal health, fertility, infant and child mortality rates, and immunization rates – are uniformly high in all parts of the country and across income groups. Good basic indicators in health are in no small measure due to the high literacy of mothers in Sri Lanka.

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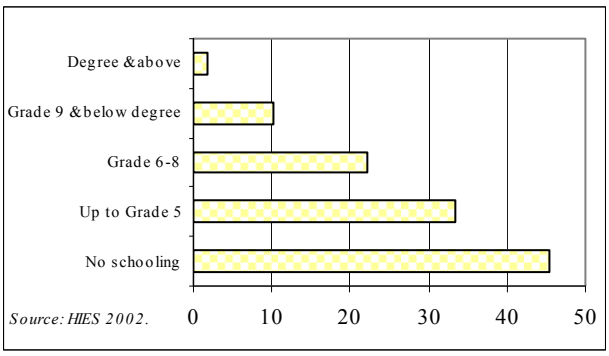
[6] Staff calculations based on DCS HIES 1990 and 2002.
[7] Assuming population growth rate of 1.2 percent. These projections are based on the approach proposed by Bourguignon (2003) to estimate growth elasticity of poverty. Like most such elasticity measures, these are calculated under certain restrictive assumptions about the current distribution of consumption (see Annex 2).
[8] However, this needs to be interpreted with caution since the per capita consumption measure is unable to account for economies of scale in consumption and age of family members, and therefore tends to underestimate the welfare of larger households.

16. Even though primary and secondary enrollment rates are high in Sri Lanka, a household is significantly less likely to be poor when the head has educational attainment of A-level and above. In 2002, almost half of households whose heads did not have any schooling fell under the poverty line, compared with 2 percent for those who completed tertiary education (Figure 5).

Figure 5: Poverty Headcount (%) by Education Attainment of Household Heads, 2002



17. Nationally aggregated data on school enrollments hide *disparities* among income groups, which show that educational attainments are likely to be less among children of poor households. For example, net enrollment for grades 10-13 among the lowest income quintile (31 percent) is only half that of the richest quintile (60 percent) (Table 1). At the tertiary level, the disparities are even greater. The net enrollment rate for the lowest quintile (2 percent) is less than one-sixth that for the richest quintile (13 percent).

18. Education quality is an area of concern, where remote, rural areas and the poor suffer from disadvantages. Nationally, students display a low level of mastery skills in first languages, English, and mathematics, and these indicators are even lower for rural children. Due to excessive demand for teacher postings in urban schools, there is a severe shortfall of teachers in rural schools – particularly in economically disadvantaged areas. Absenteeism of teachers (about 20 percent nationally on a given day) is also higher in rural schools. The poor quality of school education has led to rapid increase in the use of private tutors, where also, urban-rural and rich-poor gaps are prevalent: CFSES (2003-04) shows that private tuition is used less by rural and estate children, and almost twice as much by students in the highest income quintiles than those in the lowest quintile.

19. In health, *rich-poor* gaps are prevalent along some critical dimensions – such as low birth weight, malnutrition among pre-school children, poor nutritional status of adult women (Table 1), and incidence of communicable diseases such as tuberculosis and diarrhea. These outcomes are most closely associated with poverty, because of the direct link between poverty on the one hand and food availability, dietary awareness, and access to safe water and sanitation on the other.

Table 1: Human Development Outcomes by Wealth Quintiles and Sector (%)

	Children Under-weight	*Children w/ Diarrhea*	*Women with Low Body Mass*	*Higher Secondary Enrollment* *
Poorest	47.4	7.6	37.3	31
Richest	11.1	4.5	10.0	60
Urban	17.8	5.7	12.7	-
Rural	31.0	7.8	23.1	-
Estate	45.7	7.6	47.7	-
Sri Lanka	29.3	7.3	22.9	-

Source: Staff calculations using Sri Lanka DHS (2000). Refers to children aged 3-59 months. *DCS HIES 1995-96.

20. Inadequacies in nutrition and education – in terms of attainment and quality of education received – can have lifelong effects on earnings, and therefore trap households in a cycle of low capability and poverty. The higher incidence of poverty among the less educated and the fact that the poor are less likely to be enrolled in higher levels of education perpetuates the vicious cycle of low human capability and poverty.

21. *Employment*: Unemployment has weak correlation with poverty for the population as a whole; but the presence of an *unemployed youth* is associated with a higher probability of the household being poor – an important finding since more than 75 percent of the unemployed belong to the youth group (age 15-29).[9] The link between youth unemployment and poverty is explained by youth unemployment being especially

[9] Nanayakkara (2004).

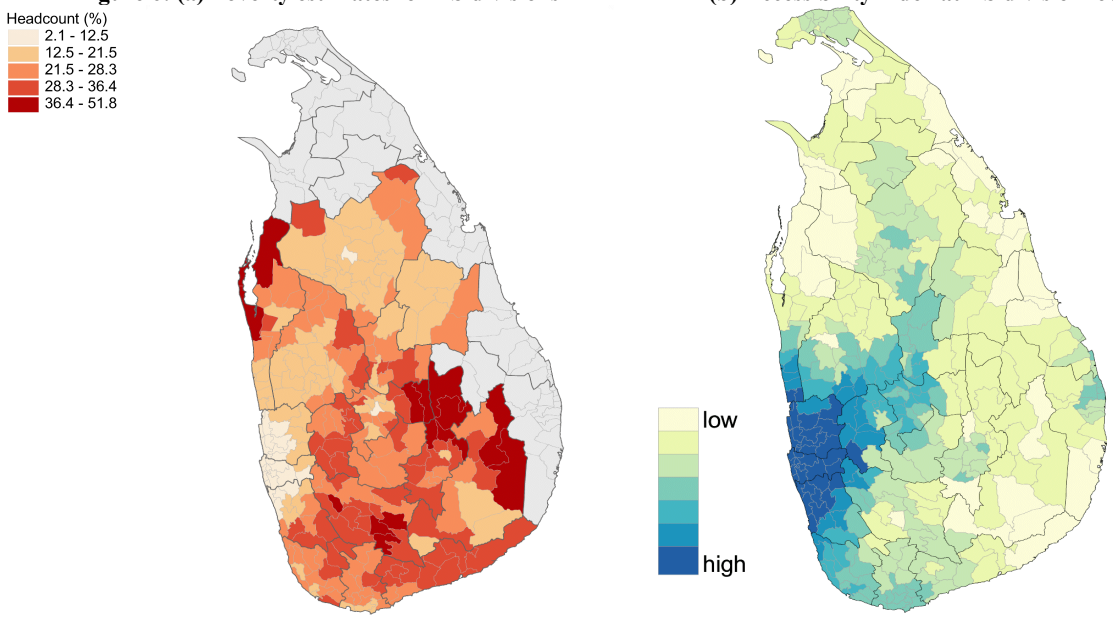
high among school dropouts, who in turn are more likely to belong to poor households (see Table 1 above). A household is also more likely to be poor when at least one member is employed in elementary occupations. Since underemployment is often a feature in the informal sector, this finding is consistent with the commonly held view that underemployment and poverty are closely linked. And the likelihood of being employed in elementary occupations is in turn higher for individuals with lower education attainment. Education is thus an important underlying factor linking labor market outcomes with poverty. Consistent with the pattern of agricultural stagnation discussed later, employment as an agricultural worker also increases the likelihood of poverty.

22. *Gender, ethnicity, and land ownership*: There is no evidence that households with female heads are poorer, and similarly no correlation between ethnicity or religion and poverty incidence. Unlike many developing countries, l*and ownership* also does not seem to have a close link with poverty (CFSES, 2003-04). However, land ownership in Sri Lanka is complex and sometimes difficult to ascertain.

B. Spatial or Location-Specific Factors

23. Even after controlling for the effects of household-specific factors, a number of spatial characteristics – at the district or DS division level – emerge as strong correlates of poverty. Poverty is concentrated in areas where connectivity to towns and markets, access to electricity and average educational attainment are relatively low, and agricultural labor is an important source of employment. The story that emerges, starkly put, is: even when two households are identical in all their characteristics, if one of them is located in a DS division with the average characteristics of Colombo and the other in an average DS division of Monaragala, the likelihood of the former being poor is 7 percent lower than that of the latter. Although this is a highly stylized example, it illustrates the main message: certain location characteristics are critical in explaining the uneven pattern of development.

Figure 6: (a) Poverty estimates for DS divisions **(b) Accessibility index at DS division level**



Source: Poverty map from DCS (2004); accessibility map based on staff calculations
Note: The accessibility index is calculated for every point as the sum of the population totals of surrounding cities and towns, inversely weighted by the road network travel time to each town. This map shows the mean of the access values for all points that fall into a given DS unit. The index is a measure of potential market integration reflecting the quality and density of local transportation infrastructure, including 185 cities/towns in the analysis.

24. Figure 6 vividly portrays the association between accessibility index (a potential for market integration, measured using distance and availability of roads from towns and markets) and poverty estimates at the DS division level, using the small area estimation-based poverty map produced by DCS.

Multivariate regressions find that the probability of a household being poor falls with every unit *increase in the accessibility index* (by 2-3 percent) and *increase in average usage of electricity* of the district or the DS division the household is located. The probability of being poor is also higher when the household belongs to a district with higher proportion of household heads with only primary education, indicating that the *average educational attainment* of the region also matters. All three indicators also have high bivariate correlations with poverty headcount estimates at the district, province and DS division level.

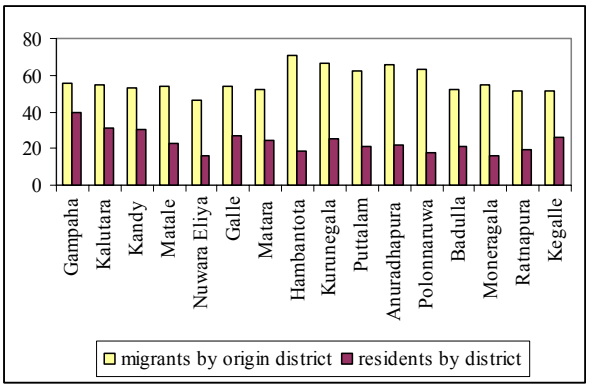
25. *The combination of such factors – from access to markets to availability of infrastructure and educational attainment* – appears to be a fair representation of what conspire to hold back growth and poverty reduction in large parts of the country outside of the Western Province. The fact that these are also highly correlated with each other indicates the many-sided nature of challenges faced by poor areas. Remote areas badly connected with markets and cities are also more likely to have lower access to electricity and lower average educational attainment, which makes it even harder to attract investment and catch up with the better performing areas in the country. Therefore, addressing these challenges require policies that address multiple dimensions simultaneously.

III. The Impact of Internal Migration – a Consequence of Rising Regional Inequality

26. Migration offers a valuable means of achieving upward economic mobility to those living in lagging regions, given the high degree of regional inequality that exists in Sri Lanka. It can be a force in favor of *reducing* cross-regional inequality – by shrinking wage gaps between regions as people move in response to wage differences, and by generating remittances back to the migrants' place of origin that promotes development in the lagging regions. At the same time, migration can *perpetuate* regional imbalances, for example when the more educated from lagging areas leave for fast-growing cities.

27. In Sri Lanka, internal migration has almost doubled in numbers between 1996-97 and 2003-04 (from 15 to 29 per 1000 households).[10] Migration within Sri Lanka *occurs primarily into the Western Province, with Colombo urban area* being the primary destination. The rising trend of internal migration is consistent with the expanding wage gap between Colombo and the rest of the country, which is seen even in elementary occupations. The economic benefits of migration from rural/remote areas to the Colombo urban growth center are large, and have increased as this area has grown much faster than the rest of the country over the last decade. In 2003-04, 81 percent of internal migration had occurred for employment purposes.[11] Remittances constitute a substantial share of consumption expenditure for households who receive remittances, around 26 percent in 2002 (using HIES 2002).

Figure 7: Share of Household Heads with Tertiary Education by Origin District, 2001



Source: Staff estimates based on Census (2001)
Note: Includes migrants into Colombo city only

28. *Poverty incidence in the origin district is strongly associated with recent migration to Colombo.* Census (2001) indicates that poorer districts and districts in the North and East account for larger numbers of migrants. This seems to indicate so-called "push" factors that induce households from economically disadvantaged areas migrate to Colombo. However, in these areas, migration is an opportunity more

[10] CFSES (1995-96 and 2003-04). It is important to note these estimates are likely to *understate* migration, since migrants in these surveys exclude those who have migrated along with their entire household.

[11] CFSES (2003-04). Over the same period, external migration fell marginally from 63 to 60 per 1000 households, but remittances from abroad grew at 11 per cent in 2003. Employment was the reason for 95 percent of all emigration. This report focuses on internal migration because of its close link with widening regional inequalities within Sri Lanka, and current lack of information on the impact of external migration. The latter will be analyzed in detail in the upcoming trade study for Sri Lanka.

likely to be taken by those who are better educated: Figure 7 shows that average education among migrants is much higher than that among residents of the district they migrated from. This indicates that there are also "pull" factors in the form of conditions in the Colombo area –like better availability of jobs – that attract those who are highly skilled or educated, away from the lagging areas.

29. Migrants are also likely to be better-educated than the long-term residents of Colombo: tertiary educational attainment among migrants is almost twice that of non-migrants in Colombo City and as a result, the proportion of migrants working in elementary occupations is much smaller than that of non-migrants. When the household head is a migrant, the household is also more likely to have good housing conditions and amenities.[12] Therefore, urban poverty in Sri Lanka is unlikely to be a direct consequence of the rural poor flooding into urban centers.

30. Migration is largely a response of individuals to the sharp inter-regional differences in economic opportunities. At the same time, the pattern of migration seen in Sri Lanka may *perpetuate* regional differences, by increasing the endowment of human capital in the Colombo area at the expense of lagging regions. Over-concentration in Colombo can also limit the growth potential created by migration, due to the negative externalities related to congestion, infrastructure bottlenecks and land shortages. Already, there are indications of strain on the city's basic services, as well as steep increases in land price, which tend to affect the poor and informal sector workers in particular. Recent cross-country literature on economic geography suggests that the *optimal urban primacy* for Sri Lanka – the share of the main urban center of the country in total *urban* population – is around 25 percent.[13] With alternative (but reasonable) definitions of the Colombo urban area, urban primacy of the area is found to be in the range of 35-50 percent, which implies a "cost" of at least 1.5 percentage points in GDP growth annually.[14] And this loss of growth opportunity is in *comparison* to having *lower urban primacy,* which implies having *other urban growth centers* to exploit better the growth potential created by rural-urban migration.

31. Migration thus provides households in remote, lagging regions with economic opportunities, which are however more likely to be utilized by those who are better endowed in terms of human capital. Thus, improving education and skills in remote areas will empower the poor with better choices. Furthermore, to reduce the losses in welfare and growth potential due to over-congestion in Colombo area, it is equally important to promote alternative growth centers, and improve urban planning and delivery of services in Colombo itself.

IV. Poverty in Selected Sectors and Regions

32. As discussed earlier, poverty has been more prevalent in the estate and rural sectors and is likely to be a serious problem in the conflict affected North and East. The unique circumstances in conflict-affected areas deserve special attention, particularly since empirical data for this region has become available only recently, although geographical coverage of household surveys remains incomplete for the region. Poverty in the estate sector remains endemic and is related to issues that are specific to the sector, and thus worthy of special attention. The rural sector is home to most of the poor (88 percent), which implies that significant poverty reduction can only occur when key factors restricting incomes in this sector are identified and addressed.

A. Social and Economic Conditions in the Conflict Affected North and East

33. Sri Lanka's over two decades of conflict have had far-reaching economic and social repercussions. Over 65,000 people have died, nearly a million citizens displaced, private and public properties and

[12] Population Census (2001). However, the aggregate picture masks differences within migrants. Those who did not migrate with their household heads, consisting of 20 percent of total migrants in Colombo, are less educated on the average than the residents and more likely to work in elementary occupations.

[13] See Henderson (2000). There are many country specific characteristics that significantly affect the relationship between urban primacy and economic growth, but are not necessarily incorporated in a cross-country exercise such as this.

[14] This number, given the limitations of a cross-country regression, is speculative. At the same time, it is a useful illustration of a broader point that Colombo urban area is over-concentrated, and that in turn imposes economic losses on the country.

economic infrastructure have been destroyed, local economies and community networks have been disrupted, and health and educational outcomes have deteriorated in certain districts. The Central Bank estimates the macroeconomic impact of the conflict cost 2-3 percent of GDP growth annually.[15]

34. Although the conflict has dampened economic growth in the North and East more than anywhere else in the country, per capita income (and consumption) levels in these provinces appear similar to those in other provinces, except Western Province (Table 2). *Significant remittances* to the populations of the North and East have contributed to safeguarding income and consumption levels. It is important to bear in mind though that these findings are based on data that do not cover the entire area, including some of the likely poorest areas in the North, and do not take into account spatial price differences, which are likely to matter for the North and East in particular.

35. These areas are also lagging behind the rest of the country in *health* and education *outcomes* and access to economic *infrastructure* and *financial services*. For example, literacy in the East is the lowest for the country. Less than half of households in the North and East have access to water seal latrines, while about three-quarters or more of households in other provinces have the same (Table 2).

36. Encouragingly the cessation of hostilities following the *Ceasefire* Agreement signed in February 2002 has spurred a remarkable *economic recovery* in the North and East. Real GDP growth in the Northern Province increased four-fold to 12.6 percent while that of the Eastern Province doubled to 10.1 percent from pre-ceasefire 1997-2001 to post-ceasefire 2002-03.[16] Unemployment also fell significantly from 13 to 9 percent in the North and from 16 percent to 10 percent in the East from 2002 to 2004.[17]

Table 2: Selected Provincial Indicators, 2003/04

	Income per capita	*Transfers as % of income*	Literacy Rates	Access to Water Seal Laterine
Western	6,603	16	96	90
Central	3,548	17	89	74
Southern	3,279	18	93	88
Northern*	3,741	37	93	46
Eastern	3,162	24	87	49
North Western	4,139	20	94	86
North Central	4,003	15	93	73
Uva	2,769	14	88	75
Sabaragamuwa	2,996	14	92	82
Sri Lanka	4,326	18	93	80

**Excludes Killinochchi, Mannar, and Mullaitivu.*

37. However, significant *constraints* still remain to sustaining high growth in the North and East including: (i) poor availability and access to financial services, (ii) poor access and quality of economic infrastructure (roads, telecommunications, water), (iii) high taxation by the LTTE on goods and incomes, (iv) time restrictions on the use of the A9 highway, (v) fishing restrictions, (vi) limits on mobility in certain areas such as Jaffna, and (vii) out-migration of the educated abroad or to the rest of the country.

38. Despite the lack of comprehensive data, there is no doubt that the conflict has severely affected the welfare and economic conditions of people residing in the North and East. The tsunami is likely to have aggravated the already serious situation in the North and East. The Ceasefire since 2002 has presented the region with the longest semblance of normalcy and peace in history and initial studies have shown significant peace dividends have accrued to the North and East. However, unless durable peace is achieved and institutional rigidities and challenges described above are addressed, the sustainability of high growth in the North and East and prospects for significant poverty reduction will remain distant.

B. Poverty in the Estates

39. The estate population as a group represents perhaps the most persistent challenge to poverty reduction in Sri Lanka. Consumption poverty in the estates in 2002 was higher than in 1990-91, so that the estate sector is now the poorest with a poverty rate 7 percentage points higher than the national average. However, considering the full distribution of consumption, the story in the estates seems to be one of

[15] CBSL Annual Report 1998.
[16] Peace Secretariat using CBSL dataset.
[17] DCS Labor Force Surveys (LFS) 2002 and 2004.

stagnation, rather than a drastic fall in welfare. A high concentration of consumption per capita within a narrow interval around the poverty line implies that even small shifts can result in large swings in poverty, and the large increase in poverty headcount between 1990-91 and 2002 occurred due to a slight worsening of the distribution (Figure 4).

40. Current national household surveys have many limitations in being able to examine the determinants of estate poverty in depth and discern patterns among types of estates – by size, location, type of crop (tea or rubber), and management (RPC, privately owned and state owned). To fill this gap, a comprehensive Estate Household Survey and a study employing qualitative methods were fielded. The poverty status of households is measured using an *Asset Index (AI) score*, which is used as a proxy for wealth.[18]

41. In terms of *household characteristics*, households with more *earners* and higher *educational attainment* among household heads tend to be better off. Possession of *National Identity Cards* (NICs) among household heads is also associated with significantly lower AI-poverty rates. Ownership of NICs is particularly low among the youth (age 15-19), and seems to be related to factors that indicate the degree of isolation of households and estates, and their increased vulnerability to poverty. Estate residents who have NICs have better opportunities to earn outside the estates.

42. More than 40 percent of estate households rely solely on estate wages for earned income. The AI-poverty rates are highest among households that receive wage incomes from only one source – be that estate or outside. The multivariate regression found that while wage employment outside the estates is not associated with significantly higher welfare or earnings, households that receive income from enterprises tend to fare better.[19] Therefore, *diversifying to occupations beyond wage employment* – and particularly to income from enterprises – seems to be a key factor associated with higher welfare, similar to what is also seen for the rural sector (see below).

43. The "ideal" diversified livelihood portfolio of an estate household, both qualitative and quantitative findings suggest, would also include *overseas migration* of household members. Consistent with what is seen for the country as a whole, estate households with overseas migrants also tend to be better off. However, households who are better off are also more likely to avail of these opportunities due to the high initial costs of overseas migration. On the other hand, although *internal migration to urban areas* does not appear to yield significant remittances, qualitative evidence suggests many other rationales for migration: the expectation of future opportunities, skill development, and as a strategy to cope with seasonal unemployment in the estates.

44. The *estate characteristic* that seems to matter most for welfare is the *remoteness of estates* in terms of year-round usability of the road linking the estate to the nearest town. 42 percent of households cannot use the road to the nearest town all year round. In all districts, households in estates where roads to town are passable all year tend be better off. Remoteness is also the reason why in terms of access to health services, ailments that require hospital visits pose special problems, with an average travel time for a one-way trip to the hospital of well over an hour among Estate Survey respondents.

45. *Alcoholism* was widely reported in the Estate Survey as hindering the upward mobility of households and improvement in communities. About 80 percent of respondents indicated alcoholism to be a problem in their estates, and 75 percent of community informants reported no improvement over the last 15 years. The increased availability of illicitly brewed alcohol both inside and outside estates was perceived as aggravating the problem.

46. The CFSES offers interesting trends in employment and diversification for the period 1996-97 to 2003-04, but no clear picture emerges on why consumption poverty in the estates stagnated or worsened slightly over the decade. One trend consistent with higher poverty is a fall in the average number of

[18] AI-Poverty Rate here is defined as the percentage of households whose AI scores lie below the 30th percentile. The 30th percentile was used since the poverty headcount for the estate sector is 30 percent.

[19] Enterprise incomes are incomes from non-agricultural businesses and from sales of crops, livestock, and livestock products.

income earners in estate households (from 2.3 to 1.7 per household), while it remained unchanged nationally. This may be linked to the growing dislike for estate work the qualitative survey found among the youth, mainly due to the stigma attached to it – to the extent that many were even willing to remain unemployed until the right opportunity outside estates came their way.

47. Contrary to poverty trends, a majority of households interviewed in the Estate Survey reported that their household conditions have improved in the last 15 years, while overall conditions of estates have deteriorated. This difference in perceptions is partly explained by the increasing role of non-estate employment, which may partly de-link the condition of the estate from that of the household. There is also a clear pattern of better perceptions about improvements in community and households from RPCs than from privately managed estates.

48. Unlike consumption poverty, many aspects of *health, education, and housing* have improved in the estates. This was also collaborated by the perceptions reported in the Estate Survey. At the same time, the estates still lag well behind the rest of the country, and even rural area, on key indicators of health and education. For example, 37 percent of estate children are stunted, compared with 14 percent of rural children; and 48 percent of estate mothers have low BMI, compared with 23 percent of rural mothers (DHS, 2000). Qualitative interviews also indicated dissatisfaction with quality of health services, and even more so in privately managed estates. Households also perceived improvements in access to better quality education to have occurred over the past 15 years, but the cost of education and quality of schools in the estates, including a shortage of teachers, were frequently identified as concerns.

49. Although 30 percent of the population in the estate sector are poor (HIES, 2002), only 13 percent of the households interviewed in the Estate Survey reported receiving any *cash transfers from the government* – a stark difference from the Samurdhi coverage rate of over 40 percent for the rest of the country. The coverage of other social programs – with the sole exception of those in sanitation – also appears to be low. Programs in housing, training and awareness, microcredit, childcare, and early childhood development services all benefit less than 15 percent of the Estate Survey sample households, and 54 percent of sample households do not participate in or benefit from any program.

50. These results show that poverty traps in the estate sector share many characteristics with the remote, rural areas of Sri Lanka – from lack of connectivity and access to infrastructure to individual attributes like lack of education. In addition, other estate-specific factors also contribute to such traps. According to CFSES, internal and external migration rates for the estate sector and participation in self-employment, while improving over time, are still well below those for the rest of the country. Low mobility is likely linked to the long history of isolation of these communities, which has led to inadequate networks and links outside the estates. And even when estate residents are able to find work in outside jobs or migrate to urban areas, the opportunities are limited due to lower education attainment. Overseas migration for unskilled jobs requires less education and has clear economic benefits, but is less available to poorer estate households because of high initial fixed costs.

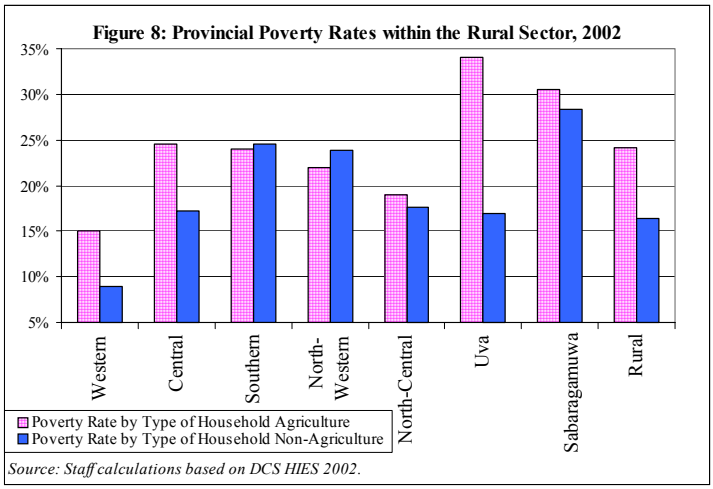
51. Qualitative findings also suggest that part of the reason why estate poverty has been so persistent has to do with the unique *organizational structure of estates* imposed by history, which continues to this day and contributes to the estate residents' marginalization from the mainstream – as suggested by perceptions and some of the evidence described above. Isolation is a key reason why estate residents still lag behind the rest of the country in making use of opportunities outside – in other sectors, urban regions and overseas. And this is why reducing poverty in the estates would require addressing the endemic economic and social issues that create poverty traps.

C. The Challenge of Rural Poverty

52. Reducing poverty in Sri Lanka will require a special focus on the rural sector, since it is home to 80 percent of the population and about 3.5 million of the country's poor. Slow poverty reduction in the sector is attributable mainly to agricultural stagnation, which 58 percent of the rural population depend on

at least partially for their livelihood.[20] Agriculture GDP growth slowed from 2.8 percent during the 1980s to 1.6 percent during the 1990s and to 0.9 percent during the years 2002-04, while national GDP has been growing annually by 5 percent since the 1990s.[21]

53. Agriculture dependent households in Sri Lanka tend to be poorer (Figure 8). 24 percent of rural agricultural households are poor, compared with only 16 percent of non-agricultural households. In the poorest province Uva, the poverty rate for agricultural households (34.3 percent) is double that for non-agriculture households (16.9 percent) (Figure 8) – significant since agriculture contributes 53 percent of Uva's GDP. Even in Western Province, where agriculture only makes up 3 percent of the provincial GDP and where access to markets and economic infrastructure are better than elsewhere, 15 percent of households engaged in agriculture are poor compared to 9 percent of those engaged in other activities (Figure 8).[22]



54. The fact that incomes generated from agriculture are significantly lower than in other economic sectors explain in large part why agriculture dependent households tend to be poorer. According to CFSES (2003-04), those engaged in agriculture earn an average monthly income of Rs. 4,353, which is only 60 percent of the income in industries (Rs. 7,313) and less than half of that in services (Rs. 9,846).

55. Growth incidence analysis using HIES data further highlights the skewed and limited improvement in incomes in rural areas, especially among agricultural households. Notably, the poorest 7 percent of rural and 10 percent of agricultural households suffered a decline in real income between 1995-96 and 2001-02. Only 19 percent of agricultural households experienced an income increase greater than 10 percent.

56. Therefore, raising agricultural productivity and expanding non-farm income opportunities are imperative for increasing employment and reducing *poverty in rural areas*. Higher agricultural productivity can be facilitated by adopting policies to ease farmer access to improved technologies, creating a more transparent and stable trade policy regime, allowing full and transferable ownership of land, and ensuring the sustainable use of water.

57. With low growth in agriculture, the non-farm sector has increasingly become an important source of income and employment in rural Sri Lanka. The non-farm sector generated 67 percent of rural employment in 2003. HIES (2002) shows that 52 percent of per capita incomes of average rural households came from non-agricultural wages and self-employment in non-farm enterprises. Even agricultural households are highly dependent on non-farm incomes and the share of their income from non-agricultural activities (41 percent) *exceeds* the contribution of agricultural income (32 percent). The relative importance of non-farm incomes is higher for paddy farmers than for farmers growing higher value crops like tea, rubber, fruit and vegetable. Paddy's lower value likely increases the necessity for paddy-based households to rely more on non-farm activities as a supplemental source of income.

[20] DCS HIES 2002.
[21] Staff calculations based on data from Central Bank Annual reports, various years.
[22] Sectoral contribution to provincial GDP from Central Bank data (2004).

58. The growth of the rural non-farm sector has significantly contributed to the reduction in rural poverty. Among the poorest 10 percent of rural people, the average household derived about 44 percent of their per capita income from non-agricultural wages, salaries and enterprise earnings. Among rural households owning and operating a non-farm enterprise, the poverty rate is 13 percent, compared to 23 percent for households without a non-farm enterprise. Households operating a non-farm enterprise have 20 percent higher monthly per capita incomes than those who do not. According to recent estimates, there are approximately 620,000 rural non-farm enterprises scattered throughout the country, most involved in production/manufacturing (41 percent) or trading (38 percent). The average rural enterprise is a micro-enterprise employing about 2.4 workers including hired workers and family members, and relatively young, with an age of about 9 years.

59. Furthermore, in coming years, poverty reduction in rural areas will depend on the rate at which the rural non-farm sector can absorb workers from the growing labor force. In 2003, the size of the labor force was roughly 7.2 million workers, out of which 82 percent were in rural areas. Each year nearly 106,000 people are added to the labor force in Sri Lanka, a large proportion of who are in rural areas. As the opportunity for further employment expansion in the agricultural sector is limited, expansion of employment and productivity in non-farm activities will be essential to absorb this growing labor force.

60. Because of the potential economic benefits rural households can derive from participating in the non-farm sector, addressing constraints to its growth will have far-reaching implications for poverty reduction. Currently, poor transportation, problems with accessing finance and the cost of finance, access and quality of electricity, and marketing difficulties pose major obstacles for rural non-farm enterprises.[23] Given the importance of non-farm income for rural poverty, these constraints would also explain why certain location-specific characteristics (like accessibility and electricity use) correlate well with the pattern of regional poverty in Sri Lanka (as shown above). Since employment in enterprises is also associated with higher earnings and welfare in the estates (see above), addressing these constraints will improve opportunities for the estate population as well.

V. Concluding Remarks

61. This report, together with other poverty research and measurements for Sri Lanka, clearly demonstrate that slow poverty reduction has been due to widening inequalities among income groups and across regions, with growth being concentrated mainly in the Western Province. Regional disparities in economic outcomes are also mirrored by similar patterns of inequities in educational attainment beyond primary level, and access to economic infrastructure and markets, which are responsible for the growth process to by-pass large sections of the population. The main theme of this report, therefore, is how to make the growth process more inclusive.

62. How to find a way out of poverty would depend on the specific set of constraints operating among a sector, region or group. That said, certain priorities appear to cut across such differences and emerge as critical for all: improving quality of education, connectivity to markets and urban centers, and access to infrastructure like electricity and financing for micro-enterprises, particularly for remote areas. All of these have the common attribute that they expand the set of choices or opportunities available to the poor and those in lagging regions – be that working in higher paying occupations, setting up or expanding micro-enterprises, or migrating to work in fast-growing sectors. And since many of these opportunities are created in the urban sector, poverty reduction in Sri Lanka will require coordination between rural development strategies on the one hand, and urban planning and development on the other.

63. The Government's commitment to peace and addressing regional disparities, as articulated in the President's *Chintana*, will be critical in growth and poverty reduction. To translate this vision into action, the effort to improve the pro-poor growth impact of public expenditures is an important step. Strengthening the strategic content of the budget can serve as a useful tool in reorienting public resources

[23] ADB and World Bank (2005).

to transform the Government's pro-poor growth vision into reality. Notably, the focus of *Chintana* on improving the roads network, electricity and access to finance is consistent with the needs of lagging areas and sectors identified above. The resurgence of economic growth in the North and East following the opening of the A9 highway to Jaffna underscores the importance of connectivity in remote areas.

64. The vision of regional development in *Chintana* is also consistent with the need to develop *alternative growth centers to Colombo*, which is already showing the negative effects of over-agglomeration. Experiences in a number of countries suggest that investing in transport infrastructure is highly effective in promoting regional urban centers, when complemented by other key facilities necessary for firms and markets to develop. An effective plan for regional development must therefore identify the comparative advantages of different areas and the critical infrastructure needs of those industries that are able to exploit these advantages. At the same time, *better urban planning* and *improving the quality of urban services* in Colombo is critical to reduce the costs of over-concentration and mitigate its impact on the poor.

65. *Improving agricultural productivity*, a key element of any rural development strategy, would require fundamental policy shifts in a number of areas, as noted earlier. Certain innovations can help, such as private-public partnerships that can open up markets for high-value crops and increase access to modern technologies. In the *rural non-farm sector*, it will be critical to address factors constraining the growth and start-up of new enterprises. This will entail improving the access to and quality of energy and transport, and access to finance of small enterprises. There is also a need to facilitate better access of rural entrepreneurs to markets and market information by strengthening links among producer organizations and business associations.

66. State investments in universal free *education* and *healthcare* have been effective in securing good basic outcomes for all. However, challenges remain in terms of second order outcomes (such as quality of education) and disparities more closely associated with income poverty (e.g. malnutrition). Pockets of malnutrition, for example in the estates, can be addressed in part by improving the access of the poor to safe water and sanitation and creating nutritional awareness. Part of the solution to malnutrition also lies in improving incomes, since incidence of stunted and underweight children is virtually non-existent among the upper income quintiles.

67. Reducing income poverty is important to improve education outcomes also, since much of the existing deficiencies reflect rich-poor gaps. More work is needed to understand what cause dropouts to occur even before Grade 5 since poverty incidence is particularly high for this group. Enhancing the quality of public education with specific emphasis on improving English and IT skills, and taking measures to improve teacher deployment in rural areas may be effective to reduce dropouts and improve the quality of learning among the poor, who are not able to compensate adequately for low quality schooling with private tuition.

68. More accurate targeting of *welfare* programs is likely to improve coverage among the poor and increase the amount of support per family to more meaningful levels. Increasing the coverage of transfers in the estate sector can also be effective in taking many households above the poverty line, given that consumption in this sector is concentrated around the poverty line. The current government has taken the important step of publicly acknowledging the need to target Samurdhi only to the poor. Eventually, improving the performance of Samurdhi will require employing transparent and easily observable criteria for selecting beneficiaries, as currently being adopted in the North and East, all over the country. At the same time, a concerted effort would also be necessary to develop viable alternative programs for income generation for those who exit out of the transfer program.

69. In addition to the crosscutting issues highlighted above, some specific interventions for disadvantaged groups/regions are useful to highlight. In the *North and East*, the removal of remaining constraints on mobility, such as on fishing and on hours of operation of the A9 highway, will be critical in sustaining the recent high economic growth in these regions.

70. Although complex structural changes in the *estate sector* can occur only in the medium to long term, more immediate welfare gains can come from a wide range of interventions to facilitate economic mobility, suggested by the evidence presented here. In addition to the cross-cutting policy measures described above, connecting estates better with nearby towns, improving the coverage of NICs particularly among the youth, developing skills in alternative economic activities, improving quality of health and education, and expanding microfinance in estates can have significant impact on reducing poverty and vulnerability. At the same time, the commercial viability of estates needs to dramatically change, since the long-term future of the sector and its workers appears to be in moving away from the current resident labor structure towards a more standard employer-employee relationship. But for this to work, the status of estate work has to improve, which can only happen if labor productivity can be increased to support wage increases.

1. Overview of Sri Lankan Economy in an International Context: Achievements and Challenges

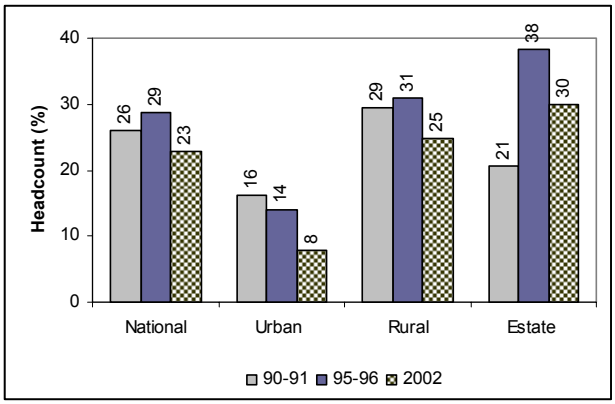
1. Sri Lanka has achieved rapid progress in human development, to the extent that many of its indicators in health and education are now close to those of developed countries. With its strong commitment to gender equality, a long history of universal and free health and education services, an extensive food subsidy and large welfare programs, Sri Lanka has established itself as a welfare state. It is thus not surprising to see that Sri Lanka has already attained or is close to attaining many of the Millennium Development Goals (MDGs) – like universal primary school enrollment, gender parity in primary and secondary school enrollment and universal provision of reproductive health services – well before the target year of 2015.[1]

2. Reduction in income or consumption poverty has however lagged considerably behind the improvements in non-income dimensions of welfare. In 2002, 23 percent of the population of Sri Lanka was poor, with per capita consumption expenditures below the level defined as the national poverty line. Between 1990-91 and 2002, poverty headcount rate declined by only 3 percentage points, which has resulted in Sri Lanka falling behind the pace of poverty reduction required to attain the Millennium target of halving poverty incidence by 2015.

1.1. Recent poverty trends in Sri Lanka

3. According to estimates derived from official household surveys, with reference to a recently developed national poverty line, poverty headcount for Sri Lanka showed only a modest decline over the decade – from 26.1 percent in 1990-91 to 22.7 percent in 2002 (Figure 1-1). In the intervening years, national poverty increased by almost 3 percentage points from 1990-91 to 1995-96, and fell by more than 6 percentage points from 1995-96 to 2002. Poverty reduction was also uneven across urban, rural and estate sectors.[2] While a more detailed analysis of the trends and patterns of poverty will be presented in Chapter 2, it is useful to summarize here some of the key findings of this analysis.

Figure 1-1: Poverty headcount trends in Sri Lanka



Source: HIES for different years, using DCS official poverty lines for Sri Lanka

4. Evidence presented in Chapter 2 will show that even during periods of poverty reduction, the benefits of growth continued to be unevenly distributed, resulting in increasing inequality co-existing with gains in average levels of consumption. Inequality between sectors and regions increased sharply over the decade. While urban poverty halved between 1990-91 and 2002, rural poverty declined by less than 5 percentage points and poverty in the estates increased by about 50 percent, making this sector the poorest in the country by 2002 (see Figure 1-1).[3] Since most of the urban population is concentrated in Western Province, around the capital city of Colombo, the growing urban-rural gap is also mirrored by a growing gap in income and poverty between

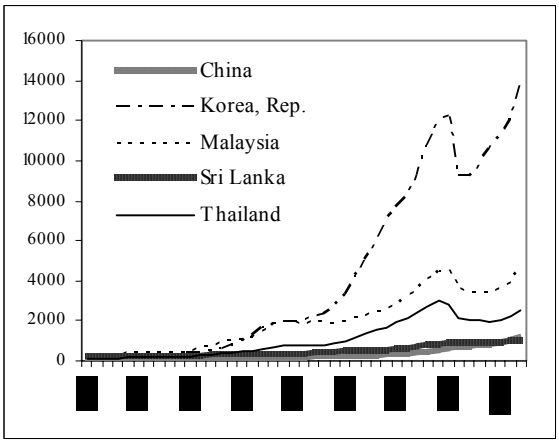
[1] See Annex, Table A-1.1
[2] Excludes the Northern and Eastern provinces.
[3] Note that because the estate sector comprises of a relatively small part of the population, the HIES sample (about 4 and 7 percent of the weighted sample in 95-6 and 90-1 respectively) yields poverty estimates with a higher degree of "error."

Western Province and the rest of the country, particularly the remote rural and estate areas. In 2002, poverty incidence in Western Province was as low as 11 percent, and as high as 35 percent for the remote and almost completely rural provinces of Sabaragamuwa and Uva. Household consumption (per capita) averages from the Central Bank's survey (CFSES) also indicate similar differences between provinces in 2003-04.

1.2. Poverty, growth and inequality: a cross-country comparison

5. Why has poverty reduction been so slow in Sri Lanka and uneven across sectors and regions? At an aggregate or macro level, some studies advance the argument that this is largely because Sri Lanka has fallen substantially short of its income growth potential. A comparison of Sri Lanka with countries like South Korea, Malaysia and Thailand appears to lend credence to this argument (see Figure 1-2). In the 1960s, Sri Lanka's per capita income was comparable to that of these three countries, but is currently less than one tenth that of Korea, one fourth that of Malaysia, and half that of Thailand. Furthermore, China – that lagged far behind Sri Lanka in per capita income in the 1960s – recently overtook Sri Lanka after more than 10 years of extraordinary growth performance.

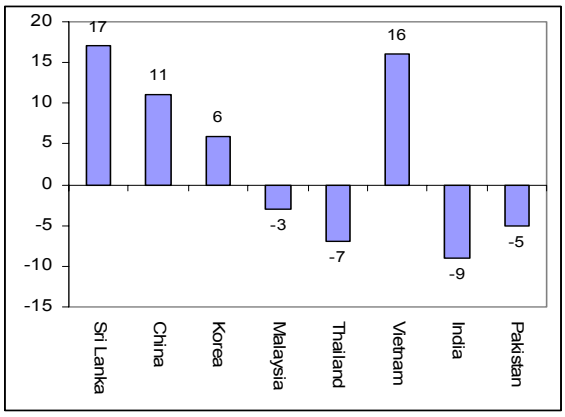
Figure 1-2. GNI per capita (current US$)



Source: WDI 2005

6. The UNDP's global Human Development Report 2005 confirms Sri Lanka's growth performance does not match its achievements in non-income dimensions of welfare. It shows that Sri Lanka's human development index is among the highest in developing countries, in sharp contrast to its rank in terms of GDP per capita. As a result, Sri Lanka's rank on GDP per capita minus that on human development index is large as compared to other East and South Asian comparators (see Figure 1-3).[4] Since human development was an important pre-requisite for East Asian countries' rapid growth during 1980s and 1990s, this can be interpreted as another indication that Sri Lanka failed to exploit its growth potential.

Figure 1-3. The rank of Human Development Index minus the rank of GDP per capita (2004)



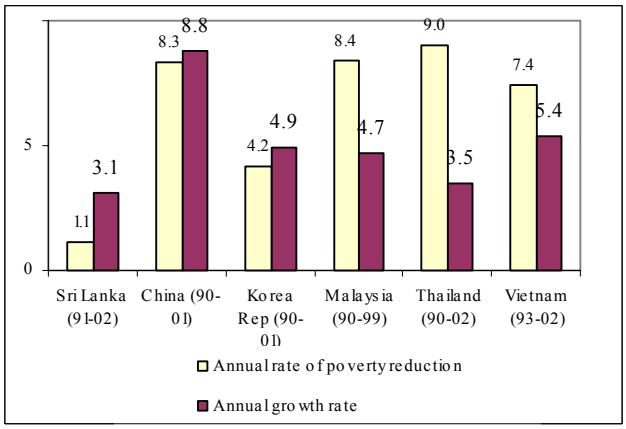
Source: Human Development Indicators

7. Furthermore, while Sri Lanka's growth performance fell short of its potential, the rate of poverty reduction in Sri Lanka was slow even for the extent of growth that occurred. Figure 1-5 shows annual rates of GDP per capita growth and reduction in poverty headcount ratios for Sri Lanka and some East Asian comparators.

[4] The human development index is a composite index of life expectancy, adult literacy, school enrollment, and income per capita.

8. *First*, despite the East Asian economic crisis in the 1990s, the East Asian comparators significantly outperformed Sri Lanka in growth. *Second*, Sri Lanka's poverty reduction has been much slower than the East Asian comparators. The poverty rate reduced at the annual rate of 1.1 percent in Sri Lanka during the last decade, compared to an more than 7 percent in China, Malaysia, Thailand and Vietnam during similar periods. *Third*, the impact of economic growth on poverty reduction appears to be lower in Sri Lanka than in the comparators. For every 1 percent annual growth in GDP per capita, poverty headcount ratio declined by 0.4 percent in Sri Lanka, compared with 0.9 percent in Korea, 1.4 percent in Vietnam and 2.6 percent in Thailand. These ratios, which are rough measures of growth elasticity, must however be interpreted with caution, since poverty headcount ratios are measured with reference to national poverty lines that are not comparable to each other.

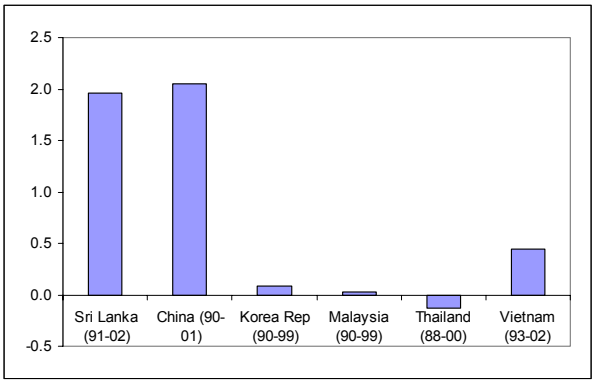
Figure 1-5. Annual rates (%) of growth and poverty reduction for recent years



Sources: All real per capita GDP data are from WDI (2005). Information on poverty headcount ratios come from: Sri Lanka—DCS (2004); China—Ravallion and Chen (2004); Korea—World Bank (2004); Malaysia—World Bank (2004); Thailand—Jitsuchon, S. (2004); and Vietnam—Glewwe et.al. (2000) and Carolyn Turk (2005).[5]

9. The slow response of poverty reduction to economic growth in Sri Lanka is linked to rising inequality. Even if the economy grows, growth can largely bypass the poor, as a result simply widening inequality between the rich and the poor. Figure 1-4 indicates this to be the case for Sri Lanka. Inequality (measured by Gini coefficients) increased at the annual rate of 2 percent in Sri Lanka, which is much higher than that for the East Asian comparators, with the sole exception of China. As Chapter 2 will lay out in detail, Sri Lanka witnessed widening intra-regional inequality as well as inter-regional inequality.

Figure 1-4. Average annual growth rate of Gini



Sources: China-Ravallion and Chen (2004); Korea-World Bank (2004); Malaysia-Government of Malaysia (2001); Thailand, Vietnam-PovCalNet at the World Bank; Sri Lanka-HIES (2002)
Notes: Gini coefficients of per capita consumption for China and Sri Lanka, of per capita income for the rest

10. What are the obstacles to growth and poverty reduction in Sri Lanka? Existing studies have indicated some of the major obstacles to be the country's two-decade-long civil war, inadequate infrastructure – particularly in rural areas, political instability, a large fiscal deficit, the stagnant agricultural sector, and existing labor regulations.

11. The next section will review these issues mostly in an international context. Cross-country comparisons, based on a review of existing literature, would indicate in what areas Sri Lanka are

[5] Annual rates of poverty reduction are based on national poverty lines using household surveys. For Sri Lanka, 1991-92 and 2002 are used; for China and Thailand, 1990 and 2002; for Korea, 1990 and 2001; for Malaysia, 1990 and 1999; for Vietnam, 1993 and 2002. Consumption expenditures are used for Sri Lanka, Vietnam and China, while income is used for Korea, Thailand, and Malaysia. Annual rates of economic growth are computed using real per capita for the years selected above.

lagging in comparison with developing countries with rapid economic growth and poverty reduction. Five comparator countries, China, Korea Republic, Malaysia, Thailand, and Vietnam, are chosen because these recently enjoyed rapid economic growth and poverty reduction, even though they faced conditions comparable with Sri Lanka in 1960s. It is important to recognize however that every country faces its own set of unique constraints to growth and poverty reduction, which necessarily implies that cross-country comparisons tend to be "naïve" and limited in terms of the insights they offer. Recognizing this, the rest of this report will focus largely on identifying the country-specific factors critical for achieving poverty reduction. That said, in spite of their limitations, the cross-country comparisons offered below are instructive, since they provide useful benchmarks against which the specific conditions prevailing in Sri Lanka can be evaluated.

12. Such international comparisons are feasible thanks to international databases such as World Development Indicators (WDI), Doing Business Survey, Investment Climate Survey, Human Development Indicators, and Asian Development Bank's key indicators. At the same time, the results using data across multiple sources and across different countries should be interpreted with caution, some of the data are not fully comparable across countries.

1.3. What factors limit growth and poverty reduction in Sri Lanka: insights from a cross-country comparison

13. What does a direct comparison with the comparator East Asian countries tell us about the challenges Sri Lanka faces to its prospects for growth and poverty reduction? It is useful to focus on a few specific factors in conducting these comparisons – including those that have been identified as important by recent studies, such as the Development Policy Review of the World Bank (2004c).

Lack of growth centers other than Colombo

14. As seen above, Sri Lanka is characterized by high and increasing inequality, particularly between urban and rural areas. Since Western province – where the country's capital and largest city, Colombo, is located – accounts for a large proportion of the country's urban population, rising inequality between urban and rural areas is also mirrored by widening gaps in income and poverty between Western Province and the rest of the country. In 2002, Western Province constituted about one-third of the country's population, but contributed half of its GDP. Much of Western Province's economic performance is attributable to Colombo. A large concentration of population in this area along with low poverty rate (of 6 percent) in Colombo district suggests that the city and its neighboring areas act as the main growth center for the country, where much of the modern sector of the economy is concentrated.

15. High inequality quite obviously weakens the link between growth and poverty reduction – reducing the responsiveness of poverty to growth – as Chapter 2 will show. At the same time the trend of increasing regional inequality, which is closely linked to rising concentration of economic activity and population in Colombo and its surrounding areas, likely has consequences for growth itself. Such over-agglomeration can impose significant costs, due to factors like negative externalities of congestion, limited availability of fixed factors like land and natural resources and over-stretched infrastructure facilities. Cross-country analysis – described in Chapter 4 – indicate that these costs can yield sizeable losses in economic growth and welfare. The costs of over-concentration in Colombo urban area however must not be interpreted as losses due to *urbanization*. In fact, the rate of urbanization in Sri Lanka is much lower than that in other

developing countries; but at the same time, almost all the urban growth has been concentrated in Colombo and surrounding areas.[6]

16. The problem in Sri Lanka is therefore the *lack of alternate urban centers* that can serve as engines of growth and reduce the agglomeration costs of Colombo. As Chapter 4 later will show, much of the in-migration is from poor and conflict-affected areas driven by economic motives. This will likely continue as long as Colombo offers a sizeable wage premium and better options for employment, even as the economic losses of agglomeration mount – since private decisions to migrate are unlikely to internalize the full social and economic costs or implications of over-concentration in Colombo. In other words, the regional inequities in Sri Lanka create strong incentives for migration into the Colombo area; and promoting other growth centers that expand economic opportunities for potential migrants is imperative to reduce over-concentration.

Infrastructure

17. Part of the reason behind the lack of alternative urban growth centers to Colombo is the poor quality of economic infrastructure in the country, which worsens the further one gets from Colombo. Poor quality and availability of infrastructure, like in many other South Asian countries, has been identified by existing literature as one of the important constraints to economic activity in Sri Lanka.[7] While Chapter 3 of this report will attempt to draw direct links between access to infrastructure and the spatial distribution of poverty, it is useful to look at where Sri Lanka stands with respect to some its comparators mentioned previously. Table 1-1 benchmarks Sri Lanka with its East Asian comparators in terms of major infrastructure such as electricity, telephone, and road network.

18. Access to electricity in Sri Lanka is clearly a bottleneck in comparison with China, Korea, Malaysia and Thailand, as the business community stressed in the Sri Lanka Investment Climate survey (2005). The latest report from the Central Bank suggests a significant improvement in the access to electricity from 62 percent in 2000 to 76 percent in 2003, which would still place it well behind all East Asian countries except for Vietnam. Sri Lanka also lags way behind the East Asian countries in terms of access to telephone mainlines, with only 49 telephone mainlines per 1000 people. Since both industry and service sectors – critical fast growing sectors in Sri Lanka – need well-equipped telecommunication network, the lack of penetration of telephones can pose a challenge for the future.

Table 1-1. Infrastructure

Country	Access to electricity (2000)	Telephone mainlines per 1000 people (2003)	Road density (km/sqkm) 1997-2002
Sri Lanka	**76.1[1]**	**49**	**1.51**
China	98.6	209	0.19
Korea, Rep.	100.0	538	0.88
Malaysia	96.9	182	0.20
Thailand	82.1	105	0.11
Vietnam	35.8	54	0.29

Source: WDI 2005; [1]: CBSL Annual Report (2004)
Note: Access to electricity in Sri Lanka was 64 percent in 2000 according WDI 2005.

19. On the density of roads, the picture is more complicated. On the one hand, Sri Lanka's road density of 1.5 km per 1 km^2 is extraordinarily high for a developing country. On the other hand, the density statistic can be misleading, since a long history of poor maintenance has apparently deteriorated road conditions, especially in remote areas. According to a recent World

[6] China, for instance, experienced an increase of 12 percent in urban share in its total population during the period 1990-2003, in spite of a number of policy measures aimed to increase the cost of rural-urban migration. The growth in urban share of Sri Lanka was about 3 percent during 1990-2003, similar to what was seen for India and Pakistan during the same period.

[7] E.g. Sri Lanka: Improving the Rural and Urban Investment Climate (2005).

Bank study, only 10 percent of the road network is properly useable.[8] The aggregate figures also mask inequality in access to infrastructure within Sri Lanka, which tends to reinforce spatial inequalities in incomes and poverty – a theme that will be explored in detail in Chapter 3.

Economic impact of the civil conflict and recent tsunami

20. More than 20 years of civil conflict has had profound impact on Sri Lanka's national macroeconomic situation and growth, and resulted in increasing economic and social disparities between the populations in the North and East and the rest of the country. The accumulation of public debt is at least partly a result of increased military expenditures in response to the conflict, which have crowded out a vast range of pro-poor public services. While military expenditures expanded from around half a percent of GDP in the 1970s to around 5-6 percent in the last decade, the combined expenditures on health and education remained around 4 percent of GDP. According to WDI 2005, Sri Lanka's military spending was 5.3 percent of GDP, which was among the highest in the world, and more than 2 percentage points higher than that of the East Asian comparators.[9] After the ceasefire treaty in 2002, military expenditures declined to a level comparable to China, Malaysia and Korea.

21. The instability brought about by the war also reduced investments and job creation. At the macro level, the Central Bank attributes the lost of 2-3 percent of GDP growth annually directly to the conflict.[10] An intangible economic cost of the conflict was that it diverted the energy and attention of policy makers away from economic reforms and policies. This was certainly true in the period 1983-1989 when the Government leadership was preoccupied with the war in the North and East and the JVP insurrection in the South and very little progress was made in undertaking economic reforms. A similar distraction from economic priorities is discernible in the period 1995-2001 when the civil conflict intensified. The conflict also prevented Sri Lanka from reaping the full benefits of economic liberalization that took place since 1977. The economy grew at annual average rate of 4.4 percent during the conflict years of 1983-2001, compared to 4.6 percent during the pre-conflict years of 1964-1982.

Industry structure: Stagnant agricultural sector but lack of mobility

22. The challenge of reducing poverty in Sri Lanka will require continued concentrated attention to the needs of rural areas, because it is home to about 88 percent of the poor in the country. And agriculture dependent households account for a large share of the poor.

23. Existing studies have identified stagnation in the agricultural sector as an important factor contributing to slow poverty reduction and widening inter-regional inequality in Sri Lanka.[11] Table 1-2 depicts the stagnation of agriculture in Sri Lanka starkly against the experiences in a number of East Asian countries. Agricultural productivity in Sri Lanka grew at an annual average rate of a little more than 0.5 percent, which was much lower than that in East Asian countries as well as some South Asian countries like India and Pakistan.

Table 1-2. Agricultural productivity growth (1990-00)

Country	% rate
Sri Lanka	**0.65**
China	3.51
Korea, Rep.	5.89
Malaysia	1.62
Thailand	1.35
Vietnam	2.80
India	1.13
Pakistan	2.56

Source: WDI 2005

24. Despite slow growth in productivity, and the contribution of agriculture to national income shrinking over time, employment in the agricultural sector remained almost unchanged over the

[8] World Bank (2004c).
[9] See Annex, Table A-1.2
[10] Central Bank Annual Report 1998
[11] ADB and World Bank (2005); World Bank (2004c).

last decade (see Chapter 2). This necessarily indicates stagnant incomes for the population that earn their livelihood from agriculture. Moreover, since agricultural production is mainly engaged in rural areas and estates, stagnant productivity and limited mobility away from the agricultural sector is closely related to the observed spatial patterns of poverty. Subsequent chapters of this report will explore this relationship in more detail.

Educational attainment

25. Educational attainment is universally considered as a critical pre-condition for growth and is found to be inversely correlated with poverty in Sri Lanka (Chapter 3)**.** Thanks to its long-term commitment to education, Sri Lanka exhibits high educational attainment at the primary and secondary levels. With gross secondary enrollment rates of 84 and 89 percent among males and females of secondary age respectively, Sri Lanka actually outperforms many East Asian comparators (see Annex, Figure A-1.1). Primary school enrollment rates are near 100 percent in Sri Lanka – similar to most of the East Asian comparator countries.

Table 1-3. Gross Tertiary Enrollment Rate (%)

	1990		Latest Year		
	Female	**Male**	**Female**	**Male**	**Year***
Sri Lanka	**4**	**6**	**4**	**6**	1997
China	2	4	14	17	2002
Korea, Rep.	25	51	64	105	2003
Malaysia	7	8	33	26	2002
Thailand	19	18	42	36	2003
Vietnam	1	3	9	11	2002

Source: Key Indicators 2005
Notes *: A year after a country name refers to the survey year used for computing female and male enrollment rates for the columns in latest year.

26. In contrast, Sri Lanka's *tertiary education* outcomes have lagged behind those of the East Asian comparators, which is indicative of the kind of constraints in terms of the availability of human capital the country may be currently facing. Gross tertiary enrollment rate of males and females was just 6 and 4 percent respectively in Sri Lanka – much lower than the rates seen in Korea, Malaysia and Thailand (Table 1-3). The East Asian countries experienced a sharp rise in the tertiary enrollment during the 1990s, while this was not at all the case for Sri Lanka. In China and Vietnam, where tertiary enrollment rates were lower than Sri Lanka's in 1990, enrollments grew rapidly enough to surpass Sri Lanka's by 2002. Tertiary enrollments rates are even lower for the poor in Sri Lanka – only about 2 percent among the lowest income quintile. Conversely, the poverty incidence among graduates in Sri Lanka is only about 2 percent.[12]

Foreign Direct Investment and Export industry

27. The inflow of foreign direct investment (FDI) and exports are key in enhancing technology transfer instrumental in raising productivity of domestic industries, enhancing their competitiveness, and amplifying overall economic growth. Table 1-4 shows that Sri Lanka's net foreign direct investment has been significantly lower than that of China, Malaysia, Thailand, and Vietnam since 1990s.

Table 1-4. Net Foreign Direct Investment (% of GDP)

	average 80's	average 90's	average 2000's
Sri Lanka	**0.75**	**1.29**	**1.15**
China	0.52	4.44	3.74
Korea, Rep.	0.26	0.66	0.88
Malaysia	3.18	5.89	2.64
Thailand	0.97	2.55	2.06
Vietnam	0.02	7.26	3.96

Source: WDI 2005

28. Studies on the East Asian "miracle" have also stressed the role of exporting industries in transferring technology to these countries.[13] Comparing Sri Lanka with its comparator countries, its export to GDP ratio is comparable to that of China and Korea, and much higher than that of

[12] World Bank estimated based on DCS HIES 2002.
[13] East Asian Miracle (1990).

South Asian countries. However, it remains far behind Thailand, Malaysia, and Vietnam (see Annex, Figure A-1.2). Growth in exports as a share of GDP since 1990 has also been lower in Sri Lanka than in almost all the East Asian countries.

Labor regulations

29. Sri Lanka's highly restrictive labor regulations have contributed to constraining private investments and in turn job creation by making separation of formal sector workers difficult and costly. This is clearly seen in the *Doing Business in 2005* report. Sri Lanka's difficulty of firing was among the highest in the world and much higher than the East Asian comparators. After Sierra Leone, Sri Lanka is the most expensive place in the world to dismiss permanent workers, with the cost to an employer (in terms of weeks of wages per employee) nearly double of that in any of the East Asian countries. Sri Lanka does turn out to be less rigid in other dimensions of the labor market – with almost no restrictions in hiring a new worker and only some degree of restrictions in changing working hours. By the average of all 3 indices, Sri Lanka is ranked near the bottom in the comparator group – slightly less rigid than Vietnam, almost the same as Korea and much more rigid than China, Malaysia and Thailand (see Annex, Table A-1.3).

30. The rigidities in the Sri Lanka labor market are thus in stark contrast to most of the fast-growing East Asian countries – likely to impede growth and employment-generation in the formal sector, which has direct implications for poverty and inequality as well. In developing countries, where insurance markets and publicly provided safety nets are imperfect, protection for workers by law can be an important social safety net. However, overprotecting workers as it is the case in Sri Lanka is likely to stifle job creation in the formal sector and push workers into the informal sector, where earnings as well as job-security are much lower than in the formal sector. Such "informalization" of employment is therefore associated with poverty, and by driving a wedge between the relatively privileged and protected workers in the formal sector and a vast informal sector labor force, contributes to higher inequality. Evidence from Chapter 3 indicates the vast difference between these two groups: the presence of a formal sector worker in a household *reduces* the likelihood of being poor in Sri Lanka by more than 8 percent, while that of an informal sector worker *increases* it by more than 6 percent.[14]

Table 1-5: Burden of interest payments in 2003 (% of revenue)

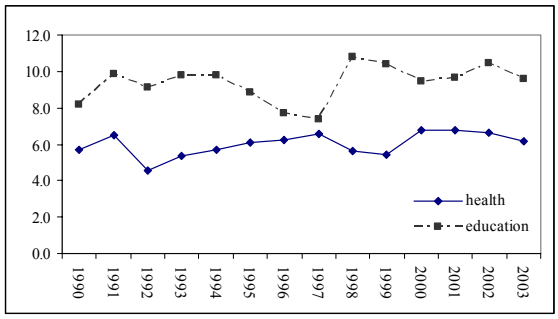
Sri Lanka	**45.3**
Korea, Rep	5.1
Malaysia	10.5
Thailand	5.8
Vietnam	4.1

Source: CBSL (2005); WDI 2005

Fiscal consolidation

31. A sustainable fiscal position has been stressed upon as a cornerstone for any viable growth strategy in developing countries by a large number of studies, including the Development Policy Review of Sri Lanka and the President's Manifesto *Mahinda Chintana*. In 2003, the fiscal deficit in Sri Lanka exceeded 8 percent of GDP and the public debt stood at over 105 percent of GDP. The large public debt involves large interest payments, significantly restricting room for productive spending. The ratio of interest payments to total revenues is around 45 percent in Sri Lanka, which is many times higher than that of the East Asian comparators (Table 1-5).

Figure 1-6. The share of health/education expenditure in total government expenditure



Source: Annual Reports (various issues), CBSL

[14] See regressions in Chapter 3 (Annex 3, Table A).

32. An international comparison of nominal and real lending interest rates for prime customers suggests the risk of high fiscal deficit crowding out private sector investment is significantly higher in Sri Lanka than in other comparators, which can hurt Sri Lanka's long-term economic development (Annex, Table A-1.4). On the positive side, the burden of large interest payments has had little impact on public expenditure for health and education as a percentage of total public expenditure, which remained almost unchanged since 1990 (Figure 1-6). The ratio of public education expenditure to GDP is however significantly lower in Sri Lanka than in Korea, Malaysia and Thailand, while that of public health expenditure is below than that for these 3 countries and China (Annex, Table A-1.5). The fiscal situation in Sri Lanka no doubt is a deterrent against being able to achieve any further increases.

1.4. Concluding Remarks

33. This chapter has reviewed Sri Lanka's challenges in achieving poverty reduction, particularly in comparison with fast growing countries that have reduced poverty rapidly, such as China, Korea, Malaysia, Thailand, and Vietnam. The evidence suggests that some of the constraints that Sri Lanka is facing are shared by other East Asian countries, albeit in varying degrees. At the same time, there appears to be a combination of constraining factors that is unique to Sri Lanka and are therefore critical to address for enhancing growth and poverty reduction.

34. International comparisons suggest that economic growth in Sri Lanka has been stymied by a combination of factors that include the effects of the civil conflict that have impeded FDI flows and contributed to high public debt, inefficiencies in the labor market, lack of advanced skills in the labor force, inadequate infrastructure and the lack of urban centers other than Colombo that serve as growth engines. At the same time, and in spite of these obstacles, the Sri Lankan economy did expand by 45 percent in terms of per capita GDP and 30 percent in terms of per capita consumption during the last decade. The growth however has not translated into commensurate poverty reduction, primarily because it has been concentrated in the urban areas, mainly in Colombo and the neighboring districts, which has resulted in widening inequality across regions and sectors. The uneven nature of economic progress, it appears, is linked to a number of factors like stagnation in agriculture, and differential access to critical infrastructure and access to markets. An in-depth understanding of the extent, nature and causes of widening inequality is thus critical to inform a poverty reduction strategy of the country, and will be a main area of focus for the rest of this report.

35. Subsequent chapters will present the evidence on trends and patterns in intra and inter-regional inequality, using micro data such as household surveys and the population census. The objective of the analysis will be to inform public policy on the kind of interventions necessary to make the process of economic development more inclusive. Chapter 2 will analyze the relationship between trends and patterns in poverty, inequality and growth over the last decade. Chapter 3 will focus on understanding the nature and correlates of spatial distribution of poverty, with the aid of poverty maps and geo-referenced information on access to infrastructure, markets, and human capital accumulation.

36. In Chapter 4, an analysis of domestic migration will shed light on how people respond to lack of economic opportunities in remote, rural areas and estates, and its implications for future growth and poverty reduction. Sri Lanka's unequal pattern of regional development has also led to high concentration of population in Colombo urban area. Cross-country evidence suggests that the economic costs of such over-agglomeration can be significant. Mitigating such over-concentration, while expanding economic opportunities to potential migrants from poor areas, will require policies to promote the growth of alternate urban centers –an area of focus for

Chapter 4. Chapter 5 will examine the human development challenges that limit the potential of the poor. These include deficiencies in nutrition of children and women and educational attainment, found particularly among the poor in Sri Lanka.

37. As the discussion in this chapter has hinted, revitalizing the agricultural and the rural non-farm sector would be critical for development in remote, rural areas where most of the poor live. Chapter 6 will draw the links between rural farm and non-farm sectoral issues and poverty, and attempt to address the question of what factors constrain productivity growth in the agricultural sector, and limit the growth of the rural non-farm sector that is critical for rural poverty.

38. Reducing poverty and closing inter-regional gaps in Sri Lanka will not be possible without bringing marginalized areas and groups to participate actively in the growth process. Chapters 7 and 8 will focus on this issue in the context of two marginalized groups: the conflict affected areas and the estate sector.

39. The civil conflict in Sri Lanka has had a profound impact on the entire country, through a number of important economic effects including reductions in FDI flows and increased public debt. However, the direct impact has been felt most severely in the affected districts of Northern and Eastern provinces, which have been essentially marginalized from the economic gains in the rest of the country. Chapter 7 will attempt to understand how conflict and its aftermath – even though a ceasefire has held since 2002 – is associated with the extent and nature of poverty on the ground. As shown in Section 1.1 above, the estate or plantation population is among the poorest in the country, with a long history of social exclusion and disempowerment behind them. Poverty in the estates can only be understood in the context of the unique set of economic, social and political factors. Since this is beyond the scope of existing national household surveys, Chapter 8 will primarily draw upon quantitative and qualitative surveys of estates conducted for this report, to identify the factors limiting the potential of estate households to climb out of poverty.

2. Poverty, Inequality and Vulnerability in Sri Lanka

1. As highlighted in Chapter 1 of this report, poverty reduction in Sri Lanka has been slow during the decade of 1990-91 to 2002. This is partly due to Sri Lanka being unable to achieve the rate of growth necessary to reduce poverty rapidly – as described in Chapter 1. Moreover, poverty reduction was inadequate even for the growth that was achieved – much of the growth bypassed the poor, and was geographically limited to Colombo and its neighboring districts – with the result that 23 percent of Sri Lanka's population still lives below the national poverty line.

2. A key challenge for Sri Lanka is not only how to improve its growth performance, but also to identify the necessary policy interventions that facilitate the growth process to be more inclusive of the lagging regions and sectors of the economy. To address this challenge, it will be first necessary to gain a better understanding of the national and regional trends and patterns of poverty over the last decade, and its relationship to patterns of growth and inequality. This chapter sets out to present the results of such analysis, drawing primarily from household surveys conducted in the country over the last decade.

3. Given the large overlap between the poor population and those who are most vulnerable to the effects of an economic shock, the chapter will include a brief discussion on what available evidence from household surveys suggests about the extent and nature of vulnerability in Sri Lanka. In this context, it will be important to consider the case of the Asian tsunami – the most significant aggregate shock to the country in recent times – and the vulnerabilities associated with its impacts. Safety net programs have an important role in reducing vulnerability; and the chapter will conclude with a brief discussion on the current status of social programs in Sri Lanka and the challenges they face in adequately protecting the poor and vulnerable.

2.1. Consumption Poverty in Sri Lanka: Trends and Patterns

4. As mentioned in Chapter 1, national poverty headcount for Sri Lanka declined from 26.1 percent in 1990-91 to 22.7 percent in 2002. These results are estimated with reference to an official poverty line recently developed to establish consistent trends across different rounds of the HIES (see Box 2.1 for a description of the poverty line). The entire period can be divided into two distinct phases: the first half of the decade (1990-91 to 1995-96) actually saw an increase of almost 3 percentage points, while a much decline of around 6 percentage points was achieved from 1995-96 to 2002 (Table 2-1).[1] Other measures of poverty – namely depth (poverty gap) and severity of poverty (squared poverty gap) – show similar trends, resulting in a decline of around 9-10 percent between 1990-91 and 2002 (Table 2-1).

5. Over the entire period of 1990-91 to 2002, the gap in poverty incidence between the urban sector and the rest of the country widened. Urban poverty halved, while rural poverty declined by less than 5 percentage points; and poverty headcount in the estate sector increased by about 50 percent over the decade (all these changes were statistically significant).[2] From 1990-91 to 1995-96, the rise in national poverty was driven entirely by a rise in rural and estate poverty, while urban poverty actually declined. Between 1995-96 and 2002 on the other hand, the reduction in national poverty was driven by a decline in all 3 sectors. Thus while urban poverty has shown a secular falling trend over the entire period, poverty in rural areas and estates spiked in the middle year that contributed to a smaller net decline in poverty over the decade for these sectors.

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[1] Excludes the Northern and Eastern provinces.

[2] Note that because the estate sector comprises of a relatively small part of the population, the HIES sample yields poverty estimates with a higher degree of "error." However, *the fall in national, urban and rural poverty headcount and the rise in estate poverty headcount between 1990-91 and 2002 were all statistically significant* at 5 percent level (Annex, Figure A-2.1).

Table 2-1: Poverty trends in Sri Lanka[3]

	Poverty headcount			*Poverty gap (depth)*			*Squared Poverty gap (severity)*		
	90-91	*95-96*	*2002*	*90-91*	*95-96*	*2002*	*90-91*	*95-96*	*2002*
National	**26.1**	**28.8**	**22.7**	**0.056**	**0.066**	**0.051**	**0.018**	**0.022**	**0.016**
Urban[4]	16.3	14.0	7.9	0.037	0.029	0.017	0.013	0.009	0.005
Rural	29.4	30.9	24.7	0.063	0.072	0.056	0.020	0.025	0.018
Estate[5]	20.5	38.4	30.0	0.033	0.079	0.060	0.009	0.025	0.018

Source: HIES for relevant years, using official poverty lines (DCS)

Box 2.1: Establishing the official poverty lines

Setting a poverty line is one of the first and the most important steps of poverty analysis. Unless a well-defined poverty line is used, poverty analysis cannot establish statistically robust trends and patterns. In Sri Lanka, since poverty studies in the 1990s were based on different poverty lines, there was no consensus over the cross-regional patterns and the time trend of poverty. To determine which poverty line should be adopted, a consultative approach was adopted by the Department of Census and Statistics (DCS) in 2004, involving various stakeholders within the country as well as donor organizations.

The new official national poverty line is set at Rs. 1423 per capita per month at national median prices of year 2002, based on the nutritional anchor of 2030 kilocalories per person. This calorie level is the national average of daily requirement, weighted by gender and age of SL population. The rupee amount was calculated using the Cost of Basic Needs approach, and represents the total monthly amount an individual would need to spend on food and non-food items to achieve the calorie minimum. To ensure that the poverty line across different survey rounds represent the same level of purchasing power, it needs to be adjusted by appropriate price indices. As a result, the line is equivalent to Rs. 475 at current prices of 1990-91 and Rs. 833 at prices of 1995-96. Taking into account such spatial differences in price (obtained from the HIES), the national poverty line is translated into district-specific lines – for example, equivalent to Rs. 1537 at the Colombo district prices of year 2002; Rs. 1338 at the Hambantota district prices of year 2002.

It is worth noting that no district in the Northern and Eastern Provinces is used for setting the official poverty line due to lack of reliable data sources at this point. Information that will allow poverty lines to be calculated for these districts must await the full round of the next HIES, which is expected to cover this region, security conditions permitting.

Source: DCS, Official Poverty Line Bulletin (2004) and internal World Bank documents

6. In interpreting the urban and rural poverty estimates, it is important to note *one caveat*: the classification of urban and rural areas changed between HIES 90-91 and HIES 95-96, with the Town Council areas considered as urban in HIES 90-91 being re-classified as rural in the later two rounds.[6] As a result, the estimated proportion of urban population fell by around 7 percentage points from HIES 90-91 to HIES 95-96 and stayed almost constant from 95-96 to 2001-02. While this should suggest caution in interpreting the absolute magnitude of changes in rural and urban poverty from 90-91 to the later years, it is likely to have minimal implication for the main conclusion above, that urban poverty has been reduced dramatically while rural poverty has been relatively stagnant. The estimates reported below for provinces and regions, the definitions or boundaries of which have *not* changed between surveys, also support this

[3] Based on official poverty lines (Rs. 1423, Rs. 833 and Rs. 475 for 2002, 95-96 and 90-91) respectively. The official poverty line is derived using "cost of basic needs" method on 2002 HIES data, and deflated by Colombo CPI to obtain nominal lines for other years.

[4] Urban-rural classification of areas is different between HIES 90-91 and HIES 95-96 onward. These do not affect national trends; but the sectoral (urban and rural) trends need to be cautiously interpreted.

[5] Comparability of estate headcount for 95-96 with that for other years may be affected by the fact that HIES in 95-96 was sampled differently for the estate sector

[6] This implies that the definition of "urban" in 90-91 HIES included Urban, Municipal and Town Councils, whereas that in 95-96 and 2002 HIES included Urban and Municipal Councils only.

conclusion. Poverty in Colombo district (and in Western Province where it is situated), which constitutes a large part of the urban sector – irrespective of whether pre or post-1995-96 definitions are used – more than halved between 90-91 and 2002, while poverty reduction in predominantly rural districts has been minimal.[7]

7. While the most recent national household survey for Sri Lanka is CFSES (2003-04), being an entirely different survey with differences in modules and field methodologies, consumption estimates from this survey cannot be compared with those from HIES. Moreover, since the official poverty line was estimated on HIES data, it cannot be applied to data from CFSES without careful adjustments. At the same time, comparisons of consumption means and inequality measures between two rounds of CFSES – conducted in 1996-97 and 2002 – offer some indications about the most recent economic status of households (see Section 2.2 below).

Regional differences in poverty incidence and trends

8. The sharp differences in poverty incidence across sectors are also mirrored by regional patterns (Table 2-2). Looking across provinces, poverty incidence was by far the lowest in Western Province (WP) in 2002 that had a poverty headcount of 11 percent, with North Central having the next lowest poverty incidence of 21 percent. In contrast, the poorest provinces of Sabaragamuwa and Uva had headcount poverty rates of around 35 percent. The low poverty incidence in WP implies that it accounts for about 33 percent of the population but only 16 percent of the poor. In comparison, Uva and Sabaragamuwa together are home to 18 percent of the population and 29 percent of the poor.[8] As subsequent chapters will show, the low poverty incidence in WP is largely due to the location of Colombo (see Figure 2-1), where much of Sri Lanka's dynamic modern sector is concentrated.

Table 2-2: Poverty and population share by province (2002)

	% of population	*Poverty headcount (%)*	*% of poor*
Western	33	11	16
North-Central	7	21	6
Central	15	25	16
Northwest	13	27	16
Southern	14	28	18
Sabaragamuwa	11	34	17
Uva	7	37	12

Source: WB staff calculations using HIES (2002)

Figure 2-1: Province and district boundaries

9. Most recent consumption data (CFSES, 2003-04) indicates per capita consumption expenditure for WP to be more than double that for Uva and Sabaragamuwa, with the other provinces in between (Annex 3, Figure A-2.3). The differences between North-Central, Central and Southern provinces are negligible, while Northwest province has significantly higher consumption. These patterns are similar to those from HIES (2002), and are broadly consistent with poverty patterns seen in Table 2-2.

[7] Colombo district and WP accounted for 13 and 33 percent of the country's urban population respectively in 2002, and 13 and 30 percent in 1990-91.

[8] The share of total population by province remained fairly stable over the decade, with the share of Western Province increasing by about 2 percentage points, while those for Southern, Northwest and Sabaragamuwa declined slightly (by 1 percentage point or less)

10. Disaggregating poverty headcounts by districts reveals even wider differences in poverty incidence (Table 2-3). In 2002, while Colombo district had a poverty headcount of 6 percent, 37 percent of the population of Badulla and Monaragala in Uva province lived below the poverty line. In 2002, poverty headcount rate in only 5 out of the 17 districts for which data are available (covering 41 percent of the population) was *at or below* the national headcount, indicating that the national poverty numbers mask much higher poverty rates in large parts of the country.

11. Thus, poverty is concentrated geographically in Sri Lanka. Evidence also suggests that over the past decade, gaps between regions have worsened. This can be seen from looking at the rate of poverty reduction across districts (Table 2-3 and Figure 2-2). Firstly, there is enormous variation in poverty reduction. Between 90-91 and 2002, poverty declined substantially in the 3 districts in WP (by 27-63 percent); and in Kandy, Anuradhapura and Galle (by 13-31 percent) that include smaller urban areas. In comparison, the headcount remained unchanged or *increased* in 9 districts, four of which (Ratnapura, Nuwara Eliya, Badulla and Puttalam) registered increases of 10 percent or more.

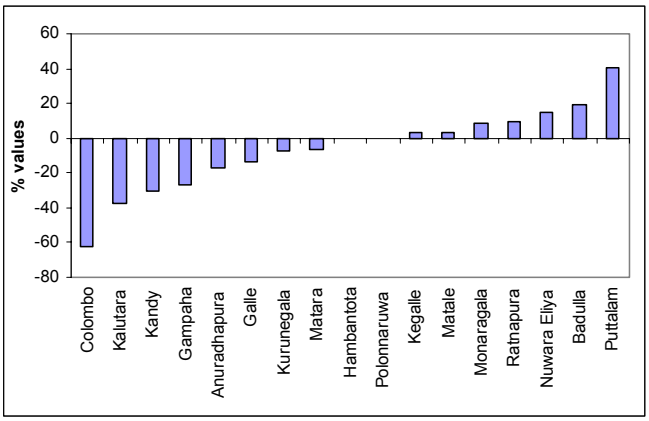
Table 2-3: Poverty headcount by districts (%)

Province	*District*	*1990-91*	*1995-96*	*2002*
Western	Colombo	16	12	6
	Gampaha	15	14	11
	Kalutara	32	29	20
Central	Kandy	36	37	25
	Matale	29	42	30
	Nuwara Eliya	20	32	23
Southern	Galle	30	32	26
	Matara	29	35	27
	Hambantota	32	31	32
North-West	Kurunegala	27	26	25
	Puttalam	22	31	31
North-Central	Anuradhapura	24	27	20
	Polonnaruwa	24	20	24
Uva	Badulla	31	41	37
	Monaragala	34	56	37
Sabaragamuwa	Ratnapura	31	46	34
	Kegalle	31	36	32

Source: HIES 90-91, 95-96, and 2002 (DCS)
Note: Districts in the Northern and Eastern provinces are excluded since no data are available for these from HIES

12. Secondly, a ranking of districts by poverty headcount shows a high degree of persistence of ranks with only 3 out of 17 districts changing their ranks by more than 5 places over the decade (Annex 2, Table A-2.1). Thus, districts that were better-off in 1990-91 tended to retain that advantage in 2002. Thirdly, these districts also tended to experience larger poverty reduction. Colombo, Gampaha and Anuradhapura, which were among the 5 least poor districts in 1990-91, were also in the top 5 in poverty *reduction* between 1990-91 and 2002. Conversely, Hambantota, Monaragala, Ratnapura and Kegalle, which were among the 6 poorest districts in 1990-91, had an increase in poverty or no change at all. There are exceptions to this pattern. Kandy and Kalutara districts – that were among the poorest 4 districts in 1990-91 – were also among the top 5 districts in terms of poverty reduction. Overall, *gaps between poorer and less poor districts widened over the period of 1990-91 to 2002*, and the results in the next section also support this finding.

Figure 2-2: % change in headcount between 1990-91 and 2002 by district



Source: HIES (1990-91 and 2002)

13. The trend of growing regional differences is also apparent from *consumption expenditures of provinces from CFSES data* and *provincial GDP trends*. Per capita real consumption grew at an average annual rate of 3.6 percent in WP between 1996-97 and 2003-04, and by 1.2 and -.4 percent in the Uva and Sabaragamuwa respectively. Northwest province was the only anomaly – in spite of being one of the poorer provinces in 1996-97, its per capita consumption grew at the highest average rate of 5.5 percent annually.

14. While provincial GDP of WP grew by an average of 6.2 percent annually during 1997-2003, the remaining provinces (excluding North and East) grew by only 2.3 percent. WP's share in national GDP increased from 40 percent in 1990 to 48 percent in 2002, while that of other provinces – with the exception of Southern – declined (Table 2-4). The share of Uva, the poorest province, in GDP halved during this period. Uva and Sabaragamuwa together accounted for only 11 percent of the GDP in 2002, and 18 percent of the population.

Table 2-4: Share of each province in GDP

Province	1990	1996	2002
Western	40.2	43.7	48.1
North-Central	4.8	4.6	3.9
Central	12.1	10.0	9.4
Northwest	11.1	11.3	10.1
Southern	9.5	9.0	9.7
Sabaragamuwa	8.1	9.0	6.9
Uva	8.1	5.1	4.3

Source: Dept. of National Planning
Note: the shares do not add up to 100%, since Northeast province is excluded from this table

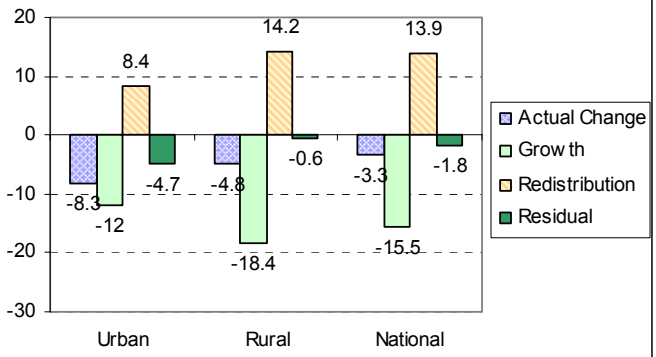
2.2. Poverty, growth and inequality

15. The pattern of poverty reduction during the last decade occurred during a period of reasonable growth in the national average consumption expenditures – particularly during the second half of the decade – along with a significant skewing of the distribution of consumption.[9] There is a clear trend of rising inequality over time, which occurred during periods of low as well as high growth.

Linking growth and distributional changes to poverty trends

16. The relationship between poverty reduction, growth in consumption and changes in inequality can be quantified by a growth-inequality decomposition of change in poverty headcount. The so-called growth effect between selected years measures the simulated impact of the increase in *average* per capita consumption on poverty headcount (keeping the distribution unchanged at that for the initial year); while the redistribution effect measures the simulated impact on headcount of the change in the *distribution* of per capita consumption (keeping the mean unchanged from the initial year).[10]

Figure 2-3: Growth-inequality decomposition between 90-91 and 2002



17. This exercise done for Sri Lanka for the period 1990-91 to 2002 shows that if inequality had not increased, a significantly greater reduction in poverty would have been achieved as a result of

[9] The analysis focuses on per capita consumption rather than income for a number of reasons. First, per capita income data from HIES 1990-91 is not comparable with that for other years due to different treatment of income of self-employment. Second, income data is more vulnerable to measurement errors than consumption data (Deaton 1997). However, for comparable years (i.e., HIES 1995-96 and 2002), the trends and patterns in income inequality are found to be similar to that for per capita expenditure (see Annex 2, Table A-2.2).
[10] See Datt and Ravallion (1992) for details.

the observed growth in mean per capita consumption (Figure 2-3). With no change in distribution from that in 1990-91, the rise in mean consumption (of about 29 percent) would have been enough to reduce poverty headcount by more than 15 percent nationally between 90-91 and 2002 (by 12 and 18 percent in urban and rural areas respectively), instead of the observed reduction of only 3 percent (8 and 5 percent in urban and rural areas respectively).

How was growth in consumption distributed?

18. How was the growth in per capita consumption – which was 29 percent from 1990-91 to 2002 – *distributed* among the population? To address this question, it is useful to first look at trends and patterns in average and inequality measures of per capita consumption.

Table 2-5: Mean real per capita consumption (Rs. at 2002 prices)

Consn. quintiles	*90-91*	*95-96*	*2002*
Q1	1045	991	1068
Q2	1499	1445	1596
Q3	1909	1881	2168
Q4	2489	2578	3117
Q5	4871	5274	7325
National	**2363**	**2434**	**3055**
Urban	3168	3556	4667
Rural	2154	2278	2865
Estate	2103	1685	1985

Source: HIES 90-91, 95-96, 2002 and CCPI

19. National mean per capita consumption increased by 29 percent in real terms from 90-91 to 2002, which implies an annual average growth of 2.3 percent. This increase was unevenly distributed – 50 percent for the top quintile and 25 percent for the 4th quintile, and 2 and 6 percent for the 1st and 2nd quintiles respectively (Table 2-5). Mean consumption increased by 47 and 33 percent in urban and rural sectors respectively (from Table 2-5), and fell by 6 percent in the estate sector. Increasing inequality over the decade is also reflected in national and sectoral Gini coefficients (Table 2-6). The Ginis increased between 1990-91 and 2002 – by 25 percent nationally, and by around 15 percent for the urban sector, 35 percent for the rural sector and 18 percent for the estates.

20. Thus over the decade of 1990-91 to 2002, the modest reduction in national poverty was the net effect of increases in consumption inequality *and* average per capita consumption. This is also apparent from looking at the full distribution of per capita consumption for the two years (see Annex 2, Figure A-2.1). The density function for per capita consumption indicates more unequal distribution in 2002 than in 1990-91. The cumulative distribution of per capita consumption, which shows an upward shift from 1990-91 to 2002, also suggests that no matter where the poverty line is drawn, the proportion of population below the poverty line is lower in 2002 than in 1990-91.

Table 2-6: Inequality: Gini coefficient of per capita expenditure

	90-91	*95-96*	*2002*
Urban*	0.37	0.38	0.42
Rural*	0.29	0.33	0.39
Estate	0.22	0.20	0.26
National	0.32	0.35	0.40

Source: HIES 90-91, 95-96, 2002 and CCPI

21. Over this period, poverty declined slower in the rural sector than in the urban sector due to greater increase in inequality *as well as* lower growth in rural areas. Poverty increased in the estate sector due to rise in inequality as well as negative growth in mean per capita consumption.

22. The two interim periods – 90-91 to 95-96 and 95-96 to 2002 – are quite different (Table 2-5 and Table 2-6). National mean per capita consumption grew by 3 percent *from 90-91 to 95-96*, with only the top 2 quintiles experiencing growth. Mean consumption increased by 12 and 6 percent for urban and rural areas respectively, and fell for the estate sector. The gini coefficient increased by 3 percent for the urban sector and 14 percent for the rural sector, and fell for the estates. These numbers are quite consistent with the rise in rural and estate poverty and the small decline in urban poverty over this period.

23. In contrast, *from 1995-96 to 2002*, national mean per capita consumption grew by 26 percent. While consumption of top and 4th quintiles grew by 39 and 21 percent respectively, that of the

bottom two quintiles also grew by 8-10 percent. Mean per capita consumption increased by 31, 26 and 18 percent for urban, rural and estates respectively. The gini coefficient also increased significantly – by 14 percent nationally and 10, 18 and 30 percent for urban, rural and estate sectors respectively.

24. Thus, inequality overall, as well as for all sectors, rose faster during the period of higher growth, namely 95-96 to 2002 than from 90-91 to 95-96. Poverty declined during the later period in all the sectors entirely due to faster growth, which compensated for the adverse impact of rising inequality.

25. ***More recent trends from CFSES:*** The changes during the later period, namely 1995-96 to 2002, are also consistent with the trends from *CFSES*, allowing for the fact that these two are entirely different surveys, and the time span for the latter is *from 1996-97 to 2003-04* (see CBSL, 2003-04). Over this period, mean per capita expenditure increased by 18 percent for the country, and 21, 19, 4 percent for urban, rural, and estate sectors respectively (Table 2-7). A sharp increase in inequality was also seen for all sectors, using per capita income figures.[11] Aggregate growth for the bottom income quintile of every sector was 4 percent or less, compared to 25-26 percent for the top quintile (Table 2-8). The Gini for per capita income increased by 9, 8 and 26 percent for urban, rural and estate sectors respectively.

Table 2-7: Growth in mean per capita real consumption
(1996-97 to 2003-04)

Sector	*% annual growth rate*	*% total change*
Urban	2.7	20.5
Rural	2.4	18.1
Estate	0.5	3.6
All	*2.4*	*18.1*

Source: CFSES Report (2003-04); Table 8.3

26. Thus, there are important similarities between trends from CFSES with those from HIES: rapid growth in consumption for rural and urban sectors, much higher for those at the upper end of the distribution than those at the lower end. On the estate sector trends, however, the two surveys differ: CFSES rounds show negligible consumption growth along with a large increase in income inequality, while the HIES indicates a sizeable increase in mean consumption, along with some increase in inequality, with a net result of sizeable reduction in poverty.[12] On the whole however, the broad agreement on poverty and inequality trends nationally and for the two dominant sectors indicates that the pattern of *rapid but unevenly distributed growth observed during the later part of the decade from HIES is not dependent on the exact choice of years, and appears to have continued beyond 2002*.

Table 2-8: Total change in real per capita income (%)
(1996-97 to 2003-04)

Quintile	*Urban*	*Rural*	*Estate*
1	-5.5	4.3	-0.7
2	1.4	9.5	-1.4
3	11.0	14.9	0.0
4	17.3	16.5	1.4
5	26.4	24.7	25.5
All	*18.1*	*18.1*	*9.5*

Source: CFSES Report (2003-04); Table 7.6

27. ***Growth Incidence Curves:*** While trends in gini coefficients and mean consumption levels by quintiles presented above hint at the distribution of growth across the population, a more precise picture emerges from using Growth-Incidence Curves (GICs) (Figure 2-4).[13] Briefly, for the country as a whole, while growth in consumption had a poverty-reducing effect, the benefits

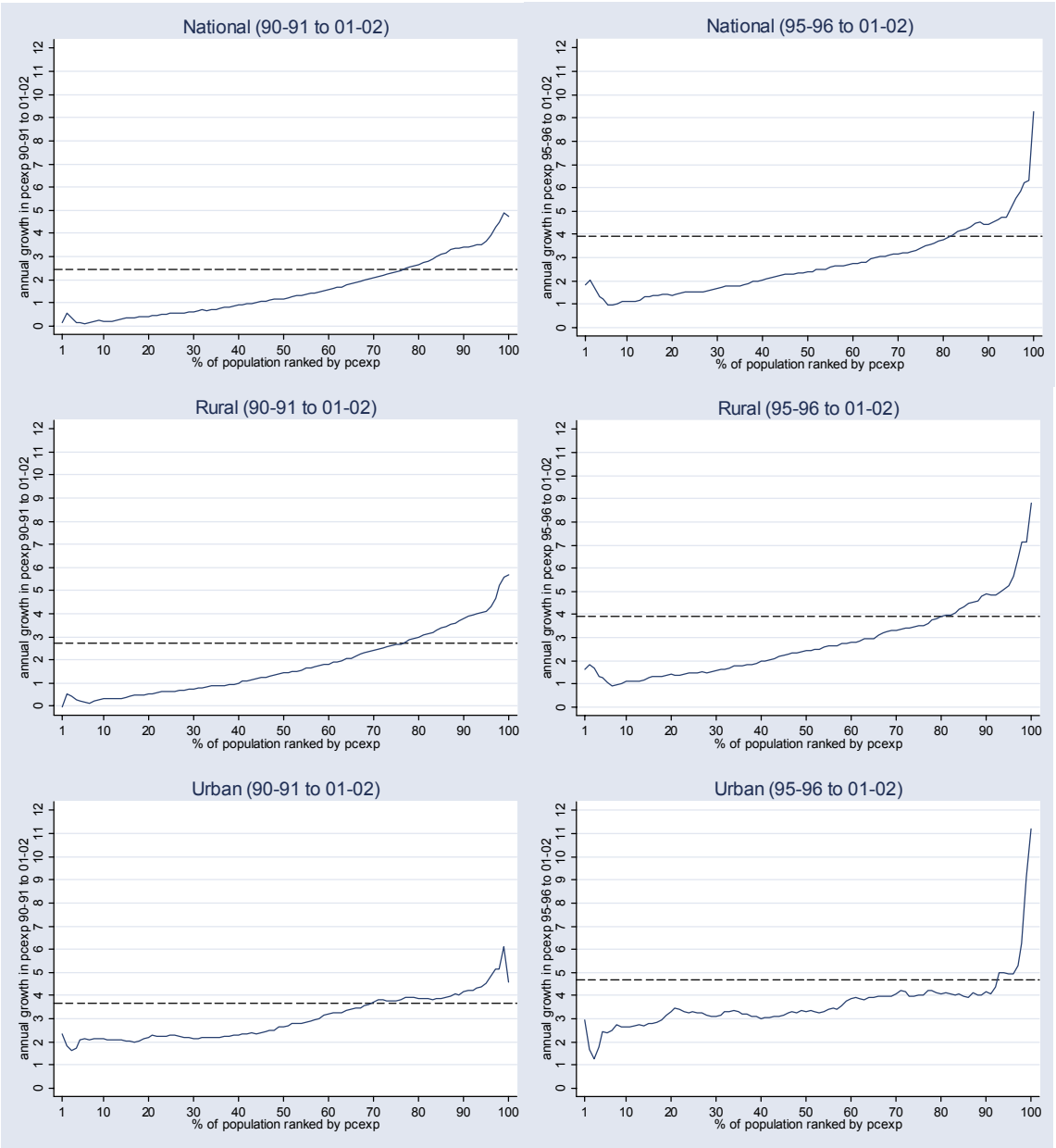
[11] Mean per capita consumption by quintiles of consumption are not provided by the CFSES report.

[12] This discrepancy may be explained by the high sensitivity of estate poverty to small fluctuations (see Figure 2 6 later), the higher standard errors in all estate sector estimates in both surveys, due to the relatively small size of the estate sample, or the fact that the HIES estate sample for 1995-96 was different in that it was not ex ante designed to be representative of the sector.

[13] The GIC maps the average annual rate of growth of real per capita consumption between the relevant years for all centiles (1 percent quantile) of the consumption distribution (see Ravallion and Chen, 2003 for details).

accrued disproportionately among the better-off. This pattern is also unchanged whether one looks at the entire period of 90-91 to 2002, or from 95-96 to 2002.[14]

Figure 2-4: Growth Incidence Curves for per capita consumption



Source: staff calculations using HIES (different years)

28. Between 90-91 and 2002, while growth in per capita consumption was positive for the entire rural population, the gains were negligible (below 1 percent) for the bottom 40 percent and sizeable for the top 20 percent. A similar pattern is seen for the period between 95-96 and 2002, although the gains in absolute terms were higher for all groups – consistent with a relatively larger reduction in rural poverty during this period. The GIC for per capita income for the same

[14] The problem associated with the change in definition of urban and rural areas between the surveys of 90-91 and 95-96, can affect *only* the GICs drawn separately for urban and rural areas for the period 1990-91 to 2002.

period also shows similar results (Annex 2, Figure A-2.4). Between 1990-91 and 1995-96, consumption growth was negative for the lower 50 percent of the rural consumption distribution – which explains the increase in rural poverty during this period.

29. The GICs for the urban sector show similar skewed growth in per capita consumption. For the decade, the shape of the urban GIC closely resembles that of the rural GIC for the same period, albeit with somewhat higher levels of per capita consumption growth – consistent with urban poverty declining more than rural poverty during this period. A notable difference between urban and rural areas is seen only for 95-96 to 2002: the gains for those near the top of the urban distribution appear to be especially large, in comparison to the rest of the distribution of urban as well as rural population.

30. The GICs thus tell a story of highly skewed growth in per capita consumption over the decade, for urban and rural areas alike – a pattern that was even more pronounced when one looks at the more recent sub-period of 95-96 to 2002. At the same time, poverty incidence declined by 6 percentage points for urban and rural areas alike during this period after it had increased during the previous five years – attributable entirely due to an upward shift in the distribution, rather than any redistribution towards the less well off.

Identifying the source of rise in inequality: inequality decompositions

31. While all the evidence above indicate a rise in inequality between households, as well as between regions and sectors, it is useful to get some measure of the source of rise in inequality. In other words, to what extent is it explained by increase in inequality *between* regions (districts or provinces) or sectors (among urban, rural and estate sectors), as opposed to increase in inequality *within* regions and sectors? To address this question, a Theil inequality index is used to decompose the national index into: (i) inter-district and within-district indices; and (ii) inter-sectoral and within-sector indices (Table 2-9).[15]

32. The decomposition shows that while national and within-district indices rose by 57 and 52 percent respectively from 90-91 to 2002, inter-district inequality rose by as much as 112 percent. The inter-sectoral index, on the other hand, increased less in percentage terms (52 percent) than did the within-sector index (57 percent) and the national index.[16] In general, the within-district and within-sector inequality indices are much larger than the inter-district or inter-sectoral indices for both years. This is to be expected, since the extent of variation within a district or a sector is much larger.

Table 2-9: Decomposition of Theil Inequality index

	90-91	2002	% increase from 90/91 to 2002
National	16.8	26.4	57
Within-district	15.4	23.3	52
Inter-district	1.5	3.1	112
Within-sector	15.5	24.4	57
Inter-sector	1.3	2.0	52

33. The important insights from this exercise can be summarized as thus. *First,* the decompositions show substantial increases in inequality – by 50 percent or more – within and between districts (that are proxies for regions) as well as within and between sectors. *Second,* while inequality *within* districts or sectors continues to be much larger in magnitude than between sectors or districts, the percentage increase in inequality *between districts* was by far the highest. Given these findings, it will be equally critical to examine the factors responsible for increasing inequality within and between regions and sectors.

[15] A Theil inequality measure is used rather than Gini coefficients because there is no simple way to decompose the national Gini coefficient by areas/regions.

[16] The share of the estate sector in total population is low, so most of inter-sectoral inequality is explained by differences between urban and rural areas.

34. However, it is important to realize that these decompositions are conducted at a level of geographical aggregation (district or sectors) that are too large and heterogeneous to capture adequately the spatial dimensions of poverty and inequality. These can be better analyzed using techniques that are able to estimate poverty and its correlates for smaller areas, like DS divisions – which Chapter 3 will attempt to do.

2.3. Attaining the MDG of halving poverty: how growth and distributional changes matter

35. In the light of the discussion so far on the relationships between growth, distributional changes and poverty incidence, one question arises: what are Sri Lanka's prospects of attaining the MDG of halving poverty by 2015 from the year 2000 level, for reasonable assumptions of growth and inequality changes? While there is no doubt that higher economic growth will lead to greater poverty reduction, what is the responsiveness of poverty reduction to growth?

36. Estimating growth elasticity and the impact of inequality is based on the approach proposed by Bourguignon (2003). Among many other methods for estimating growth elasticity, this approach was chosen because it has been empirically tested and because the impact of inequality can be easily quantified (Annex 2).

Table 2-10: Poverty Headcount (%) in 2015

	Given Inequality	With increase in inequality
Assumed GDP growth rate: 5.7%	8.2	14.8
Assumed GDP growth rate: 10%	3.1	10.1

Source: Staff estimation on HIES 2002 using the method proposed by Bourguignon (2003)
Notes: i) Population growth rate is assumed to be 1.2%.
ii) The growth rate of Gini coefficients is the same as that of average growth rate between 1990/91 and 2002.
iii) 5.7 % is the average of GDP growth rates in 2003 and 2004 from Central Bank's Annual Report 2004.

37. If economic inequality remains constant at 2002 level, elasticity of poverty reduction is found to be 2.1, i.e. 1 percent increase in per capita household consumption expenditure reduces poverty headcount ratio by 2.1 percent. Since growth in GDP can be different from that in consumption, the above elasticity for Sri Lanka – which is with respect to growth in consumption – implies that 1 percent increase in GDP per capita will reduce poverty incidence by 1.6 percent.[17] However, the assumption of constant inequality is likely implausible given that the Gini of per capita consumption grew by 2.1 percent annually over the past decade in Sri Lanka. Assuming economic inequality also grows at the average rate of increase seen from 1990-91 to 2002, growth elasticity falls significantly to 0.9.

38. These elasticity estimates are used to generate poverty projections for 2015 (Table 2-10). If GDP continues to grow at the rate of the last two years, and assuming population growth rate stays at the current level, poverty headcount will be more than halved to 8.2 percent by 2015. On the other hand, if consumption inequality increases at the average rate of the last decade (around 2 percent annually), the poverty headcount ratio in 2015 will be 14.8 percent, well above half the poverty headcount ratio in 2002; and Sri Lanka will need to grow at an annual average rate of around 10 percent to achieve the MDG target of halving poverty by 2015.

39. It is important to note that like most such elasticity measures, these are calculated under certain restrictive assumptions about the current distribution of consumption (see Annex 2). Thus these simulations are seen as illustrative, but still useful in indicating that achieving strong economic growth is probably not enough to attain the MDG poverty target – unless the growth process becomes much more inclusive of lagging regions and people.

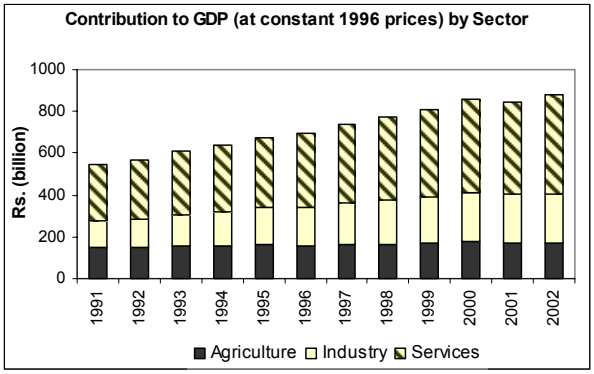
[17] This is calculated using a ratio of GDP growth to consumption growth for Sri Lanka – obtained by comparing the growth in consumption from HIES between 1990-91 to 2002 with the GDP growth from 1991 to 2002.

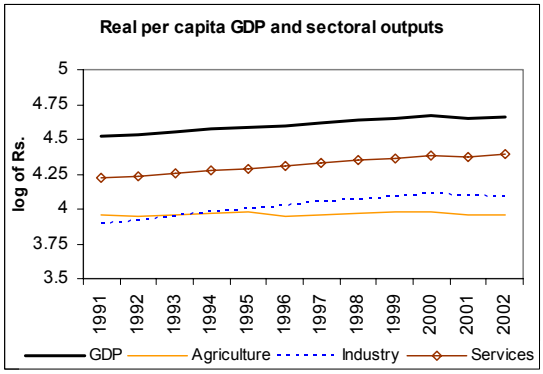
2.4. How poverty trends relate to sectoral patterns of growth

40. Macroeconomic data are broadly consistent with the growth in average levels of consumption observed in household survey data. Real per capita GDP increased by 41 percent cumulatively over the period 1991-2002 – comparable to the growth in per capita real consumption of 29 percent over the same period. For the interim periods however, per capita GDP trends are at odds with consumption trends from micro-data. Real per capita GDP grew by 21 percent during 1991-96, and 16 percent during 1996-2002, which translate to an annual average growth of 3.9 and 2.5 percent respectively. Mean per capita consumption from survey data, on the other hand, grew by 3 percent from 90-91 to 95-96 and 26 percent from 95-96 to 2002. Such inconsistencies between national accounts and household survey estimates are however common in many countries.

41. Irrespective of whether one invests more faith in macroeconomic or household survey data, the important question is – what explains the rise in inequality that tempered the response of poverty reduction to growth? Sectoral data is a useful starting point to see why predominantly rural districts/regions lagged significantly behind urban regions.

Figure 2-5: Sectoral outputs and contribution to GDP





42. Figure 2-5 shows that between 1990 and 2002, share of agriculture in GDP declined sharply from 28 to 20 percent, while that of industry and services increased. While a falling share of agriculture is a part of the natural process of development, in case of Sri Lanka the concern lies in the *stagnation* in agriculture. Agricultural output per capita remained almost unchanged and in fact registered negative growth during certain years, which is consistent with the slow and uneven reduction in rural poverty (Figure 2-5). During 1991-1996, while per capita GDP increased by almost 4 percent annually, agricultural output per capita actually *shrunk* by an annual average of -.2 percent. This may have led to the spike in rural poverty observed in the 1995-96 survey data. Between 1995-96 and 2002, agriculture did a little better, with output growing at an annual average rate of 0.4 percent per capita, and rural poverty reduced during this period (Table 2-11). At the same time, relatively high average annual growth rates in industry and services are consistent with the poverty reduction in the urban areas – over the decade as well as during *both* sub-periods (Table 2-11 and Table 2-1).

Table 2-11: Average annual % growth per capita

	GDP	Agriculture	Industry	Services
1991-96	3.9	-0.2	6.2	4.2
1996-02	2.5	0.4	2.6	3.3

Source: Central Bank of Sri Lanka Annual Reports

43. Thus, growth in the Sri Lankan economy between 1990 and 2002 occurred almost exclusively outside agriculture. However, there appears to have been far less shift in labor away from the agricultural sector than would be expected in an economy with dynamic modern sectors that grew multiple times faster. Although agriculture's share in employment fell from 43 percent in 1991 to 34 percent in 2002, the *number* of people employed by agriculture actually increased by 3.5 percent; in 2002, agriculture employed more than 1/3rd of the total workforce (and likely

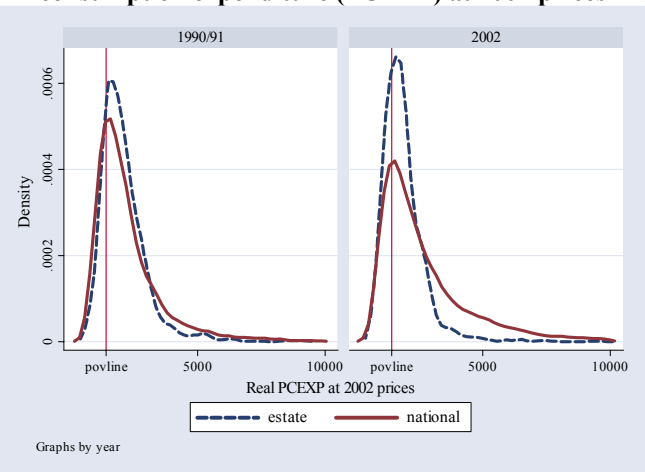
much higher in rural areas). With the stagnation in agricultural output, this would imply that the sizeable population still depending upon agriculture for their livelihoods would have had minimal growth in their incomes over the past decade.

44. To make these connections with greater clarity, it will be necessary to look at evidence from different sources, including household surveys, to explore how lack of growth in agriculture translate into rural wages and incomes, and how these impacts are distributed across the population. Unpacking the story of rural poverty will also require examining outcomes and challenges in the rural non-farm sector. Chapter 8 of this report will explore these issues in detail.

2.5. Nexus between poverty and vulnerability to economic shocks

45. Poverty and vulnerability – the risk of falling into poverty or deeper into poverty – are also closely linked. Although income volatility is inevitable for both the rich and the poor, the impact on the poor of a shock – be that community or economy wide events like a drought or individual or household-specific ones like illness – is often disproportionately severe due to their limited access to insurance and safety nets. Moreover, vulnerability is also high for those just above the poverty line, since even a small shock can push them into poverty.

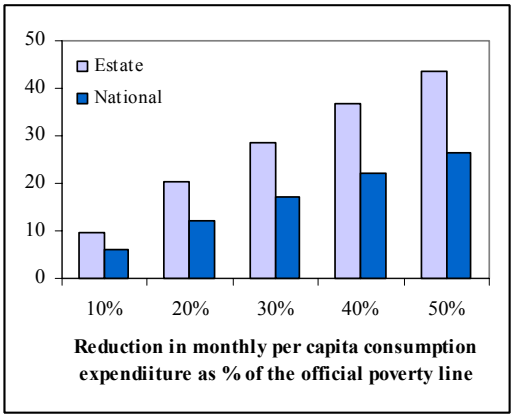
Figure 2-6: Distribution of real per capita monthly consumption expenditure (PCEXP) at 2002 prices



Source: Staff estimation based on HIES 1990/91 and 2002

46. *Consumption distribution and vulnerability to shocks*: While the static poverty estimates highlighted in the chapter are unable to measure dynamic changes, they offer some clues about the extent of vulnerability that prevails in Sri Lanka. If there is high concentration of population around the poverty line, a small shock to consumption can cause large changes in poverty incidence, which implies higher vulnerability. This appears to be the case in Sri Lanka (Figure 2-6). Although the concentration fell in 2002, a large proportion of the population is still bunched around the poverty line. The concentration is even higher in the estate sector and increased over the decade, indicating an increase in the size of the vulnerable population.

Figure 2-7: Projected increases in poverty headcount due to economic shocks



Source: Staff estimation based on HIES 2002

47. *The impact of adverse economic shocks*: Figure 2-7 illustrates the point above with some simple projections of the impact of a fall in per capita consumption on poverty headcount. For example, if monthly per capita consumption falls by 10 percent of the poverty line (less than US$1.5) for every household, the poverty headcount will increase by 6 percentage points nationally and 10 percentage points for the estates. If monthly consumption declines by 20 percent, national and estate poverty headcount would increase by almost 10 and 20 percentage

points respectively. Furthermore, the impact on poverty headcount rates could be even higher if an adverse economic shock were to reduce consumption more among the lower quintiles rather than affect consumption groups uniformly, which the case is often.

48. A recent World Bank report (draft) on social protection indicates that the major individual risks faced by Sri Lankan households are sickness, disability and death of a family member and unemployment; and the main community-wide shocks include drought, crop failure, and other natural disasters – the most recent and disastrous being the tsunami.[18] Static poverty measures also suggest significant increase in poverty during an economic downturn, like in 1995-96—a year of severe and widespread drought. Certain poor districts appear to be especially vulnerable to such shocks. From 90-91 to 95-96, there were large increases in poverty incidence for districts (like Monaragala, Ratnapura, Matale and Puttalam) that experienced severe drought (Table 2-3). Consistent with an even higher concentration of population around the poverty line in the estate sector, large fluctuations in poverty headcount have occurred in the estates (Table 2-1).

49. Safety net or social welfare programs have a critical role to play in protecting consumption in the aftermath of a shock. Sri Lanka has been well known for its safety net programs targeted towards the poor and the vulnerable. However, much of the evidence suggests that current safety net programs are not enough to mitigate vulnerability of the poor to economic and natural shocks.

Social welfare programs in Sri Lanka

50. To be effective in reducing vulnerability among the poor, social welfare programs need to target assistance to those in need, ensuring a minimum level of consumption, particularly in response to income shocks. The typical clientele for such assistance would consist of the poor, and especially the vulnerable among them – the disabled, the aged, children, and households headed by single women.[19] When measured against these broad objectives, the social welfare sector in Sri Lanka presents a decidedly mixed picture. On the one hand, a long history of country-wide programs for the poor and vulnerable have created an enabling environment and a consensus around such programs; on the other hand the effectiveness of these programs has been far below potential due to inefficient targeting and inadequate coordination across programs.

51. A multitude of overlapping programs administered by a number of ministries constitutes the social welfare sector in Sri Lanka. Total expenditure for welfare programs amounted to 3.2 percent of GDP and 12.2 percent of total government expenditure in 2003, distributed among programs like Samurdhi consumption grants to poor households, pensions to retired government personnel, fertilizer subsidy, expenditures on school uniforms and textbooks, payments to disabled soldiers and dry rations to refugees. The *Samurdhi transfers* program administered by the Ministry of Samurdhi is the most significant targeted welfare program – with an allocation of Rs. 9 billion (around $ 90 million) in FY 2003, which amounted to 0.75 percent of GDP and about 3 percent of total government spending, and increased to around Rs. 9.8 billion in 2005. Effectiveness of spending on social welfare is seriously undermined by poor targeting of beneficiaries in this program.

52. ***Samurdhi transfer program:*** A number of studies, including an evaluation conducted by the World Bank as a part of its previous Poverty Assessment (2002) point to large scale errors in targeting of Samurdhi transfers – the program misses about 40 percent of households in the poorest consumption quintile, while almost 44 percent of the total budget is spent on households from the top three quintiles. It covers more than 40 percent of the population, with the result that the benefits are spread too thinly to have much impact on individual households (Box 2.2). Empirical evidence suggests targeting errors are systematic, with some groups (e.g. poor

[18] World Bank (2006a, draft)
[19] See World Bank (2006a, draft) for a detailed discussion on vulnerable groups

households in urban neighborhoods and estates) being less likely to receive Samurdhi than others (those in a traditional village). Qualitative results suggest that political factors, including party affiliation or voting preferences appear to influence allocation of Samurdhi grants.[20]

Box 2.2: Samurdhi benefits have limited impact on households

The number of Samurdhi recipient families increased from about 1.5 million families at the start of the program to 2.3 million families by the late 1990s and remained at these levels until 2001, with budget cuts bringing a reduction of the number of beneficiaries in 2002 and thereafter. The average size of the monthly Samurdhi transfer in 2002 was Rs 375, which translated to a little above Rs. 90 per capita – that could support roughly 5 to 7 days of food consumption of a family. Moreover, Samurdhi benefits are not adjusted for inflation and so their real value has eroded further over time. Beneficiaries also receive payments that are much smaller than the stipulated grant, because of deductions for compulsory savings, social security, and a housing lottery. Glinskaya (2000) showed that after these deductions, the average size of the net transfer fell from Rs. 381 (in 1999-2000) to Rs. 310 per household. Conditional on being a Samurdhi recipient, in per capita terms, the grant is larger for better-off households. Gunewardena (2005) also indicates that the size of the actual grant was one-fourth of the average transfer needed to move a person over the poverty line in 2002 (using the average poverty gap for Sri Lanka in 2002). Improved targeting can help close this gap and lead to much higher impact for the current budget. For example, even a 10-percentage point reduction in coverage – by reducing the number of beneficiaries in the upper expenditure quintiles – will result in roughly 25 percent increase in average benefit per household. And this reduction in coverage will be justified, given that the poverty rate in Sri Lanka.

Source: "Sri Lanka – Underpinning Growth with Equity", World Bank (2006a, draft); Glinskaya (2000)

2. The errors of targeting are related primarily to the way the program defines eligibility and selects households. The criteria for selection of beneficiaries are a combination of the income of a family and number of members; how these are applied is left mainly to the program officers on the ground. Since income is generally unobservable and difficult to corroborate, this results in a largely subjective selection process. The absence of any formal process of community validation or mechanism for redressing grievances or monitoring of entry and exit also results in a process that is non-transparent to beneficiaries and non-beneficiaries alike, and vulnerable to political capture and patronage.[21]

53. The need for reforming the welfare system, and Samurdhi in particular, was identified as high priority by various governments. A new Welfare Benefit Act was enacted by the parliament in 2002 to rationalize the legal and institutional framework of all social welfare programs and reduce politicization in the selection of beneficiaries. To address these objectives, a concerted effort was started to re-orient the selection of Samurdhi beneficiaries from the current subjective criteria to a formula-based system – complemented by a strong community-based process for validation and redressing of grievances – that allows for greater objectivity and transparency. Simulations and field pilots suggest that such a system is likely to lead to significant improvements in the distribution and incidence of benefits: the lower deciles will receive a much higher share of total benefits than under the current system; and the poorest segment of the population will be covered more extensively, in keeping with the fundamental objective of a safety net program (Box 2.3).

54. Since early 2005, the reforms envisaged above are being implemented in the North and East – starting with three districts in the North, where Samurdhi is being introduced for the first time ever. Extending this effort to the rest of the country is necessary, but difficult, due to the political risks of changing an entrenched system. The current government has taken the important step of publicly acknowledging the need to target Samurdhi only to the poor, and

[20] See, Glinskaya (2000) for the full analysis; also see World Bank (2006a, draft) for more detailed discussions
[21] World Bank (2006b, draft)

recently initiated a process on the ground, facilitated through large community meetings, to revise beneficiary lists in a transparent way.

55. Eventually, improving the performance of Samurdhi will require adopting objective and transparent criteria for selection, and the successful introduction of the formula-based system in the North and East is instructive in this context. Adopting a similar system in the South will also ensure that a uniform targeting method is applied to all regions. To mitigate the considerable political risks of going through such a reform in the South, a concerted effort would also be necessary to develop viable alternatives for livelihood support (like microfinance) for those who have to exit out of the reformed transfer program. The government's recent development strategy and the Ministry of Samurdhi's current plans appear to stress the need to prioritize such programs.

Box 2.3: How to improve Samurdhi targeting – a formula-based approach

The Welfare Benefit Board (WBB) set up in accordance with the Welfare Benefits Act of 2002 conducted a careful process to develop with a proxy-means test formula (PMTF) to select Samurdhi beneficiaries. The development of PMTF was guided by analysis based on household survey data, conducted jointly by local statisticians and World Bank staff. The exercise involved using information on household or individual characteristics correlated with welfare levels in an algorithm to proxy household income or welfare. The advantage of such an algorithm is that it allows ranking of households using characteristics – such as demographic data, characteristics of dwelling units and ownership of durable assets – that are more observable than direct measures of welfare like consumption or income. The PMTF would also be complemented by a strong community-based process for independent validation of beneficiary lists and addressing appeals in order to minimize errors of exclusion.

Data analysis, field verification and extensive consultations resulted in a number of recommendations on the target group of the reformed program, the payment amounts and institutional changes necessary to facilitate implementation. The most important recommendation was that the reformed program targets the poorest 30 percent of the population. It was also recommended that the benefit paid to each household include a variable component calculated per "vulnerable" household member (child, disabled, or elderly) that also ensures that the payment amounts are progressive. Simulations and field-based pilots suggest that such a system, properly implemented, should lead to significant improvements in the distribution and incidence of benefits: the lowest 3 deciles will receive 66 percent of the benefits after the reform, as compared to only 37 percent under the current system. Moreover, the poorest 10 percent of the population will be covered more extensively compared to the current system – consistent with the fundamental objective of any safety net program.

Source: Poverty and Social Impact Analysis for Sri Lanka: a Case Study, World Bank (2006b, draft)

56. For the social welfare sector as a whole, there appears to be little coordination between ministries involved in administering programs, with the result that there is considerable overlap between objective and beneficiaries of different programs.[22] Efficiency of welfare expenditure can thus be enhanced by better rationalization between programs, in terms of their stated objectives, target groups and coverage of beneficiaries. A recent effort by the government to move towards a sectoral approach towards budget preparation, for which social welfare is one of the selected sectors, is an important step towards such rationalization of objectives and allocations.

57. While Samurdhi and other social welfare programs are key elements in managing the risks of the poor, large-scale disasters require more expanded assistance. The tsunami, and the government and its development partners' responses, have provided important lessons for social protection strategies to respond to future emergencies and underscored the critical role that the existing system in the country can play in facilitating the transition towards recovery.

[22] These include Ministries of Education, Health, Nation-building, Samurdhi and Social Welfare, in addition to Provincial departments.

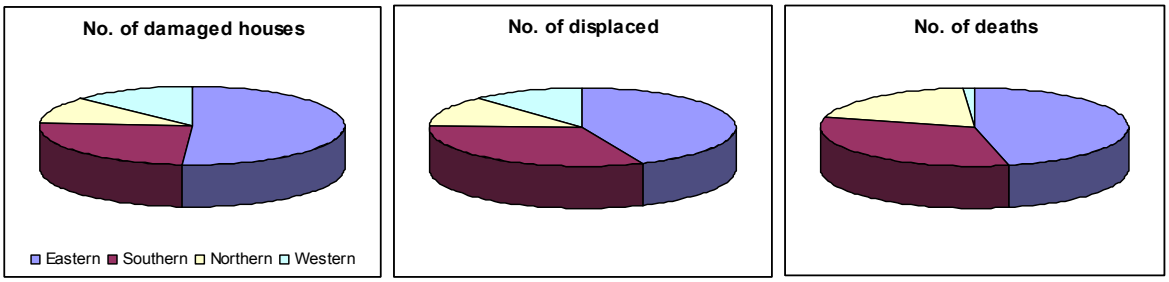
Impact of tsunami and the role of social assistance

58. The tsunami that struck Sri Lanka on December 26, 2004 was the worst natural disaster ever to confront the country. The severity of the shock is apparent from its impact that encompassed more than two thirds of the island's coastline, spread over 13 districts.[23] Over a million people were affected – loss of more than 35,000 lives, injuries of over 20,000, displacement of over half a million, and loss of source of livelihood for an estimated 150,000 workers. Almost 100,000 houses were at least partially destroyed and the total estimated value of asset losses sustained was about $ 1 million.[24]

59. External shocks and natural disasters tend to affect the poor disproportionately. The poor typically have fewer assets, resources, and networks at their disposal to help them cope with shocks and the recovery afterwards. Loss of assets and sources of income for the poor are also much harder to replace, and can leave them more vulnerable to future shocks, both at the household and the community level. As a result, there is serious reason for concern about the impact of the catastrophe on poverty and vulnerability.

60. *Geographical pattern of damage*: The tsunami affected the coastal populations in the Eastern, Southern, Western, Northern, and North Western provinces. Provincial figures on housing damage – a key indicator of impact – indicate the affected provinces to be Eastern, Southern, Northern and Western in descending order of damage suffered. Number of deaths and displaced persons, other key strong indicators of the extent of impact also show similar patterns (Figure 2-8).[25]

Figure 2-8: Impact of the tsunami by province



Sources: DCS (January, 2005); Government of Sri Lanka and Development Partners (December 2005)

61. These numbers indicate that the conflict-affected areas bore a major share of the impact, with Eastern province being the most severely affected. While poverty data is not available for these areas from HIES, all available indicators indicate that Eastern Province – and the districts of Ampara and Batticaloa within the province – was among the lagging areas of the country *prior to the* tsunami (see Chapter 6). Furthermore, in both Northern and Eastern provinces, the tsunami has only added to the vulnerabilities of a conflict-affected population (see Chapter 6). The three districts affected in Southern Province were also among the poorer districts in the country *before* the tsunami, with poverty headcount rates 3 to 9 percentage points higher than the country average (Table 2-3). The affected districts in WP on the other hand had among the lowest poverty rates in the country. Looking at the extent of damages and the fact that the tsunami has affected many in districts that were lagging or vulnerable to begin with, it is reasonable to expect significant impact on poverty in the affected areas at least in the short-run. While no systematic post-tsunami household data is available to measure the short-term impact on poverty or

[23] Government of Sri Lanka and Development Partners (December 2005)
[24] ADB, JBIC and WB (2005)
[25] DCS, Census of Tsunami Affected Areas January 25, 2005.

vulnerability, the next round of the HIES beginning in July is expected to provide valuable insights on the current situation in these areas and the extent of recovery that has occurred.

62. *Social assistance to reduce vulnerability:* In the immediate aftermath of a disaster that causes such disruption to local economies, a primary concern would be to protect the consumption of families against the consequences of income loss – until the time that alternative means of livelihood are revived in the affected areas. To address this dire need, a cash grant program was initiated by the government within 3 months of the disaster, which provided an unconditional grant of around $50 per payment to affected families for a total of four payments.[26] An interim assessment conducted after the first payment indicated that the program was successful in covering a very high percentage of the affected population. At the same time, there was mis-targeting to people who had been minimally affected by the disaster. Little more than one year after the disaster, there are encouraging signs of longer-term recovery in sources of livelihood as well, including in critical sectors like fishing and tourism (Box 2.4). In keeping with its objective, the cash grant program also disbursed its last payment in December 2005.

Box 2.4: The impact of tsunami on livelihoods, and the recovery

The most affected sectors of the economy were fishing and tourism, both of which are the primary sources of livelihood for people in the coastal areas. About three fourths of the fishing fleet and over a fifth of the large hotels in the country were damaged (53 out of 242). In addition, about 250 small hotels and over 200 related small enterprises were affected. About half of the estimated 150,000 people who lost their livelihoods were engaged in the fisheries sector and the rest were in agriculture, tourism, and other small and micro-enterprises. One year later, there were encouraging indications of recovery. About 75 percent of damaged fishing boats have been replaced or repaired; only 11 of the 53 tsunami affected large hotels were still closed and almost 12,000 of the 13,000 rooms that were affected were again operational.

63. The critical role played by the emergency cash assistance program highlights the value of a flexible and timely approach to mitigate the vulnerabilities caused by a disaster. Sri Lanka's experience with the post-tsunami program therefore offers valuable lessons for similar (or smaller-scale) shocks that affect entire communities in the future, for Sri Lanka as well as other countries. While a full stocktaking of the program's impact and lessons must await a complete assessment, the findings of the interim assessment underscored the need to define clear criteria for eligibility from the very beginning. This would help implementers on the ground in preparing beneficiary lists that are more accurate and minimize mis-targeting.

64. A long-term recovery strategy must also find a way to provide continued assistance to those who are most vulnerable among the affected population and in need of longer support, which is best accomplished by integrating them into the country's welfare system. In the case of Sri Lanka, large programs like Samurdhi offers clear opportunities. And the challenge of the social welfare system in Sri Lanka will be to adapt such programs to address flexibly the needs of those who have become vulnerable for the long-term because of the tsunami.

[26] This program was supported by the World Bank's Tsunami Emergency Recovery Project.

3. A Profile of Poverty in Sri Lanka: Poor Households and Lagging Regions

1. Previous chapters in this report have set out the trends and patterns of poverty in Sri Lanka, and identified rising inequality to be the most important factor holding back poverty reduction. Increasing inequality is manifested in widening gaps between regions, provinces and districts, as well as worsening of the distribution of consumption within geographical areas. The rest of this report will endeavor to understand what factors are responsible for this unequal spatial pattern of development, and what leads to the exclusion of sections of the population from the growth process even within faster developing areas. This chapter makes a beginning in this direction, by identifying the characteristics associated with income/consumption poverty at the household level and the observed spatial pattern of poverty.

2. Who the poor are is closely related to their individual attributes as well as to regional characteristics of where they reside. On the one hand, variation in poverty among districts/sectors is related to regional factors beyond individual attributes, such as poor growth and employment opportunities, and the availability of infrastructure such as roads. On the other hand, poverty can be also strongly associated with attributes of individuals/households such as education, occupation and employment status, land ownership, ethnicity and demographics. While it is impossible to determine the exact combination of factors that keep a household below the poverty line, even a partial analysis of the key correlates can offer valuable insights into what could be the priority areas for policy interventions to have maximum impact on poverty.

3. In identifying the combination of factors – individual or household specific as well as spatial – that explain the likelihood of poverty, a multivariate regression of the *probability* of a household being poor on a range of potential factors is instructive. The results of such probit regressions (*Table A, Annex*) must be interpreted with caution – since data limitations circumscribe the range of potential factors that can actually be taken into account, and the direction of cause and effect are sometimes impossible to determine. At the same time, it does help measure the effects of some key correlates of poverty when they are considered together, which can sometimes be quite different from simple correlations of the same variables, taken individually, with poverty incidence. The regression results show that on the whole, a variety of household-specific and spatial (district-specific) are significantly associated with the likelihood of a household being poor in Sri Lanka.

3.1. Profiling the poor: household-specific factors associated with poverty

4. This section will focus on the key household/individual characteristics associated with poverty. The probit regressions referred to above (see columns 1 and 2 of *Table A, Annex*) provide a useful starting point for the analysis. The coefficients on household-specific factors reveal that a household is more likely to be poor if it is located in the rural or estate sector, has at least one member working in the informal sector, includes an unemployed youth as a member, is a large household. On the other hand, the presence of at least one formal sector worker, or a family member working abroad reduces the likelihood of the household being poor. The presence of at least one child is associated with higher probability of being poor. Higher educational attainment of the household head lowers the probability of being poor significantly. Poverty is also more likely if the household head is employed as an agricultural wage worker, inactive in the labor market, or unemployed – although the correlation with unemployment is not very significant.

5. With the results from this regression as a framework, it is important to consider each of the key correlates of poverty independently, as a first step in identifying how these factors constrain the ability of poor households to climb out of poverty. These include labor market indicators like

unemployment, underemployment and occupational status, and educational attainment of household heads that represents human capability. While this is done to make the analysis tractable, it is also important to recognize that many of these factors are inter-related. For instance, educational attainment at least partly explains employment status, household demographics can play a role in determining education and employment opportunities, and land ownership may affect a household's access to other assets critical for income-generation.

6. While focusing mostly on the poverty correlates identified as important by the multivariate probit, the analysis will also attempt to overcome the data limitations imposed by HIES by incorporating relevant evidence from other sources. Land ownership, for example – an important correlate of poverty in many countries – is not included in the regression since HIES data does not provide household level information that can be linked with poverty status. Information on access to safe water and sanitation and housing – other important correlates of poverty – is also available from sources other than HIES, like the CFSES and the Population Census.

Household demographics and poverty

7. The probit regressions show clearly that larger households and especially those with children are more likely to be poorer than the average, while the elderly are likely to belong to households that are less poor than the average. A household size of 6 and above is associated with a 24 percent marginal increase in the probability of being poor, and the presence of at least one child increases the probability by around 5 percent. The presence of an elderly member, on the other hand, reduces the probability of being poor by around 1 percent.

8. The apparent strong correlations between household size and composition and poverty incidence must however be interpreted with caution, particularly because the definition of poverty used in Sri Lanka does not take into account economies of scale and equivalence scales in consumption. Such effects are hard to quantify in a universally acceptable form, and therefore excluded from the measure of poverty, following the practice in many countries where consumption-based measures of poverty are used. That does not however eliminate the possibility that these effects are likely to exist, which would result in larger households with more children *appearing* to be less poor than what their per capita consumption would suggest.

9. In case of Sri Lanka, analysis of poverty profiles suggests that scale effects in consumption do not significantly impact poverty profiles as far as non-demographic correlates are concerned. But correlations with variables that are directly linked to household size and composition are a different matter. If economies of scale could be incorporated into the poverty measure, the effect of household size and composition – namely the presence of children or elderly – on the probability of being poor would likely be different from what is seen here.

10. Finally, the presence of a family member abroad has a significant effect (a marginal effect of around 8 percent) in reducing the likelihood of a household being poor. This indicates the critical role migration to foreign countries, and presumably remittances received from migrants, plays in determining the economic status of a household.

How employment status of household members is linked to poverty

11. It is often argued that unemployment may not be strongly associated with poverty in developing countries because the poor cannot afford to be unemployed. Instead, they are more likely to be under-employed; i.e., engaged in low-productivity activities in the form of casual wage employment. Is this the case in Sri Lanka?

12. *Poverty, unemployment and underemployment*: Underemployment is an important issue for household heads in Sri Lanka, while unemployment of household heads is quite rare (see *Table 3-1*). *Table 3-2* indicates that there is no clear difference in poverty incidence by the household head's employment status. The probit regression suggests that if the household head is unemployed, everything else being the same, the probability of being poor increases by around 4 percent. This effect is however only marginally significant, and therefore not reliable. The multivariate probit however does indicate that poorer households are more likely to have household heads who do not participate in the labor market, and this coefficient is significant.

Table 3-1: Distribution of employment status of household heads (%)

	1990-91	1995-96	2002
Employed	75.7	75.4	76.3
Unemployed	1.1	1.2	2.7
Inactive	23.2	23.4	21.0
Source: HIES 1990/91, 1995/96, and 2002			

13. While there is no direct evidence linking *underemployment* with poverty due to data limitations, the CFSES report 2003/04 provides some insights into the prevalence of underemployment, defining it as employment with duration of less than 35 hours per week. Underemployment is seen to prevail most among the less educated, agricultural and fishery workers and elementary occupation workers, and in the agricultural sector. These suggest a likely link between poverty and underemployment.[1]

Table 3-2: Poverty Headcount Rates by employment status of household heads (%)

	1990-91	1995-96	2002
Employed	26.3	29.5	23.0
Unemployed	23.4	28.9	26.2
Inactive	25.6	26.5	21.5
Source: HIES 1990/91, 1995/96, and 2002			

14. Moreover, there is evidence that poverty is associated with employment of household heads in elementary occupations, where underemployment is more common. According to HIES 2002, a little less than 40 percent of household heads were working in elementary occupation where the average monthly earning was less than half that in other occupations and the poverty headcount rate of their households was almost 70 percent higher than the national average. The probit regression reveals that when at least one member of the family is employed in the informal sector that largely coincides with elementary occupations, the household is 6 percent more likely to be poor, controlling for other factors. These results are consistent with the view that underemployment is more closely related with poverty than unemployment.

15. *Linking youth unemployment with poverty*: Although underemployment, rather than unemployment, is more closely linked with poverty for the population as a whole, unemployment among the youth is clearly associated with poverty. Poverty headcount rate for households with unemployed youth (age 10-20) was almost 10 percentage points higher than those with employed youth in 2002, and the difference was at least 6 percentage points for all three surveys during the decade (*Table 3-3*). Presence of an unemployed youth in the household is associated with a statistically significant increase of almost 4 percent in the probability of the household being poor. This link is critical in the light of strong evidence that a large share of unemployment in Sri Lanka is among the youth. According to Nanayakkara (2004), more than 75 percent of the unemployed belonged to the group of age 15 to 29 years.

Table 3-3: Poverty Headcount by employment status of youth (aged 10 to 20) (%)

	1990-91	1995-96	2002
Employed	28.4	30.8	25.0
Unemployed	35.2	36.9	34.6
Inactive	29.4	33.4	27.7
Source: HIES 1990/91, 1995/96, and 2002			

[1] As noted in the CFSES report, the definition of underemployment does not take into account that even a person working for more than 35 hours per week can be underemployed if he/she is over-qualified for the job. Further analysis will be necessary to get a better picture of underemployment and its association with poverty. The new round of LFS, since it will include various measures of underemployment, may provide opportunity for such analysis.

16. To understand what explains the link between poverty and youth unemployment, one needs to reconcile these insights with available evidence. Recent studies have argued that unemployment of the youth is explained largely by "queuing", namely young workers opting to wait for certain kinds of jobs that pay higher than market-clearing wages.[2] This strategy will maximize expected lifetime earnings for workers – provided the wage differential between "good" and "bad" jobs and the probability of eventually securing a good job are high enough. In Sri Lanka, earnings in formal sectors that come under TEWA have indeed been significantly higher than in other (often informal) sectors. Queuing would explain the high unemployment rate among educated young people who are qualified for these good jobs; but since such youths are more likely to belong to better-off households, this cannot by itself explain the link between poverty and youth unemployment.

17. The results from Nanayakkara (2004), using LFS data, provide some clues from looking at unemployment among school dropouts. While the highest unemployment rate was recorded among those with GCE A/L or higher degree during the 1990s – which may be largely explained by queuing – individuals with education of grade 5-10 constituted the *highest share* among the total unemployed (41 percent in 2002). It is unlikely that junior secondary school dropouts who entered the labor market did not take less-paid jobs because they expect to get highly paid jobs eventually – indicating that the queuing hypothesis is not the *only* explanation for youth unemployment. Such dropouts are also more likely to occur in poorer households, which is consistent with the observed association between poverty and youth unemployment.

18. The prevalence of unemployment among youth with low education thus may reflect lack of suitable skills among such youth for the labor market, and lack of opportunities in the labor market for such workers. The fact that they are more likely to belong to poor households would also increase their likelihood of being trapped in a vicious cycle of poverty, low level of human capital due to early dropout, and lack of employment that in turn perpetuates poverty. Breaking this cycle may require special efforts to train such youth in skills geared to the demands of the labor market.

19. *Agricultural employment and poverty*: Poverty is also associated with wage employment in the agricultural sector. This is expected, given this sector's stagnation co-existing with almost unchanged levels of employment (see Chapter 2). According to the probit regression, the marginal effect of the household head being employed as an agricultural wage worker on the probability of being poor is positive and significant (around 4 percent). *Table 3-4* suggests that poverty rate among households whose heads were working in the agricultural sector as paid employees was 18 percentage points higher than the national poverty rate. Including household heads who are cultivators, poverty headcount ratio of this group was 5 percentage points higher than the national average.

Table 3-4: Poverty headcount by industry where household head is employed (2002)

Agriculture/Fishing	40.4
Manufacturing/Construction	24.7
Service	9.6
All households	22.7

Source: HIES (2002)
Note: Including paid employment only

20. How important agriculture still is as an employer in Sri Lanka, especially in rural areas, is apparent from LFS data that indicate 33 percent of employment occurred in the agricultural sector in 2001 (Nanayakkara, 2004); while HIES indicates that more than 45 percent of household heads were working in the agricultural sector in 2002. In rural areas, almost 50 percent of household heads were working in agricultural sector as cultivators or paid employees, while 54 percent of the poor population belonged to such households.

[2] Rama (2003); Heltberg and Vodopivec (2004)

Poverty and Educational Attainment of Household Heads:

21. Higher level of educational attainment expands economic opportunities for households – both in salaried employment and self-employment.[3] Even though both primary and secondary enrollment rates are high in Sri Lanka, there is a strong relationship between poverty and the level of education attained by the household head. The multivariate probit (*Table A, Annex*) shows that educational attainment of A-level and above among household heads is associated with a 8 percent lower probability of being poor, and education of 5th grade and below is associated with an 18 percent higher probability of being poor.

22. The cross-tabulations of educational attainment of household head with poverty headcount confirm this story quite starkly (*Table 3-5*). In 2002, poverty headcount was more than 30 percent and 45 percent if household heads had education up to grade 5 only or had no schooling respectively – significantly higher than the national average. Poverty incidence in households whose heads have had no schooling has also increased from 1990-91 to 2002, while the proportion of such households in the total population has declined from 15.7 to 12.5 percent. This indicates that even as school enrollments have gone up, the disadvantages suffered by households lagging behind in education have expanded over time.

Table 3-5: Poverty headcount ratios by educational attainment of household heads (%)

Education level	*1990-91*	*1995-96*	*2002*
No schooling	38.1	45.3	45.5
Up to Grade 5	32.7	38.0	33.5
Grade 6-8	23.9	29.5	22.3
Grade 9 & below degree	11.1	14.0	10.3
Degree & above	1.2	1.1	1.9

Source: HIES (2002)

Poverty and land ownership:

23. In many developing countries, land ownership is closely associated with poverty not just because land provides the main source of income, but also because land ownership improves access to economic and social opportunities, especially in rural areas. It is therefore useful to look at the association between land ownership and poverty in the case of Sri Lanka also, albeit with a few caveats that place limitations on the analysis.

24. First, since HIES did not include detailed information on land ownership, the analysis must draw other surveys, like the CFSES. Being different surveys altogether, CFSES and HIES are not strictly comparable, which makes poverty rankings of households based on CFSES data difficult to compare with those based on HIES. Second, land ownership in Sri Lanka is quite complex and sometimes difficult to ascertain. The CFSES survey focused on the *de-facto* ownership of the land, without any reference to supporting documentary evidence of legal ownership. This is a practical solution to the complex nature of land ownership in Sri Lanka, but may also result in a certain degree of misreporting. Moreover, de facto ownership, in the absence of legal ownership, may impose constraints on the rights over the land – particularly as far as selling or mortgaging it for credit is concerned – that could further complicate the relationship between land ownership and poverty. Chapter 6 of this report will examine the issue of land ownership, the current land tenurial system and its possible association with agricultural productivity and incomes in some detail.

25. The CFSES 2003/04 report provides some broad trends. Although land ownership rose with income level, the difference between the rich and the poor was much smaller than in other countries in the South Asia region. For example, even in the poorest quintile, 86 percent of

[3] A number of papers in the economic literature have shown the links between incomes and education. Datt and Ravallion (2002) has shown the links between education and non-farm economic growth, which results in economic diversity. Basu et al (2001) has shown that externalities of having an educated member on the household can result in higher earnings of other household members.

households own lands, while in the richest quintile, 96 percent of households own them. Land size per household did not vary much among different income levels except for the richest quintile. Households in the poorest quintile owned 117 perches on average, while the average ownership for the 4th and 5th quintiles were 134 and 197 perches respectively.

Gender, ethnicity and religion of household heads:

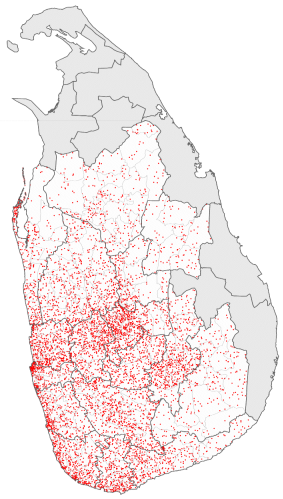
26. Although it is often argued that poverty and gender of household heads are closely associated, there is no evidence that household with female heads are poorer in comparison to those with male household heads (see Table A-3.1, Annex). However, this does not necessarily imply that female-headed households suffer no economic disadvantages in Sri Lanka. The lack of correlation between poverty and gender of household head, which is also often observed for other developing countries, may just be a result of poorer households designating a male member as the household head due to social and cultural factors, even if the household lacks an adult male of working age. Unlike some other developing countries, ethnicity and religion of household heads are not correlated with poverty incidence in Sri Lanka (Table A-3.2, Annex).

27. Since poverty in Sri Lanka is largely rural (the rural poor account for 88 percent of the total poor of Sri Lanka), the household characteristics associated with poverty identified above predominantly reflect those of the rural poor. For a number of reasons, it is also important to draw a profile of the urban poor, a large proportion of who are situated in the largest urban center of Colombo, with characteristics that may be quite different from those of the rural poor.

Characteristics of urban poverty

28. Why profile the urban poor separately, given that urban poverty rate is only around 8 percent? *Firstly*, even a low poverty rate can translate into a significant *number* of poor people concentrated in a relatively small area because of large population of urban areas. The poverty map for DS divisions of Sri Lanka shows this quite starkly (Figure 3-1). Large numbers of poor people are found in Western Province *including* Colombo city due to its high population density. *Secondly*, even as urban poverty rates have dropped, consumption inequality has increased, widening gaps between the rich and poor (Chapter 2). A poverty map of Colombo area shows that poverty headcount ratios vary widely within Colombo city, with pockets of deprivation persisting amid relative affluence. A poverty profile can help understand what factors prevent a section of urban dwellers even in Colombo from availing of the substantial opportunities offered by the country's most vibrant growth center.

Figure 3-1: Spatial Concentration of poor population



29. A study of poverty in Colombo is rendered especially difficult by the small size of the household survey sample for the city. A few studies using less formal data sources have offered some insights into what characterizes the poor in Colombo.[4] These find a few characteristics to be endemic in the poor settlements/slums of Colombo City, which are also under-served in terms of access to basic infrastructure facilities: lack of stable income sources, lack of access to infrastructure and poor quality of housing, and lack of clarity in land tenure (Box 3.1).

[4] DFID et al (2002) and Gunetilleke, et al. (2004)

Box 3.1: Under-served or poor settlements in Colombo city

Based on a survey of 10 settlements in Colombo city, two studies have identified some the salient features among inhabitants of poor or under-served settlements of Colombo:

(a) *Lack of stable income*: Only about 12 percent of urban poor families have permanent source of income and 45 percent of them are engaged in unskilled/irregular employment activities.

(b) *Lack of access to basic infrastructure and housing*: According to Gunetilleke at el, 43 percent of residents in the underserved settlements picked availability of water for domestic use as their highest priority in terms of needs; 27 percent of residents picked the availability and quality of sewerage system; and 24 percent of residents picked the availability of electricity. Many residents also complained about the limited space for houses and expressed concern about poor quality of building materials used in their houses.

(c) *Lack of clear land tenure*: Illegal occupancy, particularly on land belonging to government departments is common in poor and underserved areas. Lack of land tenure restricts the incentive of residents to build proper houses or renovate their houses with proper materials in constant fear of sudden displacement ordered by a legal entity.

Consistent with these findings, the studies also document the recognition among many residents of poor settlements that completing primary/secondary education, being able to find work in a formal sector and/or establish own businesses are key to be able to move out of poverty.

Source:

30. *Evidence from Census 2001:* While the findings of the studies in Box 4.1 are instructive, being based on a sample of only 10 underserved settlements, they should be validated using an alternative data source with wider coverage. Population Census of 2001 is best suited for this purpose.[5] Based on poverty map estimates and consultations with staff at DCS, two GN divisions in Colombo City were chosen as "underserved" or poor areas: Madampitiya and Mahawatta. According to the poverty map estimations, the poverty headcount ratios of these two GN divisions were 19 percent and 18 percent, respectively – more than three times of the poverty headcount ratio of Colombo District, but lower than the national average.

31. The results are consistent with Box 4.1. Households in the two poor/underserved GN divisions have significantly less access to electricity, gas, clean water and a toilet exclusively for the household. These areas also have a much higher proportion of housing units that are huts/shanties or comprising of only one room than the rest of Colombo City. In the underserved areas, a much lower percentage of individuals finish primary and secondary education and a much higher percentage of working-age adults are employed in the informal sector than in other areas of Colombo City (Table 3-6). Poverty in urban areas thus appears to be associated with low educational attainment, employment in elementary occupations in the informal sector and poor living conditions. These also indicate why the urban poor are likely to find it difficult to avail of economic opportunities: their human capital is limited due to poor education and inadequate access to facilities like safe water and sanitation critical for health, which in turn is likely to trap them in low-paying and insecure forms of employment. The proportion of migrants in underserved settlements is also smaller than that in other areas of the city, which is consistent with the findings in Chapter 4 later in this report – migrants are on the average better-educated and better-employed than the long-term residents of Colombo.

[5] The Census 2001 can identify areas only at the GN division level, which is larger than a typical urban underserved area/settlement. This problem can be minimized by careful selection of GN divisions. To define underserved areas in Colombo from the Census, 5 GN divisions were first chosen based on their estimates of poverty headcount ratios; out of them, 2 GN divisions were chosen after close consultation with knowledgeable DCS staff.

32. It constitutes somewhat of a puzzle as to why educational attainment in particular is low in these areas, and is likely to perpetuate across generations given that other studies indicate high school dropout rates among children. Since these areas likely have ready access to school facilities, the question is whether the poor outcomes are attributable to poor quality of schools, lack of demand for education, social factors that limit aspirations or a combination of some of these. More analysis is needed to gain a better understanding of these questions.

Table 3-6: Indicators of welfare in Colombo City (%)[6]

	Other GN divs	*Underserved GN divs*
Light: electricity	86	56
Toilet: exclusively for the hhld	61	37
Water: Tap within unit/premises	53	31
Fuel: gas	58	30
Wall: plank	9	35
Type of house: hut/shanty	4	13
House: single roomed house	19	33
% of individuals (age≥25) with higher than primary education	78	58
% of individuals (age≥25) with higher than secondary education	43	16
% of individuals (age≥25) in elementary occupation	31	55
Proportion of migrants	27	12

Source: Census of Population and Housing Condition 2001

3.2. Profiling poor areas: what characterizes poor provinces and districts?

33. Poverty cannot be explained solely by individual attributes—regional or spatial characteristics can limit economic opportunities of even individuals with favorable attributes. As shown in Chapter 2, Sri Lanka is far from homogenous with regard to distribution of income and growth pattern, and such spatial economic inequality has in fact widened during the last decade. Also, decomposition of inequality measures in Chapter 2 indicated that inter-district inequality grew much faster than average inequality within a district over the past decade. Recognizing this, this section explores what regional (province or district-specific) characteristics are strongly associated with poverty incidence.

34. The importance of district-specific characteristics as correlates of poverty is apparent from the probit regression to explain probability of a household being poor described earlier (see *Table A, Annex*, columns 1 and 2). Incorporating *district level indicators* for electricity usage, unemployment rate and average access to potential markets (defined by an accessibility index constructed as a measure of potential market integration, based on information about road network and location of major cities and towns), a household is more likely to be poor if it belongs to a district with lower average access to markets and lower proportion of households using electricity; while the impact of higher district unemployment rate is ambiguous. The probability of being poor is also higher when the household belongs to a district with higher proportion of household heads with education up to primary level or below and employment as agricultural workers, when the accessibility index is omitted from the regression.[7]

35. With these results as a background, it is useful to examine more closely how each of these factors is associated with, and partly explain, the regional distribution of income and poverty, between provinces and districts.

[6] The underserved areas are defined as areas with GN code 20 and 25 in Colombo DS code=3. Other areas are areas which belong to Colombo City (DS code=3, 27) but not underserved areas.

[7] Note that all spatial variables cannot be included together in a regression because of high multicollinearity. In particular, accessibility index has very high correlation with the other spatial variables taken together (see Annex 3, Table A-3.10), for which proportion of household heads with education of primary level or below and proportion of household heads employed as agricultural workers are dropped when accessibility is introduced in the regression.

Access to markets and infrastructure

36. The association between poverty indices and various measures of access to business opportunities can be seen at different levels of geographic disaggregation. The accessibility index is one measure (as defined above), where higher the index of an area, the better average access to markets the area has. Another measure is travel time to Colombo – estimated based on the geographic information system on road network, recognizing that actual travel times (that depend on road and traffic conditions) are likely to be longer.[8] In addition to these indicators, share of enterprises that use electricity, has a land/mobile telephone line, and is located in a community with a bank are considered here as useful indicators of access to infrastructure that improve business environment; these are available just at the province and not the district level.

Table 3-7: Poverty indices and access to infrastructure by province

Provinces	Poverty Headcount Ratio (%)	Average accessibi-lity index[1]	Average travel time to Colombo (min)[2]	% share of enterprises that use electricity	% share of enterprises with a land line/mobile phone	% share of enterprises located in a community with a bank
Western	11	3.8	73	79	24	70
Central	25	3.1	200	80	7	47
Southern	28	3.1	229	68	18	62
North Western	27	3.1	177	61	15	70
North Central	21	2.9	304	61	8	75
Uva	37	2.8	295	62	23	78
Sabaragamuwa	35	3.3	152	76	15	70
Correlation with HCR (%)		**-61.8**	**47.4**	**-32.4**	**0.2**	**13.9**
Source[3]	HIES 2002 WB	ICS	ICS	ICS	ICS	ICS

Notes:
1. The accessibility index is calculated for every point as the sum of the population totals of surrounding cities and towns, inversely weighted by the road network travel time to each town. The numbers show the mean of the access values for all points that fall into a given province.
2. The average travel time to Colombo city is estimated travel time to each town based on geographical information of road network. The numbers show the mean of the travel time for all points that fall into a given province.
3. "HIES 2002 WB" denotes that the world bank staff calculated these figures using HIES 2002; "ICS" refers to "Sri Lanka: Improving the Rural and Urban Investment Climate (2005)".

37. The association between indicators of accessibility and poverty incidence comes through clearly at the provincial level (*Table 3-7*). Western Province has significant advantages in terms of access to business opportunity by any measure. On the other hand, many of these indicators do not necessarily explain the extent of deprivation in other provinces. For example, the province with the highest poverty headcount ratio, Uva, has almost the same level of telephone connection as the Western province and even better access to a bank, while having poor access to the nearest market, nearest city, and electricity. Importantly, among these indicators of accessibility, *indicators of geographical isolation* such as accessibility index and average travel time to Colombo seem to be most closely correlated with poverty. The correlation coefficient between the accessibility index and poverty headcount ratio is -62 percent and that of the average travel time to Colombo is as high as 47 percent.

38. While these correlations provide some clue about what factors constrain investment and growth in poorer provinces, their usefulness is limited by the large amount of variation likely to exist within a geographic area as large as a province.

[8] Accessibility measures are taken from "Sri Lanka: Improving the Rural and Urban Investment Climate (2005)"

39. The relationships between poverty headcount rates and the measures of accessibility at the *district* level are stronger than at province level (*Figure 3-2*). According to the probit regression (*Table A, Annex*), the probability of a household being poor falls by almost 3 percent with a unit increase in the accessibility index of the district the household is located in, even after controlling for other factors that affect the probability of being poor. At the same time, the association between district poverty rates and accessibility index or distance from Colombo is much reduced once districts in Western Province are excluded. This suggests that district level averages of these indicators mostly explain differences in poverty between districts in Western Province and those in the rest of the country.

Figure 3-2: Accessibility index and average driving distance to Colombo correlated with district poverty headcounts

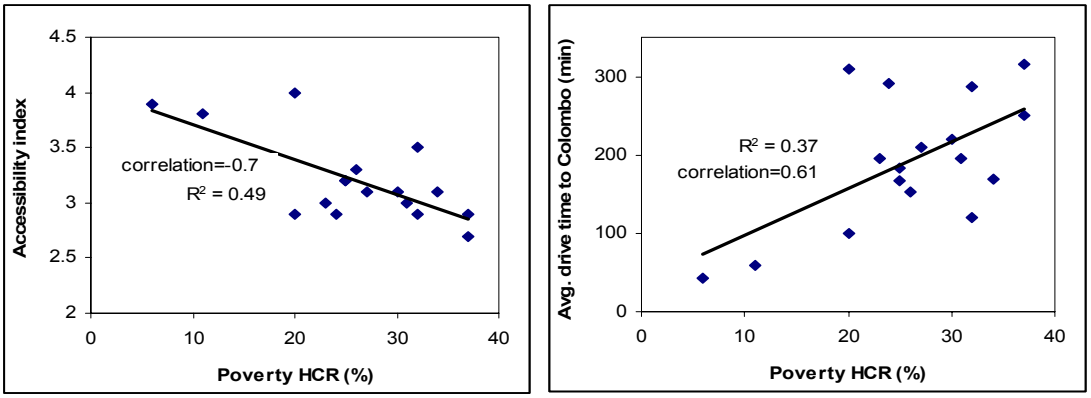
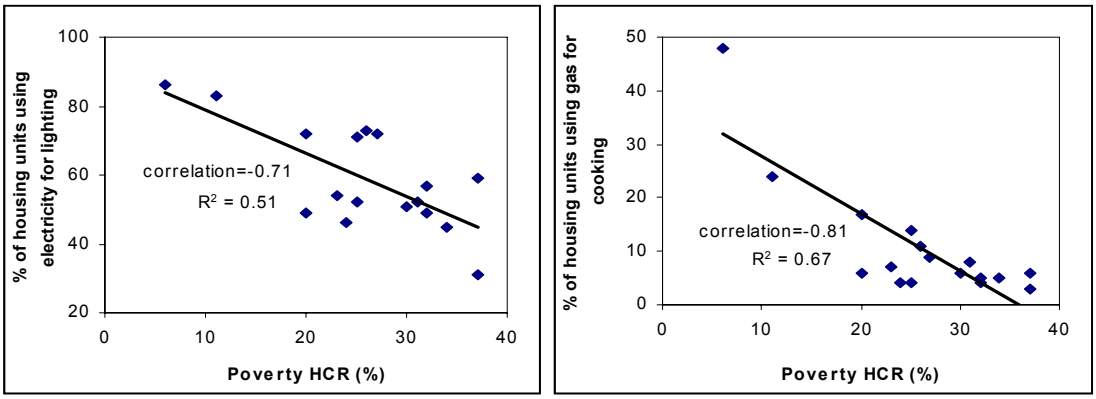


Figure 3-3: Proportion of housing units using electricity or gas correlated with district poverty rates



40. The proportions of enterprises that use electricity, have access to telephone lines, or are located in a community with a bank are not available at the district level. Instead, two new indicators are created from Census 2001 – shares of housing units using electricity for lighting and using gas for cooking fuel – as new proxies for infrastructure availability in districts. It is clear from *Figure 3-3* that households in poorer areas have limited usage of electricity and gas, which are critical for economic activities. The probit regression (*Table A, Annex*) also finds average usage of electricity in a district to have a significant marginal effect on the probability of a household located in the district to be poor. The correlations of these indicators with poverty headcount are reduced once the districts in Western Province are excluded, but are still significant (above 30 percent).

The size of rural and estate sectors, and inequality in a province:

41. The probit regressions show that the probability of being poor is significantly higher when the household belongs to the rural or estate sector. In other words, location in these sectors affects the economic status of households, even after allowing for the impact of other household-specific and geographic characteristics. Provinces with a large share of rural and estate population are thus likely to be poorer. *Table 3-8* indicates that urban areas in all provinces tend to be significantly better off than rural areas. Sabaragamuwa however bears special mention. Poverty in Sabaragamuwa is not just a rural feature – mean per capita consumption expenditure in the *urban* areas of Sabaragamuwa is significantly lower than that of other provinces, and is in fact comparable to the mean per capita consumption in *rural* Western Province.

42. The two poorest provinces, Uva and Sabaragamuwa, also have relatively high shares of estate population (*Table 3-8*). A comparison between Central and North-Central provinces is instructive: although Central province has the richest urban sector and the second richest rural sector, its poverty headcount ratio is worse than that in the North Central province, partly because Central province has a high share of population in the estate sector. These facts are consistent what was shown in Chapter 2: that estate sector is the poorest in Sri Lanka, and contributes disproportionately to the poor population.

Table 3-8: Sectoral shares and inequality measures by province

	Poverty Headcount Ratio (%)	Share of population (%)		Mean per capita monthly consumption expenditure (Rs)			GINI of per capita consumption expenditure (%)
		RURAL	ESTATE	URBAN	RURAL	ESTATE	
Western	11	69.7	0.9	5447	3800	1911	40
North Central	21	95.2	1.0	5001	2574	4833	33
Central	25	70.2	21.0	5644	2630	2067	38
North Western	27	95.7	0.5	5113	2582	1908	37
Southern	28	90.2	2.0	4918	2488	1979	37
Sabaragamuwa	35	87.4	8.8	3864	2317	1817	35
Uva	37	80.8	15.6	5282	2342	1765	39
Total	23	80.6	6.0	5285	2865	1985	40

Source: World Bank staff calculations using HIES 2002

43. Finally, *Table 3-8* illustrates how inequality *within* a province is also important in explaining its relative rank in terms of poverty incidence. The case of North Central province is instructive. In terms of access to infrastructure critical for business environment, North Central ranks quite low (*Table 3-7*). Also, the majority of population in North Central province resides in the rural sector (more than 95 per cent), whose mean expenditure is not high in comparison with other provinces. From evidence so far, the relatively low poverty incidence in North-Central is attributable to two factors: the *lowest* inequality among all provinces as measured by Gini of per capita consumption; and a substantially better off estate population compared to other provinces.

Educational attainment and regional poverty:

44. Average educational attainment at the province or district level is associated with higher poverty incidence. Higher the share of household heads with no schooling in a province, higher the poverty headcount; conversely, higher the share of household heads with at least GCE (O/L) education in a province, lower the poverty headcount (*Table 3-9*). Both correlation coefficients are higher than 80 percent in absolute terms. The high spatial correlations are partly due to the large gap between Western Province and the rest of the country. If Western Province is excluded,

both correlation coefficients are reduced, although they are still significant at around 25 percent in absolute terms.

45. At the district level, similar results apply (*Figure 3-4*). The probit regressions show that the average educational attainment of household heads in a district has significant effect on the probability of a household being poor, even after controlling for other factors.[9] Moreover, bivariate correlations are higher than 70 percent in absolute terms (see Annex 3, Table A-3.5), and if districts in Western Province are excluded, they decline to around 25 percent.

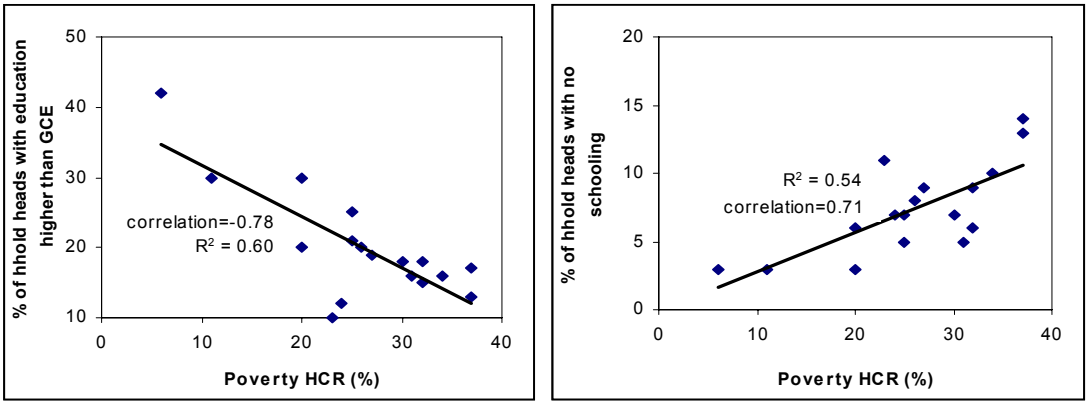
Table 3-9: Poverty and educational attainment of household heads by province

	Poverty Head-count (%)	% of household heads with no schooling	% of household heads with at least GCE
Western	11	3	35
North Central	21	7	17
Central	25	8	19
North Western	27	5	20
Southern	28	8	19
Sabaragamuwa	35	8	17
Uva	37	13	15
Correlation with HCR(%)		**83**	**-85**

Source: HIES 2002 WB

46. It is instructive that average educational attainment of household heads in a province or district is a strong poverty correlate at the regional level, even though basic education indicators are quite high in Sri Lanka. There can be a number of explanations why a poor province like Uva has more than four times the proportion of household heads with no schooling and less than half the household heads with GCE (O/L) or higher degree than Western Province. It may reflect relatively poor access to and quality of education in rural/remote areas; or lower demand for education due to lack of economic opportunities in a province like Uva, which drives down the returns to higher education. A further explanation may lie in patterns of inter-regional or international migration, an issue that will be examined in detail in the next chapter.

Figure 3-4: Proportion of household heads with higher education or no education correlated with district poverty rates



47. While it is hard to point to the exact combination of factors that explain the observed gap in educational achievements, its implications are clear. Provinces/districts that lag behind economically also suffer from a disadvantage in education and skills, which in turn will make it harder for them to attract investment and catch up with the better-performing regions of the country.

[9] A one unit increase in the proportion of household heads with below-primary education in a district is associated with a 0.6 percent increase in the probability of a household being poor, which is highly significant statistically (see Table 3 11, column 2).

Labor market indicators:

48. As shown in Section 3.1, the relationship between poverty and unemployment is quite complex. If the focus is on household heads, underemployment rather than unemployment prevails in Sri Lanka. However, if other household members, especially the youth, are taken into account, there is some correlation between unemployment and poverty. How do these findings translate into spatial correlations with poverty? In other words, are *areas* with higher unemployment rates likely to be poorer on the average?

49. Poorer provinces actually tend to have *lower* unemployment rates, with the correlation coefficient around -24 percent (see Annex 3, Table A-3.6). Uva turns out to have the lowest unemployment rate, while Western Province registers relatively high unemployment. With further disaggregation to the district level, there is no association between unemployment and poverty incidence (a correlation of 0.08). The probit regression also reveals ambiguous impact of the average unemployment rate of a district on the probability of being poor (*Table A, Annex*, columns 1 and 2). The marginal effect of unemployment disappears when district level proportions of household heads with primary heads and agricultural wage employment are introduced, suggesting that these two together capture much of the effect of district level unemployment on poverty.

50. These findings are broadly consistent with what is known about the nature of unemployment in Sri Lanka, as described in Section 3.1. Firstly, evidence suggests that many college graduates and highly educated young people are unemployed in Sri Lanka mainly because they can afford to wait for better job opportunities – the queuing hypothesis referred to in Section 3.1. Secondly, however low the wages are, the extremely poor must work because they cannot survive without income. In relatively poor areas, unemployment is not associated with poverty, likely because remaining unemployed is not an option for a large portion of population who are poor. In these areas, underemployment is likely to be associated more closely with poverty. In contrast, in Colombo district where only 6 percent of population is poor, unemployment in the expectation of better job offers in the future is likely to be a more common feature.

Regional poverty and the agricultural sector:

51. As shown in Section 3.1, employment as agricultural wage labor is associated with higher likelihood of a household being poor. *Table 3-10* also indicates high correlation between poverty headcount and the proportion of agricultural paid employees in total employment of a province, which declines significantly when Western Province is excluded. At the district level, the correlation is lower, at around 26 percent. The probit regression shows that this district-level proportion has a small but significant marginal effect on the probability of a household located in the district to be poor.

Table 3-10: Poverty and share of paid employees in the agricultural sector by province

	Poverty Headcount Ratio (%)	*Share of agricultural paid employees in total employment (%)*	*Average per capita monthly income when household heads work as agricultural wage workers (Rs.)*
Western	11	4	2467
North Central	21	17	2184
Central	25	21	2022
North Western	27	8	2249
Southern	28	15	1929
Sabaragamuwa	35	11	1467
Uva	37	23	2022
Correlation with HCR (%)		**64**	**-73**

Source: World Bank staff calculations using HIES 2002

Note: The agricultural sector includes fishing and forest workers

52. Average *per capita monthly income*

of households whose heads are working as agricultural workers has stronger association with poverty incidence in a province (see *Table 3-10*). This partly explains the high poverty headcounts in Southern province and Sabaragamuwa in spite of relatively low share of agricultural wage employees: these ranked at the bottom in per capita income when household heads worked as paid agricultural employees. This indicator has a strong association with poverty incidence at the district level also, with a correlation coefficient of around 60 percent including all districts and 30 percent excluding districts in Western Province (see Annex, Table A-3.8).

53. Thus primacy of agricultural sector in wage employment in a province or district is associated with higher poverty incidence. But much of this association disappears when Western Province, which is primarily non-agricultural, is excluded from the analysis. What seems to matter more, and is more closely related to regional patterns of poverty, is the average income of households with agricultural employees in a particular area. This in turn suggests some degree of variation in the incomes of agricultural households across different regions.

54. These results merely hint at the complex links between agriculture and rural poverty. The fact that there exist regional variations in incomes of agricultural households significantly correlated with spatial patterns of poverty makes it important to understand what factors explain such variations – which will be a subject of Chapter 6 later in this report. Moreover, given that the *non-agricultural* rural sector provides critical income diversification opportunities for households engaged in agriculture, this will be a further critical area for Chapter 6 to look at.

55. **In summary**, comparisons among provinces and districts in this section show some evidence that poverty is concentrated in areas that are *geographically isolated* (in terms of distance to markets and cities); where access to electricity and gas are limited; the proportion of highly educated household heads is small; and the proportion of agricultural wage workers in total employment is high while the average incomes of households with such workers are low. On the other hand, there is no clear evidence that inequality between provinces or districts is closely associated with differences in regional unemployment rates. At the same time, many of these province/district characteristics are more useful in explaining differences in poverty incidence between Western Province and others, and less so for differences between provinces and districts outside of Western Province.

56. The fact that correlations between poverty and all province/district-specific factors decline when Western Province is removed from the equation is telling by itself. It indicates that the sharpest regional differences – and the greatest source of regional inequality in the country – arise from the vast gaps between the 3 districts in Western Province and the rest of the country. And these differences are not confined to poverty headcount and provincial GDP figures, but extend to a broad range of factors that underlie the income and poverty outcomes.

57. Simply put, these diagnostics suggest a story of two different economies circumscribed by geography: one of Colombo and its surrounding areas in Western Province where there is better access to markets and infrastructure, a higher concentration of educated people, and the non-agricultural sectors play a predominant role; and another covering the rest of the country where largely the converse of these conditions holds. Although there are variations within the latter group, with some provinces like North-Central faring much better than Uva and Sabaragamuwa, the differences within this group are much less than the difference between them and Western Province.

58. Such a broad characterization based on district or province level profiles, although perhaps accurate on the average, tends to over-simplify reality. Significant pockets of poverty, for instance, are known to exist in even the richest districts; and even in Western Province, a vulnerable group like the estate population has per capita consumption levels of about half that of

rural households. This is also consistent with one of the results in Chapter 2, that *within*-district inequality in consumption is significant and has increased by 52 percent over the decade – less than the 112 percent increase in between-district inequality but substantial all the same.

59. Analysis that is more disaggregated geographically can help address the questions raised above, and is particularly useful to clarify the links between poverty and factors that can be influenced by specific policy interventions, like access to markets and infrastructure. Such analysis is attempted below, using poverty maps and other geographical information at the level of DS division.[10]

3.3. What characterizes poor areas: DS divisions as the unit of analysis

60. Ability to conduct more geographically disaggregated (below district level) analysis is usually hampered by lack of reliable data, since most sample surveys like HIES are designed to be representative at the district level at best. Recent efforts in creating databases at sub-district levels by the DCS and the World Bank have found ways around this problem. Such approaches consist of employing the statistical technique of small-area estimation in combining Census and HIES data to estimate poverty incidence for administrative areas that are smaller than what is possible from the HIES (see Box 3.1); and using information from Census and other sources to measure certain key spatial characteristics below the district level. These in turn have offered unique opportunities to examine the factors associated with spatial concentration of poverty, for a unit of analysis smaller than the district.

How spatial characteristics of DS divisions relate to poverty incidence

61. The probit regression of probability of a household being poor offers an opportunity to relate available DS division-level indicators with poverty incidence. In the regressions presented in *Table A, Annex* (columns 3 and 4), district level indicators for accessibility index, proportion of households using electricity and proportion of households with below-primary education are replaced by corresponding DS division level averages.

62. The results of this regression are quite similar to those obtained with district level characteristics for these three indicators. Coefficients of almost all the household-specific and household head-specific remain unchanged, indicating that the marginal effects of these variables on the probability of being poor are quite stable. District level spatial characteristics that were significant continue to be significant at the DS division level also. A household is more likely to be poor if it belongs to a DS division with lower average access to markets and lower proportion of households using electricity. The probability of being poor is also higher when the household belongs to a DS division with a higher proportion of household heads with below-primary education, when the accessibility index is omitted from the regression.[11]

63. Notably, the spatial characteristics at the DS division and district level remain significant in terms of their marginal effects on the probability of being poor even when the sample of households *excludes* all those located in Colombo district (see Annex 3, Table A-3.9). Thus DS division level indicators like accessibility index, share of households using electricity and share of households with education of primary level or below appear to be important not only in explaining the variations in poverty incidence between the richest district and the rest of the

[10] Sri Lanka has a four tiers of administrative units: province, district, divisional secretary's division (DS division), and Grama Niladhari division (GN division). In total, there are 9 provinces, 25 districts, 324 DS divisions, and around 14,000 GN divisions.

[11] With the introduction of DS division level variables, unemployment rate at the district level has an unambiguously positive and significant effect on the probability of being poor; and share of agricultural wage employment in total employment of a district continues to be associated with a higher probability of being poor.

country, but also the variations in poverty outside this district. For example, even excluding Colombo district, a unit improvement in average accessibility index of a DS division reduces the probability of a household located in the DS division to be poor by 12 percent (Table A-3.9).

Poverty estimates for DS divisions:

64. Poverty mapping using small-area estimation technique mentioned above (also see Box 3.1 below) lends new insights into how poverty is distributed in the country, including even in areas where more aggregated analysis suggests low incidence of poverty. Perhaps even more importantly, it allows policymakers to draw visual and statistical links between poverty and spatial factors that are not apparent from more aggregated analysis. At the same time, it is important to bear in mind that poverty mapping uses statistical techniques to circumvent the absence of statistically representative household data, which can introduce errors in the poverty estimates. Given this, it is best to use the poverty maps in conjunction with other tools available to policymakers to get a handle on spatial distribution and correlates of poverty, rather than rely exclusively on the precise ranking of geographical areas indicated by the map to guide policy.

65. *Figure 3-5* – a map of poverty headcount ratios at the DS Division level – indicates some interesting geographic patterns. First, as expected, poverty headcount ratios are substantially lower in Colombo district and its neighboring areas. Second, areas with high rates of poverty are much more prevalent in areas down south (Southern, Uva and Sabaragamuwa provinces) than in areas more to the center and north of the country (North-West and North Central provinces).[12]

66. At the same time, pockets of extreme poverty exist even in districts with relatively low poverty rates. For example, some DS divisions in the southern part of Western Province (Kalutara district) suffer from severe deprivation; and similar pockets of extreme poverty exist in North-west and North-Central provinces (e.g. in parts of Puttalam, Anuradhapura and Kurunegala districts). There is also a wide variation in poverty incidence in Central province.

Box 3.1: The role of poverty maps in analysis

There are good reasons to believe that poverty rates much higher than the national average can be found in specific areas in Sri Lanka, even within districts that on the aggregate show a relatively low incidence of poverty. Thus there is a long-standing demand for an understanding of poverty and inequality at finer levels of spatial disaggregation than what is available as direct estimates using HIES data (district level). Reasonably accurate estimates of poverty, at the DS Division or lower administrative level, can greatly facilitate monitoring and evaluation of the existing poverty alleviation programs and geographic targeting of future government interventions. This is possible through an exercise in Poverty Mapping – a technique developed in Elbers et al (2003) and since implemented in many countries around the world – with the objective to provide statistically reliable estimates of consumption-based welfare indicators. The DCS of Sri Lanka has initiated this exercise – the first-ever attempted in South Asia – with technical assistance from the World Bank.

The poverty mapping method takes advantage of strengths of both the HIES – that includes consumption aggregates but lacks enough sample size to estimate poverty at the geographical unit below district – and the Population CENSUS – that has enough sample size but lacks consumption aggregates. Using this method, members of the DCS and World Bank staff produced a map of poverty headcount ratios at the DS division level, for the year 2002. The results of this exercise, presented below (along with other GIS-based maps of characteristics like infrastructure and rainfall/drought), suggest the important role that poverty maps can play in the analysis of spatial inequality and its correlates.

Relating characteristics of DS divisions with poverty estimates:

67. *Accessibility potential*: As seen earlier, geographical isolation measured by the distance to the nearest market/town is highly correlated with district poverty headcounts. This correlation is

[12] Refer to Chapter 2, Figure 2.1 for a map of Sri Lanka with administrative boundaries of districts and provinces.

likely to be even more important at the DS division level, since accessibility should be more relevant for a smaller geographical area.

Figure 3-5: Poverty estimates for DS divisions

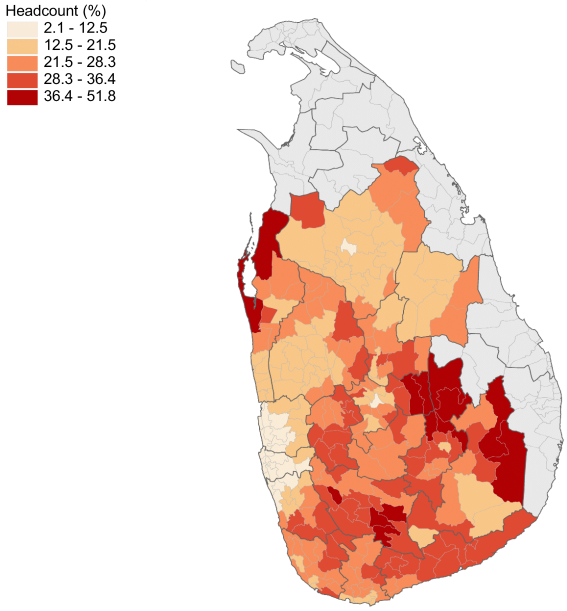
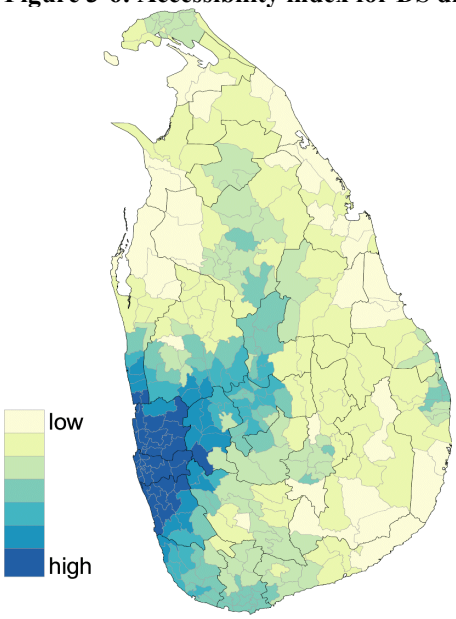


Figure 3-6: Accessibility index for DS divs

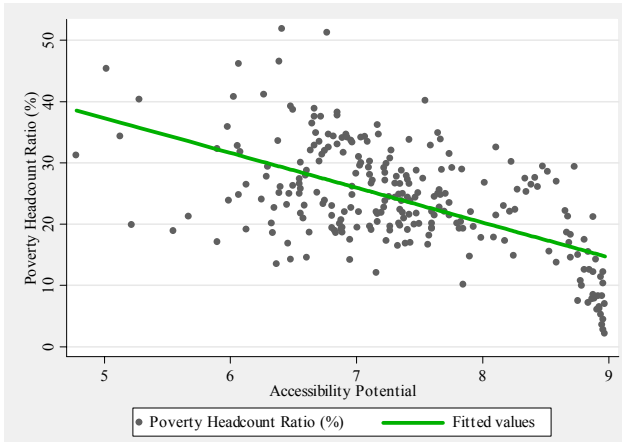


Source: Tilakaratna and Satharasinghe (2005) and World Bank (2005b); accessibility map based on staff calculations.
Note: The accessibility index is calculated for every point as the sum of the population totals of surrounding cities and towns, inversely weighted by the road network travel time to each town. This map shows the mean of the access values for all points that fall into a given DS unit. The index is a measure of potential market integration reflecting the quality and density of local transportation infrastructure, including 185 cities/towns in the analysis.

68. Using accessibility indices calculated for DS divisions, *Figure 3-6* shows that areas surrounding the Colombo district in Western Province are well connected to towns/markets. These include the southwestern coastal areas surrounding Colombo city and the areas between Colombo and Kandy city. In general, accessibility index appears to decline rapidly as with distance from Colombo and its surrounding areas.

69. Comparing *Figure 3-5* and *Figure 3-6*, higher the accessibility index of a DS division, lower tends to be its poverty incidence. For example, the coastal areas surrounding the Colombo district record a high accessibility index as well as a low poverty headcount ratio, whereas many DS divisions in Monaragala district of Uva province are very poor and geographically isolated. A scatter plot and a simple regression of poverty headcount on accessibility index confirm a significant negative correlation (of -0.58) between these two indices (*Figure 3-7*).

Figure 3-7: Poverty Headcount and Access to Urban Centers at DS division level



70. Educational attainment and electricity usage: DS division level indicators of education attainment and usage of electricity among households are also highly correlated with poverty estimates for DS divisions obtained from

the poverty map. The correlation coefficients of DS division level poverty estimate with the proportion of household heads in the DS division with education of primary level or below and the share of households using electricity are as high as -0.62 and 0.79 respectively.

71. The spatial characteristics considered here are also strongly correlated with each other. This is particularly true for accessibility index vis-à-vis other spatial factors. A regression shows that DS divisions that are better connected to markets are also likely to have larger proportion of households with electricity and better education attainment among household heads, and belong to districts with lower unemployment rates and proportion of agricultural wage employment (Annex, Table A-3.10).[13]

3.4. Summary and concluding remarks

72. This chapter draws primarily upon broad correlates, and therefore only hints at some of the sector-specific issues critical to explain poverty outcomes and inform policy interventions. Such correlates serve as a starting point for more in-depth analysis in subsequent chapters to address questions like what are the specific reasons for stagnation in output and wages in the rural sector, and why do certain groups like the estate residents continue to lag behind the rest of the country in incomes as well as human development.

73. The broad correlates also do little to identify the specific characteristics of poverty in the conflict-affected North and East. Almost all the data used so far, as noted before, in fact does not even include these two provinces, due to lack of availability of representative household data or Census information. Chapter 7 will piece together such information that does exist, from a variety of sources, to draw a profile of poverty and vulnerability in these areas in the context of the unique challenges brought upon by the conflict.

74. At the same time, and in spite of their limitations, the correlates of poverty highlighted here bring out the range of key factors that characterize poor households and poor areas across a significant part of the country. Once the broad set of constraints that recur across poor households and areas are identified, sector-specific analysis can help in further refining these to make them more policy-relevant.

75. A number of household-specific factors correlate closely with the likelihood of being poor. The presence of at least one formal sector employee in the household, a family member working abroad, higher educational attainment of the household head reduces the likelihood of poverty. There is also some, although less conclusive evidence that unemployment particularly among the youth, and underemployment that is usually associated with employment in the informal sector, are associated with higher probability of being poor. Consistent with the pattern of agricultural stagnation, employment as agricultural worker increases the likelihood of poverty.

76. Although poverty incidence in Colombo urban area is low compared to the rest of the country, up to three times the poverty rate of Colombo district prevail in certain areas of the city that are also under-served in terms of basic services. Census data and smaller studies of poor, under-served areas/settlements reveal that poverty in urban areas is strongly associated with low educational attainment, employment in elementary occupations in the informal sector and poor living conditions. Moreover, long-term residents rather than migrants are more likely to live in

[13] This regression has an R^2 of 0.71, which is very high given the short list of explanatory variables and indicates high multicollinearity. This also explains why all the spatial variables cannot be included simultaneously in the probit regressions of probability of being poor. The best results are obtained when one specification includes accessibility index but not educational attainment of household heads and share of agricultural wage employment, while another specification is just the converse.

these under-served areas – Chapter 4 in this report will show that migrants are better educated and less likely to work in elementary occupations than non-migrants of Colombo city.

77. Thus increasing productivity and incomes from agriculture, creating growth and employment in the formal sector, and investing in higher education would likely have positive impact on poverty reduction across the board. The problem of youth unemployment also deserves attention, particularly because a significant part of it appears to occur among school dropouts from poor households, which can have the effect of perpetuating poverty and sharpening inequality across generations. Further analysis is however necessary to understand this phenomenon better and find appropriate policy interventions.

78. While most of these household-specific factors are quite intuitive, it is interesting that even after controlling for their effects, a number of spatial characteristics emerge as strong correlates of poverty. The significance of this can be shown through an example using the probit regression in *Table A, Annex*. Even when two households are identical in all their household characteristics, if one of them is located in a DS division with the average spatial characteristics of Colombo district and the other is located in an average DS division of Monaragala, the likelihood of the former household to be poor is 7.4 percent lower than that of the latter. Although this is a highly stylized example based on an exercise limited by lack of data on other potential spatial and household-specific factors, it does illustrate a message supported by all available evidence: that location matters in Sri Lanka, and location-specific characteristics are critical in explaining the uneven pattern of development.

79. A few spatial factors emerge as key here. Given the limited number of indicators available at the district or DS division level, these should not be taken as an exhaustive list, but rather be looked upon as the types of critical constraints faced by lagging regions in the country.

80. Accessibility or potential for market integration, which as measured here depends on distance (and available roads) from towns and markets, is one such factor. Irrespective of whether accessibility is aggregated at the DS division or district level, it significantly reduces the probability of a household being poor. Consistent with this, accessibility is also closely associated with the aggregated poverty incidence in provinces, districts and DS divisions. Although this association is weaker outside Western Province and Colombo district, even excluding Colombo, accessibility remains a significant correlate of the likelihood of a household to be poor. Other spatial factors important at all levels of geographic disaggregation are access to electricity (proxied by proportion of households using electricity) and average educational attainment of household heads. Both of these, however imperfectly, capture attributes relevant for growth and poverty reduction in a particular region – availability of infrastructure and human capital or skills.

81. The combination of such factors – from access to markets to availability of infrastructure and human skills – appears to be a fair representation of what conspire to hold back growth and poverty reduction in large parts of the country outside of Western Province. The fact that these are also highly correlated with each other indicates the multifaceted nature of challenges faced by poor areas. Remote areas badly connected with markets and cities, for example, are also likely to have lower access to electricity and lower average educational attainment among household heads, which further reduces the potential for economic development. It seems intuitive therefore to suggest that in order to address these challenges policy interventions also need to occur along multiple dimensions that complement each other.

4. Internal Migration, Remittances and Urban Concentration

1. As highlighted earlier in this report, poverty in Sri Lanka is related closely with location or geography. Poverty rate in the lagging regions – remote districts far away from Colombo, with a large rural and estate population – is a few orders of magnitude higher than that in Colombo and its surrounding areas in Western Province, and this gap has been growing over the last decade. In order to address this growing regional imbalance, it is necessary to understand some of the processes that contribute to and perpetuate the imbalance. Chapter 3 has made a beginning in this direction, by identifying spatial factors associated with poverty – such as access to markets, availability of critical infrastructure like electricity and average education levels that affect economic opportunities in a region. The fact that these conditions occur – often simultaneously – in poor areas also suggests that if they were to continue, lagging regions are in danger of falling further behind the rapidly growing regions of the country.

2. What is the impact of widening regional inequality – not just on current poverty but also on the future path of growth and poverty reduction? To answer this question, one must look at the dynamic changes that can occur in a country *because* of rising regional inequality. And perhaps the most critical among these is the movement of people from backward regions to faster-growing areas in search of better opportunities. In Sri Lanka, internal migration has almost doubled in numbers between 1996-97 and 2003-04, indicating that such dynamic processes are indeed well underway (CFSES, 2003-04). This should come as no surprise, since economic benefits of internal emigration from rural/remote areas to the urban growth center have increased as the gap in economic performance between this area and the rest of the country has widened.

3. This chapter will closely examine the causes and patterns of internal migration in Sri Lanka, with a view towards understanding how these dynamic changes in turn affect future trends in development. Such movements of people – that in Sri Lanka's case occurs largely from rural areas to the urban growth center of Colombo – can have complex but profound effects on poverty and inequality, depending on the causes, scale and pattern of migration. Migration can be a force in favor of *reducing* cross-regional inequality – by shrinking wage gaps between regions as people move in response to wage differences, and generating remittances back to the migrants' place of origin that promotes development in the lagging regions. In addition, since migration often represents the best available option to those in lagging regions to better their economic status, it can significantly influence welfare and poverty of households who have migrated.

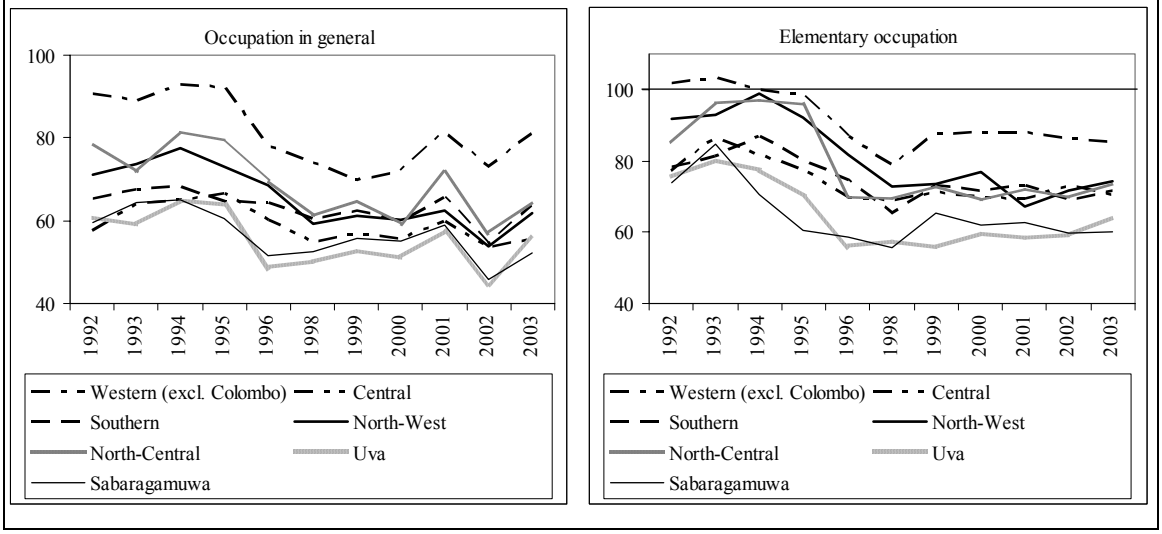
4. At the same time, migration can also *perpetuate* regional imbalances; for instance, if the more endowed, in terms of skills or wealth, from lagging areas in Sri Lanka are likely to relocate to avail of better employment opportunities in Colombo. Furthermore, large-scale movements of people into a rapidly growing city can have implications for urban poverty and even impose limits on the growth process due to overcrowding. The scale and pattern of migration are thus important in understanding the incidence and characteristics of urban poverty, as well as the challenges faced by urban regions to keep the momentum of economic growth going.

5. The chapter will begin by describing the trend and pattern of internal migration in recent years, and then go on to analyze the characteristics of migrants and purpose of migration that in turn influence its impact on the place of origin as well as destination. A key element in understanding the impact of migration involves looking at the incidence, size and use of remittances at the place of origin. The effects of urban agglomeration, which is a consequence of the pattern of migration seen in Sri Lanka, and its potential costs on growth will be an additional area of analysis. The chapter will end with a discussion on the implications for policy.

4.1. Trends in internal migration over the last decade

6. The proportion of migrants in Sri Lanka had increased from 78 per 1000 households in 1996-97 to 89 in 2003-04, with internal migration increasing from 15 to 29 per 1000 households. CFSES data also shows that the main purpose of migration is to seek employment: in 2003-04, 81 percent of internal migration had occurred for this purpose.[1] The HIES data also shows similar increases in migration from 1990-91 to 2002. It is important to note these estimates are likely to *understate* migration, since migrants in these surveys are only those who live outside the place of residence of other members of the same household – therefore excluding those who have migrated along with their entire household (see Annex 4).

Figure 4-1: Monthly wage in province as a percentage of wage in Colombo District



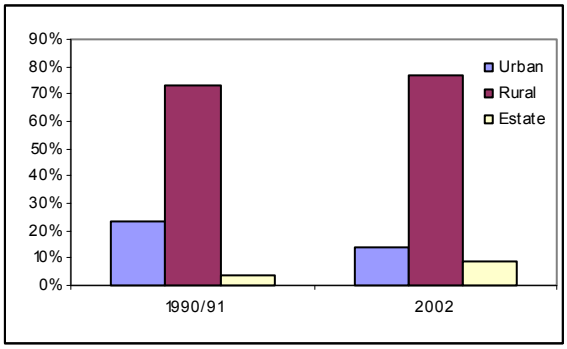
7. The sharp increase in internal migration measured by CFSES – even using a restricted definition – is consistent with the fact that economic inequality between regions has been increasing through the last decade, which has increased benefits from migrating into Colombo and its surrounding areas. Figure 4-1 shows a widening gap in monthly wage earning between Colombo district and all provinces other than Western Province. This gap does not necessarily translate into commensurate opportunities for potential migrants, since wages in the TEWA-protected formal sector – that is relatively large in Colombo district – are set artificially high above market-clearing levels, which hampers job-creation in the formal sector.[2] However, even in elementary occupations, which are mostly outside of the labor regulation and reflect market forces better, there is a significant wage gap between Colombo District and other areas, indicating substantial economic benefits from migration.

[1] Over the same time, external migration fell marginally from 63 to 60 per 1000 households. Remittances from abroad however still grew at 11 per cent in 2003, to the extent that it constituted 18 percent of import income and 7.5 percent of GDP (CFSES Report 2003-04). Employment accounted for 95 percent of all emigration out of Sri Lanka. While external migration is an important issue, this chapter does not analyze its impact, because the focus is on internal migration, as a *consequence* of regional inequality and because of its potential impact on regional growth and inequality patterns.

[2] The simplest economic theories posit that migration occurs when the expected economic benefit – determined by the earning differential and the probability of finding a job at the destination – outstrips the cost of migrating. The wages prevailing in TEWA-protected sectors – that are far more numerous in Colombo than outside and thus affect Colombo wages more – are high enough to impede new hiring and therefore reduce the probability of finding a job in this sector. Thus, the economic benefit from migrating can be overstated if one just looks at the wage differential.

8. Incidence of internal out-migration had increased for all provinces from 1996-97 to 2003-04, with the exception of Western Province, indicating that the latter was the recipient of most migrants. In 2003-04, the highest proportions of internal migration were recorded from the Northern and Eastern provinces, while the lowest was from the Western Province. The pattern is explained by lower opportunities in the North and East due to the security situation there and the ability of people to migrate relatively safely within the country after the ceasefire.

Figure 4-2: Composition of migrants by sector of their origin



Source: Staff estimation using HIES 1990/91 and 2002

9. Consistent with internal out-migration increasing for all provinces other than Western Province, HIES data also shows that the proportion of migrants from rural and estate areas increased from 1990-91 to 2002, while that from urban areas declined (Figure 4-2). In fact, the share of migrants from the estate sector more than doubled over this period. In 2002, nearly 90 percent of migrants came from rural and estate sectors.

4.2. How migration affects the economy at the origin and destination

10. Given the trends in migration in Sri Lanka, what are the likely welfare impacts? The economic literature suggests a wide range of possibilities, depending on who migrates, to where and why. Migration occurring among highly skilled workers can reduce productivity and management skills in the source regions, which can in turn deepen regional inequality. At the same time, emigration of skilled workers can also generate benefits for lagging regions. Remittances from the emigrants can be far larger than the income they could earn staying in their place of origin. The emigrants may also confer other benefits to their place of origin–induce investment and spillover of knowledge from their destination, some of which may even raise the stock of human capital.[3]

11. Out-migration of low-skilled workers on the other hand is almost always favorable to poverty alleviation at the place of origin. Low-skilled workers are likely to earn higher wages at their destinations and send remittances to household members back home; and low-skilled emigration can raise wages or create new job opportunities for those left behind in the place of origin. However, in spite of its benefits, emigration of low-skilled or poor workers is usually limited by factors such as their lack of financial resources, skills required to obtain a job or access to social networks in urban areas.[4] For migration destinations, in-migration of poor or low skilled workers can negatively affect poverty and human conditions, due to rising unemployment rates, expanding urban slums and strain on urban services. In Sri Lanka, although the link between migration and urban poverty in Colombo city attracts considerable policy interest, few studies have explored this issue with adequate data.

12. Migration from rural/remote areas to Colombo district/city, even if it widens spatial disparity, can be an efficient use of labor force. International experience suggests that internal migration to a few large cities is an inevitable stage of the development process.[5] Goods and services are produced efficiently due to the cities' better access to a large pool of skilled workers,

[3] See Lucas (2005) and Schiff (2006).
[4] See, for example, Mahmud 1989 for Bangladesh
[5] See WDR 2000, chapter 6

a critical mass of consumers, and a network of suppliers of intermediate goods. Such advantage attracts more workers from other lagging areas, further widening the economic gap between the large cities and other areas. However, as agglomeration continues, congestion can hamper transactions and reduce productivity in the urban center itself. Such externalities of urban over-concentration can create a divergence between individual and social benefits from migration. Migrants can continue to flow into the urban center even though the social cost of congestion already exceeds the economic benefits from agglomeration.

13. Which among all these possible effects are occurring in Sri Lanka, and what is their net welfare impact? Since this in turn depends on who migrates, to where and how, a comprehensive profile of migration in Sri Lanka needs to be drawn. Although the lack of panel survey data with detailed information on migrants is a serious obstacle, data from Census and household surveys offer an imperfect but useful alternative – that of drawing inferences from profiles of households who have migrated or those who have migrant members. Each data source has its pros and cons, and only the comprehensive use of all three databases leads to a reasonable picture of an economic and social phenomenon as complex as migration (see Annex).

Characteristics of internal migrants: migrants into Colombo City

14. Characteristics of migrants can provide important clues for addressing key questions to do with what factors trigger migration, and related to that, what are the factors that restrict mobility of people in lagging areas? Migration can actually be triggered by a combination of "push" and/or "pull" factors that directly result from regional economic differences. The push factors are those that prevail in the place of origin, such as lack of economic opportunities in a poor region, which compel certain types of individuals to leave rural areas for the urban center. The pull factors on the other hand would be conditions in the Colombo area that attract certain types of individuals, like those who are highly skilled or educated, away from the lagging areas. Pull factors can also result from "network effects", due to the presence of strong social networks at the potential destination.

15. The characteristics of migrants offer some glimpses into the kind of push-pull factors that may be at work in Sri Lanka. Given the patterns of internal migration, and the fact that the relative prosperity of Western Province can be largely attributed to the location of Colombo city within this province, studying the characteristics of migrants into Colombo city will be the primary objective. The Census (2001) provides a rare opportunity to understand demographic and economic characteristics of migration into Colombo City, using welfare proxies other than income/consumption, like education or living conditions. The results of poverty mapping, which yields poverty estimates for small geographical areas or groups, are also useful for this purpose.

16. ***What factors propel migration into Colombo?*** The distribution of migrants and recent migrants (with residency of 5 years or less in Colombo) by their origin districts from Census 2001 shows the largest shares of both migrants and recent migrants into Colombo City to be from conflict-affected Jaffna district (see Annex 4, Figure A-4.1). A clear link is also seen between the size of migration and the origin district's poor population (see Annex 4, Figure A-4.2). A district with larger poor population tends to have larger emigrations into Colombo city, with Kandy and Nuwara Eliya being the sole exceptions. The large estate populations of these two districts may explain the anomalies in their case.

17. Table 4-1 indicates that poverty incidence in the origin district is strongly associated with recent migration into Colombo city. The correlation is stronger with the district poverty rates in 1995-96 than with those for 2002, which is consistent with the definition of "recent" migration in 2001 Census. Finally, although the aforementioned network effects can be a quite important pull-factor for internal migration, there is no data suitable to measure how it is so in Sri Lanka.

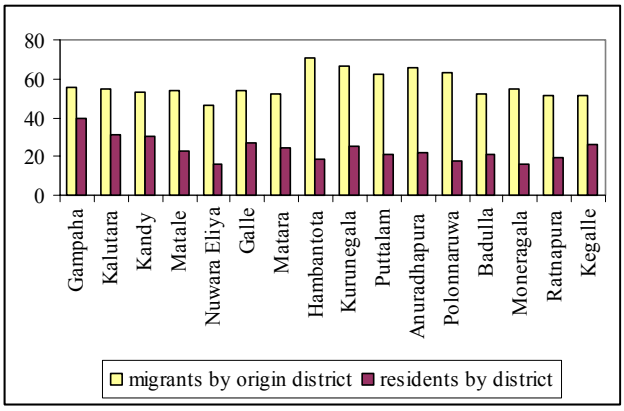
Aggregate statistics only hint at the possibilities. For example, the "network" effect of a large Tamil population in Colombo may partly explain large migrations from Jaffna.[6]

18. Therefore, just as the CFSES, Census data of Colombo city also indicates that the main purpose of migration is to seek better economic opportunities than what is available in conflict-affected or poor districts, which suggests the strong presence of push factors to propel migration. As seen in Chapter 3, such districts are also likely to have poor access to infrastructure, markets and other conditions conducive to business or economic environment.

Table 4-1: Correlation of size of recent migration into Colombo City	
With poverty headcount rate of districts in 1995-96	**0.56**
With poverty headcount rate of districts in 2002	**0.39**

19. ***Education and skills of migrants:*** Even if a significant number of migrants originate from poor areas, this does not necessarily imply that the migrants themselves are poor. On the contrary, Figure 4-3 suggests that skilled workers are more likely to emigrate than unskilled workers are from poor areas in Sri Lanka. Proportion of those with education of Grade O/L or above is much higher among household heads who are emigrants into Colombo City than those who are residents in their origin districts.

Figure 4-3: Share of household heads with tertiary education – migrants and residents by origin district

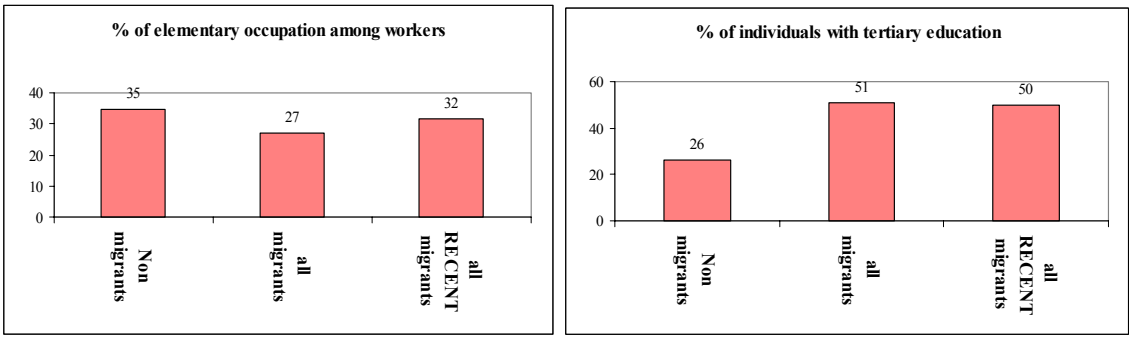


20. The fact that this pattern is true for all districts, and not just the poorest, also suggests the presence of strong pull factors in Colombo. And these are able to attract large numbers of highly-skilled workers – including those from areas that are not among the most economically backward – with the promise of much superior economic prospects than the rest of the country. At the same time, that migrants are much better educated than other residents at their origin districts also suggests lack of higher education is likely to be an important *constraint* to mobility for people in lagging areas.

21. ***Occupation of migrants:*** International experience suggests that even if migrants were well educated, they may not necessarily find jobs commensurate with their skills at their destination. If this were true in Sri Lanka, even though migrants appear to be among the better educated in their districts of origin, their skills and talents would be put to less than optimal use in Colombo City. Figure 4-4 finds some evidence in favor of this kind of "under-employment" among migrants into Colombo. While tertiary educational attainment among migrants and recent migrants is almost twice that of non-migrants in Colombo City, migrants seem to enjoy narrower employment advantages, as measured by the difference between the proportion of (recent) migrants and non-migrants who work in elementary occupations. This suggests that a sizeable number of skilled migrants are working in jobs for which they are overqualified. At the same time, the proportion of migrants working in elementary occupations is much smaller than that of non-migrants, and constitutes a minority (27 percent) of employment among migrants.

[6] Sri Lankan Tamils constitute around 30 percent of Colombo City's population, compared with only 4.5 percent of total population excluding the North and East (HIES 2002).

Figure 4-4: Educational attainments and occupation for migrants, recent migrants and non-migrants in Colombo city



22. Evidence also suggests that migrants who did *not* migrate with the head of their households experience greater difficulties in finding good jobs – a larger proportion of such migrants work in elementary occupations (see Annex 4, Table A-4.3).[7] This is partly explained by educational attainment among migrants who have not migrated with their household heads being lower than that of others, although still higher than that of non-migrants. This is also consistent with the presence of a network effect, although there may be other, equally plausible explanations for this finding.

Migration and urban poverty

23. Given that migration into Colombo area appears to be a result of both push and pull factors, the impact on urban poverty is uncertain. It does seem unlikely however, given that migrants are on the average better off in educational attainment and occupation than non-migrants, that migrants themselves are a significant proportion of the poor in Colombo.

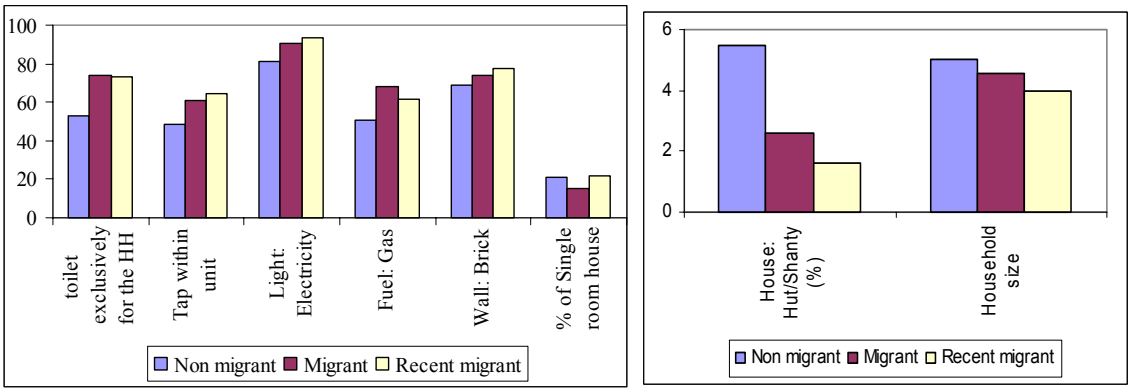
24. ***Housing conditions and ownership:*** Figure 4-5 suggests migrants into Colombo city have better housing conditions, and are thus likely to be better off, than non-migrants.[8] When the household head is a migrant, the household is more likely to have access to clean water, private toilets, electricity, and gas; and their houses are more likely to have brick wall and more than one room.

25. Migrants are less likely to own and more likely to rent the house they live in than non-migrants (Figure 4-6). While this is somewhat inconsistent with the finding that migrants are likely to be better off than non-migrants, it is partly due to a very high proportion of renters among migrants from conflict areas (see Annex 4, Figure A-4). This could be in part because they plan to return to their origin districts as soon as the conflict ends. Higher proportions of migrants from other districts are also renters compared with non-migrants, which may be due to shortage of housing and a recent hike in land prices in Colombo City that put migrants at a disadvantage.

[7]This finding resolves the apparent contradiction between Census and CFSES report: the latter indicates that a majority of internal migrants work as unskilled workers. This is because CFSES can identify internal migrants only if the rest of their household live in the origin district. Census 2001 however shows that those who have migrated *with* their household head actually constitute a dominant majority among all migrants; the CFSES analysis thus applies to a minority group among migrants. Among the migrant group closest to the one considered by CFSES, the Census also shows a large proportion (46 percent) employed in elementary or unskilled occupations. (See Yoshida et al 2006 for details)

[8] This analysis is conducted for households whose heads are (recent) migrants. This is reasonable because firstly, 80 percent of migrants belong to such households, and secondly, if household heads are not migrants, the characteristics of housing units, etc. may not reflect the result of migration.

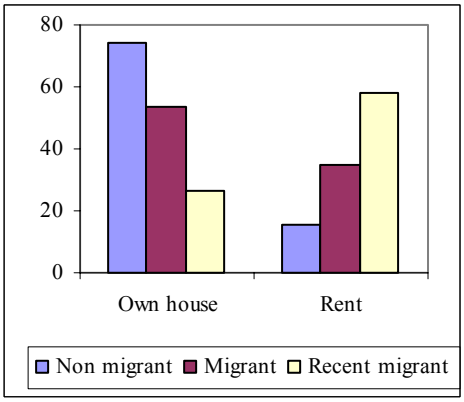
Figure 4-5: Comparison in Housing Conditions by household head's migration status
(% of households)



26. ***Poverty estimates using mapping methods:*** Typical household surveys cannot provide statistically reliable poverty estimates for migrants in Colombo City due to the small sample size. But the poverty mapping method that combines Census with HIES data (described in Chapter 3) can also be employed to estimate poverty for *groups* that are small relative to the population. These estimates are however based on simulations and must be interpreted with caution (see Annex 4).

27. Using this method, the poverty headcount among migrants and recent migrants (with residency of 5 years or less) into Colombo City is estimated to be well below that of non-migrant residents of the city (Table 4-2).[9] These findings are consistent with those in Chapter 3 (Table 3-6): that the share of migrants in the poor/underserved GN divisions is only 12 percent, which is less than half that of other areas in Colombo City.

Figure 4-6: Home ownership by household head's migration status (%)



28. This evidence appears to make it clear that unlike many developing countries, urban poverty in Sri Lanka is not a direct result of the rural poor flooding into the urban center. This does not however imply that migration has *no adverse* impact on urban poverty, because of a number of potential indirect effects. The influx of better-educated and skilled migrants from outer districts into the city can push the less skilled/educated long-term residents out of the better types of employment, and therefore increase the numbers of poor. The rapid inflow of migrants may also drive up the cost of housing enough to force lower income households into under-served settlements. Furthermore, inflow of migrants may have also led to excessive

Table 4-2: Estimates of poverty headcount ratio in Colombo City

Migration status of household head	Poverty headcount	Std. error
Non migrant	10.9	1.0
Migrant	5.6	0.6
Recent migrant	4.3	0.6

Source: Staff estimation using the Census 2001 and the HIES 2002

[9] Furthermore, recent research shows that the poverty headcount rates for migrants and recent migrants estimated in this manner are likely to be overestimated, which suggests that the gap between migrants and non-migrants may be even larger than what is suggested by the poverty mapping estimates. (See Hoogeveen (2003) and Yoshida et all (2006) for details)

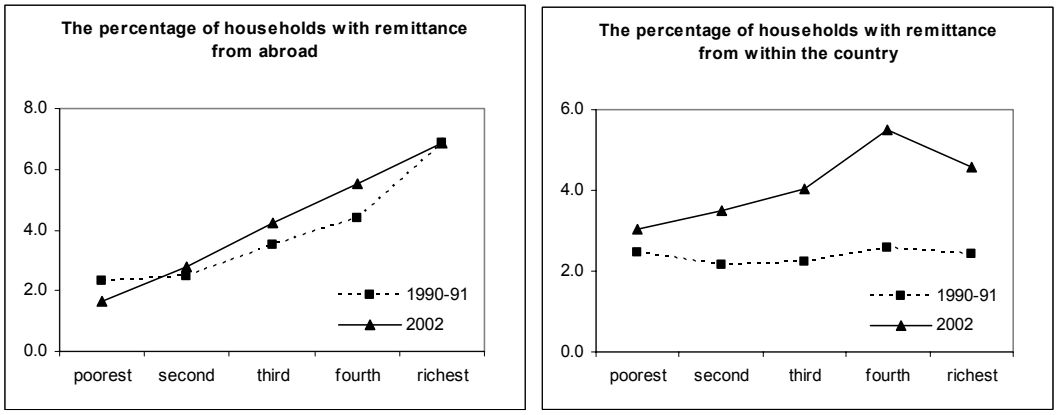
concentration of population in Colombo urban area, which would impose aggregate losses in growth and welfare due to over-agglomeration, which is explored in detail in Section 4.4. Such negative effects however need to be weighed against the benefits that migrants may bring. For example, expanding the pool of skilled workers available is likely to stimulate economic growth, which would also increase earnings of those employed in the informal sector.

Does migration benefit lagging areas in Sri Lanka?

29. For many households in backward areas, migration is a viable opportunity to better their economic status. As documented widely in economic literature, migration of some family members is also often a means for households to diversify their sources of income and economic risk. Other than the benefits for households, migration can also benefit the migrants' place of origin if the poor households in these areas receive enough remittances to lift them out of poverty. This is possible since wage differences are significant between rural/remote areas and Colombo District. On the other hand, migration and remittance might further increase economic inequality, if the wealthier or the well endowed in the places of origin are more likely to migrate.

30. ***Incidence of remittances in migrants' places of origin:*** Links between internal/international remittance and poverty can be explored using HIES data. Figure 4-7 shows that incidence of remittance from abroad is higher among higher consumption quintiles. The highest share of households with international remittance is found among the richest consumption quintile. On the other hand, the incidence of remittances from *within* the country is less correlated with consumption level. For both types of remittance, the correlation between household consumption and incidence of remittance is stronger in 2002 than in 1990-91.

Figure 4-7: % of households with remittances by consumption quintiles



Source: Staff estimation based on HIES 1990/91 and 2002

31. This however does not *necessarily* mean that better-off households have higher incidence of remittance. It may be the case, for instance, that a poor household has become better off due to remittances received. There is no easy way to distinguish between these possibilities using currently available household surveys in Sri Lanka. What *is* clear from Figure 4-7 is that remittances are received by the poorest groups as well. The proportion of households in the poorest quintile that received remittance from abroad or within a country (2-3 percent) are not far apart from those of households in the richest quintile who receive remittances (4 to 7 percent). Remittances

Table 4-3: Ratio of remittance to consumption expenditure in 2002

Consn. quintile	*All households*	*Hholds with remittance*
Poorest	1.2	23.7
2nd	1.3	20.4
3rd	2.3	27.1
4th	3.2	28.1
Richest	3.3	27.3
Overall	2.3	26.0

Source: Staff estimation using HIES 2002

constitute a substantial share of consumption expenditure for households who receive remittances, around 20–28 percent for all consumption groups in 2002 (Table 4-3).[10] If all households are included, remittances constitute only around 1–3 percent, reflecting the fact that most households do not receive any remittances.

32. ***Do remittances reduce the likelihood of being poor?*** As Chapter 3 has shown, after controlling for a number of household and spatial characteristics, receiving remittance from abroad has a significantly negative correlation with the probability of a household being poor. However, this is not enough to say remittance *reduces* the probability of being poor. To answer this question, it is necessary to infer a migrant's *counter-factual* income, i.e., the income level if he or she were to work in the origin area, which is not possible with HIES data.

33. A partial picture of the impact of urban migration on poverty emerges from Ranabahu (2004), from a special survey of urban migration in Gampaha district that compared pre-migration income with post-migration income. Since pre-migration income is a reasonable proxy of the counterfactual income, the result from this comparison is indicative of whether migration actually improves the income level of the migrant. The study finds that 73 percent of in-migrants experienced income increases after their migration into an urban center in Gampaha district. The income increase is not restricted to the richest income group; and more than 80 percent of even the poorest pre-migration income group managed to increase their monthly income. This study is however based on a relatively small sample from a specific area, and a clearer picture on the impact of remittance on poverty must await better data at a national level that allow such analysis.

34. ***Impact of migration on education in its place of origin:*** There is evidence from other countries that sometimes, since the opportunity to emigrate increases the returns to education, more individuals are encouraged to invest more in education. However, only some of the educated people actually emigrate. If the increase in human capital of those unable to emigrate exceeds the loss from those who do emigrate, human capital where migration originates rises as a consequence of migration, which is in turn likely to promote poverty reduction in the origin.

35. Do such gains occur due to migration in Sri Lanka? If the hypothesis were to hold, educational attainments of household members of migrants should be higher than of households without migrants, since the incentives to invest more in education should be higher within the former types of households. It turns out that there is little or no variation in educational attainments of household heads or secondary enrollments of children of age 14 and above by migration status of household members (see Annex 4, Table A-4.1 and Figure A-4.5). This is also largely true for enrollments of all other age groups. Moreover, there is no significant difference in educational expenses between households with and without remittances. Educational expenses account for 11 percent of total household expenditure for households without remittances, but 13 percent for those with remittances. Therefore, there is no evidence that out-migration leads to greater investment or better outcomes in education.

4.3. Urban agglomeration and its effects on growth and poverty

36. Migration is mostly a private decision of households in response to differences in economic opportunities between areas; and the ability to migrate therefore often represents a significant welfare-increasing opportunity for households. However, even when the private benefits of migration are high due to widening economic inequality between regions, the social costs of over-crowding and congestion in the country's only urban center may result in net loss of welfare. Cross-country evidence also suggests that over-concentration in a single urban area can

[10] Per capita monthly remittance ranges from Rs. 270 (in 2002 Rs.) for the poorest income group to more than Rs. 1800 for the richest income group (see Annex, Table A-4.2).

result in significant aggregate losses in growth, as compared to a country with a larger number of urban centers that serve as alternative destinations for migrants. Indeed if Sri Lanka is shown to suffer from such over-concentration, significant gains in growth and welfare can be achieved by adopting appropriate policies to reduce agglomeration costs at Colombo.

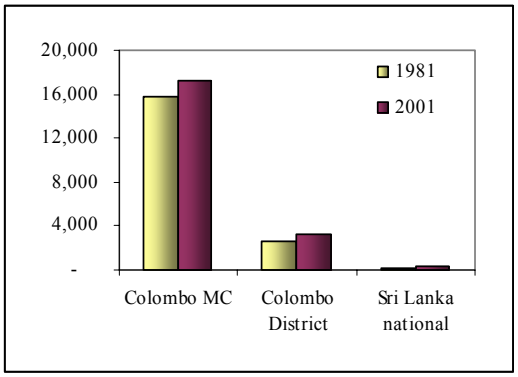
37. ***Urbanization and over-concentration:*** Urbanization and economic growth in developing countries go hand-in-hand. The simple correlation coefficient across countries between the percent urbanized in a country and GDP per capita (in logs) is about 0.85. Production of manufacturing and services is much more efficient when concentrated in dense business-industrial districts in cities. Close spatial proximity, or high density, promotes information spillovers amongst producers, more efficiently functioning labor markets, and savings in the transportation costs of inputs and finished products. While such forces promote geographical concentration in a country's main urban area, there are also opposing forces. Immobile factors, such as land and natural resources, can create diseconomies. Concentrations of economic activity increase the demand for local land, driving up land rents and so discouraging further concentration. And concentrations of activity can generate pure external diseconomies such as congestion and pollution that can profoundly affect welfare and growth.

38. The loss in economic growth due to over (or under) concentration can be substantial. According to recent cross-country empirical research by Henderson (2000), around 10-percentage point more or less than optimal urban concentration – defined as the extent to which a country's *urban* population is concentrated in a *single* urban center – can reduce annual growth rate by more than one percentage point.

Is Sri Lanka over-concentrated?

39. According to Census 2001, around half of Sri Lanka's urban population (1.2 million) lives in Colombo District, and a quarter of urban population (0.6 million) in Colombo MC—in an area of a little less than 40 square km.[11] The population density of Colombo district is many times higher than that of the country, and the density in Colombo MC is more 4 times that of even Colombo district (Figure 4-8). This leads to the question: is Sri Lanka over-concentrated, and if so what are the consequences?

Figure 4-8: Population density (per sq.km.)



Source: UDA (2001), Indrasiri (2006) and DCS (2004)

40. There is much evidence to suggest that over-crowding is a serious problem in Colombo, and especially so in the MC area. There are indications of strain on the city's basic services, like electricity, gas, clean water and sanitation – particularly in the poor and under-served areas of the city (see Chapter 3). Residential land prices have skyrocketed in recent years – rising more than 200 percent in some areas and more than 100 percent in even some poor areas between 2000 and 2005 after controlling for inflation.[12] Census data from 2001 shows high net out-migration from Colombo to its surrounding districts, especially among unskilled workers.[13] This may indicate the costs of overcrowding – in terms of rising housing costs and access to services– affecting lower-paid workers more than the better off. Such negative effects of agglomeration thus especially burden the poor, and add to the cost of starting and doing business, which in turn affect growth.

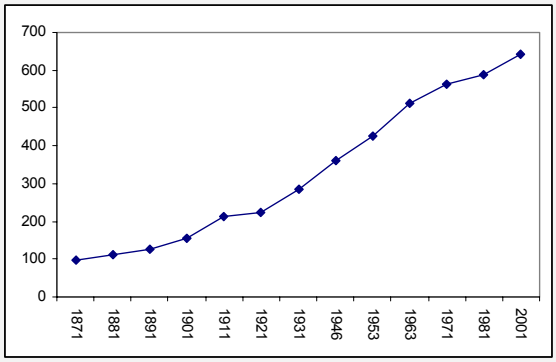
[11] The total urban population of Sri Lanka is 2.6 million (Census 2001) excluding cities in the Northeast.
[12] According to Weeratne's independent land price assessment in 2006.
[13] See Yoshida et al (2006).

41. Moreover, the rising trend of workers being forced to live outside Colombo has also led to massive increases in traffic flowing into Colombo every day. Overcrowding in Colombo during daytime is thus far worse than what even the high population density figures suggest (see Box 4.1). According to some estimates the population of Colombo MC more than triples during daytime, when more than a quarter of the *total population of Western Province* flows into the city and leaves at night. Such congestion is likely to have serious economic and welfare implications – by increasing vehicle running costs and lengthening commuting time, negatively affecting productivity and welfare.

Box 4.1: Population growth and congestion in Colombo Municipality Council (MC) and District

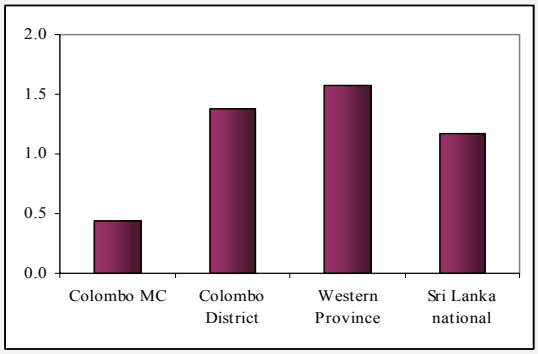
Congestion in Colombo MC is a growing concern in Sri Lanka. Population in Colombo MC has increased since 1871 and reached 0.6 million in 2001 (Figure i). Colombo MC's over-concentration issue is evident when looking at its extremely high population density (Figure 4-8). Colombo MC's population density grew from around 15 thousand per square km in 1981 to around 17 thousand in 2001, which are much higher than Sri Lanka and even Colombo District. The high population density may explain why population growth in Colombo MC slowed down since 1970s and is much lower than the national growth rate (Figure iii). It is also the likely reason for high population growth in the broader metropolitan area – Colombo District – and Western Province: over-concentration in Colombo pushes many residents outwards, at the cost of long daily commutes.

Figure i: Population in Colombo MC (thousands)



Source: UDA (2001) and Indrasiri (2006)

Figure ii: Average annual population growth between 1981 and 2001



Source: Indrasiri (2006) and DCS (2004)

In fact, congestion in Colombo MC is much worse than the population density figures suggest during daytime when population in the MC area expands to more than 2 million. Severe traffic congestions are caused by the high traffic volume, and aggravated by factors such as shortage of parking areas and poor public transport facilities. As a result, average vehicle speed is only around 10 kilometers per hour within most parts of the city during the day.

Source: DCS (2005) and UDA (2001)

42. ***What is the aggregate cost of over-concentration?*** Cross-country empirical research mentioned earlier provides some way to estimate the losses to Sri Lanka's economic growth.[14] Using the parameters from the cross-country regression (see Box 4.2 for details), the *optimal urban primacy* for Sri Lanka – defined as the share of the main urban center of the country in the total urban population – based on its per capita GDP is estimated to be 24.5 percent.[15] If all areas within a radius of 10 km. from the center of Colombo MC are taken as the Colombo urban area,

[14] Henderson (2000)

[15] This analysis just shows indicative evidence on over-concentration in Colombo. There are many country specific characteristics that significantly affect the relationship between urban primacy and economic growth, but are not necessarily incorporated in a cross-country exercise such as this.

urban primacy is as high as 35 percent. An area of this size is a much better approximation of Colombo urban area than just the MC area, based on carefully constructed evidence from Census 2001, and is in fact much smaller than what the UDA defines to be the Core Area of the Colombo Metropolitan Region (CMR).[16] If instead the CMR is taken to be the Colombo urban area, urban primacy of Sri Lanka swells to well above 50 percent.

43. The aggregate losses to the economy due to over-concentration in the Colombo urban area can now be simulated using the cross-country regression. An urban primacy of 0.35 implies substantial growth losses: a reduction of at least 1.5 percentage points in annual growth rate. This number, given the limitations of a cross-country regression, can be subject to errors of various kinds, and therefore should be considered highly speculative. At the same time, it is a useful illustration of a broader point made earlier in Chapter 1: that Colombo urban area is over-concentrated, and that in turn imposes economic losses on the country. And these losses are strictly in *comparison* to the counterfactual of having *lower* urban primacy, i.e. having more urban centers that serve as viable destinations for migrants and reduce the pressure on Colombo.

Box 4.2: Cross-country evidence on the economic costs of over-concentration

Henderson (2000) provides an estimate of economic loss due to over-concentration in the largest city or the largest metropolitan area in a country. He examines the cost imposed by excessive concentration (interacted by per capita income and national scale) on economic growth using a panel of 80-100 countries every 5 years from 1960 to 1995. Henderson confirms that there are "optimal" primacy points—urban concentration in the largest city—that depends on income and scale. Specifically, efficient urban primacy levels rise up to an income per capita of $5,000 (1985 PPP), then peak, and decline. The rise is rapid, but the decline after the peak is modest. For example, for a country with national urban population of 8 million, the optimal primacy rate changes from 15, 28, to 26 percent as the country's GDP per capita rises from $850, $3000, to $17200.

Henderson (2000) shows the list of countries with highly excessive urban primacy in 1990. The list includes the usual suspects, such as Argentina, Panama, Costa Rica, Chile, Korea and Thailand. On the other hand, 30 countries belong to a group of countries with satisfactory urban concentration, which includes USA, Canada, Australia, and New Zealand.

Source: Henderson (2000)

How to mitigate excessive agglomeration in Colombo urban area

44. Section 4.2 shows that a high proportion of migration into Colombo is driven by economic motives and occurs from poor and conflict-affected areas; and this is likely to continue given the large gap in opportunities between Colombo and the rest of the country. A potential migrant while deciding to migrate or not is also unlikely to take into account or even perceive the full social and economic costs of over-concentration in Colombo. Given the strong incentive to migrate and the significant economic gains from migration to households, developing *alternate urban centers* would be the only way to reduce agglomeration in Colombo, while preserving the economic opportunities afforded by migration to those living in remote, lagging regions. Promoting the growth of urban centers outside of Colombo will therefore also have a direct impact on poverty in such remote areas.

45. ***Lessons from economic theory and cross-country experiences*:** Recent literature on Economic Geography suggests viable ways to mitigate the losses due to over-primacy.[17] A few

[16] See Figure A-4.6, Annex. According to UDA, the Core Area of CMR, also known as Capital Territory consists of the municipal councils of the City of Colombo, Dehiwala, Mt. Lavinia and Sri Jayawardena Pura-Kotte, and a few local authorities in the Western province. CMR, on the other hand, consists of the entire Western Province (City of Colombo Development Plan; http://www.buildsrilanka.com/CDP/).

[17] See, for instance, Krugman (1999); Henderson et al (2001)

studies hypothesize that excessive concentration in cities is likely to occur unless migration is properly coordinated by institutions and land markets are freely functioning.[18] Urban agglomeration losses (such as congestion) are externalities; so unless they are incorporated into migrants' welfare, urban migration would exceed the optimal concentration level. But what institutions are then needed to have migrants realize the full welfare impact of their migration including those on other inhabitants in the city? Different studies identify a few such factors: free functioning land markets, and a strong role for pro-active autonomous local governments and/or competitive land developers in city development (see Box 4.3).[19]

Box 4.3: How to mitigate excessive urban concentration: theory and cross-country experiences

A few studies have identified specific mechanisms/institutions that allow the externalities of migration to be incorporated into the migrants' private decision to migrate. An autonomous local government that can act to restrict city size in the interests of its residents is one such. The local government collects rents from land holding through property tax, and provides a proper incentive to potential migrants by subsidies or taxes – but *does not* attempt to restrict migration directly. South Korea's de-concentration of Seoul city has been successful partly because the government provides proper incentives to migrants. To take such action, local governments need to have control over their budgets as well as maximize the welfare of residents. Therefore, Henderson and Becker (2000) conclude that decentralization of powers and democratization of local governments would likely reduce the probability of having excessive urban concentration. A similar result can be achieved at least theoretically through market forces, provided these forces can operate without monopolies or other kinds of distortions.

A number of studies have found inter-regional transport infrastructure to be the most important factor that influences national urban concentration. Henderson (2003) finds that investment in national roads and highway systems significantly reduces national urban primacy, with the effect rising with income. Similar results are provided in Gallup et al (1999), who suggest that historical investments in national navigable waterways induce inland habitation, significantly reducing urban concentration. Rosen and Resnick (1980) also find rail investment reduces national urban concentration. The de-concentration of industry from the greater Sao Paulo region in Brazil to lower wage hinterland cities followed major transport corridors first through Sao Paulo state and then into Minas Gerais, the interior state with the main iron ore and other mineral and agricultural reserves.

However, building transportation links may also have an opposing effect (Krugman, 1991, 1999). Lowering transportation costs enables firms in large cities to expand into remote markets to compete with local producers. The competitive advantages enjoyed by firms in the main urban area, due to economies of scale and urban agglomeration effects may then actually conspire to harm local business in hinterlands and induce further concentration in the largest city. The net effect of investing in better connectivity on urban primacy will thus depend on which of the two opposing effects dominates. For Sri Lanka, while no definitive answer is possible at this stage, there is some evidence to suggest that better connectivity will tend to work in favor of spreading growth beyond the main urban center.

Source: Yoshida et al (2006)

46. A number of studies also find inter-regional transport infrastructure to be the most important factor in reducing urban concentration. Investment in highway systems, inland waterways and railways have all worked with some success in different countries in spreading out growth from the largest cities to other areas (Box 4.2). This suggests that in the case of Sri Lanka, lack of adequate transport infrastructure outside Western Province – as reflected by the accessibility indices in Chapter 3 – is a critical factor behind growth being over-concentrated in Colombo. However, improving transport infrastructure by itself may not be sufficient to reduce

[18] Krugman (1999); Henderson and Becker (2000)
[19] Henderson and Becker (2000); Henderson and Wang (2005)

concentration, and a number of complementary policy instruments to improve investment climate and exploit comparative advantages of specific areas may be necessary.

47. ***What do existing studies suggest for Sri Lanka?*** The Investment Climate Assessment for Sri Lanka (2005) shows that not only road network but also factors such as electricity, transportation and access to finance are perceived as major constraints by both urban and rural firms. Among them, electricity is the biggest challenge for both rural and urban firms. Rural firms suffer from limited access to electricity, while urban firms perceive high cost and unstable supply of electricity as major constraints. Also, cost of finance and transportation are identified as major obstacles by both urban and rural firms. Investment climate is thus multi-dimensional, and a comprehensive approach will be necessary to improve the investment climate of both rural and urban areas.

48. In the case of Sri Lanka, the role of institutions and markets within cities (see Box 4.3) is also likely to be critical for achieving optimal city sizes. A recent report on service delivery shows that local governments, who can potentially play an important role in providing the incentives appropriate to achieving optimal city sizes, are weak due to insufficient de-centralization and suffer from lack of finances and capacity.[20] Moreover, the weaknesses of local governments also affect the quality of urban services provided. Even Colombo city suffers from inadequate infrastructure and services, and even more so in poorer localities, improving which will reduce the cost of agglomeration and its impact on welfare and growth.

4.4. Summary and policy implications

49. This chapter is an attempt to draw a profile of internal migration in Sri Lanka, which is a consequence of increasing regional inequality, to understand its implications for poverty, inequality and growth. In the absence of any panel data, the analysis is based largely on "snapshots" of migrants at different locations and cross-country analysis, drawing upon cross-sectional databases. At the same time, these are not substitutes for a properly designed panel survey that allows one to analyze the dynamics of migration patterns; and the design of appropriate policy responses will greatly benefit from future surveys incorporating such elements into their design.

50. Migration within Sri Lanka occurs primarily into Western Province, with Colombo city being a major destination. The rising trend of internal migration is consistent with an expanding wage gap between Colombo district and the rest of the country, even in informal or elementary occupations. Most migrants originate from poor and remote areas or the conflict-affected North and East, indicating that the quest for better economic opportunities is a powerful motive; the ceasefire of 2002 also allowed more free flow of migrants from Northeast.

51. The characteristics of migrants into Colombo city indicate that average level of education is much higher among heads of households who have migrated into Colombo city than residents at their district of origin – which may cause lagging areas to fall further behind in terms of their economic potential. At the same time, remittances sent by internal and international migrants to their family members at their places of origin appear to improve living standards in these areas.

52. When compared against non-migrants, migrants into Colombo city are likely to be better educated than the long-term residents, and less likely to be poor or employed in low-paying elementary occupations than the latter by a wide margin. Consequently, migrants are also likely to enjoy better housing conditions and access to basic infrastructure. A large proportion of migrants into Colombo have migrated with their households, and they tend to be more educated and better employed than those who have migrated by themselves. This suggests that much of

[20] Service Delivery Report, World Bank (2006)

internal migration is relatively long-term in nature, and that this type of migration contributes the most in terms of infusing human capital and skills.

53. In the urban center of Colombo, the inflow of migrants adds to the stock of human capital, which strengthens the city's advantage. At the same time, continued migration into Colombo is likely to impose agglomeration costs that can reduce productivity and raise the cost of doing business. There is strong evidence to suggest this – skyrocketing land prices indicating scarcity of land, increasing pressure on urban infrastructure, and a pattern of out-migration of poor and unskilled workers to the peripheries. Cross-country analysis suggests that the aggregate growth impact of over-agglomeration in Colombo urban area is likely to be negative and substantial. Sri Lanka can therefore raise its growth by promoting alternate growth centers –reducing the agglomeration at Colombo *and* offering alternate economic incentives to potential migrants.

54. While the net welfare impact of migration is ambiguous, migration does offer a valuable means of achieving upward economic mobility to those living in lagging regions. But such opportunities are also more likely to be utilized by those who are better endowed in terms of education or skills, indicating that the absence of such attributes can act as powerful obstacles to the mobility of households.

55. The findings therefore suggest certain dynamic processes at work in Sri Lanka. Migration is largely a response of individuals to the sharp inter-regional differences in economic opportunities that exist. At the same time, while being a *consequence* of inequality, the pattern of migration may *perpetuate* regional differences, by increasing the endowment of human capital in the Colombo area at the expense of lagging regions. Moreover, as continuing migration leads to over-concentration at the country's main growth center, there is an aggregate negative impact on growth and welfare as well. Through these dynamic processes, regional inequality therefore has an adverse impact on inequality itself as well as on the economy's growth. And if the trend of rising regional inequality is not reversed, these processes are only likely to get stronger with time.

Implications for a development strategy

56. Migration has the potential to induce efficient human resource allocation spatially, and reduce poverty in remote lagging areas. Moreover, in case of remote areas with significant disadvantages, it is more feasible to improve welfare by empowering people to be mobile rather than moving jobs to those areas. At the same time, migration in Sri Lanka currently appears to be more viable for skilled or educated workers than those who are not; as a result, migration actually widens spatial inequality in human resources.

57. Thus, it is important to understand what constrains unskilled workers in remote areas with high levels of poverty from migrating to areas that are more prosperous, even when the potential economic gains (as indicated by wage differentials) are high. If it is partly because restrictive land transaction under current legislation makes emigration from hinterlands more costly, land reform may facilitate mobility. Since this chapter also suggests that lack of education and skills can be a significant constraint to migration, *investing in higher quality education in remote, lagging areas*, will help empower households with the ability to migrate to urban areas.

58. While raising the capacity of the rural poor to seek better economic opportunities in urban areas will improve welfare, it must be supported by strategies to *create destinations for migration* that are viable alternatives to the Colombo urban area. This would diversify opportunities for migrants and minimize the economic losses due to over-agglomeration. This would involve promoting *growth of alternate dynamic urban centers* and creating appropriate institutions in towns/cities, which underscores the importance of coordination between urban planning and regional development strategies.

59. Literature on economic geography suggests that a combination of proper *urban planning* by pro-active autonomous local government, competition among urban land developers and well-functioning urban land markets is likely to create the proper incentives for cities to achieve optimal sizes and improve infrastructure and services. Developing better institutions will also likely help the smaller cities to be able to exploit their growth potential and sustain the growth process. In case of Colombo, improvement in infrastructure and services will also have a significant growth and welfare impact – by reducing the costs of agglomeration in the city. The recent report (draft) on service delivery suggests a number of ways to rejuvenate urban functions of Colombo Metropolitan areas and other urban areas – consistent with some of the principles stated above, such as the role of well-functioning land markets and the private sector (Box 4.4).

Box 4.4: Improving urban services in Sri Lanka

Based on analysis on data available in Sri Lanka and international experience, the Service Delivery Report (2006) made several recommendations to rejuvenate/enhance urban functions of Colombo Metropolitan areas as well as other urban areas.

First, financing urban services by levying a tax on the annual rental value of land or any species of immovable property will make urban services more demand driven. This is especially the case for urban areas outside the Colombo Metropolitan regions. This not only enhances local governments' own source of revenues, but also fosters more efficient pricing of local services, aligns costs with benefits more closely, and make infrastructure services more demand-driven.

Second, the role of private sector in urban planning should be expanded. The government should reduce its role of land uses by auctioning off public lands, and focus on planning, provision of urban services and infrastructure, and levying an appropriate tax on land holdings. By doing this, the government can help markets to allocate resources efficiently to mitigate the risk of market failures.

Third, in the Western Province, some form of integrated metropolitan urban planning and land management is worth exploring. As shown above, urban development of Colombo MC is closely linked to other neighboring areas. Integrated metropolitan urban planning will help mitigate the cost of over-concentration of Colombo MC as well as foster economic growth in Western Province as a whole. Indeed, the city of Colombo Development Plan devised by UDA appears to be consistent with this approach, although it is not clear when this plan will be translated into action.

Source: Service Delivery Report; Draft; World Bank (2006)

60. In addition, as experience in a number of countries suggest, *investing in transport infrastructure* is likely to promote the growth of regional urban centers. The strong correlations between accessibility to markets, economic activity and poverty indicated in Chapter 3 suggest investment in transport is likely to have significant impact on regional development in Sri Lanka. At the same time, just transport infrastructure by itself may not be enough to jump-start the growth of urban centers, and would need to be complemented by other key facilities necessary for markets to develop.

61. This does not however mean the solution would be to replicate the infrastructure found in Colombo in remote areas of the country. It will be enormously inefficient in terms of resource allocation to do so; and investing in markets or urban centers that are not sustainable due to the lack of critical complementary factors is even unlikely to achieve regional development, as numerous experiences in other countries have shown. Rather, a careful strategy should be developed to *identify the comparative advantages* of different geographic areas; *improve connectivity* of these areas to Colombo and other smaller, regional markets; and provide the key complementary facilities needed by those industries that are able to exploit these advantages.

62. The critical question would be *how to identify potential growth centers* where such a strategy can be effective. A possible approach can be to identify existing towns/cities that enjoy

some locational advantages, and basic infrastructure and institutions that provide a starting point for expansion. Most importantly, a careful exercise to identify and analyze such potential – focusing on natural endowments and comparative advantages of specific regions – must precede and inform such a strategy.

63. Even as the urban sector, especially Colombo and its surrounding areas have grown rapidly in the past decade, inequality within these areas has risen sharply. As seen in Chapter 3, even among the relative affluence of Colombo there are areas or settlements with much higher poverty incidence, where the urban poor are concentrated. From a welfare point of view, *urban poverty reduction* should therefore be a key policy objective.

64. Since urban poverty is linked to employment in the informal sector, the sustainable path out of poverty would lie in rapid growth of the formal sector, which would also raise informal sector wages and draw workers into the formal sector. *Removing labor market rigidities* that constrain growth and employment of the formal sector – as indicated in Chapter 1 – will go a long way towards promoting opportunities in the formal sector for Colombo residents and potential migrants alike. However, in order for the poor to avail of these long-term opportunities, their *education and skills* would need to be enhanced. To identify the types of interventions likely to be effective in reducing dropouts and improving educational attainment, more information is needed to understand what factors constrain education in poor urban areas.

65. While these transformations will take time, the medium-term growth strategy and urban planning to drive this process must be complemented by immediate efforts to reduce vulnerability of the urban poor and improving their access to basic services. Chapter 3 shows that lack of access to basic services and poor housing are the most critical problems in settlements where the poor of Colombo are concentrated. Thus, *targeted initiatives to provide clean water, sanitation and assistance for housing* in poor, under-served areas can improve welfare substantially. Better functioning municipal governments are also likely to improve the provision of such services in poor areas. *Safety net schemes* are important to reduce the vulnerability of informal sector workers who are not covered by formal insurance or pension schemes. A number of social programs in Sri Lanka assist different types of vulnerable groups in urban areas. While most of these programs target small payments to narrowly defined groups, the Samurdhi cash transfer program – being the country's largest social welfare program – has the broadest coverage among the urban poor. For Samurdhi to play the role of an effective safety net however, the program will need to be targeted better in order to maximize benefits to those who are the most vulnerable.

5. Human Development Challenges and the Poverty Nexus

1. Sri Lanka's early achievements in human development are well known internationally. At the national level, the country is poised to achieve or is well on its way to achieving most of the MDGs in health and education. Public provision of free education and healthcare, and the country's extensive network of school and healthcare facilities have been effective in providing the entire population, including the poor, universal access to basic education and health services.

2. As a result, the *poor* fare as *well* as the rest of the country in terms of *basic human development* outcomes. The challenges that face Sri Lanka in human development are quite different from those that face most developing countries, including those in South Asia. Primary enrollment and literacy, that remain priority challenges for many developing countries, is near-universal in Sri Lanka. Similarly, basic indicators of health – like life expectancy, maternal health, fertility, infant and child mortality rates and immunization rates – are uniformly high in all parts of the country and across income groups. Good basic indicators in health are in no small measure due to the high literacy of mothers in Sri Lanka.

3. However, nationally aggregated social indicators hide *quality issues and disparities* across income groups in terms of secondary level outcomes. Some poor health outcomes, low educational attainment, and lower enrollment rates are more likely among low income households, which in turn is likely to keep households in poverty. In health, there are some critical dimensions along which *rich-poor gaps* are prevalent – such as in low birth weight, malnutrition among pre-school children, poor nutritional status of adult women, and incidence of communicable diseases such as tuberculosis, and diarrhea. Poor nutrition has important ramifications for health and earning potential of the poor, which in turn is likely to perpetuate the cycle of poverty and low human capability. A healthy mother is an essential pre-requisite for the birth of a health baby; and low birth weight and poor health amongst young children has been found to affect their learning ability in school and raise the risk of chronic diseases in adulthood. These in turn are likely to have adverse impact on lifetime earnings.

4. The challenge in *education* in Sri Lanka pertain more to second generation issues such as *quality*. Despite significant investments in the education sector over the decades, students display only a weak grasp of first languages, English, and mathematics, and these weaknesses are even worse in the non-urban sector. Chapters 3 and 4 of this report have shown that higher levels of educational attainment are associated with lower incidence of poverty, mainly due to access to higher-paying jobs and increased opportunities to migrate to urban areas. This chapter will show that poverty is also associated with lower net enrollment rates at secondary and tertiary levels and nutritional deficiencies among the next generation. Inadequacies in education and nutrition can have lifelong effects on earnings, and trap households in a cycle of low capability and poverty. The use of private tuition to supplement formal classroom lectures is higher for the rich, while school avoidance rates are higher among the poor. The higher incidence of poverty among the less educated and the fact that the poor are less likely to be enrolled in higher levels of education perpetuates the vicious cycle of illiteracy and poverty.

5. This chapter will help understand the extent to which there exists a nexus between inequalities in economic status on the one hand and non-income dimensions of welfare on the other. The analysis – based on existing data sources as well as a review of the literature in the country – will draw from the evidence on outcomes or indicators to identify some of the key challenges facing the health and education sectors today, to inform the current policy debates on the way forward. At the same time, it will be also important to recognize and learn from the successes already achieved in these sectors – to ensure that addressing new challenges do not run the risk of undermining some of the very same factors that have contributed to the overall success story in health and education in Sri Lanka.

5.1. Health Sector in Sri Lanka: Achievements, Outcomes and Challenges

6. The health-poverty nexus: Inadequate health among the poor, who face the greatest burden of ill health, remains one of the most pressing issues all over the developing world. Poor health outcomes are more likely among low-income households, which in turn is likely to keep households in poverty. There is little consensus on what must be done to address the health-poverty nexus. Are poverty reduction efforts effective in improving the health of the poor? Alternatively, should governments focus on supplying effective health services – immunizations against diseases and drugs to treat them – to the poor? It has been argued that, in the long-run, health services alone serve little purpose because they do not attack the root causes of ill-health that are intimately linked to poverty and hence efforts to reduce poverty are key to improving the health of the poor. Countering this is the view that while poverty reduction is a laudable development goal, it cannot be achieved when sickness and disease hamper poor people's ability to work and earn a living.[1]

7. Sri Lanka's health experience is a microcosm of this complex debate, in that the country has done both. While it is well known for investments in basic health and education, Sri Lanka also has a long history of welfare programs to protect the poor. And these efforts seem to have largely worked well to improve health outcomes of the poor; although challenges still remain along some dimensions along with new challenges. Among the most important of these new challenges include injuries, heart diseases, mental illnesses, diabetes, and cancer.

8. In reviewing the poverty-health nexus in Sri Lanka and identifying the challenges, this section starts by presenting an international comparison of Sri Lanka's health outcomes. This is followed by an examination of how the health system is accessible to or utilized by poor households, and health outcomes, particularly nutritional status, among poor and rich households and across sectors. Much of the data analysis is based on Sri Lanka's Demographic and Health Survey (DCS, 2002), where socio-economic status is defined in terms of assets or wealth, rather than income or consumption – since this information is not collected by the survey.[2]

Profile of Health Outcomes in Sri Lanka with Comparator Countries

9. A comparison of Sri Lanka with other South Asian countries as well as a group of lower-middle income countries reveals that the country does better in most human development indicators (Table 5-1). *Fertility* rate is very low at about 2 births per woman and child; and mortality rates among infants, children and mothers, immunization rates and life expectancy at birth are much superior to the averages for lower-middle income countries and South Asia. The prevalence of *child malnutrition*, although lower than the South Asian average, is more than twice that of the average for lower-middle income countries.

10. Sri Lanka's achievements are in spite of relatively low total *spending on health*, which reflects its well-known low cost health system. Expenditure per capita and total health expenditures (sum of public and private) as a percentage of GDP are less than both the South Asian average and the average for low middle-income countries. The composition of expenditures show the important role played by public health system. The share of public expenditures in total health spending is nearly 50 percent in Sri Lanka and this is higher than the corresponding shares in South Asia and lower middle-income countries. Public health expenditures as a percentage of GDP is higher than the South Asian average but lower than the average for lower middle-income countries.

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[1] A large number of studies show that health affects productivity (Schultz (2003), Strauss and Thomas (1995), Strauss and Thomas (1998), Behrman and Deolalikar (1988), Haddad and Bois (1991)).

[2] Households are classified into quintiles based on their asset index using the principal components approach described in Filmer and Pritchett (2001). See Thalagala (2004) for another recent analysis of SL DHS 2000 using an asset index.

11. Despite low expenditure levels, *health sector capacity* measured by number of hospital beds per 1000 (3.1) is comparable to the average for lower middle-income countries (3.8) and significantly higher than the South Asian average (0.7). However, number of physicians per 1000 people (0.5) is only about a quarter of the average in lower middle-income countries (1.9). In summary, cross-country comparisons show that Sri Lanka's superior performance in health indicators occurs concurrently with relatively low spending on health and low income.[3]

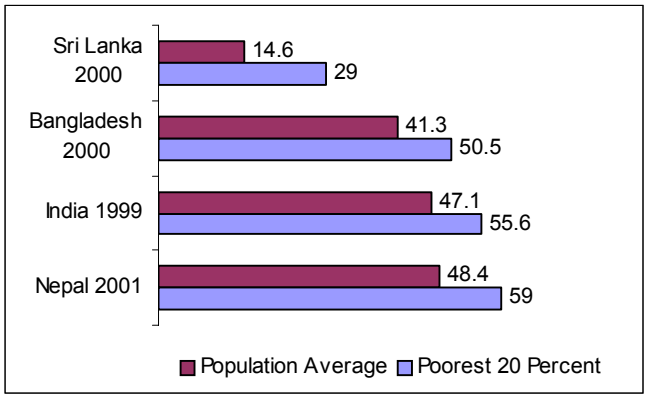
Table 5-1: Selected indicators - Sri Lanka and other countries

Indicator	*Sri Lanka*	*South Asia*	*Lower-middle Income*
Life expectancy at birth (years)	74	63	69
Total fertility rate (births per woman)	1.9*	3.2	2.1
Infant mortality rate (per 1,000 live births)	14*	67	36
Under-5 mortality rate (per 1,000)	15*	93	44
Maternal mortality rate (per 100,000 live births)	92	567	121
% of underweight children (under age 5)	29*	48	11
Child immunization rate, DPT3 (12-23 mos.)	98*	71	88
Child immunization rate, measles (12-23 mos.)	94*	67	86
Adult literacy rate (% of population ages 15 +)	92	59	90
Health expenditure per capita ($)	32	26	84
Health expenditure, public (% of GDP)	1.8	1.3	2.7
Health expenditure, public (% of total hlth exp)	49	24	45
Health expenditure, total (% of GDP)	3.7	5.5	6

Source: Health, Nutrition and Population Comparative Data, HNP Stats, World Bank <http://devdata.worldbank.org/hnpstats/cd.asp>
*: Sri Lanka DHS 2000 (DCS, 2002)

12. The *poor* in Sri Lanka also generally fare better in terms of health outcomes compared to the poor in other parts of South Asia. The relatively better health status of the poor can at least partially be attributed to a Sri Lanka's universal and free healthcare and a well laid out network of preventive health services and hospital network. A comparison of prevalence of stunting among children reveals interesting contrasts.[4] As noted earlier, Sri Lanka's performance in malnutrition status is below that of middle income countries. The prevalence of *stunting* among children, an indicator of *chronic* malnutrition, is lower among the poor in Sri Lanka than the poor in Bangladesh, Nepal and India (Figure 5-1).[5] However, the difference in the incidence of stunting in Sri Lanka between the poor and non-poor is larger than in any other South Asian country. Stunting among the poor is double that of the average population in Sri Lanka (Figure 5-1).

Figure 5-1: Sri Lanka's poor do relatively better than South Asian Counterparts
Stunting among children



Source: Tabulations for Sri Lanka based on World Bank staff estimates using DHS (2000). Remaining tabulations taken from Gwatkin and others (2004).
Notes: Refers to children under 5 years.

13. Access to *safe water and education* are two areas of investment that typically improve health outcomes. In terms of access to safe water, Sri Lanka performs better than other South Asian

[3] HNP Stats, World Bank; Annual Health Bulletin 2002 (Department of Health Services, Govt. of Sri Lanka 2002).
[4] Comparisons are done tabulation of recent rounds of DHS by Gwatkin and others (2004) combined with tabulations from Sri Lanka's DHS 2000 (DCS, 2002).
[5] Classification into population quintiles based on asset index approach. See footnote 2.

countries but slightly worse than the average lower-middle income countries. In adult literacy, Sri Lanka is comparable to even middle income countries and outperforms South Asia with less than 10 percent of adult Sri Lankans being illiterate compared with more than 40 percent for South Asia (Table 5-1). The *high literacy* rate in Sri Lanka, especially among mothers, no doubt goes a long way in bringing about *good basic health outcomes*.

Equity and Efficiency of Public Healthcare in Sri Lanka

14. Research during the 1980s and 1990s showed that public investments in health and related social sectors, rather than income growth, brought about the successes in health outcomes. Dreze and Sen (1989) described Sri Lanka's approach to development as one of "support-led security" in which the government provided health and social sector services as a means of promoting development without waiting for economic growth to do so. Other such country examples that advocated the same approach include Chile, Costa Rica, Cuba, Jamaica and the Indian state of Kerala. A number of studies have shown Sri Lanka to be an outlier in terms of its social achievements given its level of income.[6] Studies using time series data have also demonstrated that between 1952 and 1981, income growth alone could not have achieved the observed positive health outcomes and that public intervention had a significant and positive effect.[7]

15. By regional and international standards, the health system in Sri Lanka displays high levels of *technical efficiency* and is *equitable*. Total health expenditures (as percent of GDP) in Sri Lanka are comparable to those of Thailand, Malaysia, and Korea; slightly below India, Russia, and the United Kingdom; but significantly lower than the United States (Table 5-2). Like Malaysia, Korea, Russia, and the United States, public spending on health in Sri Lanka make up about half of total health expenditures.

16. At the same time, the share of spending on health in total public expenditure is lower in Sri Lanka than in all countries listed here with the exception of India. Moreover, *total* health expenditure per capita in Sri Lanka is far lower than other middle low income and high income countries, and comparable to that of India. This suggests that unit costs are low and health expenditures in Sri Lanka are comparatively more efficient than other countries given its impressive health outcomes. Nonetheless, there is room for improvement in a number of areas, including allocative efficiency and quality of health care (Box 5-1).

Table 5-2: International Comparison of Health Expenditures, 2002

Country	*Gross National Per Capita Income (US$) 2004*	*Total Health Exp. as % of GDP*	*Public Exp. on Health as % of Total Health Exp.*	*Public Exp. on Health as % of Total Govt. Exp.*	*Per Capita Total Exp. on Health (US$)*
Sri Lanka	1,010	4	49	6	32
India	620	6	21	4	30
Thailand	2,540	4	70	17	90
Malaysia	4,650	4	54	7	149
Korea Republic	13,980	5	53	11	577
Russia	3,410	6	56	10	150
U.K.	33,940	8	83	16	2,031
USA	41,400	15	45	23	5,274

Source: World Health Organization. The World Health Report 2005.

[6] See for example Wang et al (1999) and Shiffman (2000). Sen (1981) showed Sri Lanka to be an outstanding performer in social outcomes given its income level and this generated considerable debate in literature – Bhalla and Glewwe (1986), Bhalla (1988a and 1988b).

[7] Anand and Kanbur (1991); Anand and Ravallion (1993).

Box 5-1: Is Public Healthcare in Sri Lanka Pro-Poor and Efficient?

Incidence of *government expenditure* is found to be *mildly pro-poor*, although the distribution moved somewhat in favor of the better-off in the later years of the 1990s. Out-of-pocket expenses to private health care providers increase monotonically with income (Rannan-Eliya, 2001), and incidence of government expenditure is equitably distributed, and even mildly pro-poor. Calculations using data from CFSES (1996-97) show that every income quintiles, except the richest, received nearly 20 percent of the government health expenditure; while in the early 1990s nearly 30 percent accrued to households in the poorest quintile (Hsiao, 2002). A study comparing Nepal, Bangladesh and Sri Lanka found that among these three countries only in Sri Lanka did the overall distribution of government expenditures mildly favor the poor (Ranan-Eliya et al, 2001). A WHO study also indicates that Sri Lanka fares well in terms of out-of-pocket payments, as a share of total household consumption, are progressive relative to the ability to pay. Moreover, access to health services protects a large majority in Sri Lanka from very high expenditures, and this proportion is high by international comparison.

Efficiency of the health system: Recent studies have also found the Sri Lankan health system, particularly the provision of tertiary hospital services, to be technically efficient. Based on a 1992 study of the health delivery system in four districts, Hsiao (2000) reports high technical efficiency based on the levels and range in inputs, outpatient visits delivered, admission rates, and unit costs. However, national statistics hide the mal-distribution within the sector such as the significant under utilization of smaller healthcare facilities. This mal-distribution is perpetuated by the fact that central tertiary care hospitals are better equipped. Patients too often bypass primary hospitals, which increases cost and undermines the efficiency of the overall healthcare system in part due to the absence of a clear admission and referral system. As a result there is overcrowding of the few large hospitals. The delivery of preventive health care and outreach, particularly maternal and child health services, has also been found to be effective by international standards. However, the recent trend of declining expenditures on preventive care has to be reversed to enable Sri Lanka to maintain its past achievements.

Shortages in critical staff: There are considerable shortages island-wide in some categories of staff such as general surgeons, obstetricians, pediatricians, medical teachers, nursing and paramedical tutors, nurses, and paramedics. At the same time, there is an overproduction of general doctors. This is particularly problematic since the government has committed to absorbing all medical graduates up to 2010 into the state sector. Although some form of health care is available within 1.4 km of most homes, there are also major shortages in specialist staff in remote and conflict-affected areas. Concurrently, some districts, such as Colombo, Kandy, and Galle, have too many health personnel. According to the Annual Health Bulletin 2002, nearly 35 percent of specialist doctors are in Colombo, while Kilinochchi, Mullaitivu and Mannar in the North did not have any.

Source: Poverty and Health in Sri Lanka: Successes and Challenges, Sinha (2006)

17. Equity *in access to public health services:* Most evidence on utilization of health services points towards access to health facilities being near-universal from the island-wide provision of free public care services with an extremely well laid down network of preventive services and a hospital network. The system of health facilities provides a dense yet well-dispersed network of facilities that minimizes travel costs. It has been estimated that most rural people live within 5-10 kilometers of a peripheral health facility (Hsiao, 2000). In-patient care is provided free of charge to all and access is more or less equal across income groups.

18. Evidence from DHS 2000 further corroborates this. When families were asked about whom they will consult if their child was seriously ill, rich and poor mothers are equally likely to report that they would consult a trained provider. Utilization of maternal health services shows that women in both rich and poor households have a high uptake of antenatal and postnatal care (Table A-5.1, Annex). Nearly 97 percent of the births during the 5-year period prior to the survey took place in government hospitals or maternity homes. Utilization of preventive care and contact with health workers is also equitable, with little variation between rich and poor households (Table A-5.1, Annex). Mothers, whether they are rich, poor or estate residents, all

appear to take their children for growth monitoring: on average most children under age 5 had been weighed about 6 times suggesting that most mothers comply with the recommended number of visits (Table A-5.2, Annex). The starkest differences are across sectors: as compared to urban or rural women, a smaller percentage of estate women report visits by midwife for prenatal or postnatal care (Table A-5.1, Annex).

Nutritional Outcomes and Poverty

19. Although there is a high degree of equity with little rich-poor variations in indicators such as childhood mortality and utilization of health services, *rich-poor gaps* do exist along a few important dimensions. These pertain to low birth weight and nutritional status of children and women, and the incidence of communicable diseases such as diarrhea and tuberculosis. These are associated with structural poverty issues like the ability to access food as well as to child feeding practices and access to safe water and sanitation facilities, and not just to "supply-side" factors, like access to and utilization of public health system.

Table 5-3: Child Nutrition and Health Status, by Wealth Quintiles and by Sector

	Percentage with Low Birth Weight (<2.5 kg)	*Percent children Stunted (low Height for Age)*	*Percent children Wasted (low Weight for Height)*	*Percent children Underwt. (low Weight for age)*
By Wealth Quintiles				
Poorest	24.7	29.0	20.1	47.4
Richest	9.2	3.5	9.5	11.1
By Sector				
Urban	13.7	8.3	8.9	17.8
Rural	17.3	14.1	16.8	31.0
Estate	30.0	37.0	12.5	45.7
Population Avg.	17.4	14.6	14.8	29.3

Notes: World Bank staff calculations using Sri Lanka Demographic and Health Survey (2000). Refers to children aged 3-59 months whose heights and weights were measured.

20. *Low birth weight* is a proxy for intrauterine growth retardation and indicates that a newborn did not attain his/her full growth potential. Low birth weight is more prevalent among poor households and estate residents. Nearly 25 percent of all babies born to mothers belonging to poor households were of low birth weight. Mothers who were estate residents had an even higher prevalence of low birth weight babies (Table 5-3).

21. *Child malnutrition*: Anthropometric indicators for pre-school children are indicators of nutritional status. Prolonged or severe nutrient depletion eventually leads to retardation of height or linear skeletal growth in children that is evident in unusually low height-for-age, also called *stunting*. On the other hand, short-term and acute food shortfalls are visible in low weight-for-height or wasting. Almost 30 percent of pre-school children residing in poor households and nearly 40 percent of estate children are stunted. In contrast, only 3.5 percent of children in rich households are stunted (Table 5-3). This shows the prevalence of prolonged nutrient deficiency among poor and estate children in Sri Lanka.

22. *Wasting* is also more prevalent among children in poor households, but the prevalence of wasting among estate children is not any higher than among rural children. The percentage of children who are *underweight* or have low weight for their age reflects a combination of children suffering from both chronic and acute nutritional depletion. Not surprisingly, prevalence of underweight is high among the poor and among estate children.

23. The prevalence of child malnutrition varies across regions and reflects *regional variation* in poverty rates. Child malnutrition rates are high in North-Western, North-Central,

Sabaragamuwa, Uva and Central provinces, while Western province that has the lowest poverty rate and the highest level of economic activity also has the lowest prevalence of child malnutrition.

24. *Nutritional status of women:* The intergenerational persistence of poor nutritional status is evident in the high incidence of poor nutritional status of women residing in poor and estate households (Table 5-3). Nearly 40 percent of poor women and 50 percent of estate mothers have low Body Mass Index, indicating poor nutritional status. Mother's poor nutritional status is an important contributor to intrauterine growth, retardation, and low birth weight. Undernutrition among poor women also co-exists with obesity among rich and/or urban women – now a growing feature in many developing countries. Nearly 40 percent of rich women and those residing in urban areas are obese (Table 5-4).

Table 5-4: Women's Nutritional Status, by Wealth Quintiles and by Sector

	Percent women with Low Body Mass Index (<18.5)	*Percent women with High Body Mass Index (>=25)*
By Wealth Quintiles		
Poorest	37.3	6.6
Richest	10.0	36.9
By Sector		
Urban	12.7	37.0
Rural	23.1	17.7
Estate	47.7	4.6
Population Average	22.9	20.5

Notes: WB staff calculations using Sri Lanka DHS (2000). Women aged 15-49 years

25. *Long-term impact of malnutrition*: The relatively high prevalence of malnutrition among poor and estate children can have a number of consequences for their education, adult health, and earnings. Fetal and/or childhood undernutrition increases the likelihood of chronic non-infectious diseases later in life that affect lifetime earnings. Malnutrition can also constrain children's schooling. While it is difficult to discern the impact of nutritional status on school attainment, since households simultaneously invest in both, the few studies that have done so using longitudinal data show that malnourished children receive less education (see Box 5-2). This may be either because their parents invest less in education or because malnourished children have higher rates of absenteeism from school due to higher rates of illness. Poor nutritional status may also delay school entry that could potentially reduce lifetime earnings, or impair children's cognitive development.

Box 5-2: Impact of Malnutrition on Schooling and Earnings

Glewwe, et al (2001) used longitudinal data from Cebu, Philippines to track children from birth through primary school and found that better nourished children were both more likely to start school earlier and less likely to repeat grades. They found that a 0.6 standard deviation increase in the height of undernourished children would increase completed schooling by nearly 12 months. Alderman et al (2001) used longitudinal data from rural Pakistan and found that malnutrition decreased the probability of ever attending school. Because malnutrition affects schooling, it will also affect earnings. Using a sample of adult identical twins in the United States, Behrman and Rosenzweig (2004) found that controlling for genetic and other endowments shared by such twins, low birth weight had a large impact on schooling and wages.

Source: Poverty and Health in Sri Lanka: Successes and Challenges – Sinha (2006)

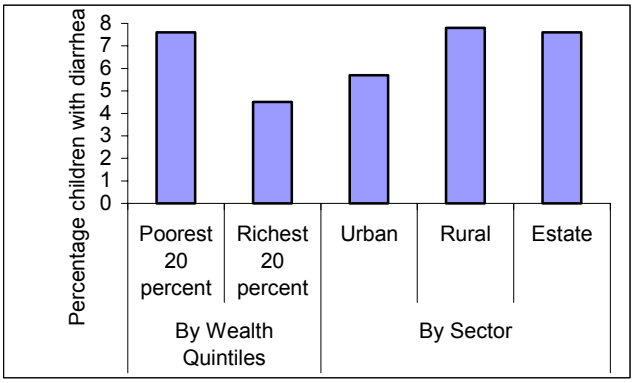
26. *Malnutrition and exposure to diseases*: A recent analysis of Sri Lanka's progress toward meeting the MDGs[8] found that the likelihood of becoming malnourished in childhood was

[8] World Bank (2005c) Attaining the Millennium Development Goals in Sri Lanka.

strongly associated with household's access to sanitation facilities (toilets) and safe drinking water (piped water).[9] Children living in households that had a flush toilet and piped water were less likely to be malnourished than children in households without these facilities. This is consistent with the evidence from a number of studies that dietary intake and exposure to disease and infection that prevent absorption of nutrients or increase dietary requirements are important immediate causes of malnutrition. Children in poor households are at a greater risk of being exposed to such infectious diseases because of lack of access to toilets and safe drinking water. Moreover, young children are also susceptible to infections because their immune systems tend to be immature. DHS data show that diarrhea is more prevalent among children residing in poor households and in rural areas (Figure 5-2).

27. *Access to safe water and sanitation:* Access to protected water supplies and sanitation systems among *rural households* in Sri Lanka are better than other countries at a similar income level. However, around 17 percent of households still get drinking water from potentially unsafe sources like unprotected well or from river, tank or stream; and this proportion is nearly 67 percent for estate sector households. Moreover, although health education about the need to boil drinking water has been widely communicated, most poor households appear not to follow this practice.[10] This exposes children in poor households to significant risks of diarrhea and gastrointestinal infection.

Figure 5-2: Diarrhea is More Prevalent Among the Poor



Notes: World Bank staff calculations using DHS (2000). Percentage children reporting diarrhea in the 2 weeks prior to survey.

28. *Poverty reduction* measures will go a long way in reducing the incidence of *malnutrition* in Sri Lanka since much of nutritional deprivation is concentrated among poor households. But these measures by themselves will not be sufficient (Box 5-3). Measures to address childhood malnutrition must target food and health inputs as well as appropriate child care practices such as breast feeding and nutritional supplementation of very young children. In addition to these policies, improved access to clean water and sanitation are also important in preventing malnutrition because young children are particularly susceptible to infections.

Box 5-3: Nutritional Status Is Responsive to Income

Empirical analysis consistently shows that reductions in poverty lead to a reductions in malnutrition. The strength of the association between income and malnutrition varies across countries but is significant. For example, Svedberg (2004) using 67 countries find that Gross National Income per capita can statistically explain more than half the variation in prevalence of stunting across countries. Estimating the causal relationship between income and nutritional status requires that endogeneity issues be addressed. If cross-country regressions are used to estimate the relationship, unobserved and omitted country effects correlated with both the level of Gross National Income and nutritional status will lead to biases.

Haddad et al (2003) estimated the causal effect of income growth on malnutrition (underweight) among preschool children. They estimated this relationship using household survey data from 12 countries (Egypt, Jamaica, Kenya, Kyrgyz Republic, Morocco, Mozambique, Nepal, Pakistan, Peru, Romania, South Africa

[9] Other significant correlates include mother's education, father's education, child's age, sex and birth order (see World Bank, 2005c).
[10] See Sinha (2006) for evidence from DHS (2000).

and Vietnam; all fielded during 1990s). They also estimated this relationship using cross-country regression drawing on data from 61 developing countries. Household survey analysis showed that a 2.5 percent per annum growth in income will lead to 27 percent reduction malnutrition by 2015. Only in Jamaica, Morocco and Peru does such a growth in income lead to a 50 percent reduction in malnutrition by 2015 and so meet the nutrition MDG. Haddad et al estimate the elasticity between income and underweight to be about –0.54, but this conceals vast variations across countries. In Peru, the elasticity was estimated to be –1.13 while in South Africa, the elasticity was –0.19. In Nepal and Pakistan the elasticity was -0.77 and –0.3 respectively.

Why is nutritional status sensitive to income? Increases in incomes enable families to invest more in food and clean water and good hygiene. It can also enable families to access more effective childcare. Higher Gross National Income (GNI) per capita can also increase government expenditures on health and nutrition services and enable governments to spend more on complimentary investments such as education. In Sri Lanka, where basic health and nutritional outcomes are better, the correlation between income and nutritional status is lower. World Bank (2005) estimated that an annual 3 percent increase in household consumption expenditure per capita would lead to a 2 percentage point reduction in prevalence of underweight. This is by no means a large effect. But this suggests that even when income growth is modest, improvements in nutritional status can be achieved. If Sri Lanka achieves substantial income growth, it can expect to achieve significant improvements in malnutrition.

Source: Haddad (2003), Svedberg (2000 and 2004), Smith and Haddad (2002), Strauss and Thomas (1998).

5.2. Education Sector in Sri Lanka: Achievements, Outcomes and Challenges

29. Sri Lanka's education system has many notable attributes. The country had near universal primary school enrollment (96 percent) and gender parity in primary and secondary enrollments as far back as early 1990's. Further, there are no differences in primary school enrollment rates across income quintiles (Table 5-6). Education in the country continues to be free with the Government devoting 7-9 percent of its expenditure on education amounting to 3 percent of GDP. Government investment in basic education has also shown good equity, with underprivileged areas receiving higher per student allocation.

Quality of Education

30. The challenge for the education sector in Sri Lanka pertain more to second *generation issues*. Despite significant investments in the education sector over the decades since independence, students display only a weak grasp of first languages (37 percent)[11], English (10 percent), and mathematics (38 percent) (Table 5-5). These core set of skills are essential for the onward progression of children - to higher education and eventually securing employment. These profound weaknesses are even worse in the non-urban sector. For example, at grade four, only 7 percent of rural students display mastery of the English language compared to 23 percent in the urban sector. Even in mathematics, there are contrasting differences with only 35 percent of rural students achieving mastery compared to 52 percent of their urban counterparts. These sectoral differences in key outcomes are indicative of the worse quality of education in non-urban schools.

Table 5-5: Mastery Skills at Grade 4, 2003

Mastery Skill	*Sri Lanka*	*Urban*	*Rural*
First Language	37	51	34
English	10	23	7
Mathematics	38	52	35

Source: National Education Research and Evaluation Centre, University of Colombo

31. The uneven *deployment of teachers* in the country contributes to the regional imbalances in the quality of education. Due to excessive demand for teachers to be posted in popular urban schools, there is a severe shortfall of teachers in rural schools and in particular schools in economically disadvantaged rural areas – where poverty incidences are higher. The same situation has resulted in teacher excesses in urban schools. However, efforts by the authorities to transfer teachers to difficult areas have not been successful and are almost often met with

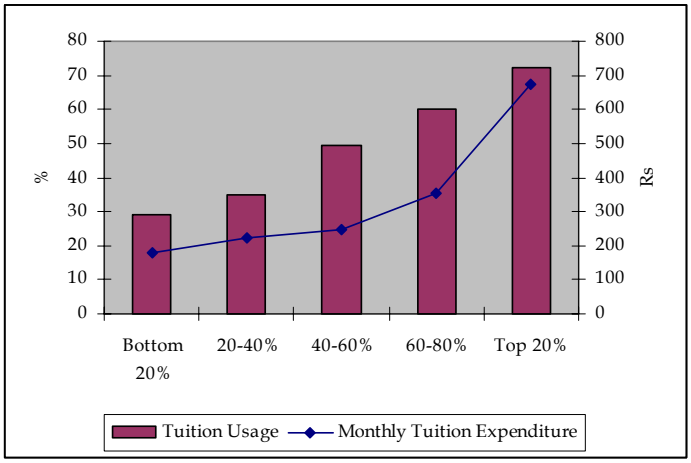
[11] i.e either Sinhala or Tamil.

countervailing action. The education system is also plagued with high teacher absenteeism that sees almost one fifth of all teachers absent on any given school day. Like in teacher deployment, teacher absenteeism is most unkind to rural and underprivileged areas of Sri Lanka where non-attendance among the teachers is much higher than the national average. Sri Lankan teachers are also less paid compared to their counterparts in India and Bangladesh since real salaries of teachers in Sri Lanka have declined since 1978. This encourages teachers to give private tuition to students after school hours and not teach the necessary curriculum during school hours.

32. The poor quality of education within the formal school system has prompted many parents and students to seek private tutors. '*Private tuition*' has witnessed a tremendous increase over the years. While less than one in four school child took private tuition classes in 1986/87, this rate has doubled in 2003/04 where one in every two school going child pay for private tuition (CBSL CFSES).

33. The CFSES 2003/04 data reveal that a lesser percentage of rural and estate children use private tuition as a means of augmenting their formal school education than urban children[12]. The CFSES has also mapped the incidence of private tuition among children according to their income level. A clear pattern is seen - students in higher income households have a higher incidence of private tuition than their counterparts in low-income brackets (Figure 5-3). While less than a third of children in the poorest income quintile spend on private tuition, over two thirds of children in the richest quintile take private tuition (Figure 5-3).

Figure 5-3: Private Tuition Usage by Quintile 2003/04



Sources: CFSES 2003/04.

34. The above discussion and data underscores two things. First, private tuition has become an essential part of Sri Lanka's educational process and it enhances the chances of success at national competitive examinations given the shortcomings of the normal school education system. Second, since the poor are less able to afford private education their chances of passing at national competitive exams are considerably lower. At the provincial level, a clear pattern emerges. Provinces where a smaller percentage of students use private tuition have lower GCE O/L pass rates (Table 5-7). For example, in the North Central province only 40 percent of the students used private tuition in 2003/04. Correspondingly, the province's GCE O/L pass rate was only 31percent. In contrast, in the Western Province 63 percent of the GCE O/L students took private tuition and the corresponding pass rate was 48 percent. However in the case of the GCE A/L examinations, the pass rates among provinces were very similar (around 50 percent), while the corresponding incidence of private tuition was also high[13] (around 60 percent).

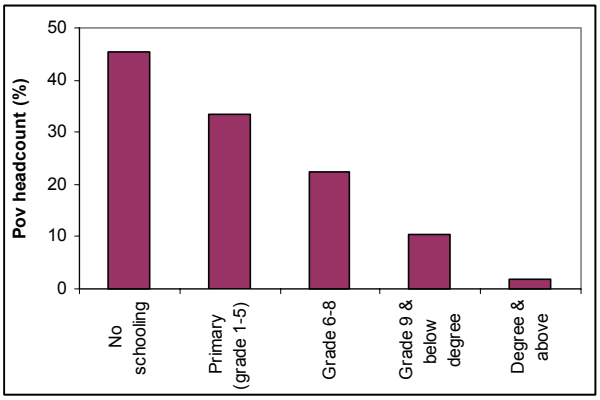
[12] The only exception being that in preparing for GCE A/L larger percentage of **estate students** use private tuition than in urban or other rural areas. One reason for this as suggested by the CSFES is the high premium placed on educational achievement at the advanced level in the estate sector in recent times.

[13] And these incidence rates show relatively less variation among provinces.

Poverty, and Educational Attainment and Enrollment

35. There is a close relationship between *education and poverty*. Intuitively, a person with a higher level of education is less likely to experience poverty due to greater chances of being employed in better-paying economic activities[14]. World Bank estimates based on HIES (2002) suggest that the poverty incidence among the less educated is far higher than the educated (Figure 5-4). While less than 2 percent of households with a tertiary educated household head were poor, the poverty incidence when the household head with no schooling was close to 50 percent (Figure 5-4).

Figure 5-4: Poverty and educational attainment of household head (2002)



Source: HIES (2002)

36. Although the country has near universal primary enrollment, there are imbalances among the different income groups in terms of *net enrollment rates at secondary and tertiary levels* (Table 5-6). Net enrollment of children in grades 10 to 13 in the lowest income quintile is about half the rate for the richest quintile (Table 5-6). At the tertiary level, the disparities widen even more considerably. The net enrollment rate for the richest quintile at the tertiary level (13 percent) is more than six times the rate for the poorest quintile (2 percent).

Table 5-6: Net Enrollment Rates by Income Quintile (1995/96)

Income Quintile	Primary (grade 1-5)	Secondary (6-9)	Secondary (10-13)	Tertiary
Lowest	95	61	31	2
2nd	96	66	35	2
3rd	95	67	41	4
4th	96	77	47	5
Top	97	76	60	13

Sources: World Bank estimates based on the HIES (1995-96)

37. Moreover, 18 percent of students who join the education process fail to complete the compulsory formal education. Most of the students who *drop out from school* come from (i) families living off the street, (ii) economically disadvantaged areas, (iii) conflict affected areas, (iv) the estate sector, or (v) are disabled. In addition, the poor are also more likely to stay away from school. While less than 1 percent of the children in the richest quintile in the urban sector reported having avoided school in the CFSES 2003/04 survey, the corresponding figure for the poorest quintile in the estate sector was about 6 percent.

Regional Disparities in Education Outcomes

38. Like poverty incidence and growth, there are also *regional disparities in some educational outcomes* (Table 5-7). Although the percentage of students who complete 9 years of schooling is pretty uniform across provinces (73-87 percent), there are wide disparities in the pass rates for GCE O/L and A/L examinations. For example, while almost half of the students in the Western Province pass the GCE O/L and A/L exams, only around 30 percent of students from the North Central, Uva, Central and North and East provinces pass the O/L exams (Table 5-6). Outcomes in GCE O/L and A/L exams also appear to be linked to regional variations in how much households spend monthly on private tuition. Households in the North and East spend about Rs.

[14] i.e. activities in which the benefits or returns exceeds all costs including opportunity costs.

222 monthly on private tuition fees, while households in the Western Province spend more than double that amount at Rs. 571 (Table 5-7).

39. Another way of looking at regional disparities in education outcomes is to look at the *sum of mean deviations* (SMD) of completion of grade 9, pass rates for GCE O/L and GCE A/L and tertiary enrollment by province. The overall educational attainment score (i.e. SMD score) is highest in the Western Province, which performs above the national average in almost all outcomes except GCE A/L (Table 5-6). In contrast, provinces with low SMD scores (such as Uva, North Central, and Central provinces) under-perform on all outcomes especially in terms of GCE O/L pass rates and tertiary enrollment.

Table 5-7: Key Educational Indicators (Percent), 2002

	SL	*Western*	*Central*	*Southern*	*North and East*	*North West*	*North Central*	*Uva*	*Sabara-gamuwa*
Formal Education Completion (Grades 1-9)	82	87	82	87	73	78	81	81	85
GCE O/L Pass	37	48	32	37	32	38	31	31	34
GCE A/L Pass	56	54	55	57	58	58	53	52	57
Tertiary Enrollment	11	16	8	10	-	7	6	7	9
Sum of Mean Deviations* (of above indicators)	-	19	-9	5	-	-5	-15	-15	-1
Monthly Tuition Expenditure	384	571	351	372	222	369	344	246	299
Poverty Incidence (percent)	23	11	24	28	-	27	21	37	33

*SMD measures the overall attainment of the province in outcomes. It is calculated as $\sum (X_i - X_{SL})$ for all i 1 to 4 and where X_{SL} is the national average for the relevant outcome. **High positive score indicates a relatively higher performance relative to the national average while a low value indicates a weaker performance.**
Sources: CFSES 2003/04; Ministry of Education and World Bank estimates based on Labor Force Survey (DCS).

5.3. Conclusion

40. Sustained public investments in health and education have clearly led to some of the most impressive human development outcomes globally. Compared to countries with similar GNP and countries with similar poverty rates, Sri Lanka performs much better on most health and education indicators. Sri Lanka's poor tend to have better health and education outcomes than those in other South Asian countries. Yet, there are a few outstanding challenges remaining that disproportionately affect the poor. These are important to address because deficiencies in human development have impact on earning potential over the entire lifetime.

41. *In health*, there are some critical dimensions along which rich-*poor gaps* are prevalent – such as in low birth weight, *malnutrition* among pre-school children, poor nutritional status of adult women, and incidence of communicable diseases such as tuberculosis, and diarrhea. These outcomes are also the ones likely to be most closely associated with poverty, because of the direct link between poverty and food and water and sanitation availability. Poor nutrition has important ramifications for health and earning potential of the poor, which in turn is likely to perpetuate the cycle of poverty and low human capability.

42. The relatively high prevalence of malnutrition in Sri Lanka is out of line with the other health indicators, which is considered a puzzle.[15] Common correlates of malnutrition are availability and utilization of health facilities, female literacy, good hygiene practices and health knowledge, and insufficient access to food. Given that Sri Lanka fares quite well on the first two correlates, *insufficient access to food* due to poverty and exposure to *unsafe sanitary conditions* are best candidates to explain the relatively high prevalence of malnutrition and communicable diseases among the poor. Since malnutrition is non-existent among the top quintile in Sri Lanka, it seems obvious that increased prosperity will bring about an end to this problem. However, such a long-term process is likely to work slowly; and given that malnutrition contributes to the poverty trap by itself, interventions that seek to reduce malnutrition even at the current income levels can induce a "virtuous cycle" that has a strong impact on welfare and poverty.

43. A number of interventions currently exist in Sri Lanka to address malnutrition. These appear to have been successful in reducing chronic malnutrition among children, but not in reducing acute, short-term undernutrition, and prevalence of low birth weight infants remains high. More therefore needs to be done. Within the health sector, for example, *growth monitoring* can be strengthened, especially beyond the first 6 months of life when most toddlers begin to consume non-milk food items. Much can also be done to further promote *boiling of water* to make it safe for drinking; and improving *access to piped drinking water, closed wells and toilets* is also likely to pay off in reduced incidence of diseases and lower malnutrition rates. The wide gap between the *estates* and other sectors for a number of nutritional indicators of women and children also underscore the need to improve access to safe water, sanitation, and health services; and level of awareness on nutritional and hygiene issues.

44. Second, even though Sri Lanka's health system is internationally hailed as a success, the "*supply side" problem* is not fully solved. The health system faces a shortage of specialized staff on one hand and an over supply of more general staff on the other hand. There are also regional imbalances in *staffing*.

45. Third, there are variations in the *utilization of public healthcare facilities*. Tertiary central hospitals located in Colombo and other urban areas are unnecessarily overcrowded with patients where the facilities are better. While peripheral health care centers in more remote poorer areas with poorer facilities are under-utilized. Therefore, there is a need to think about an effective referral system for hospitals and a need to consolidate the large number of peripheral clinics.

46. Fourth, the health system must also gear up to deal with *emerging issues such ageing and the increase in the cases of non-communicable diseases* such as cancer and diabetes that go hand in hand with high life expectancy. Sri Lanka is poised to become the third oldest country in Asia, after Japan and Singapore; and the health system must adapt to meet the needs of such a rapidly altering demographic composition of its clients. The share of the population over 60 years of age in Sri Lanka will increase from 9 percent in 2001 to 13 percent in 2010 and 21 percent in 2025.[16] Geriatric care and curative care for non-communicable diseases are expensive. Therefore, the current budgetary allocations for healthcare will need to shift in order to consolidate past gains and deal with emerging challenges.

47. Education is often considered a great 'leveler', since it expands the economic opportunities available to poor individuals and households, especially in remote areas – as various chapters of this report shows in case of Sri Lanka. In spite of near-universal enrollments at the primary level, rich-poor gaps in secondary and tertiary enrollments and private tuition usage shown above seem suggest that poor children are put at a disadvantage in acquiring the necessary skills, which would also reduce their prospects of getting out of poverty. A similar argument would apply to poor

[15] World Bank (2005c).
[16] Annual Health Bulletin (2002) and Hsiao (2000).

regions also. Education is accepted to be a critical driver of growth, and is strongly associated with the spatial distribution of poverty in Sri Lanka (Chapter 3). The regional and sectoral disparities in education outcomes and quality issues covered in this chapter therefore suggest that lagging regions are in the danger of falling further back economically. Recognizing how the current inequities in education are likely to strengthen poverty traps at the household and regional level, Sri Lanka must focus on improving education for the underprivileged, and particularly in remote areas and the estate sector where the challenges are most severe.

48. *Enhance Quality of Education with Specific Emphasis on Improving English and IT Skills.* Improving the quality of education is a critical challenge. To improve students' prospects in the labor market, emphasis needs to be placed on enhancing English language competencies at school level and promoting English as a medium of instruction in the school system (in addition to the Sinhala and Tamil streams). Another requirement of any modern day curriculum is the knowledge of IT. A good dissemination of IT knowledge will not only serve to improve learning outcomes but would also brighten future prospects for employment. As schools in economically underprivileged areas in the country suffers most from a lack of suitable IT facilities, a suitable program on the part of the government in association with the private sector and donor agencies can take IT to village schools.[17]

49. *Improve Teacher Deployment in Remote Areas.* As discussed earlier, teacher deployment is one of the weakest links in service delivery in education, which has a more pronounced impact on children in more remote areas. Incentives for teachers to relocate to difficult areas have to be developed to address the regional disparities in staffing in the education sector. Teacher recruitment could also be more decentralized with provincial educational authorities empowered to recruit teachers from the area. These teachers are also more likely to stay. These steps could help mitigate the present problem of weak teacher deployment and perhaps even mitigate teacher absenteeism in rural schools.

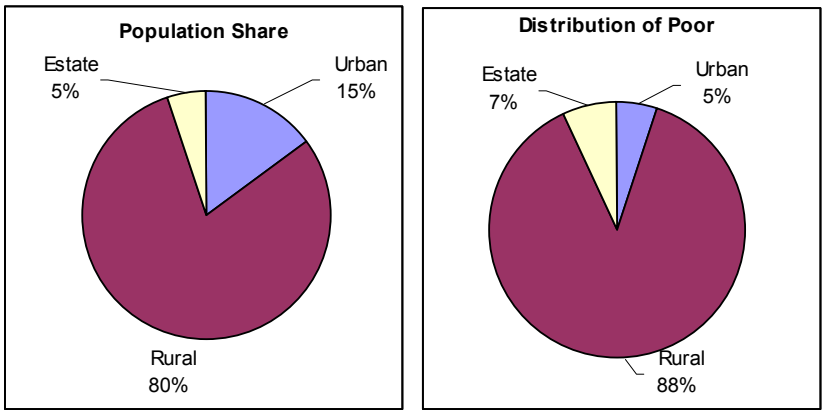
50. *Shift Public Resources towards Primary and Secondary Education.* Since tertiary education in the country is mainly used by students from the upper income quintiles, resources should be shifted more towards primary and secondary education where serious quality deficiencies remain. Whilst spending more on basic education, the Government also needs to be mindful of gradually shifting expenditures towards quality inputs such as IT equipment. Private sector provision, especially for tertiary education, should be encouraged given that this level of education tends to benefit students from upper income families. This would free up more public resources that can be used to improve the quality of primary and secondary education that tend to have greater impact on the poor.

[17] World Bank has already undertaken an initiative in this regard through its e-Sri Lanka program.

6. The Rural Challenge: Raising Agricultural Productivity and Non-Farm Incomes

1. The challenge of reducing poverty in Sri Lanka will require continued concentrated attention to the needs of rural areas, because it is home to about 80 percent of the population and about 88 percent of the poor in the country (Figure 6-1). Although the rural poverty rate has declined from 29.4 percent to 24.7 percent during the period 1990/91 and 2002, this still translates to about 3.5 million people.

Figure 6-1: Population (2001) and Poverty Rates by Sector, 2002



Source: HIES (2002)

2. Agriculture dependent households account for a large share of the poor. The slow down in agricultural growth over the last decade has not helped in hastening poverty reduction. Therefore, raising agricultural productivity and expanded opportunities for non-farm income opportunities could offer avenues of increasing employment and incomes and reducing poverty in rural areas.

6.1 Agricultural Households Comprise the Majority of the Rural Poor

3. Agriculture remains the major source of livelihood in rural areas in all provinces with the exception of the Western province. Analysis of the HIES 2002 data indicates that in most provinces agricultural households comprise over two thirds of households in rural areas (Table 6-1). Agricultural households are those engaged in crop production, raising livestock, and agricultural wage labor. In Uva and North-central provinces, about 4 out of every 5 households are dependent on agriculture.

Table 6-1: Household Distribution and Poverty Rates by Sector and Province, 2002

	% of poor households by Sector			Percent Share of Total Households	
Sector/Province	Agriculture	Non-Agriculture	All	Agriculture	Non-Agriculture
Rural	24.1%	16.4%	20.8%	58.0%	42.0%
Region					
Western	15.0%	9.0%	9.2%	32.9%	67.1%
Central	24.5%	17.2%	20.8%	65.3%	34.7%
Southern	24.3%	24.6%	23.6%	69.0%	31.0%
North-Western	22.0%	23.9%	22.3%	64.6%	35.4%
North-Central	19.0%	17.6%	18.1%	80.3%	19.7%
Uva	34.3%	16.9%	31.8%	89.6%	10.4%
Sabaragamuwa	30.5%	28.4%	28.9%	62.0%	38.0%

Note: Agricultural households are those engaged in farm production, raising livestock or agricultural wage labor as primary occupation.
Source: Staff calculations from HIES 2002.

4. The number of poor agricultural households far exceeds the number of poor non-agricultural households in rural areas. Not only do agricultural households dominate in rural areas, but the poverty rate among them (24.1 percent) is significantly higher than non-agricultural households (16.4 percent) (Table 6-1). In most provinces, the poverty rate among agricultural households in rural areas is generally higher than the poverty rate among non-agricultural households, with the exception of the Southern and North Western provinces. The poorest rural households are also more dependent on agriculture as a

source of income. Agricultural farm and wage incomes account for 28 percent of the incomes of the poorest 10 percent of rural households, compared to 7 percent for the wealthiest[1].

Table 6-2: Average Annual GDP Growth Rate and Share of in Total GDP of the Agriculture, Forestry and Fisheries Sector, 1982-2004.

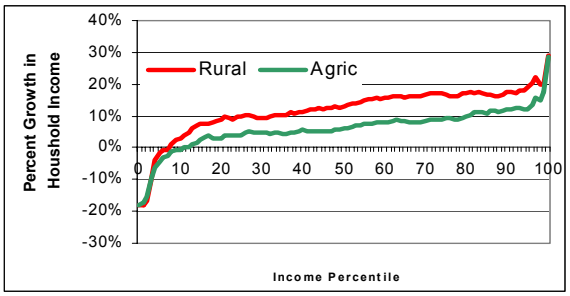
Subsector	Average Annual GDP growth rate				Share in Agriculture, forestry and fisheries GDP		
	82-90	91-00	95-02	02-04	TE85	TE95	TE04
Agriculture, forestry and Fisheries	1.7%	1.9%	1.4%	0.4%	33%	28%	22%
Agriculture	2.8%	1.6%	1.6%	0.9%	24%	19%	16%
Tea	2.9%	3.4%	4.8%	-0.3%	4%	1%	1%
Rubber	-1.2%	4.3%	-4.7%	1.8%	1%	1%	0%
Coconut	-3.8%	2.5%	1.3%	3.1%	3%	2%	1%
Rice	-0.3%	-0.7%	3.7%	-4.5%	6%	4%	3%
Other	6.3%	1.9%	0.9%	2.6%	11%	11%	10%
Forestry	6.1%	3.3%	1.1%	1.3%	2%	2%	2%
Fisheries	0.7%	6.4%	4.1%	-2.7%	2%	3%	2%

Note: TE – Trieenium ending

Source: Authors calculation from data from Central Bank Annual Reports, various issues.

5. A more rapid reduction in the rural poverty rate was hampered by the slow down in agricultural growth at the macro-economic level as well as the slower growth in incomes in rural areas, especially among agricultural households starting in the 1990s. Agricultural GDP growth slowed from 2.8 percent per year during the 1980s to 1.6 percent during the 1990s (Table 6-2), while national GDP has been growing around 5 percent annually since the 1990s. The slow down was driven by the sharp slow down in the non-traditional crop sector. Non-traditional crops account for nearly half of agricultural and allied sectors' (forestry and fisheries) GDP and was severely affected by the weak performance of the paddy sector.

Figure 6-2: Growth in Incomes - Rural and Agricultural Households, 1995/96 and 2001/02



Source: Staff calculations.

6. Growth incidence analysis of rural incomes further highlights the limited improvement in incomes in rural areas, especially among agricultural households. Notably, the poorest 7 percent of rural and 10 percent of agricultural households suffered a decline in incomes in real terms between 1995/96 and 2001/02 (Figure 6-2). Moreover, only 19 percent of agricultural households achieved an increase in income greater than 10 percent.

Employment in Agriculture and Rural Areas

7. Rural areas continue to provide employment to 80 percent of the labor force. Among the rural labor force, most are already engaged in non agriculture wage work (43 percent), 16 percent are engaged in agricultural self-employment, 15 percent in non-agricultural self employment, and 9 percent work as unpaid agricultural family workers. In the period 1998-2002, rural areas have seen faster growth in non-agricultural employment (3 percent annually) as compared to employment in agriculture (less than 1 percent), largely due to the strong growth in non-agricultural wage work.[2]

8. The average annual growth rate in wage earnings among agricultural wage workers was also below those of non-agricultural workers (Table 6-3). In Uva and Sabaragamuwa, the provinces with the highest poverty rates, the average annual growth rate in agricultural wage earnings were about half that of non-agricultural wages.

[1] See Annex, Table A-6.1.
[2] See Annex, Table A-6.2.

Table 6-3: Average Annual Growth in Wage Earnings by Sector, 1992-2002

	Ag Wage Worker			Non-agric wage worker			All Wage Workers		
Sector/Province	92-03	92-95	95-02	92-03	92-95	95-02	92-03	92-95	95-02
Rural	2.6%	5.6%	1.5%	3.2%	6.7%	2.4%	3.1%	6.5%	2.4%
Provinces									
Western	1.9%	2.5%	0.1%	3.5%	5.2%	3.1%	3.5%	5.2%	3.1%
Central	2.5%	5.8%	1.4%	3.1%	11.1%	1.5%	2.7%	8.9%	1.1%
Southern	2.4%	8.6%	0.6%	3.2%	4.3%	1.9%	3.0%	4.0%	2.1%
North-Western	-0.1%	6.3%	-2.5%	1.7%	6.2%	0.1%	1.3%	5.7%	0.3%
North-Central	0.8%	2.0%	2.4%	1.0%	2.4%	0.4%	1.4%	5.9%	0.5%
Uva	0.7%	-0.4%	2.1%	2.1%	10.6%	0.3%	2.1%	6.7%	1.9%
Sabaragamuwa	0.8%	1.3%	0.3%	2.2%	5.0%	1.9%	2.0%	4.7%	1.5%

Source: Staff calculations using Sri Lanka Annual Labor Force Survey data.

Challenges in Raising Agricultural Incomes

9. Fostering more rapid agricultural growth and increased agricultural incomes will require an increased emphasis on raising agricultural productivity and competitiveness. Broad government interventions in agricultural commodity and factor markets have hampered more rapid productivity growth in agriculture. Although trade, marketing, agricultural technology, land and water policies sought to protect the interest of the farming population, these policies have unintentionally squeezed the returns from agricultural production, limited productivity and income-enhancing investments, held back diversification to higher value activities, and "pushed" many out of agriculture, in many cases, into low-paying, insecure, casual non-agricultural wage labor.

10. *Agricultural Technology Policy*: Access to productivity-enhancing technologies by farmers has been constrained by restrictive seed and phyto-sanitary policies and the weakening of the agricultural research systems and extension services. As one indicator of productivity, crop yields in Sri Lanka still have considerable room for improvement (Table 6-4). There is increasing consensus that excessive regulation serves more as a barrier to entry than as an environmental filter. Many requirements are outdated and inadequate to meet the rapid advances in research and technology occurring worldwide, and subject to costly permit and inspection procedures. Delays in releasing the revised seed and phyto-sanitary regulations increase uncertainty regarding requirements for planting material imports and marketing.

Table 6-4: Average Yields of Selected Crops, 2002-04

Commodity	**Sri Lanka**	China	India	Indonesia	Pakistan	Thailand	Viet Nam
Rice	**3,394**	6,170	3,006	4,517	2,988	2,676	4,694
Maize	**1,103**	4,964	1,874	3,241	2,319	3,656	3,333
Groundnut	**585**	2,904	975	2,013	971	1,512	1,678
Soybean	**1,049**	1,781	865	1,270	1,250	1,356	1,317
Potatoes	**16,543**	15,462	18,555	18,555	15,051	12,054	13,159
Eggplant	**6,882**	18,631	16,146	7,034	10,556	5,826	
Cabbage	**13,889**	18,743	21,330	20,334	14,856	11,011	17,972
Chillies	**2,888**	19,160	9,182	3,808		14,000	
Tomatoes	**7,593**	26,121	14,789	12,678	9,964	26,095	
Sugarcane	**56,966**	65,376	62,731	69,710	48,378	68,862	54,215
Pepper	**623**	1,530	237	718		3,093	1,733
Tea	**1,450**	863	1,690	1,405		295	1,011
Coconut	**4,271**	10,099	4,809	6,013	4,000	4,327	6,804
Rubber	**798**	1,292	1,596	896		1,623	876

Source: Food and Agriculture Organization statistical database.

11. *Agricultural research* is performed by a large number of government institutes in Sri Lanka.[3] The government's research effort has been relatively successful in raising the productivity of rice, but it has been less successful for other crops. Past reviews found that the public agricultural research system had been too rice-focused, is highly fragmented, and makes little use of socio-economic or financial

[3] These include the Department of Agriculture, plantation (tea, coconut, rubber) research institutes, several national institutes reporting to the Council for Agricultural Research Policy and universities.

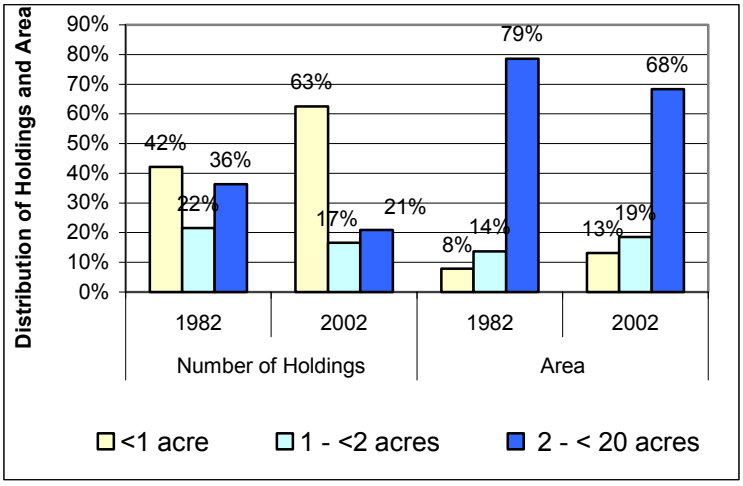
analysis (Charles 2002). The government established a number of priority setting, planning and competitive grant research funding schemes, but complicated procedures for accessing the grants deterred applicants. There is very limited private sector involvement in agricultural research in Sri Lanka. The absence of intellectual property rights protection, restrictive seed and phyto-sanitary regulations and procedures, and subsidized sale of planting materials discourage private sector investments in research.

12. Improving the effectiveness of the agricultural research system in the future, in large part already elaborated in the National Agricultural Research Policy (2003), will require fostering a pluralistic national agricultural research system, including the government, private sector, NGOs and other agencies. Institutional reforms of existing public agricultural research system needs to strengthen demand orientation and improve the quality of research activities, including through greater participation of farmers and other stakeholders in program governance, priority setting and evaluation of performance.

13. *Agricultural extension services* have been severely weakened since it was devolved to Provincial Councils in the early 1990s under the 13th Amendment to the Constitution. Most field level agricultural extension workers were reassigned as village facilitators, effectively eliminating their role in disseminators of agricultural information (Tabor et al. 2000). Analysis of the SLIS data (1999/2000) found that only about 13 percent of agricultural households report receiving technical assistance from a government extension agent (15 percent from all sources).[4] In 1999, the Department of Agriculture began piloting "fee-based" agricultural extension services as part of the Second Perennial Crops project. By design, however, this approach concentrates only on larger commercial farmers and enterprises. Its applicability to small holders may be more limited.[5]

14. Improving the effectiveness of the agricultural extension system in Sri Lanka would necessitate increased focus on: (i) expanding the supply of extension services by fostering greater participation of private firms, NGOs, and producer organizations, including through government sub-contracting of services; (ii) improving the effectiveness of the public extension service - strengthening client orientation through adoption of participatory approaches in planning and implementation; (iii) linking providers to multiple sources of innovation (research and others); and (iv) expanding use of new information and communications technologies to deliver a wider array of information of value to farmers through new, innovative channels.

Figure 6-3: Distribution of number of owned agricultural holdings and area by farms size, 1982 and 2002.



Source: Department of Census and Statistics (1987) Census of Agriculture 1982, Department of Census and Statistics (2004) Census of Agriculture—Sri Lanka 2002, Preliminary Release No.2.

15. Land Policy: The increasing proportion of farmers dependent on very small landholdings coupled with slow growth in agricultural productivity pose another constraint to raising agricultural incomes. Analysis of the land ownership structures from the Census of Agriculture 1982 and 2002 highlight the significant jump in the number of farmers with agricultural land holding less than 1 acre (0.40 hectares). By 2002, 63 percent of owned agricultural holdings were less than 1 acre (Figure 6-3). Another 17 percent

[4] See Annex, Table A-6.3.

[5] Two private firms were contracted to provide technical assistance in project planning, design and implementation of commercial agricultural activities funded under the project (the fees charge is set at 5% of the project costs).

owned holdings less than 2 acres (0.8 hectares). Such small farm sizes severely limit the income generating potential of, especially if farmers are confined to only grow low value crops (such as rice).

16. Existing *land legislations*, however, limit the more efficient functioning of land markets. A critical feature of Sri Lanka's land ownership pattern is Government's ownership of a large share of land in the country. Agricultural land in Sri Lanka totals about 2.79 million ha (1.72 million ha state owned and 1.07 million ha privately owned) (World Bank 1996). These lands were transferred to farmers through various land settlement programs beginning in the 1930s supported by a number of legislations, one of the most important of which is the Land Development Ordinance (LDO) 1935.[6]

17. While these government *legislations* succeeded in promoting greater equity in land ownership, their highly *restrictive* nature hurt farmers in several ways. For LDO land, restrictions on mortgaging preclude its use as collateral to access credit that households could use to finance both income-enhancing farm and non-farm investments. For those wanting to remain in agriculture, the small landholdings, the lack of secure property rights, and the legal restrictions on buying or leasing-in LDO land reduce incentives for productivity-enhancing investments. Those interested in shifting out of agriculture into non-farm activities, or merely moving to another location would have to leave without compensation for their land. In addition to fostering a large cadre of part-time farmers, these legislative provisions limit the ability of the land market to allocate land to its best use (World Bank, 2003).

18. The Land Development Ordinance (LDO) is in the process of being amended in order to address some of the land issued discussed above. However, concerns still remain about inefficiencies that can arise from the procedures laid out in the Bill and the absence of clear criteria for approving or disapproving applications.[7] The prompt processing of the amendments to the LDO, including addressing the above concerns, would be essential to enhance agriculture productivity.

19. *Water Policy:* During the last five decades, irrigation development served as a major pillar of the government's rural development strategy. Most of these investments focused on the construction of new dams for power generation and surface irrigation systems, which were also closely linked with the government's land resettlement program. The most important program was the Mahaweli Project, initiated in the late 1970s and managed by the Mahaweli Authority of Sri Lanka (MASL).

20. However, the long term sustainability of past huge investments in expanding surface irrigation infrastructure is threatened on several fronts. Inadequate priority and funding for operations and maintenance (O&M) has led to the rapid deterioration of canal systems and to poor quality of services. This explains the need for repetitive (often every 5-6 years) and costly rehabilitation. Institutional weaknesses in the water-agencies combined with minimal involvement of farmers impeded greater improvements in the quality of and "user-orientation" in service delivery. Poor reliability of water delivery and the frequent lack of access to water by tail-enders, combined with lack of access to agricultural extension and improved technologies, contributed to low crop yields. Inadequate farmers' involvement in decision making regarding water delivery, both in terms of quantity and timing, has constrained their ability to diversify to higher value crops or alternative crops besides paddy.[8] Providing water for free also reduced the incentive for farmers to save and use water efficiently. There is an urgent need to improve the delivery of surface irrigation services. *Effective action* will necessitate: (i) prioritization of expenditures towards rehabilitation and maintenance of existing infrastructure; (ii) fostering greater user participation in managing systems and recovering costs; and (iii) re-orientating and restructuring water institutions to ensure efficient and client-oriented operations.

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[6] Other key legislations included the Sale of State Lands (Special Provision) Law 1973, Land Development (Amendment Act) 1981, Agrarian Services Act 1979, Land Reform Law 1972 and 1975, Land Reform (Special Provisions) Act 1981, and the Agrarian Services Development Act No. 46 2000

[7] For example, people obtaining new land allocations under the LDO will still be required to go through the process of receiving a permit first.

[8] Current water delivery schedules are still designed for paddy cultivation.

21. The Government is now faced with tightening inter-sectoral competition for water among various users (agriculture, drinking water, industry, etc). Therefore, as the Government finalized the *National Water Policy and National Water Bill*, priority would need to given to: (i) promoting the shift from supply-driven goals to comprehensive planning, allocation and management within a river-basin framework; (ii) formulating an appropriate regulatory framework and reprioritizing expenditures to support such a shift; and (iii) reforming institutional structures and procedures, building on increased participatory management of systems, to improve the management of water resources in Sri Lanka.

22. Fostering more rapid agricultural productivity growth and rural development in the future will require strong commitment to removing policy and regulatory restrictions so that those who choose to remain in agriculture can raise their productivity. In the short to medium term, key to promoting increased agricultural productivity and incomes would be adopting policies to ease farmer access to improved technologies, creating a more transparent and stable trade policy regime, allowing full and transferable ownership rights to land, and ensuring the sustainable use of water. Adopting policies to speed up currently lagging private sector participation and investments would also be critical to promoting growth in both the agricultural and non-farm sectors. These include promoting a regionally equitable development strategy for rural infrastructure and services development with increased emphasis on operation and maintenance of physical assets to ensure their longer term performance.

6.2 Increasing Importance of Non-farm Income

23. With low productivity and growth in agriculture, the *non-farm* sector has increasingly gained importance as a *source of income* and employment in rural areas. The non-farm sector generated 67 percent of rural employment in 2003. A quarter of those employed in the sector are self-employed in non-farm enterprises, the remaining work in non-farm salaried or wage work. Not only does the sector generate a large number of rural jobs, but it also contributes substantially to household income. More than half (52 percent) of the per capita income of the average rural household comes from non-farm earnings. Even agricultural households are highly dependent on non-farm incomes and the share of their income from non-agricultural activities (41 percent) exceeds the contribution of agricultural incomes (32 percent).[9]

24. The relative importance of *agricultural incomes*, however, differs considerably by type of farmer. Agricultural incomes account for over 40 percent of incomes for farmers growing higher value crops like tea, rubber, fruit and vegetable. By contrast, it accounts for only 32 percent of incomes of paddy farmers.[10] Paddy's lower value likely increases the necessity for paddy based households to rely on non-farm activities as a supplemental source of income.

25. The growth of the rural *non-farm* sector has significantly contributed to the reduction in rural *poverty*. The poorest rural households are heavily dependent on non-farm incomes. Among the poorest 10 percent of rural people, the average household derived about 44 percent of their per capita income from non-agricultural wages, salaries and enterprise earnings (Table 6-1). Data from the HIES suggest that ownership of and/or employment in a rural non-farm enterprise are associated with significantly higher levels of welfare. As mentioned earlier, the incidence of poverty among rural non-agricultural households is considerably lower than that among households engaged in agriculture. Among rural households owning and operating a non-farm enterprise, the poverty rate is 13 percent, compared to a poverty rate of 23 percent for households without a non-farm enterprise. Households operating a non-farm enterprise have monthly per capita incomes that are about 20 percent higher than those who do not.

26. In coming years, the rural non-farm sector will have to generate a high number of jobs for the growing labor force. In 2003 the size of the labor force was roughly 7.2 million workers. About 12 percent of workers are employed in urban areas, 82 percent in rural areas, and the remaining 6 percent in

[9] See Annex, Table A6.4
[10] See Annex, Table A6.4

the estate sector. Each year nearly 106,000 people are added to the labor force in Sri Lanka. Much of this growing labor force will continue to live in rural areas.[11] As the opportunity for further employment expansion in the agricultural sector is limited, expansion of employment and productivity in non farm activities will be essential to absorb this growing labor force.

Profile of the Rural Non-farm Enterprise Sector

27. According to recent estimates, there are approximately 620,000 rural non-farm enterprises scattered throughout the country. Most of these rural enterprises are involved in production/manufacturing (41 percent) or trading (38 percent), with a far smaller proportion in services (21 percent). Approximately 10 percent are engaged in manufacturing and the sale of processed agricultural goods. Important rural manufacturing industries include garments, non-metallic mineral products, furniture, and wood products. Most trading enterprises are engaged in selling processed (65 percent) and unprocessed agricultural products (57 percent), and only about 5 percent sell agricultural inputs. The main service related enterprises include repair services (24 percent of service-related enterprises), followed by personal services at 17 percent (including barber shops, beauty salons etc.) and hotels/restaurants (14 percent).

28. The typical rural enterprise is a micro-enterprise employing, on average, about 2.4 workers including hired workers and family members. Almost half the workforce in rural enterprises comprises of family labor (60 percent of workers in trading enterprises, 50 percent in services and 42 percent in production are family labor). Production-based enterprises tend to be larger with 3 workers on average while traders work alone or in partnership with one other person. Only 6 percent of rural enterprises have more than 5 workers. The average rural enterprise is relatively young, having been in operations for about 9 years. More than half (59 percent) of these enterprises operate as stand-alone establishments, with the main place of business found outside the family homestead.

Constraints to Rural Non-farm Enterprise Growth

29. Because of the economic benefits rural households can derive from participating in the non-farm sector, addressing factors to promote its development will have far-reaching implications for poverty reduction. In a recent survey of the investment climate in Sri Lanka, rural entrepreneurs identified top *constraints to doing business* as poor quality and availability of transportation, poor access and high cost of finance, limited access and unreliable supply of electricity, marketing difficulties, and poor coverage in telecommunications (Figure 6-4).

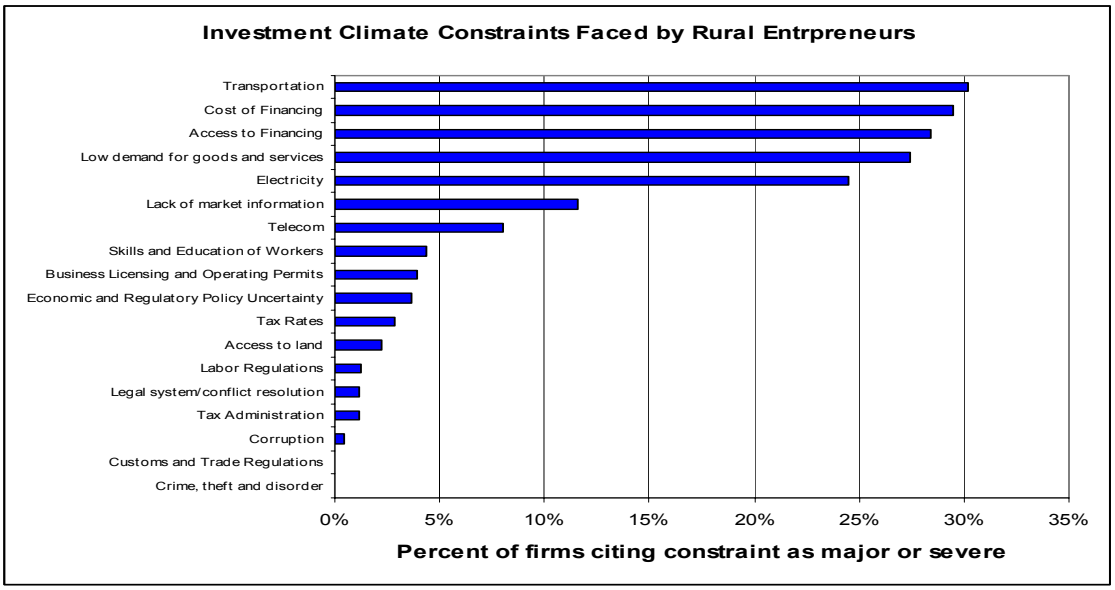
30. While the *ranking of constraints* differs by province, there is consistency across provinces in terms of the top 7 constraints identified as major business obstacles (Annex, Table A-6.5). But the relative importance of the obstacles faced does vary with the type of enterprise. For example, when asked about the single most important constraint they faced, electricity was identified as the most important obstacle by a larger proportion of production and service enterprises (31 percent and 27 percent) as compared to trade-related enterprises (19 percent), who seem more affected by lack of market demand (16 percent) and lack of financial infrastructure (14 percent). Separating firms by age suggests that financial infrastructure, lack of market demand and, to a lesser extent, road access are of greater importance for startups than for older and well-established enterprises. These factors, especially finance and road access, are also perceived as more important constraints by small stand-alone enterprises as compared to larger ones.

31. Together, these obstacles identified by rural firms also have a negative impact on productivity, level of investments made by existing firms, and discourage the start-up of new enterprises. Analysis of the impact of business obstacles on the productivity of firms suggest that, in order of priority, addressing constraints in electricity, financial infrastructure, market demand and information, and road access, would

[11] Between 1998-2003, 58% of the new entrants lived in rural areas.

have the highest impact on productivity. There is also evidence to suggest that larger rural enterprises are able to deal with the constraints imposed by poor infrastructure than small ones (Jin et al, 2005).

Figure 6-4: Constraints Rated as Major or Severe Problems by Rural Entrepreneurs



Source: ADB & World Bank, 2005..

32. *Linkage between the business constraints and poverty incidence*: Since the non-farm sector constitutes a significant part of rural economy, the constraints for non-farm enterprises may be closely associated with poverty incidence. In fact, this is the case in Sri Lanka for most of the business constraints identified above. As shown in Chapter 3 (Table 3-7), better access to markets and banks, proximity to Colombo, and higher penetration of electricity are all closely associated with lower poverty incidence. On the other hand, coverage in telecommunication is an exception: even though business communities in rural areas identify poor coverage in telecommunications as a constraint for rural non-farm enterprises, there is no clear indication that poor coverage is associated with high poverty incidence.

Table 6-5: Transport Facilities and Rural Access

Province	Share of enterprises in GNs where road improvements have taken place in the past 5 years	Average Distance to the nearest city (Km)	Average Travel time to the nearest city by main means of transport (minutes)	Average Distance to the nearest commercial center (Km)	Average Travel time to the nearest commercial centre by main means of transport (minutes)
Western	47%	5	24	5	23
Central	63%	10	55	5	22
Southern	72%	3	25	13	41
North Western	51%	6	22	6	20
North Central	44%	8	36	7	29
Uva	51%	15	72	16	70
Sabaragamuwa	57%	4	23	18	59
North Eastern	47%	9	34	5	23
Total	54%	7	31	8	31

Source: ICS, 2004.

33. *Transport:* Even though, on average, enterprises are located within 10 kilometers of the nearest city or the nearest market, because of the poor road conditions travel times are extremely slow resulting in the largest number of rural entrepreneurs identifying transportation problems as a major or severe

obstacles to doing business (Table 6-5). Thirty-six percent of rural enterprises identified road quality as being a major or severe constraint, 33 percent complained about access to roads and an additional 32 percent about absence of available transport. Twenty-nine percent of enterprises are located in communities without public transportation to the main market and about 13 percent are in communities without public transportation to the nearest city. This greatly contributes to marketing difficulties as 47 of rural entrepreneurs do not own their own vehicles.

34. *Finance:* The high cost and poor access to finance closely follow behind transport as a key constraint to rural enterprise performance and growth. Close to 30 percent of entrepreneurs identified cost of finance as a major or severe problem and 29 percent rated access to finance as a problem. A separate survey on small and medium enterprises (SMEs) conducted by the Asian Development Bank (ADB) in 2003 found that 64 percent of all enterprises cited the availability of credit to be a serious constraint to expanding their businesses; and 73 percent cited the interest rate on loans to be a constraint. More than 50 percent of such firms viewed access to equity capital as a major or significant constraint (as cited in World Bank, 2005d).

35. Most rural firms have very limited access to financing from private commercial banks. Less than 12 percent of rural firms apply for loans to these institutions compared to 41 percent from state commercial banks and Samurdhi. The smaller the enterprise, the less likely it is to access financing from private commercial banks. Access to formal finance is especially restricted for investment purposes with internal sources (cash in hand) providing the biggest share of investment (43 percent) followed by family and friends (35 percent). Trade finance appears to be an important source of working capital with nearly 31 percent of rural enterprises purchasing goods on credit. The share of financing from moneylenders is relative limited with rural enterprises primarily using this type of financing for liquidity management purposes.

36. *Collateral* is often critical to the availability of finance. Almost a quarter of loans to rural enterprises required collateral, and land is offered in 75 percent of these transactions. When loan applications from non-farm rural enterprises are rejected, lack of collateral is by far the most important reason. Unfortunately, there are many obstacles to using land as collateral in Sri Lanka as identified in the earlier section on land. While the Government has taken steps to strengthen the enabling environment for financial institutions to expand financing to small enterprises, a number of regulatory, institutional, and market failures remain. The most critical regulatory weaknesses and institutional problems preventing lending to small enterprises include: (i) deficiencies in debt recovery legislation; (ii) incomplete land ownership and titling; (iii) absence of efficient charge registries over movable collateral; (iv) limited availability of credit information; and (v) a weak regulatory framework for asset-backed securities. In addition to these obstacles to access credit, equity financing sources are very limited (World Bank, 2005d).

37. There are several avenues through which *access to financing opportunities for small rural businesses* could be *expanded*. These include: (i) developing a conducive environment for lending through macro economic stability and a supporting legislative and regulatory framework, in particular strengthening creditors' rights; (ii) encouraging the formal financial sector to move down market, into higher risk markets, through support from government in defraying their cost of entry, e.g., through partial credit guarantees; (iii) the government and financial institutions could partner in the development of new financial products better suited for small enterprises – credit scoring, reverse factoring, and other export financing products; (iv) the government and financial institutions continuing their joint efforts to modernize the credit information bureau to mitigate market information asymmetries; and (v) providing more opportunities for financial and management training and education of small entrepreneurs.

38. Lack *of market information and isolation from supply chains* also constitute important barriers to the success of small rural firms. About 27 percent of rural enterprises complained about low market demand being a major or severe constraint and 11 percent complained about lack of adequate market

information. Inadequate market information can cause businesses to sell into local markets where prices may not be optimal or to miss opportunities in markets where growth prospects are greater. Many owners of small businesses recognize their lack of market information to be a serious obstacle The ADB survey on SMEs (2003) found that nearly 60 percent of the owners viewed market opportunity to be a serious barrier to their growth. In the investment climate survey less than 2 percent of all rural enterprises used any type of marketing assistance to sell their goods and services.

Box 6.1: Strengthening Supply Chains

Uncoordinated and highly fragmented supply chains are a factor limiting the access of many rural small holders and enterprises to wider and more remunerative markets. Well-coordinated supply chains provide many advantages including access to improved technology, financing, and information on market requirements and facilitate expansion into higher value products and new market outlets. The loss of potential opportunities due to fragmented supply chains and the benefits to be gained by strengthening these chains are well illustrated by the experience of the spices sector in Sri Lanka.

There are over 200,000 small scale growers involved in cultivation of spices in Sri Lanka and several thousands more involved in trading, shipping and processing spices. The main spice crops include cinnamon, pepper, cloves, cardamoms, nutmeg and mace. The main markets for Sri Lanka's spice exports are India, Mexico, USA, Peru & Colombia. In 2003, the value of Sri Lankan spice exports was equivalent to 1 percent of total national exports, 7.6 percent of agricultural exports, and 50 percent of the value of agricultural exports other than tea, coconuts, and rubber. Following a steady increase in exports earnings during the 1990s, cinnamon has now become the third largest export crop, next to tea and coconut.

Production of spices is dominated by many small holders and some family owned plantations. Produce sold by farmers then passes through the hands of a large number of intermediaries as it moves from village collectors to town and district collectors who in turn sell to brokers/agents. From the brokers/agent the product then moves on to the packer/processor and is eventually sold to retailers or exporters. The large numbers of intermediaries contributes to large post harvest losses and uneven quality as product moves through the supply chain slowly. Linking processors and packers to the farmers is becoming increasingly important in order to shorten these chains and ensure that quality standards required for export markets are met. A recent study of the spices sector found that a sizeable portion of production fails to meet international standards and exceeds acceptable standards for mould and aflatoxin. Several factors were identified as contributing to the problem including improper harvesting, the processing technology (unfavorable drying systems) and poor storage facilities (most use unhygienic and improper storage methods such as storing in gunny bags with no proper treatments to prevent mould development or infection from other microbial organisms).

Financing options for small holders are limited consisting largely of short-term credits, thereby limiting their ability to upgrade their knowledge, infrastructure or buy new planting material. Linking farmers to end users would also potentially open up new opportunities for establishing longer-term contracts, which in turn could support the provision of longer-term credit facilities to farmers based on sales contracts (e.g., forward sales) and also significantly improve technology transfer within the sector.

There is also considerable scope for greater value addition in the spices sector through processing and branding. Cinnamon, pepper, and other spices are largely exported in bulk form with almost no value addition. To highlight the potential gains from strengthening the value chain, the global trade in spices (excluding internal consumption) is worth close to US$ 5 billion, with up to 90 percent of the produce used in processed forms. Value addition ranges from three times to 30 times the price of the raw spice collected at farm level. A few initiatives are underway to connect end users (exporters and processors) to farmers including projects by GTZ and USAID. Expanding these activities within the spices sector and beyond will go a long way in improving access to markets, financing and opportunities for greater value addition for rural businesses.

Source: World Bank, 2005b, Herath, 2001 and http://www.competitiveness.lk/spice.htm

38. Long and fragmented supply chains are one of the major challenges confronting rural enterprises (Box 6.1). Very few firms appear to be integrated into well-coordinated supply chains, limiting access to new technology, financing options and wider markets. The vast majority of firms sell their goods directly to consumers or traders in their own district and only a few firms sell their products to multinational

parent companies or larger urban firms. Less than 10 percent of all rural firms report selling under sub-contracting arrangements that potentially would provide them with access to wider markets.

39. Evidence from other countries suggests that participation in business organizations and local chambers of commerce could potentially strengthen marketing channels allowing businesses to share information on prices, quality standards and obtain technical, financial and organizational services for greater value addition. However, in Sri Lanka, participation in these business associations is very limited among rural entrepreneurs. Only about 8 percent of enterprises are members of any form of business association, 4 percent are members of a chamber of commerce and similar fractions are members of trade specific or general business associations. Participation is more frequent among larger rural firms with 23 percent of firms with more than 5 workers reporting membership in a business association compared to 6 percent of firms with between 1-2 employees.

40. Addressing the marketing problems faced by rural entrepreneurs will require mobilizing support to strengthen producer organizations, addressing infrastructure bottlenecks, strengthening business associations, linking producer organizations with associations, and improving access to financial resources, particularly longer terms financing that will allow firms to innovate, develop new products and reach out to a wider consumer base.

41. *Electricity:* Almost a quarter of rural entrepreneurs cited electricity as a major or severe problem and a similar proportion single it out as their most important constraint. Access to electricity remains a challenge in many communities, and even among enterprises with access, reliability of supply and the high price of electricity are problems. Electricity is heavily concentrated in urbanized areas such as the Western province which enjoys over 80 percent coverage, leaving rural areas such as Uva province grossly under-served with less than 40 percent coverage. Poor power supply exposes firms to frequent outages increasing production costs and tying up significant resources to produce their own power, resources that could be productively engaged in their core business. Just below 70 percent of rural enterprises use electricity from the national grid. The vast majority of these firms reported experiencing power surges or outages; half the firms with access to the grid reported that the longest power outage in a typical month lasted more than 2 hours.

42. Addressing the power problem will give rural businesses a tremendous boost particularly the rural manufacturing sector, which is the segment that generates more jobs than trade or service oriented businesses. In the medium term, increasing electricity access in rural areas will require transparent and efficient mechanisms of subsidy for rural electrification; (ii) improving quality and reliability of power supply through priority investments in transmission and distribution system; (iii) reducing the fiscal burden of power sector – phased reduction of capital and operating subsidies; (iv) attracting private sector investment in utility operations for sustainable efficiency improvements; and (v) promoting renewable energy such as solar, hydro, biomass and wind resources as part of the national energy strategy (ADB & World Bank, 2005d).

6.3. Concluding Remarks

43. About 60% of rural households in Sri Lanka are agricultural households. The poverty rate among rural agricultural households is significantly higher than that for non-agricultural households, and the poorest rural households are more dependent on agriculture as a source of income. A more rapid reduction in rural poverty has been hampered by the slowdown in agricultural growth and the slower growth in incomes in rural areas.

44. With low productivity and growth in agriculture, the non-farm sector has become an increasingly important source of income and employment in rural Sri Lanka. The non-farm sector generated 67 percent of rural employment in 2003. More than half of per capita income of the average rural household is made up of non-agricultural wages and earnings from self-employment in non-farm enterprises. Even agricultural households are highly dependent on non-farm incomes and the share of their income from

non-agricultural activities exceeds the contribution of agricultural incomes. Rural households that own and operate a non-farm enterprise have a significantly lower poverty rate compared to those without a non-farm enterprise.

45. Raising agricultural productivity and expanding non-farm income opportunities offer avenues of increasing employment and incomes and further reducing poverty in rural areas. Fostering more rapid agricultural productivity growth and rural development in the future will require strong commitment to removing the policy and regulatory restrictions so that those who choose to remain in agriculture can raise their productivity. In the short to medium term, key to promoting increased agricultural productivity and incomes would be adopting policies to ease farmer access to improved technologies, creating a more transparent and stable trade policy regime, allowing full and transferable ownership rights to land, and ensuring the sustainable use of water.

46. Poor transportation, problems with accessing finance and the cost of finance, access and quality of electricity supply, and marketing difficulties pose major obstacles for rural non-farm enterprises. Given the importance of non-farm income for rural households, these constraints would explain why certain location-specific characteristics (like accessibility and electricity use) correlate well with the pattern of regional poverty in Sri Lanka (Chapter 3). Addressing these constraints will be important for improving the productivity and growth of these businesses and encouraging the start-up of new enterprises in rural areas. This will entail improving the access to and quality of energy and transport; improving access to finance by developing a conducive environment for lending to small enterprises, through the development of new financial products better suited to small enterprises, modernizing the credit information bureau and providing more opportunities for financial and management training and education of small entrepreneurs.

47. There is also a need to facilitate better access to markets and marketing information for rural entrepreneurs by strengthening producer organizations and business associations and linking these organizations and association together. Strengthening the regulatory framework for contract enforcement and making lower-cost dispute resolution easier are also critical for raising private sector participation and investments that will be critical for promoting growth in rural areas.

7. Social and Economic Situation in the Conflict Affected North and East

1. Sri Lanka's over two decades of conflict have had far-reaching economic and social repercussions. Over 65,000 people have died, nearly a million citizens displaced, private and public properties and economic infrastructure have been destroyed, local economies and community networks have been disrupted, and health and educational outcomes have deteriorated in certain districts. The Central Bank estimates the macroeconomic impact of the conflict has cost the country 2-3 percent of GDP growth annually.[1]

2. While the conflict has affected the entire country, the North and East have taken the brunt of the impact. The conflict has dampened economic growth in this region more than anywhere in the country, and these areas have fallen behind in terms of health and education outcomes and access to economic infrastructure and financial services. The tsunami that struck Sri Lanka in December 2004 also post additional challenges given that the districts of Ampara and Batticaloa in the East have sustained the most in damages. At the same time, recent (although with incomplete geographic coverage and unadjusted for prices) information from CFSES indicates that per capita income and consumption levels in these provinces, are similar to those in other provinces of Sri Lanka with the exception of Western Province. Significant remittances to the populations of the North and East may have contributed to safeguarding income and consumption levels to a certain extent.

3. By most indicators of welfare and human development, the North and East therefore represent one of the most lagging regions in the country, where vulnerabilities due to the conflict and now the tsunami have resulted in a special set of challenges. Reducing regional inequalities in Sri Lanka will therefore require first identifying, and then designing policies to address the unique set of conditions that are responsible for the gaps between the conflict areas and the rest of the country.

4. The cessation of hostilities following the Ceasefire Agreement signed in February 2002 has spurred a remarkable economic recovery in the North and East. Real GDP growth in the Northern Province increased four-fold to 12.6 percent while that of the Eastern Province doubled to 10.1 percent. Unemployment significantly dropped from 13 to 9 percent in the North and from 16 percent to 10 percent in the East from 2002 to 2004. Meanwhile, economic growth and unemployment have stayed relatively the same in the rest of the country.

5. However, significant constraints remain that threaten sustained high growth in the North and East, which is key to poverty reduction, including: (i) poor availability and access to financial services, (ii) poor access and quality of economic infrastructure (roads, telecommunications, water), (iii) high taxation by the LTTE on goods and incomes in the North and East, (iv) time restrictions on the use of the A9 highway, (v) fishing restrictions, (vi) limits on mobility in certain areas such as Jaffna, and (vii) out-migration of the educated abroad or to the rest of the country.

6. The Ceasefire Agreement has also opened up opportunities for policy interventions to address poverty and vulnerability in the region. The recent expansion of the Samurdhi program to the Northern districts (starting with Jaffna and Mannar), a national program that provides cash transfers to the poor, is a step in the right direction to reduce vulnerability (see Chapter 2). There is also a strong need for analysis to identify the key constraints to economic opportunities and human development, to inform the design of policies that seek to raise incomes and improve living standards. But such analysis proves to be especially difficult due to the paucity of household survey information with adequate coverage and representation for this region. In the absence of such data, this chapter will attempt to provide a comprehensive a picture of the economic and welfare situation in the North and East, to the extent that is possible using available sources of survey data and smaller studies conducted by different organizations. While such analysis will not be able to identify fully the proximate causes of poverty, it will indicate how

[1] Central Bank of Sri Lanka. Annual Report 1998.

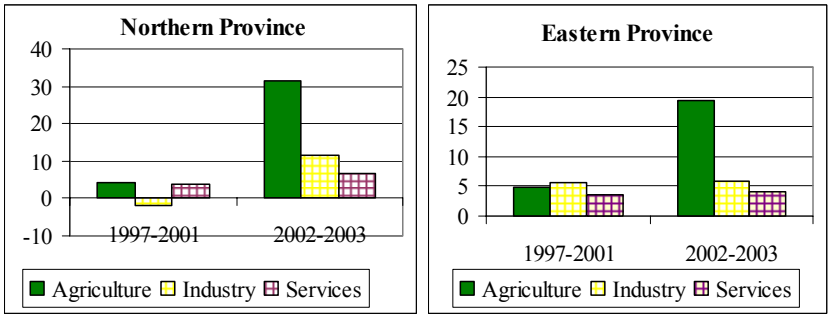
the region compares to the rest of the country along various dimensions of welfare, and what therefore are likely to be the major challenges to the region's development.

7.1. Peace Dividends Following the Ceasefire in 2002

7. The civil conflict reached a positive turning point in February 2002 when the Government of Sri Lanka and the Liberation Tigers of Tamil Eelam (LTTE) rebels signed a Memorandum of Understanding (MoU) that brought in a ceasefire between the two sides. This has been the longest truce between the two sides to date. Prior to the Ceasefire, the GoSL imposed economic embargo since 1990 on over 60 consumer goods including fuel, food, and medicines on the rebel-held areas in the North and East was lifted in January 2002. The A9 highway, which linked the districts in the North with the rest of the country, was also rehabilitated reopened in April 2002. These developments resulted in the improvement of security and mobility of persons and goods from the rest of the country to most of North and East and vice versa.

8. The Ceasefire also presented national agencies like the Central Bank and the Department of Census and Statistics the first opportunity during the last two decades to collect household data from some of the conflict-affected areas. While these efforts go some ways towards filling the gap in information, they are still partial in terms of coverage because some areas remain insecure. In the absence of representative data for all areas in the North and East, estimates of consumption, poverty and other indicators of well-being cannot be computed, making it difficult to compare trends and patterns of these indicators with those of the rest of the country. From the information that is available from these data sources, as well as other studies conducted by different agencies in recent times, this chapter will attempt to draw some preliminary conclusions about the economic and welfare situation in the North and East, compared with what is seen for the rest of the country. The chapter will also place these indicators of welfare in the broader context of the economy of the region, and the recent developments brought about by the cessation of conflict since 2002.

Figure 7-1: GDP Growth 1997-2003



Source: Impact of the Ceasefire Agreement on Regional Economic Growth in Sri Lanka, SCOPP Web Release.

9. *Provincial GDP growth:* Using the Central Bank provincial GDP data the Peace Secretariat found that GDP of the Northern Province quadrupled from an average of only 3.4 percent during the pre-ceasefire years (1997-2001) to 12.6 percent during the post-ceasefire years (2002-2003); while that of the Eastern Province more than doubled from 4.6 to 10.1 percent (Figure 7-1). Furthermore, GDP in the North-Central Province, which shares borders with the North and the East, increased by 8.2 percent per annum in 2002-2003 compared to a contraction of 0.2 percent per annum in 1997-2001.

10. However, the rapid expansion of economic activity in the Northern, Eastern, and North-Central provinces has not had a more significant impact on overall national economic growth. The rest of the provinces have also not experienced significantly different GDP growth rates during the post-ceasefire period. This is because the Northern, Eastern, and North-Central provinces combined do not make up a significant portion of national GDP. During 1996-2003, the collective contribution of these three provinces to national GDP was around 11-12 percent although they make up almost one fifth of the total population. By contrast, Western Province contributed 43-49 percent of national GDP and makes up only 28 percent of the population.

11. *Agriculture and Fishing:* The engines of growth during the post-ceasefire period in the North and East were agriculture and fishing. In 2002-2004, the agriculture sector expanded by an average of 32 percent per year in the Northern Province and by 19 percent in the Eastern Province, compared to 4.3 and 4.9 percent, respectively, during 1997-2001. Paddy production more than doubled in Northern Province from an average of 65,000 tons during 1997-2001 to 138,000 tons in 2002-2003, and significantly increased in Eastern Province from an average of 619,000 tons to 752,000 tons during the same period. The combined share of the North and East in national paddy production increased from 27 percent in 1997-2001 to 31 percent in 2002-2003.

12. Given that the farming community in the North and East consists largely of smallholders, this growth is likely to be broad based and pro-poor. Unfortunately, there is no poverty trend data to verify this hypothesis at this time. However, the next round of HIES by the DCS, scheduled for 2006/07, may be able to provide poverty estimates for the North and East in future – although that will depend on the security environment in the region being conducive for such a survey.

13. *Other sectors* of the economy in the North and East (industry and services) have also shown growth after the ceasefire. Growth in industries, for example, has averaged 11.6 percent annually during 2002-2003 compared to an average contraction of 2 percent per year in 1997-2001.

14. In terms of *investments*, in addition to increased investments in economic infrastructure by donors and on social sectors by the government after the ceasefire, private investments have also risen. Unfortunately, comprehensive data on pre and post ceasefire investments in the North and East are not available. However, in some sectors such as banking, retail trade, and communications, there are clear signs of increased investments in the North and East beginning in 2002. In the communications sector, for example, the largest private cellular company Dialog did not operate in the areas under LTTE control prior to the ceasefire. Dialog has since invested over a million dollars in its infrastructure network in the North and East. Of its total 1.5 million mobile customers, 250,000 or 17 percent are now from the North and East. This is significant considering that only about 13 percent of the population in Sri Lanka currently resides in the North and East.[2]

Impact of the Ceasefire on Labor Force Trends

15. There have also been significant developments in the labor force in the districts in the North and East since 2002. *Unemployment:* Although the unemployment rate in the districts in the North and East remains higher than the national average (8.4-11.5 percent in the districts in the North and East compared to 8.3 percent nationally), the trend is encouraging. Unemployment fell from 13 to 9 percent in the North and from 16 percent to 10 percent in the East from 2002 to 2004 (Tables 7-1 and 7-2).

16. *However, labor force participation rates* in the North and East remain low. The labor force participation rate was 34 percent in the North and 40 percent in the East in 2002. The corresponding figures for 2004 varied around 36 to 46 percent. In comparison, the corresponding national labor force participation rates were 50 percent in 2002 and 49 percent in 2004 (LFS 2002 and 2004).

Table 7-1: Labor Force Statistics (%) 2002

Province	*Labor force Participation*	*Unemployment Rate*
Northern (part)	33.8	13.0
Male	54.6	6.9
Female	15.7	31.5
Eastern	40.3	15.9
Male	63.6	9.3
Female	18.0	38.0
National Excl North and East	50.3	8.8
Male	67.9	6.6
Female	33.6	12.9

Source: Labor Force Survey (LFS) 2002, Department of Census and Statistics.

[2] Peace Secretariat Impact of the Ceasefire Agreement on Regional Economic Growth in Sri Lanka (2004)

17. *Sectoral shares in employment:* The employment by occupational group in the North and East mirrors the trend in the country. About 27 percent of those employed in the North are skilled agricultural and fishery workers, 25 percent are in elementary occupations, and 14 percent are craft and related workers. In the East the respective numbers are 30, 20 and 14 percent respectively; whereas nationally they are 20, 26 and 15 percent, respectively (LFS 2004).

18. *Employment and gender:* The new jobs created in the North and East recently tended to benefit men disproportionately. The female unemployment rate in many districts in the North and East remains significantly high. About 44 percent of the women in Mulaittivu, 30 percent in Vavuniya, 24 percent in Jaffna, and 23 percent in Batticaloa were unemployed in 2004 (Table 7-2).

Table 7-2: Labor Force Statistics (%) 2004

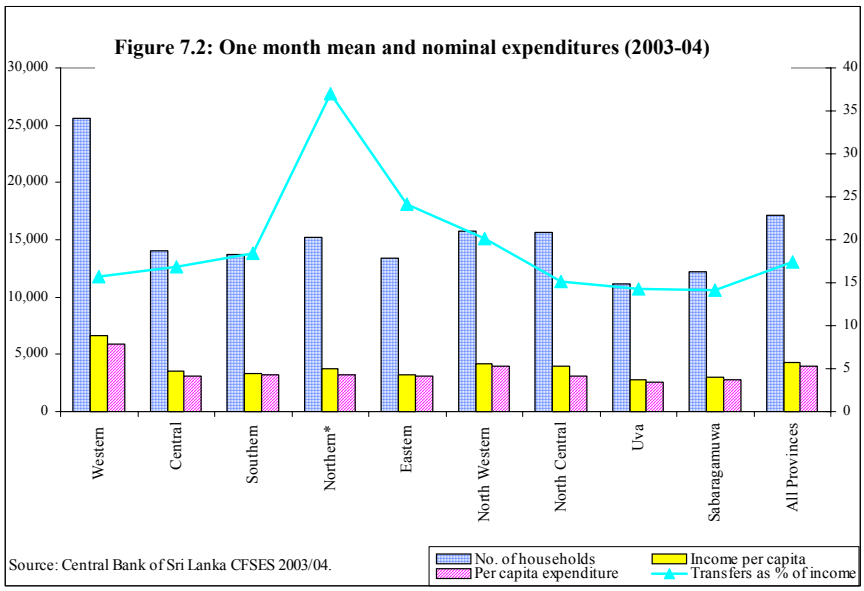
	Labor force Participation	*Unemploy-ment*
National	*48.6*	*8.3*
North		
Jaffna	36.2	9.7
Mullaitivu	36.3	11.3
Killinochchi	40.3	8.5
Mannar	39.3	-
Vavuniya	38.0	11.1
East		
Batticaloa	41.4	10.6
Ampara	46.1	11.5
Trincomalee	38.1	8.4

Source: Department of Census and Statistics Labor Force Survey 2004.

19. *Education and unemployment:* Job creation in the region has not catered to the more educated who have moved back to the North and East recently. As a result, unemployment is very high for the educated (completed GCE A.L./HNCE and above) – at around 29 percent compared to the national average of 17 percent in 2004 – and the educated are now the most likely to be unemployed in North and East. Unemployment for women who have completed GCE A.L. and above in 2004 is even higher – 45 percent in the North and 38 percent in the East (compared to 24 percent nationally). The fact that in 2004 unemployment in the North and East was highest among the most educated group in the labor force is in complete contrast to 2002, when unemployment was highest for workers who had less than 10 years of schooling (45 percent in the North and 43 percent in the East).

Income and Consumption Levels

20. Now turning to income and consumption levels, significant transfers to the populations of the North and East seem to have contributed to safeguarding income and consumption levels (Figure 7-2).[3] Transfers constituted 37 percent of the total incomes of households in the North and 24 percent in the East, while the average for all provinces was only 18 percent in 2003/04 (Figure 7-2). As a result, the average monthly income of households in the North in 2004 is very similar to other provinces with the exception of the richer Western province. The monthly incomes in the East, on the other hand, are much lower and comparable to that of the poorest provinces of Sabaragamuwa and Uva (Figure 7-2).



[3] The CFSES 2003/04 survey of the Northern province excludes Killinochchi, Mannar, and Mullativu.

21. Although both the Central Bank and the DCS attempted to cover the North and East in their household surveys since 2002, large parts of the North and some parts of the East still could not be covered due to security constraints. Therefore, since the DCS was not comfortable with the sampling and the data collected from the North and East, this data was not considered suitable for analysis. The CFSES 2003/04, on the other hand, does provide some data on the North and East. Since the CFSES data is not comparable with the HIES, based on which the poverty line for Sri Lanka has been drawn, comparable poverty estimates could not be calculated for the North and East. However, the CFSES does yield measures that are rough *proxies* for welfare – like income and consumption levels, savings and borrowing patterns, and housing conditions – that serve points of comparison between North and East and the rest of the country. The CFSES also does not include a significant part of the North (about 25 percent of areas) where income and consumption levels are likely to be lower. As a result, the data for the North is heavily weighted towards Jaffna and has a strong urban bias. In addition, the CFSES being a household survey did not cover families still living in camps that are likely to be worse off.[4] Thus, estimates for the North and East from the CFSES are likely to *over-estimates.*

22. Moreover, it bears highlighting that the per capita income of the North and East is not comparable to other provinces in the country in terms of purchasing power because of *higher prices of commodities* in the North and East**.** Extra taxes, higher transport costs, and monopolization of trade in certain essential goods fuel these higher prices. There are no consumer price indices for the districts of the North and East at present. However, spot checks on commodity specific prices indicate that a basket of minimum essential commodities would cost much more in the LTTE held areas (particularly the North) compared to the rest of the country.[5] Thus, the real per capita income in the North may be overestimated.

23. The monthly *per capita expenditure* in North and East is very similar to that of other provinces with the exception of the Western and North Western provinces (Figure 7-2). Notably, households in North and East, like those in the poorest provinces of Uva and Sabaragamuwa, spend a significant share of their income on food (around 43 percent). This again may be due to the fact that the prices of commodities in the North and East tend to be higher than the rest of the country, and indicate that North and East households are poorer than what their nominal expenditure levels indicate.

24. *Housing Conditions:* A comparison of housing conditions and facilities is also useful in gauging the well-being of the population. The CFSES suggests a mixed picture on this front, although the results may again reflect an urban bias for the North (see Table A-7.4, Annex). Like many of the other districts, a large proportion of households in the Eastern province (92 percent) own their own houses. However, this proportion is much lower in the North (63 percent) and is in fact the lowest in the country. The houses in the North and East tend to be smaller and more congested, but built with good quality inputs compared to the rest of the country. Thus based on quality of housing, the North and East do not seem to lag significantly behind the rest of the country.

7.2. The Economies of the North and East

25. Although significant transfers maintained the income and consumption levels in the districts in the North and East, these economies have remained underdeveloped throughout the decades of conflict. Although the North and East combined made up about 14 percent of the population in the island in 2003, the economies of North and East together contributed only 8 percent of national GDP (Table 7-3).

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[4] See Table A-7.3, Annex for statistics on population living in refugee camps due to conflict and/or tsunami

[5] For instance, the price of LP gas (12.5 kg cylinder) was around 38 percent and 35 percent higher in Jaffna compared to Vavuniya during May and June 2005, respectively. The price of petrol was 12 percent higher and diesel 11 percent higher in Jaffna compared to Vavuniya. In Mannar district, during May 2005, the price of a bag of cement was Rs. 520 in government held territories whereas it was Rs. 630 in rebel held territories.

Sectoral Composition

26. The predominance of services and agriculture and fishing sectors (33 to 42 percent of North and East GDP) in the North and East has not changed during the past two decades. The *industrial sector*, on the other hand, has always been very small in the North and East. In 1983, about 10,000 industrial units employed approximately 50,000 people and by 2003, 12,000 units employed only about 45,000 people.[6] Although the services sector makes up about half of the economy of the North and East, since it is dominated by micro-enterprises, information on specific activities within this sector is not available.

27. Although *agriculture and fishing* sector continues to make up a significant part of the economies of the North and East, the importance of the sector nationally has eroded during the conflict years. Before the conflict paddy, onions, chillies, tobacco, fruits, dairy products, and fish were sold in significant quantities to other parts of the country. However, due to transportation difficulties and the trade embargo commercial agriculture in the North and East was transformed into subsistence agriculture.

28. Paddy, as is the rest of the country, is the major agriculture produce of the North and East. Paddy production accounted for almost one third of total paddy production in the country in 1980. However, this share had shrunk to less than a quarter in 2000. Following the Ceasefire, paddy production in 2002 more than doubled in the North and more than tripled in Batticoloa district in the East (see Table A-7.1, Annex).

29. Fishing has historically been a major economic activity in the North and East especially for Jaffna. In 1980, more than half of the total fish catch in the country was from the North and East (56 percent). However, this scenario has dramatically changed during the past decades, mainly because of time and distance restrictions on fishing imposed on security grounds. The region's share in the total fish catch of the country dropped to 33 percent by 1990, and to just 16 percent in 2000. Encouragingly, when fishing restrictions were relaxed in 2002 following the Ceasefire, the share of North and East almost doubled to 31 percent in 2002 from 2000 (see Table A-7.2, Annex).

Table 7-3: Provincial GDP and Population Shares 1990-2003

Province	1990	1995	2000	2001	2002	2003	Population Shares 2003
Central	12.1	11.7	9.4	9.4	9.4	8.9	12.9
Eastern	*4.2*	*4.6*	*4.5*	*5*	*4.9*	*5.5*	*7.9*
North Central	4.8	6.3	3.9	3.7	3.9	3.9	5.9
Northern	*4.4*	*3.1*	*2.2*	*2.4*	*2.6*	*2.7*	*5.7*
North Western	11.1	9.6	10.4	10.7	10.1	9.4	11.4
Sabaragamuwa	8.1	7.7	6.7	6.4	6.9	6	9.5
Southern	9.5	9.5	9.4	9.7	9.7	9.8	12.1
Uva	8.1	7.7	3.9	4.6	4.3	4.4	6.3
Western	40.2	42.3	49.6	48.3	48.1	49.4	28.4

Note: Northern Province excludes Kilinochchi, Mannar, and Mullaitivu districts.
Sources: Central Bank of Sri Lanka (2005), Sri Lanka Socio Economic Data 2005, Colombo, pp35.
Columns 1 & 2 – Department of National Planning cited in Sarvananthan (2004: 55).

Poor Economic Infrastructure

30. *Roads:* Like some of the other poorer areas in the country, the North and East also suffer from a severe lack of economic infrastructure that is critical to support economic growth and reduce poverty. Although several 'A' and 'B' class roads have been rehabilitated in the past four years, several rural roads are yet to be rehabilitated. The inadequacy of the roads network is reflected in the low accessibility

[6] Census of Industries 2004 (DCS).

potential in the region (see Figure 3-6, Chapter 3). The quality of roads in the North and East are also likely to be poorer than in the rest of the country due to years of inadequate expenditures on maintenance. However, information on quality of roads is currently not available.

31. Even where roads are available, lack of adequate transport facilities deprive people in the interior from accessing markets for their produce. For example, in the Vanni region of the North there is only a skeleton bus service connecting various towns and villages. While there is a frequent bus service between Omanthai (Vavuniya) and Muhamalai (Jaffna), no bus serves the interior routes. There are also no rail services in the North beyond Vavuniya.

32. Similarly, *power and telecommunications facilities* in the rebel held areas of the North and East are minimal, which deprive agricultural producers and fisherpersons access to information and markets.

33. According to the CFSES 2003/04 only 64 percent of total households in the North and East have *power*, while the average for the island is 73 percent. Even this figure for the North is an overestimate because the CFSES could not cover Kilinochchi, Mannar, and Mullaitivu, which are more remote and where it is estimated that more than 90 percent of the households do not have power. Similarly, only about 20 percent of households in the North and 14 percent in the East have either a land or cellular *phone* while nationally about a quarter of households have phones. Access to telecom in the North and East is better than in Uva (9 percent) and Sabaragamuwa (13 percent) but below other provinces.

7.3. Vulnerability and Human Development Outcomes

34. *Savings and borrowings*: Household savings and indebtedness can provide some indication of vulnerability in North and East as compared with the rest of the country. The North and East region has the lowest percentage of households with positive savings. Only 34 percent of households in the East and 38 percent of households in the North have positive savings, while the average for all provinces was 53 percent in 2003/04. The North and East households also have higher borrowing rates than the rest of the country. On average, households in the East borrow as much as 44 percent of their total household income and the corresponding rate in the North is 39 percent, while the national average is only 22 percent. About 65 percent of households in the East and 58 percent of those in the North are indebted, compared to 49 percent of all households in Sri Lanka. The number and average size of loans taken is also much higher in the North and East than in the rest of the country and usually used for consumption (CFSES 2003/04).

35. The significantly lower savings and higher incidence of borrowing among North and East households compared with the rest of Sri Lanka may be indicative of a higher degree of vulnerability. Indebtedness and negative savings often result from households being compelled to borrow or run down their savings to cope with income shocks. While the available information is not enough to conclusively link these averages with the incidence of such shocks, it is consistent with the intuition that households in conflict areas are likely to be subjected to more frequent shocks.

36. A few existing studies using different methodologies also appear to suggest that vulnerability is pervasive in the North and East. In 2003, the World Food Program (WFP) undertook an island wide vulnerability study focused on *food insecurity* at the District Secretariat (DS) Division level using secondary data, Geographic Information Science (GIS), and statistical tools, which indicated vast parts of the region to be vulnerable in terms of food access and utilization (Box 7.1). This study concluded that 29 percent or 94 DS divisions in Sri Lanka are most vulnerable to food insecurity. About 43 percent of the food insecure DS divisions identified were in the North and East. In addition, all but 5 DS areas in the North were identified as most vulnerable to food insecurity.

Box 7.1: Island-wide Vulnerability Study by the World Food Program

In 2003, the World Food Program (WFP) undertook an island wide vulnerability study focused on food insecurity at the District Secretariat (DS) Division level using secondary data, Geographic Information Science (GIS), and statistical tools. The study collected information on the following variables reflecting availability, access, and utilization of food for its analysis:

(a) *Variables on food availability*: percentage of area under paddy cultivation, percentage of area with moisture availability of 0.68 or less, percentage of area with slope of 8 percent or less, average yield of paddy per farmer from minor tanks, percentage of paddy cultivation area under major irrigation schemes.

(b) *Variables on access to food*: average per capita income per household, average per capita consumption expenditure per person, average per capita expenditure per person on non-food, percentage of housing units with better floor materials, percentage of housing units with better toilet facilities, average distance to nearest major tank, average distance to nearest major river, average distance to nearest major river with irrigation schemes, average distance to nearest Type A or Type B roads, index on access to power supply, whether the DS area has mined places.

(c) *Variables on infrastructure facilities*: percentage of national schools, percentage of type 1 AB or type 1C schools, percentage of schools with power supply, percentage of schools with safe drinking water facility, percentage of schools with telephone facility, percentage of professionally qualified teachers, percentage of graduate teachers.

(d) *Variables on food utilization*: infant deaths per 1,000 live births, under-5 year deaths per 1,000 live births, percentage of children attending preschools, percentage of children failing their class, percentage of children quitting school, percentage of school enrolment.

Box 7.2: Vulnerability and Poverty Profiles (VPPs) of Villages in North and East

The VPP study conducted in 2004 and 2005 at the village level in North and East (except for the district of Mullativu) attempts to identify poverty and vulnerability along the following dimensions:

Economic: living condition, power supply, and employment potential for agriculture & fishing
Health: access to dispensary, mobile health service, and maternity clinic
Education: access to nursery and primary schools, and number of schooling years
Vulnerability: food production, household consumption, availability of food ration, refugees, displacement, war effects, women-headed households, orphans, incidence of child labor and dependents

Based on the indicators above, all the villages in a DS division are classified under the following categories: displaced villages, lower prevalence of poverty (Code 1), prevalence of poverty (Code 2), high prevalence of poverty (Code 3), very high prevalence of poverty (Code 4), and destitute situation or extreme poverty (Code 5). These VPPs are based on *relative* poverty of each village within each DS division. VPPs for Ampara, Jaffna, and Kilinochchi districts have not been completed yet.

In Batticaloa district, Koralaipattu South (60 percent of total villages in area) and Koralaipattu North (55 percent of total villages in area) DS divisions have the largest share of "extremely poor" villages. In Trincomalee, Eachchilampattai (58 percent) and Kuchchaveli (43 percent) DS divisions have the largest share of "extremely poor" villages. In Mannar, Madhu (40 percent) and Manthai West (32 percent) DS divisions have the largest share of "extremely poor" villages. Finally, in Vavuniya, Vavuniya North DS division has the largest share of "extremely poor" villages (38 percent) (see Table A-7.5, Annex). However, since the ranking of villages is *relative within each DS division*, one cannot conclude which districts are better/worse off when compared with each other, based on these findings.

***Source**:* Centre for Information Resources Management (2004), Vulnerability Poverty Profile: Batticaloa District, December, North East Provincial Council, Trincomalee.

37. There are significant variations in welfare and economic outcomes even *among areas within the North and East*. Some indication of this is provided by the *Vulnerability and Poverty Profile (VPP) of the North and East* conducted by the Center for Information Resources Management (CIRM) of the North and East Provincial Council in 2004 and 2005 (see Box 7.2). The study attempts to identify the poverty

status of villages in different DS divisions within the North and East along four dimensions: economic, health, education, and vulnerability. A large majority of villages in all DS divisions of Batticaloa, Trincomalee, Mannar, and Vavuniya are categorized as "extremely" or "highly" poor by these criteria.

The Tsunami: Further Worsening Vulnerabilities in the North and East

38. As the North and East were slowly emerging out of the protracted civil conflict (since early 2002) the tsunami struck Sri Lanka on December 26, 2004 affecting the coastal populations island-wide including the North and East. Coastal communities in the North and East now face the double burden of hardships from the conflict and the tsunami. The districts of Ampara and Batticoloa in the East in particular bore the worst impact in terms of lost lives and damages to infrastructure and housing.

39. *Losses:* According to the Census of Tsunami Affected Areas conducted by the Department of Census and Statistics, out of the estimated 35,000 lives lost to tsunami, 63 percent or 22,000 were from the North and East. About 347,000 persons were also displaced in the North and East by the tsunami. In terms of damages to properties, about 100,134 buildings were damaged partially or completely by the tsunami (see Figure A-7.1, Annex). Out of this, around 89 percent were private housing units. The East sustained the most damage in buildings – 48 percent buildings destroyed were in Ampara and Batticoloa.

40. In terms of *livelihoods*, fishing was the most severely affected sector in the North; and fishing, micro and small enterprises, and tourism in the East. Although the tsunami had a marginal impact on the country's overall macroeconomic performance, the regional economies of the affected areas were hard hit.[7] Since the populations in the North and East are mostly engaged in agriculture and fishing, the tsunami is also likely to have worsened livelihoods and the incidence of poverty in these areas.

Lagging Education and Health Outcomes

41. Lagging educational and health outcomes have a strong bearing on the likelihood of future generations falling into poverty. In terms of health and educational outcomes the North and East has clearly been negatively affected by the conflict. Vital infrastructure in these sectors has been destroyed, maintenance of these assets has fallen short, and there have been shortages in necessary human capital due to security fears. This is even more serious given that child dependency ratio in the North and East is significantly higher than in other provinces – 45 and 55 percent respectively, while the national average is about 40 percent (CFSES, 2003-04).

Table 7-4: Selected Social Indicators

Indicator	*Sri Lanka Excluding N&E*	*North & East*	*Ampara*	*Batticaloa*	*Trincomalee*	*Jaffna*	*Kilinochchi*	*Mannar*	*Mullaitivu*	*Vavuniya*
Low birth weight < 2.5 kg*	18.0	25.7	22.7	24.3	30.5	30.5	N.A	12.7	N.A	38.8
Underweight 3–59 months*	29.4 (2000)	46.2	44.1	53.2	44.7	43.1	N.A	38.3	N.A	50.6
Access to safe drinking water**	61.9	45.9	-	-	-	-	-	-	-	-
No latrine**	5.6	5.0	29.2	7.3	14.4	4.6	2.7	3.4	4.6	1.0

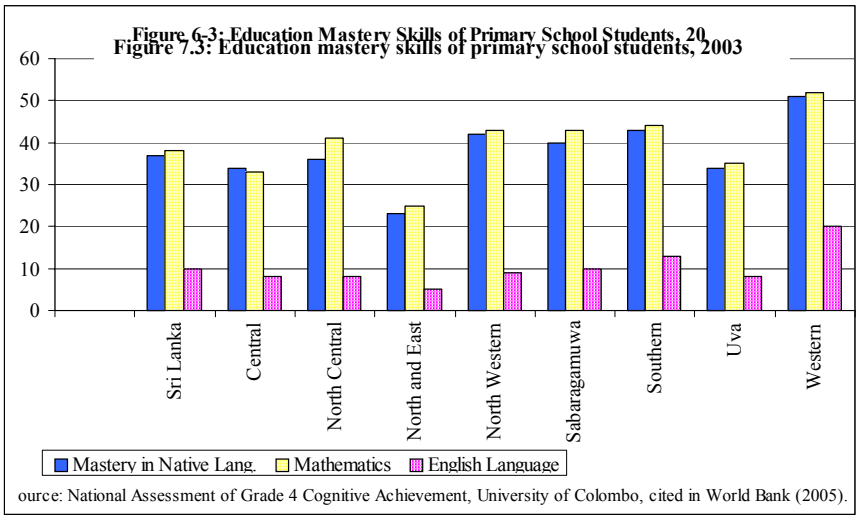
Note: *: 2001; **: 2003-04
Sources: Department of Census and Statistics (2004), Poverty Statistics / Indicators for Sri Lanka, Colombo, pp4&42; Central Bank of Sri Lanka (2005), CFSES 2003/04.

42. In terms of *health* outcomes, 46 percent of children below 5 years of age in the North and East are underweight, compared to 29 percent for the rest of the country. While 18 percent of babies born in the

[7] ADB/JBIC/JICA/WB (2005)

country are underweight, the proportion is 26 percent for the North and East. The figures are even worse in some districts. In Batticaloa and Vavuniya, over half of the children are underweight, while more than 30 percent of babies born are underweight in Trincomalee, Jaffna and Vavuniya (Table 7-4).

43. Access to *safe drinking water and safe sanitary* facilities are also inadequate. While nationally 62 percent of households have access to safe drinking water, only 46 percent of those in North and East have so. About 80 percent of households in Sri Lanka have access to water seal latrines, while less than half of household in the North and East have so (the lowest two among all provinces).



44. In education there are serious access and quality issues. In terms of outcomes, Eastern Province lags behind the rest of the country. Eastern Province has the lowest literacy rate (87 percent) in the country, with female literacy being higher than male literacy. The East also has a significantly larger share of population with no schooling and lower shares of population with secondary or tertiary education, compared with the country averages. In contrast, literacy and education outcomes in Northern Province are closer to those for the country as a whole; tertiary education attainment is much higher in Northern Province (28 cent of the population) than the average for the island (21 percent).

38. Other indicators also indicate higher than average dropout rates in the North and East, and lower quality of learning by students from these areas. According to the Census of Schools undertaken in 2003 the repetition and dropout rates in the North and East were one of the highest in the country after Sabaragamuwa and Uva Provinces. At Grade One level, Sabaragamuwa Province had the highest repetition rate (2.63 percent) followed by Eastern (1.87 percent), Uva (1.82 percent), and Northern (1.77 percent).

45. Primary school (Grade 4) children in the North and East also have the poorest mastery of skills in their mother tongue, English language, and mathematics. The share of Grade 4 children in the North and East achieving mastery in their native language was only 23 percent whereas the national share was 37 percent. Likewise, the share of Grade 4 children in the North and East achieving mastery in English language was only 5 percent whereas the national figure was 10 percent. In mathematics only 25 percent of Grade 4 children achieved mastery, compared to 38 percent of the children nationally (Figure 7-3).

46. The gaps in achievement, school retention and repetition between North and East and the rest of the country indicate quality of education to be a serious issue in the conflict-affected areas. Even more than lagging educational outcomes, these indicators underscores the impact the conflict may have had on the quality of basic services critical to build human capital, which have in turn exacerbated the poverty challenges faced by the region.

7.4. Remaining Impediments to Growth and Poverty Reduction in the North and East

47. Positive events in 2002 clearly started to benefit the local economies of the North and East. However, despite several measures that resulted in the improvement of security, reintegration of the North and East to the rest of the country, and higher economic growth in the North and East, the contribution of

the economies of the North and East to national GDP remains low. The sustainability of future higher growth in these regions also remains questionable. This section will explore remaining institutional impediments to growth and poverty reduction affecting the North and East.

48. *Mobility:* A number of rigidities in the current institutional set-up still exist that impede the mobility of populations between the North and East and the rest of the country. This imposes additional costs on economic activity and on welfare. Although the Government has withdrawn the requirement to obtain a pass for the movement of civilians to and from the LTTE-held areas, the LTTE still continues to operate a pass system, albeit less stringent. The Srilankan armed forces also continues to impose high security zones in the North and East which bars access to civilians and prevents the undertaking of productive activities in these areas. One third of the Jaffna peninsula falls under the high security zone and half of the city of Jaffna is still occupied by the army. The restrictions and occupation of prime commercial properties in Jaffna is seriously hampering business development in the North and East since Jaffna is the commercial hub of these two provinces.

49. *Fishing restrictions:* Certain time and geographic restrictions on fishing still exist in the Northern and Eastern provinces, particularly in Jaffna, despite some relaxation after the Ceasefire. Fishing is one of the primary economic activities in the North and East, and prior to the conflict used to account for half of the total fish catch in the country. These restrictions in fishing have also resulted in poaching within Sri Lankan maritime boundaries by fishermen from India, Japan, Taiwan, and Thailand.

50. *Restrictions on road use:* Although the A9 highway has been open since 2002, it is only open for vehicular and civilian traffic for 10 hours a day and six days a week. The highway is closed on Sundays and only operates from 7:30 a.m. to 5:30 p.m. In addition, goods transported to and from the North and East need to be checked at 4 points by the Sri Lankan army and the LTTE. At each checkpoint, the entire consignment is offloaded, checked, and reloaded. As a result entrepreneurs from Jaffna complain that it takes them 3 days to transport goods to and from Colombo via the A9 highway, which adds to the cost of doing business.

51. *Access to credit:* Businesses based in the North and East also have poor access to bank credit. Businesses in the North and East cannot open a Letter of Credit (LC) at their local banks. Hence, traders in the province have to purchase imported goods from Colombo-based importers, which again add to transaction costs and consequently retail prices. In addition, there is anecdotal evidence of capital flight from the North and East to the rest of the country because of fear regarding the security of savings in banks located in these provinces. Since banks in the North and East only lend what they obtain in deposits from local clients, the issue of capital flight constrains the availability of credit in the area. Banks in the North and East are also more stringent in disbursement of loans to farmers, fishermen, and traders; and the collateral requirements are higher than in other parts of the country.

52. *Taxation:* Another major impediment to economic revival in the North and East is the continued high direct and indirect taxation imposed by the LTTE on the incomes of people and goods in these provinces in both LTTE and government held areas, which started in 1990. This imposition of taxes stifles entrepreneurship, raises the cost of doing business and has resulted in the exodus of professionals such as teachers and doctors, which has harmed the medium-term economic prospects of the provinces. The higher prices in the North and East even after the lifting of the economic embargo and opening of the A9 highway are probably due in large part to these additional taxes. These taxes do not translate to investments in public services. Public investments and services in the North and East continue to be provided only by the Government and donors.

53. *Out-migration:* Despite the large influx of internally displaced persons (IDPs) Jaffna in recent times, the total number of people leaving the North and East may be higher due to the obstacles people face in banking, transport, and fishing; and heavy taxation. The unemployment rate among the educated is also very high in the North and East. As indicated in Chapter 4, the ceasefire of 2002 has made it possible for people in North and East to migrate in greater numbers to the Colombo region in search of

economic opportunities. In addition, it appears that the bulk of those migrating out are relatively better educated and skilled – which would also be similar to the pattern of migration seen in other parts of Sri Lanka (Chapter 4). Therefore, out migration is creating further obstacles for the region by further depleting the human capital urgently needed for rehabilitation and revival.

54. In conclusion, during the past (nearly) four years of ceasefire several critical infrastructure have been re-built and services restored: roads and bridges have been reconstructed, power supply and telecommunications have been restored, and schools and hospitals have been rebuilt. However, these physical facilities alone are not adequate to enable the North and East to realize fully its growth potential unless institutional constraints of the types described above are addressed.

7.5. Concluding Remarks

55. Despite imperfections, shortcomings, and the lack of comprehensive data available on the welfare, economic, and social conditions in the North and East there is no doubt that the conflict has severely affected the welfare and economic conditions of people residing in these districts. The war has aggravated poverty and welfare outcomes in these parts of the country. No amount of investments by the government and various donors can fully compensate for the shortfalls in economic infrastructure, incomes, health, education, and social challenges in the region until a permanent peace is achieved. The tsunami further aggravated the already serious situation in the North and East. The Ceasefire since 2002 has presented the region with the first longest semblance of normalcy and peace in history and initial studies have shown some peace dividends have accrued to the North and East. However, unless permanent peace is achieved and institutional rigidities and challenges are addressed, the sustainability of the recent high growth rates in the North and East and prospects for significant poverty reduction will remain distant.

8. Finding a Path out of Poverty in the Estates

1. The estate population as a group represents the most significant challenge to poverty reduction in Sri Lanka.[1] Consumption poverty in the estates in 2002 was higher than what it was in 1990-91, contrary to the trend seen for the country as a whole, so that the estates were the poorest sector in Sri Lanka in 2002 with a poverty rate 7 percentage points higher than the national average (Chapter 2). In 2002, the sector constituted about 5 percent of the country's total population but 8 percent of the poor. This chapter will examine the nature and determinants of estate poverty, with the objective of understanding the factors responsible for persistent poverty among the estate population. To do so, it will also focus on the particular characteristics that set the estates apart from the other sectors in Sri Lanka, rooted in the history of the plantations and the typical organizational and economic setup of the estates.

2. A wide range of factors contribute to poverty traps in Sri Lanka – from geographical reasons like isolation and lack of access to infrastructure to individual attributes like lack of education and occupation (Chapter 3). Many of these are also reasons why large sections of the estate population are trapped in a cycle of low capability, minimal earning potential and poverty, as this chapter will show. Although many of these factors operate in remote, rural areas of Sri Lanka as well (see Chapters 3 and 6), the challenges in the estates demand special attention due to a number of reasons.

3. The first is to do with inadequate human development. As Sri Lanka has made rapid strides in this area, in spite of improvements in the estates, many key indicators still lag far behind even those in rural areas (Chapter 5). As this chapter will show, deficiencies in education are part of the reason why even opportunities from internal migration – found to be an avenue out of poverty for households in remote areas in Chapter 4 – are limited for estate households. Relative to what is seen nationally, estates have lower rates of migration, self-employment and participation in other sectors. And even when estate residents are able to diversify their income sources by working in outside jobs or migrating to urban areas, the economic benefits are often limited because of their inability to find better-paying employment, which in turn is linked to educational attainment. Overseas migration for unskilled jobs does not require education and has clear economic benefits, but is less available to poorer estate households because of high initial fixed costs.

4. To understand why estate poverty has been so persistent and opportunities outside the estates have not been enough to break these poverty traps, one must also look at the "burden" of history on the sector, the unique organization structure of estates; and the resulting social and economic isolation, including the stigma associated with estate labor, that has had an impact to this day. Such isolation is a part of the reason why estate residents still lag behind the rest of the country in making use of opportunities outside – in other sectors, urban regions and overseas. And these are some of the reasons why reducing poverty in the estates would require interventions to address the endemic economic and social issues that create poverty traps.

5. Current national household surveys have many limitations in being able to examine these questions in depth. Both HIES and CFSES data cannot be easily disaggregated among types of estates by characteristics like size, location and management type to discern underlying patterns; and do not adequately cover certain issues–location and connectivity of estates, type of work done on estates, coverage of social programs and availability of services to name a few – that are critical for welfare of estate households. Furthermore, because of the special circumstances of estate poverty, linked to history and the unique organizational structure of the estates,

[1] The definition of estates in this report is identical to that used by DCS: plantation areas, which are more than 20 acres in area and employing not less than 10 residential laborers.

understanding poverty traps requires looking at some of the underlying perceptions and attitudes of estate residents and the relationships between the important actors – management, trade unions and households.

6. To fill this data gap, a comprehensive household survey and a qualitative study were fielded to inform the estate analysis of this report. The insights gained from these will help the analysis to identify the factors associated with poverty in the estates. Two important questions will frame the analysis: what explains the persistence of poverty traps in the estates, and at the same time, what characteristics enable some poor people move out of poverty and stay out of poverty while others fall into poverty or remain trapped in chronic poverty? In addressing these questions, findings from quantitative data will be triangulated with qualitative insights on perceptions of estate residents on what they see as drivers of positive change. While the household survey was *not designed to be representative of the estate population*, it was based on a large sample (of over 1,000 households in 43 estates) with wide coverage in terms of location and other important characteristics of estates to allow for rich analysis.[2]

8.1. Setting the Context: the Estate Sector in Sri Lanka

7. Large plantations growing tea, rubber and coconut came into being during the British colonial period. The sector was structured as a self-sufficient enclave with very little integration into the national socio-economy. Labor was imported from South India and confined within the structure of plantations, thus creating "residential labor" that was completely dependent on the management for all aspects of their life. Considerable changes have taken place in the sector since Sri Lanka became independent. The importance of plantation crops in the national economy has declined, ownership has shifted from foreign to national, the labor force has become Sri Lankan citizens, and the rigidity of the estate structure has been reduced.

Origin and development of the estate sector

8. *The industry:* The British colonial administration initiated the introduction and subsequent cultivation of tea and rubber as commercial crops in the late 1800s. The diversification of the Sri Lankan economy, changes in the world commodity market as well as changes within the estate sector in Sri Lanka meant a gradual decrease in the importance of the tea and rubber exports. By 2004, textile and garments had taken over as the leading earner of foreign exchange for Sri Lanka, although tea remained an important export crop. Rubber diversified into a local manufacturing base initially in the 1950s and expanded rapidly after the introduction of free trade policies and investment promotion zones in the late 1970s. The proportion of smallholdings (not classified as estates) has more than doubled in the tea sector (from 19 to 44 percent from 1982 to 2002); and the smallholdings are rapidly catching up with the estates for rubber despite a fall in the total area cultivated for rubber. The estate sector share of agriculture has dropped from 27 percent in 1982 to 20 percent in 2002.

9. *Labor in the estate structure:* Due to a range of socio-political and commercial issues, rather than employ indigenous labor, the British transferred labor from South India to work in the plantations. Today, the estate population is made up of those who are residents on estates and whose main source of income is wage employment on a plantation. Citizenship rights were granted to estate migrant workers only recently, in 1988. Over the last two decades, the size of the labor force in plantations has declined by more than 50 percent, from a peak of 542,000

[2] The qualitative study was conducted as a combination of focus group discussions (FGDs), key informant and household interviews in a sample of 20 estates, 13 of which belonged to the survey sample (see Annex for details).

workers in 1980 to an estimated current figure of less than 269,000.[3] This trend, along with the rise of the smallholdings in both tea and rubber, indicate that as a sector, the estates are in decline.

10. *Policy changes affecting ownership and management*: The significant policy shifts constituted nationalization of foreign-owned estates through Land Reform Law of 1975; re-privatization Phase 1 in 1992 that involved privatization of management only – creating state-owned Regional Plantation Companies (RPCs) where each RPC entered into an agreement with a private company, the Management Agent (MA); and Phase 2 in 1995 that involved selling of controlling interests in the RPCs to MAs subject to some restrictions that allowed the government to exercise control over certain affairs (see Annex 8). These policy shifts represented significant events that are likely to have had profound impact on estate management, workers and the relationships between these actors.

Poverty and human development in estates: comparison with national trends

11. *Poverty incidence: E*state sector has the highest incidence of poverty, with a headcount rate of 30 percent in 2002. While poverty in the estate sector followed the general national trend, unlike national poverty, estate poverty in 2002 was significantly *above* the 1990-91 levels.[4] Consumption in the estates is also highly concentrated in a narrow interval around the poverty line – considerably more than what is seen nationally. In contrast to the country as a whole, the concentration in estates has increased between 1990-91 and 2002 (see Chapter 2). Such a distribution has the implication that even small changes or shocks to the estate economy can produce large movements in poverty headcount, which can overstate the actual change in welfare. Thus, poverty trend analysis for estates should take into account the change in the entire distribution, rather than just the headcount.

12. Considering the full density of consumption, the story in the estates seems to be one of little movement *over time*, as well as relatively low variance *within the sector*. A significant majority of the estate population appears to consume just enough to reach somewhere close to the poverty line; and over time the slight worsening in the situation appears to have affected almost the entire range of the distribution. While these are but snapshots at two different points in time that say little about movements in and out of poverty, they do hint at *poverty in the estates being endemic and linked to factors that affect the sector as a whole and have changed little over time*. Insights from the qualitative study appear to support this view. There is much agreement in the characterization of poverty between households across different types of estates; and in most cases, the perceptions and explanations of poverty by respondents were restricted to factors operating within the estate sector.

13. Poverty in the estates is multi-dimensional – a characterization that also comes through quite clearly by the respondents' own assessments in the qualitative interviews. While earnings and consumption are at the core of the households' own understanding of poverty, other elements such as health and education also figure strongly. At the same time, there is some divergence between time trends of consumption poverty and other indicators of welfare. Unlike consumption poverty, many aspects of health, education, and housing have shown improvements in the estates– especially during recent years when a number of initiatives have been undertaken by the government with other development partners, including donors and NGOs.

[3] DCS, 2004: Statistical Abstract

[4] Even when the standard errors of poverty headcount are taken into account in computing 95 percent confidence intervals, headcount in the estate sector is seen to have unambiguously increased between 1990-91 and 2002, and also clearly higher than the national headcount in 2002 (see Chapter 2, Annex).

14. *Health and education*: The Estate Sector Health Bulletin documents a gradual improvement in the health trends among RPC estates working with the Trust.[5] For example, the crude birth rate, crude death rate and infant mortality rates have shown steady decline during the past 15 years. The gap in average literacy rates between the estate sector and the urban and rural sectors has also narrowed over the past 2 decades (Table 8-1).

Table 8-1: Literacy rates by sector

	Rural	*Estate*	*All sectors*
1986/87	**89.5**	**68.5**	**88.6**
Male	92.8	80.0	92.2
Female	86.5	58.1	85.2
1996/97	**92.3**	**76.9**	**91.8**
Male	94.4	87.2	94.3
Female	90.4	67.3	89.4
2003/04	**92.8**	**81.3**	**92.5**
Male	94.7	88.3	94.5
Female	91.1	74.7	90.6

Source: CFSES report (2003-04)

15. In spite of these gains, the estates still lag well behind the rest of the country, and even the rural sector, on key indicators of health and education. Male and female literacy rates are around 6 percentage points lower than the country averages and 6 and 3 percentage points below the rural averages. As reported in Chapter 5 (Table 5-2), 30 percent of estate children have low birthweight, compared with 17 percent of rural children; 37 and 46 percent of estate children are stunted and underweight respectively, compared with 14 and 31 percent of rural children; and 48 percent of estate mothers have low BMI, compared with 23 percent of rural mothers.

16. There are a number of potential reasons for the relatively high incidence of malnutrition in the estates – including inadequate access to food and poor nutritional/diet practices. The Estate Survey indicates that food shortage is a factor: about 13 percent of sample households report food shortage and households in privately managed estates are more likely to report such shortage. Moreover, such shortages appear to be related to poverty– of those who reported experiencing a shortage, most attributed the shortage to lack of income, as opposed to non-availability of food.

17. *Housing conditions*: The estate housing stock consists of a wide array of residential types that include single houses, attached houses and annexes, line rooms and row houses, and shanties. Single houses are clearly the most desirable form of living arrangements; and the CFSES shows that the proportion of single houses in total housing stock in the estate sector increased almost threefold from 1996-97 to 2003-04 (Table 8-2). This reflects recent efforts of the government and estate management to allocate more resources in this area. However, the proportion of line rooms is still much high than the country average, and a sustained effort will be required to close the gap between living conditions in the estates and other sectors.

Table 8-2: Changing pattern of housing stock in estates (percent)

Type of housing unit	Estate		All sectors	
	96-97	*03-04*	*96-97*	*03-04*
Single house	10.2	28.1	88.5	91.2
Attached house/Annex	0.0	7.9	9.7	2.8
Line room/Row house	83.2	63.4	0.0	3.9
Shanty	0.2	0.5	0.3	0.8
Other	6.4	0.2	1.5	1.4

Source: CFSES report, CBSL (2005)

8.2. A Profile of Poverty in the Estate Sector: Household and Community Attributes

18. In order to understand what factors contribute to poverty traps and affect the likelihood of households to move out of poverty, it is necessary to explore what characteristics – of households, communities and estates – are associated with poverty. Attributes of households and/or household heads — such as demographics, education, occupation and ability to diversify livelihoods —can have strong associations with poverty status of households. Many of these

[5] Plantation Human Development Trust (2005). This captures only RPC estates working with the Trust.

factors are also identified by the qualitative study as closely influencing households' movements in and out of poverty.

19. The special Estate Survey conducted for this report is especially useful for this analysis, since it allows disaggregated analysis of a wide range of household and estate attributes. Since this survey lacks consumption data, the poverty status of households is measured using an *Asset Index* (AI) score, which should be interpreted as a proxy for wealth, rather then a flow of income.[6] To distinguish this measure from the consumption-based estimate of poverty used elsewhere in this report, the welfare measure calculated from the AI will be referred to as *AI-Poverty Rate* – defined as the percentage of households whose AI scores lie below the 30th percentile. The 30th percentile is a reasonable choice for the "AI-poverty line", given that according to HIES data, the poverty headcount for the estate sector is 30 percent.

20. ***Demographic characteristics:*** The average dependency ratio – the ratio of number of dependents (family members of age below 15 and older than 64) to number of working age family members (ages 15-64) – in estate households is 55 percent, compared to the national average of 49 percent.[7] Multivariate analysis using the Estate Survey data indicates that households with higher dependency ratios have lower AI, and conversely, households with more earners tend to be better off (see regression results in Annex, Table A-8.1). In the qualitative study, the demographic cycle of a household – from the birth of children into a family, through schooling, to reaching the age of employment, marriage and death – is identified by the households as having a strong impact on their current economic status and future prospects.

21. ***Education:*** According to HIES (2002), 14 percent of estate household heads have not had any schooling, compared to 6 percent for Sri Lanka as a whole. 24 percent of estate household heads attained grade 6-9 compared to 37 percent among all household heads. In the Estate Survey sample, 17 percent of household heads have not had any schooling, and only 7 percent have had education of O-level or above. AI poverty rate among households whose heads have had no education is 40 percent, compared with less than 12 percent among those with O-level and above (Table 8-3). The multivariate model shows that household head's education beyond grade 5 has a significant positive effect on the household's AI score and poverty (Annex, Table A-8.1). As seen later, education attainment is related to better employment opportunities and higher earnings, especially in occupations outside the estate.

Table 8-3: Selected attributes of estate households and AI-poverty

	AI	*Poverty rate (%)*	*Sample Distrn. (%)*
Head of household's education attainment			
No schooling	-0.32	40	17
Grade 1 – 5	-0.19	34	44
Grade 6 – 9	0.11	23	31
O level	0.85	13	5
A level and beyond	1.68	4	2
Head has National ID card			
No	-0.47	49	12
Yes	0.04	27	88
Total	-0.02	30	100

Source: MOP Estate Survey (2005)
Note: The results are applicable to sample estates only, and are not representative of the estate sector

22. The qualitative study reveals that estate households also recognize education as a driver of upward mobility. Households perceived improvements in access to better quality education – both within the estate and in the larger towns – to have occurred over the past 15 years, and saw that as a force for positive change. Some doubts were expressed about whether education actually creates employment opportunities for estate residents – probably explained by lack of

[6] The method employed to construct asset indices is similar to the approach adopted by DHS surveys around the world, including Sri Lanka, and in the Health section of Chapter 5 of this report.
[7] DCS: "Poverty statistics/indicators for Sri Lanka"

examples in some of the estates, as well as a feeling of marginalization that often clouds perceptions in the estates. At the same time, the role of education in enabling greater integration with the national socio-economy was strongly articulated, particularly by the youth. However, cost of education, as well as the quality of schools in the estates – including a shortage of teachers – was frequently identified as a concern.

23. ***National Identification Card (NIC)*:** There is a close association between AI-poverty and the possession of NICs. A sizeable proportion of household heads – 12 percent – do not have NIC, and the AI-poverty rate among these households is 22 percentage points higher than among the rest (Table 8-3). In the multivariate regressions, this correlation remains strong even after taking into account other attributes. The regressions also reveal that households with a higher proportion of family members with NIC are less likely to be AI-poor. Ownership of NICs is particularly low among the youth (age 15-19), and seems to be related to factors – such as accessibility to towns, lower education, gender or ethnic characteristics of household head – that indicate the degree of isolation of households and estates (Box 8.1).

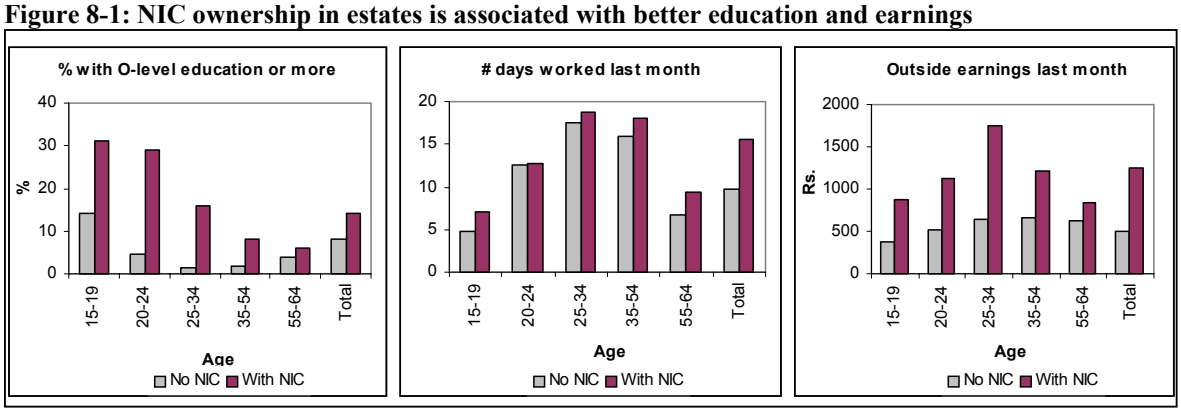
Box 8.1: What factors determine possession of NICs in estates?

While anyone can legally obtain an NIC when he/she reaches the age of 15, in the estates this became possible only after residents were granted citizenship rights in 1988. The ownership of NIC increases with age in the estates – the average NIC ownership among youth of age 15-19 is only 30 percent and increases with age, but levels out at around 85-90 percent after they reach 25 years old (Annex, Figure A-8.1). This leads to the question: why does a substantial section of the estate population not have NICs? It turns out that ownership of NICs is related to factors that indicate the level of isolation of communities and households. A probit regression of the probability of NIC ownership among estate residents of age 15 and above suggests that living in a household whose *head* has more education or has NIC increases the likelihood of having an NIC. Being a woman, or having an Indian Tamil as household head, on the other hand, reduces the likelihood – such individuals or households are more likely to be isolated that can lead to lower rate of NIC ownership, which in turn can exacerbate the isolation.

Source: MOP Estate Survey (2005)

24. *Why is possession of an NIC linked to welfare?* It turns out that having an NIC has statistically significant links with key determinants of welfare, like education and economic opportunities, particularly outside the estates. Estate residents with an NIC are on the average better educated, work for more days, and earn more from outside sources than those without an NIC (see Figure 8-1).

Figure 8-1: NIC ownership in estates is associated with better education and earnings



Source: MOP Estate quantitative survey (2005)
Note: The results are applicable to sample estates only, and are not representative of the estate sector

25. The difference in education attainment is particularly high among the 15-19 and 20-24 age groups: around 30 percent of youths with NIC attain O-level education or more, compared to 14

and 5 percent of non-NIC youths in the two age groups respectively. Given that NIC ownership rate is low among youths, this difference means that NIC ownership has critical implications for future prospects of estate youth. Ownership of NIC also appears to be associated with more opportunities for employment outside estates. The estate residents of age 15-34 who have NICs earn more from outside sources than from estates, unlike those from their age group *without* NIC or the older generation, who rely heavily on estate wages. Regressions show that, even after controlling for gender, education, ethnicity and location, having an NIC yields a significant premium to earnings (see Annex, Table A-8.2 for more details).

Diversification of the household livelihood portfolio

26. Qualitative findings indicate that the most successful method of moving out of poverty is by diversifying the household livelihood portfolio beyond estate employment – incorporating non-estate sources of income including skilled work, internal or external migration (see Box 8.2). It is important, therefore, to examine empirically whether the ability to diversify income sources is associated with higher welfare and lower poverty for households; and the data from Estate Survey indicates this is indeed the case, particularly when the sources include income from enterprises and/or regular/skilled employment outside the estate, and overseas migration.

Box 8.2: External employment as a means to achieve economic mobility

Excerpts from a life history (respondent: age 39, male, married; rubber, RPC, Kalutara district):

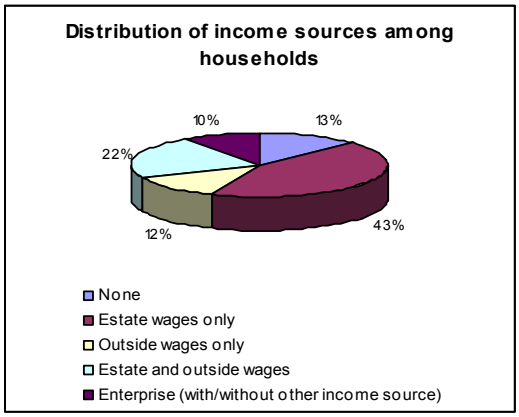
"….Until 1990 mother was the only registered earner of the family since father was ill and whatever she earned was not enough to sustain the family of six. Could not receive a satisfactory education: only up to the 5th grade because parents were facing difficulties in supporting our studies…….Tried wage labor in the estate until 1990 but it was not paying enough to cope with the gradually increasing expenses of the family. From 1990 to 1994 through the help of a known mudadlali (trader) I was in Moratuwa (suburb of Colombo) working in a "tea kade" (roadside tea kiosk)……Managed to come home twice a month and could save Rs. 2000 but the boutique closed due to a road-widening project that cleared all roadside vendors…….In 1993 my sister left for Lebanon for two years and it is with her help that we built the house to its present status. Realizing that the estate will not help me come up I started my current business as a pavement vendor of selling toys in 1995, I got the opportunity through a friend in the estate. As the estate community does not own any assets, it is always hard to get a loan from a bank and it was Janasaviya (state's previous poverty alleviation program) that helped us save some money to start the business. Now I have something that I can call my own and my next desire is to buy a vehicle and improve on the same business, since I cannot come back to estate work or sell kadala (gram)……"

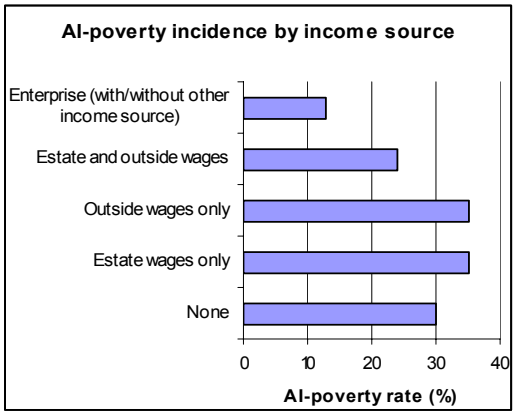
Source: CEPA (2005)

27. ***Income diversification of estate residents:*** Estate households receive their income from a number of sources that can be combined into three broad categories: estate wages, outside wages, and enterprise incomes – that includes income from non-agricultural household businesses and from sales of crops, livestock, and livestock products. More than 40 percent of estate households rely *solely* on estate wages for earned income, with "estate and outside wages" a distant second. The *AI-poverty rates are highest among households that receive wage incomes from only one source*; and lowest for households with incomes from all three sources (Figure 8-2).

28. Multivariate regressions are useful to gauge the effect of diversification net of household attributes that may be correlated with both the household's ability to diversify and AI. The regressions show that households earning both off-estate and estate wages are *not significantly different* in terms of AI from those whose incomes are only from estates, after controlling for a number of household attributes. In contrast, households that *receive income from enterprises* – whether singly or along with other income sources –fare significantly better (Annex, Table A-8.1). This also mirrors what is seen for *rural households* – those owning a non-farm enterprise have a significantly lower poverty rate compared to those without one (Chapter 6).

Figure 8-2: Income diversification is associated with lower poverty



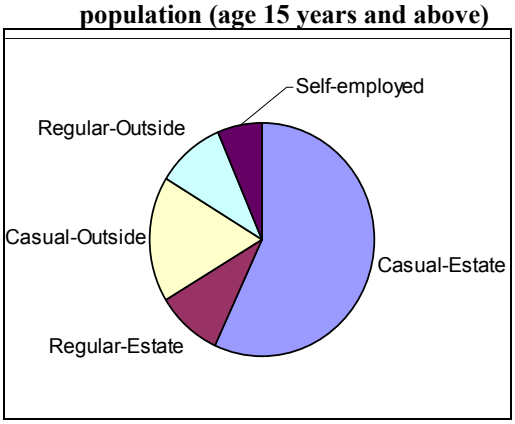


Source: MOP Estate Survey (2005)

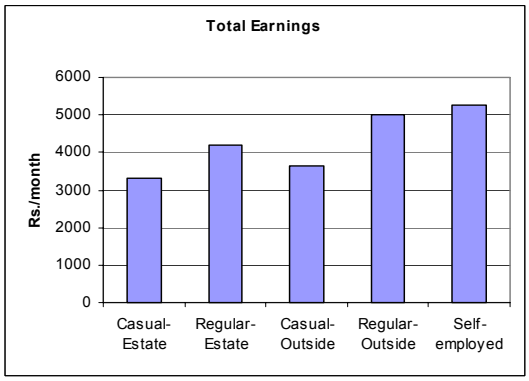
29. Why is diversification into *any type of employment* outside the estate not enough to increase household welfare? A disaggregated look at occupations is useful to understand why. Primary employment of estate residents can be divided into 3 broad groups—estate, non-estate wage and self-employed; and these can be further broken down by location or nature of employment (Figure 8-3).[8] Employees can also be classified as casual and regular (salaried) workers. Self-employed—those who derive their incomes from enterprises—account for about 6 percent of workers.

30. Earnings from different primary occupations differ substantially (Figure 8-3). Workers in regular estate wage employment are better educated and earn almost a thousand rupees more per month than casual estate workers do, even though the number of days worked per month is almost the same (see Annex, Table A-8.3). Similar gaps in earnings and education also exist between casual and regular workers *outside* the estates. Working outside the estates thus does not necessarily imply higher earnings. Earnings from casual wage labor outside the estates are only slightly higher than that on estates, and even that may not translate into a welfare gap, since estates provide workers with numerous benefits. Regular employment inside or outside the estate and self-employment inside and outside the estate, on the other hand, are clearly associated with higher earnings.

Figure 8-3: (a) Primary occupation of estate population (age 15 years and above)



(b) Monthly earnings by primary occupation of estate residents



Source: MOP Estate Survey (2005)

[8] It is enough to focus on primary employment exclusively, because less than 7 percent of workers living on estates have secondary employment, and less than 5 percent have so outside the estates.

31. Therefore, *certain types* of income diversification are associated with higher welfare of estate households. Diversification of income sources among household members lead to significant improvements in welfare *only* when the outside income sources include self-employment and/or regular (salaried) employment, similar to what is seen for rural areas (Chapter 6). Conversely, a reliance on casual employment – be that on or outside estates – seem to be associated with higher AI-poverty. Notably, better education outcomes seem to lead to more remunerative types of employment, and especially so outside the estate. Successful households also often make a conscious decision to include estate work in their livelihood portfolio in order to access the package of benefits including housing.

32. ***Migration as a driver of economic mobility:*** Diversification appears to offer the most successful strategy out of poverty, and qualitative findings indicate that migration is an important component of the "ideal" diversified livelihood portfolio. The questions that remain to be addressed is how prevalent different types of migration is among the estate population, what are their measurable effects on welfare, and what are the characteristics that determine the pattern of migration and their impacts?

33. *Trend and pattern of migration from estate sector*: The CFSES reports that migration from the estate sector increased considerably during the past decade. Rate of external migration from estates increased from 42 to 49 per 1,000 households, between 1996-97 and 2003-04. During the same period, internal migration grew from 4 to 20 per 1,000 households. The Estate Survey reports a much higher internal migration rate of 257 per 1000 – probably because it considers migrations that have occurred in the last 5 years, while CFSES takes a reference period of 1 year.

34. Migrants from estate sectors are diverse in their characteristics. A significant majority of migrants who moved out to work within the past 5 years have gone to urban areas of Sri Lanka, and a sizeable proportion to other countries (**Error! Reference source not found.**). Most are temporary migrants, returning home for a little more than 2 months per year on average. Overseas workers are almost exclusively female, following the national pattern – women accounted for 64 and 53 percent of all external migrants in 1996 and 2003 respectively (SLBFE, 2004). Most of overseas employment is unskilled– for the country as a whole; domestic employment (primarily in the Middle East) accounted for 82 percent of the jobs of female overseas migrants.

Table 8-4: Profile of migrants from estates during last 5 years

	Distribution (%)	*Avg. no. of months spent in estate*	*Remits regularly (%)*	*Avg. age (yrs.)*
Gender				
Male	60	2.3	77	29
Female	40	2.5	58	28
Type				
Permanent	6	N.A.	73	34
Temporary	94	2.3	70	28
Destination				
Rural	6	3.4	80	28
Urban	77	2.3	74	28
Abroad	17	2.7	51	32
Total	100	2.4	70	28

Source: MOP Estate Survey (2005)
Note: The results are applicable to sample estates only- not representative of the estate sector

35. The pattern of migration is also linked to migrants' life cycle – particularly internal migration, which is high among estate youth (Annex, Figure A-8.2). Migration for employment is most active among those in their 20s – 13 percent of this cohort lives outside estates. The qualitative study suggests that many residents work out of estate during their prime years, and then return to the estates. Male migrants start returning home around the age of 30, while female migrants might return home sooner due to marriage.

36. Evidence from the Estate Survey makes it clear that the two groups of migrants—overseas and urban—are distinct, in terms of characteristics of the migrants themselves as well as their households of origin. The two groups are also almost mutually exclusive – only 0.4 percent of estate sample households have *both* urban and overseas migrants. Overall, 17 percent of estate households have had migration activity within the past five years, with internal (urban) and overseas migration accounting for 13 and 4 percent, respectively (Annex, Table A-8.3).

37. *Foreign migration, remittances and poverty*: Multivariate regressions show that having an overseas migrant family member is associated with higher AI for the household, after controlling for various household and location attributes. Average AI is higher for households with overseas migrants than those with urban migrants and or without migrants (Table 8-5). However, the averages disguise the high *variation* in AI of households with overseas migrants, which results in higher AI-poverty rate among households of overseas migrants compared with households with urban migrants and those with none.

Table 8-5: Welfare of households with migrants

Destination	Urban Sri Lanka			Abroad			No migra-tion
Remit regularly	Yes	No	Total	Yes	No	Total	
Mean-AI	-0.02	0.04	-0.01	0.56	-0.19	0.20	-0.02
AI-Poverty (%)	22	28	23	25	42	33	31

Source: MOP Estate Survey (2005)
Note: Results are applicable to sample estates –not representative of the sector

38. The link between overseas migration and poverty reduction becomes more apparent from looking at the impact of remittances on welfare. Households whose migrants send remittances regularly tend to be better off than the rest (Table 8-5). The multivariate regressions show that remittance from overseas is associated with higher AI of recipient households; and net of that, having a family member working abroad has almost no effect (Annex, Table A-8.5). Remittances from abroad thus have high benefits for households.

39. *Who are more likely to migrate overseas?*[9] Larger household size increases the chance of overseas migration, likely because larger families have greater need and ability to diversify their income sources.[10] The incidence of overseas migration also tends to be higher in larger estates, perhaps because networks and recruitment are more prevalent in larger estates. Overseas migrants also tend to come from households whose heads are less educated, probably reflecting the unskilled nature of most of these jobs (Table A-8.4).

40. Interestingly, the average earnings of family members (excluding migrants) of households with overseas migrants are *higher* than that of other estate households. Their livelihoods are also more diversified and secure—higher percentages of members work off-estate in industry, trade and services, and hold regular employment in the estates. And these indicators are even better for households of foreign migrants who send remittances regularly than those who do not (Annex, Table A-8.7). It is hard to explain why this would be the case, given that none of these indicators should be directly affected by remittances. But given this is observed, it can arguably weaken the apparent link between overseas remittances and welfare: the fact that households who receive remittances are better off than those who do not can be partly because the former were better off to start with, which enabled them to invest in migration of certain family members.

41. The selective pattern of overseas migration— relatively few migrate and more likely from households with more resources—can be explained by the excess supply and high cost of migration. The nature of overseas employment does not require high level of education attainment, and therefore creates a large pool of prospective migrants. The fact that households

[9] For regression results pertaining to results in this paragraph, see Annex, Table A-8.6.
[10] Household size in this particular analysis refers to the size *before* migration.

with more resources tend to finance migration indicates that migration is costly, and that it is seen more as a diversification strategy by households than as a coping strategy. Evidence from qualitative interviews of estate residents also largely supports this argument.

42. *Internal (urban) migration and poverty*: Motives and attributes of internal migration are more heterogeneous than overseas migration, which also explains why no direct links can be observed between internal migration, remittances and household welfare. Unlike external migrations, there are reasons to migrate to urban areas beyond short-term monetary benefits. Migrants may expect to gain exposure to opportunities for salaried employment, develop skill or escape working in estates that is deemed degrading by many, particularly the youth. Such heterogeneity would explain why the average AI of households with internal urban migrants is not different from that of non-migrants (Table 8-5). The multivariate regression also shows that having a household member who has migrated to an urban area *or* regular remittances from the migrant have no significant association with the household's AI (Annex, Table A-8.5).

43. Unlike what is seen for overseas migrants' families, the average AI is very similar for households of remitting and non-remitting urban migrants (Table 8-5). Given that remittances should directly increase household assets, this suggests that the condition of the household, as well as that of the migrant him/herself, affect the decision of migrants to remit. There is some evidence to suggest that on the average, urban migrants who remit regularly come from relatively poor households, and their remittances are insufficient to lift these households out of poverty. Furthermore, some urban migrants may not be remitting regularly even if their households are needy, because they just do not earn enough to do so.

44. *Who are likely to migrate internally?* Migrants to urban areas – unlike overseas migrants – belong to households with relatively high education levels. This is probably because higher education of household members increases the availability of information, linkages and access to networks necessary to find urban jobs. Larger household size increases the chance of internal migration. Residency in estates for more than 20 years is associated with higher likelihood of migration to urban areas, and the presence of young children reduces the likelihood. Unlike what was seen for households with overseas migrants, households with migrants to urban areas in Sri Lanka do *not* appear to have significantly higher earnings or more diversification of employment among the non-migrant members than those with no migrants.[11]

45. The analysis suggests that households consider overseas migration as an investment in improving living conditions, with remittances from abroad being the "returns" to that investment. While remittances are likely to improve welfare of households with migrants, only some households – with better initial conditions in terms of earnings and employment – seem to be able to avail of these opportunities. In comparison, internal migration is more heterogeneous in terms of the motivation to migrate and the characteristics of migrants and their households. In addition to the motivation to diversify households' sources of livelihood, the qualitative study indicates that internal migration appears to occur for reasons as diverse as seeking future opportunities, coping with poverty or seasonal unemployment in the estates, and escaping the much stigmatized estate employment. The qualitative findings also suggest that *longer-term migration* is more successful as a driver of positive change, as it allows the households to develop sustainable sources of income as well as social networks.

46. At the same time, there remain significant obstacles to mobility or diversification, which is apparent from looking at even the simple statistics on migration. In spite of the rapid increase in migration from estates reported by CFSES in recent years, both internal and external migration rates are well below that for the rest of the country, even though poverty rates in the estates are

[11] Refer to Annex, Tables A-8.6 and A-8.7 for results to support this paragraph.

much higher that should provide greater incentives to migrate. Constraints to mobility of the estate population are likely to be linked to the long history of isolation of the community. The Estate Survey provides a hint – it turns out that 81 percent of sample households have lived in the estates for more than 20 years, indicating that a large share of the population will probably have minimal links with networks and information sources in the outside world, which are often critical to migrate or find outside employment.

47. The correlates of poverty described so far are consistent with much of the qualitative evidence on how different economic groups are characterized. Focus Group Discussions (FGDs) on characteristics of three categories of households indicates that the most critical attributes of the bottom group are high dependency, unstable or limited source of income and ill-health, with poor quality housing/facilities and alcoholism also being frequently mentioned. In contrast, important attributes of the top group include having well-diversified and stable sources of income, regular remittances from abroad, and access to productive networks.[12]

Estate or community characteristics that matter for welfare

48. ***Location, crop and management type:*** The Estate Survey sample is drawn from 5 districts with significant estate populations. Table 8-6 shows that the AI-poverty rates are much higher for the estates in Ratnapura and Kegalle, and lowest for Kandy. This pattern persists even after controlling for other correlates of poverty (Annex, Table A-8.1). The correlations between crop type or management type and AI-poverty disappear after controlling for district location of the estates (see Annex, Table A-8.1). Table 8-6 also shows that when district, crop and management type are considered together, the association between type of crop, type of management and AI-poverty incidence is ambiguous.

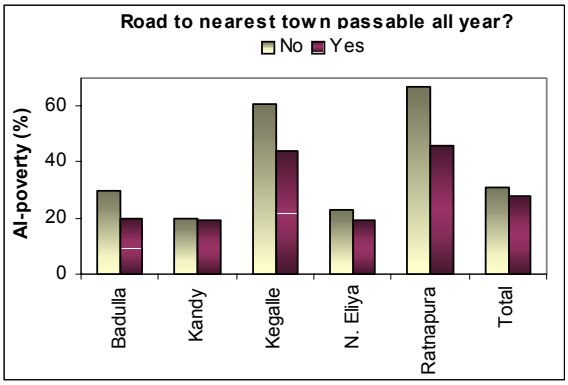
Table 8-6: AI-poverty rates
(% of population below 30th pctile of AI-index)

	RPC		*Non-RPC*	*All*
Districts	*Tea*	*Rubber*	*Tea*	
Kandy	-	-	20	20
Nuwara Eliya	21	-	-	21
Badulla	23	-	-	23
Ratnapura	46	58	29	48
Kegalle	70	52	-	53
Total	25	54	22	30

Source: MOP Estate Survey (2005)
Note: The results are applicable to sample estates only- not representative of the estate sector

49. ***Remoteness of estates:*** Although 77 percent of estate households in the sample live within 10 km. from the nearest town, 42 percent of households cannot use the road to the town all year round. This indicates a high degree of isolation of estates from markets and employment opportunities. Recognizing that the quality of roads also depends on the geography of the locale, Figure 8-4 shows AI-poverty rate by district and road quality. In all districts, households in estates where roads to town are passable all year tend be better off. Moreover, after controlling for other estate, location and household attributes, having an all-weather road connecting the estate to the

Figure 8-4: AI-poverty in estates by road quality



Source: MOP Estate Survey (2005)

[12] The households assessed as being at the 'bottom' were those who faced long-term deprivation and felt that they were at the bottom of the community group. The 'middle' group comprised of those who did not face key deprivations but were constantly balancing the upward and downward pressures. The 'top' level was characterized by progressive 'movers' saw themselves as better than most in the community.

nearest town is associated with a 10 percent lower probability of a household in the estate being AI-poor (Annex, Table A-8.1).

50. These results suggest lack of connectivity of estates (roads operable throughout the year) with towns or market centers is an important constraint to estate households' upward mobility. The negative impact of poor connectivity also came up in qualitative interviews – especially in the context of factors that contribute to isolation from job opportunities and services outside, and the mainstream economy in general. The results also suggest that poverty incidence in estates is higher when they are located in poorer districts, such as Ratnapura and Kegalle (see Chapter 2).

What determines economic mobility of households

51. The correlates of AI-poverty, supported in some cases by qualitative insights on what households identify as drivers of change, point to some key factors likely to affect economic mobility of estate households. *Diversifying the household livelihood* portfolio appears to be an effective path out of poverty – particularly when incorporating income from enterprises and regular/skilled employment outside the estate. *Overseas migration*, and the remittances it generates for households, is also an effective diversification strategy. *Internal migration to urban areas* may not yield significant remittances, but can provide other benefits – in the form of future opportunities, skill development, and as a strategy to cope with poverty or seasonal unemployment in the estates. A number of other factors also play a role, primarily by affecting households' ability to diversify or improve income sources. *Education* improves the prospect of more regular and remunerative employment, particularly outside the estate; and qualitative findings indicate that households perceive these benefits and look upon improvements in access to and quality of education as a force for positive change. *Not having an NIC* appears to hinder education and employment outside the estate, especially for the youth among whom the coverage of NIC is far from universal. *Lack of connectivity to towns* (by a road that is useable throughout the year) – a relatively common problem in the estates – is an important factor that limits opportunities for households to access markets and employment.

52. The qualitative study also suggests additional factors that communities and households themselves describe as important for households' mobility upwards or downwards. *Wages, availability of work and cost-of-living* appears to be one: rising cost of living that wage increases fail to match and lower availability of work were frequently mentioned as strong constraints to upward mobility. There were some difference between the tea and the rubber sector as the workers in the rubber sector reported improved work availability due to changes in agricultural techniques and marketing.

53. *Health shocks and access to healthcare*: Ill health and death of a family member were identified by households as important downward drivers, so much so that these frequently overrode strong upward drivers such as a diversified livelihood portfolio and low number of dependents. The risk of chronic illnesses, especially among income earners, was identified as a critical factor in determining the household's economic future. The type and quality of healthcare available within the estate were also identified as influencing the direction of welfare change.

54. While there are gaps between the estate sector and the rest of the country, overall access to basic health services in estates seems fairly high, although variable across estates. The Estate Survey shows that availability of a doctor, nurse or midwife is high but far from universal, and varies across different types of estates. Utilization of maternal and child health services are high too, although lower than the rest of the country. Ailments that require hospital visits pose special problems. The average travel time for a one-way trip to the hospital can be over an hour, and more than 1.5 hours for those who live more than 5 km. away from the nearest town – no surprise given the connectivity problems above. Furthermore, the qualitative study indicates a high

degree of dissatisfaction with the quality of health services, as well as the perception that quality has tended to decline after privatization (see Box 8.3).

Box 8.3: Access to and quality of health facilities in the estates

The Estate Survey shows that availability of a doctor, nurse or midwife in the estate is high but far from universal, which may partly explain lower utilization of health services in the estates. About 80 percent of communities in the survey report access to a doctor and a midwife; around 50 percent have access to a nurse; and 77 percent have a health clinic located on the estate. Despite variations in availability of medical personnel and health facilities across different types of estates, women's use of maternal and child health services is high – although lower than the rest of Sri Lanka. Most children have health cards and undergo growth monitoring, and have completed their vaccinations by age 1. In case of ailments, estate households were most likely to consult a government run facility (40 percent as compared to 14 percent who consulted an estate run facility). Utilization of preventive health services is lower in estates than in other sectors (DHS, 2000). Estate mothers are less likely to receive prenatal or postnatal visits by a midwife or medical officer, or be advised on symptoms of pregnancy complications. Although 80 percent of estate women give birth in a hospital, this compares poorly with almost 100 percent in other sectors.

Some of the statistics hint at problems in the quality of health services available. The qualitative study also reveals widespread dissatisfaction: poor quality of services – in terms of availability of trained staff, drugs and functioning equipment – was seen by many as a factor contributing to the deterioration of estates. A direct link was often perceived between privatization and deterioration of health facilities. The female focus groups were particularly critical of the halting of free provision of nutritional supplements to children and changes in maternity care in some estates, which they associated with productivity standards and other rules introduced by the privatized management in recent years. Privately owned and managed estates were found to be the most poorly served. The Estate Survey partly validates this observation – privately managed estates have lower availability of doctors and health clinics (but not midwifes) than RPCs.

Source: MOP Estate Survey (2005); CEPA (2005); DHS (2000)

55. *Housing and sanitation*: At the community level, the general condition of estate housing (particularly line rooms) is seen as a contributing factor to poverty. However, at the household level housing, together with related facilities of toilets, water and electricity were frequently seen as improving and contributing to upward mobility. This is consistent with the evidence earlier indicating improvements in estate housing conditions (Table 8-2). The improvements in stock of housing were generally attributed to households' own efforts, although some acknowledge contributions from management. The Estate Survey indicates that any kind of housing program has benefited only 15 percent of households in the sample in the past 2 years, which seems to be consistent with these perceptions. Sanitation programs turn out to be far more prevalent, with 24 percent of households reporting benefits. The qualitative study indicates perceptions that sanitation conditions have improved in the estates over the last 15 years, which was also linked to improvements in education and awareness (Box 8.4).

Box 8.4: Improvements in sanitation and health in the last 15 years: Key Informants' perspectives

Key Informants in RPC estates and in Colombo pointed out that health and sanitation conditions had improved considerably in the last 15 years. In the tea sector a significant minority also acknowledged the role of NGOs in improving living conditions, health, sanitation and education in estates. In FGDs, women in particular pointed to significant positive changes in health and education facilities as important drivers for community wide improvement.

"…… There have been significant changes over the past 10 to 15 years. The incidence of diseases such as diarrhea, dysentery tuberculosis and scabies has lessened. Those days the estate was a breeding ground for infection, now the situation has improved, there is a better interest, awareness and receptivity for family planning, births are spaced out and family planning practices have improved. Improvements can be attributed to education (especially of youth) and the media; almost every house has a TV……" (CTL, Rubber, RPC, Ratnapura). "Two new schools were started in 1993 and 1995. In 1998 we got electricity. In 2000 the government took over our hospital and upgraded it to a rural hospital for the area…." (Female FGD, Tea, RPC, Nuwara Eliya).

Success of welfare interventions were measured by improved levels of awareness especially in relation to good practices in health, and prioritizing the schooling of children. Programs that focused on changing current attitudes and behavior patterns were identified as important contributors to change.

"In the past, general awareness levels were very poor, there was no knowledge of safe sanitation and related practices, children did not attend school. This lack of knowledge was identified as a key gap and we worked to fill this need. This year, a volunteer group of youth has been trained to connect awareness workshops. These groups organized nutrition interventions and competitions for home gardens." (CTL, Rubber, RPC, Kegalle)

Source: CEPA (2005)

56. *Alcoholism* was widely seen as hindering upward mobility at the community as well as household level – by adversely affecting households' earning capacity, expenditure and education of children, creating intra-household conflict and disrupting community life. Men – who are the primary consumers – tended to underplay alcohol consumption, abuse and its effects; while women, youth, welfare officers and the estate management discussed it at length. About 80 percent of respondents in the Estate Survey indicate that alcoholism is a problem in their estates, and 75 percent of community informants report no improvement over the last 15 years. The increasing availability or supply of alcohol was seen to create and increase the problem; and a majority of community informants identified the sources to be illicit brews inside and outside the estates. Many better-managed RPCs are attempting community level solutions to the problem, and frequently sought the participation of young people in such programs (see Box 8.5).

Box 8.5: The negative consequences of alcoholism in the estates

Women, youth, management and welfare officers were particularly critical of parental/adult alcohol consumption and negative social consequences and saw it as a direct reason for deterioration within a given community. Increasing availability/supply of alcohol was seen as a strong contributory factor. In better-managed RPCs that were attempting community level solutions to the problem, the management frequently sought the participation of the community – and particularly the youth.

"Within the estate we have two bars. When men get their salary, the first thing they do is to go to the bar. The family comes after that. People are addicted to 'kassippu' (moonshine)." (Female FGD, Tea, RPC, Nuwara Eliya). "Most of the parents are addicted to alcohol and children face lots of problems due to this. ….This causes lot of problems in the night and children can't even study properly. The problem is getting worse day by day. In some families both parents drink." (Youth FGD, Tea, RPC)

"When talking of poverty, alcohol is a big issue…...Kassippu (moonshine) is brewed and sold in the neighboring villages, now even 'iced packs' are available. Lax laws contribute to its continuance. Fine (for brewing and sale) is Rs 10,000 – the dealer sends one of his assistants to prison and continues to sell. The vendors are seen hovering around on paydays to collect debts….." (CTL, Rubber, RPC, Ratnapura).

"Though both males and females drink, the incidence is lower here than other estates. We worked with the people and took the initiative to arrange for police interventions. Children's education and awareness has led to them playing a lead role on educating their parents on the ill effects of alcohol. The police station is close to this division – this may have also contributed to the success of the programs." (CTL, Rubber, RPC, Kegalle)

Source: CEPA (2005)

57. *Organizational structure of the estate sector:* The empirical evidence on the nature of poverty in the estates and the qualitative insights from households, management and other key stakeholders seem to suggest that the organizational structure of the sector is a critical constraint to poverty reduction. The structure of the "plantation system" as it stands today creates social or non-economic constraints within the sector. On the one hand, the system leads to residents' marginalization from the mainstream that affects households' economic decisions. Other than the perceptions of estate residents, empirical evidence laid out in this chapter – lack of connectivity of a large number of estates to towns, spotty coverage of NIC among estate residents and inadequate services including welfare programs (see Section 8.3) – seem to indicate such marginalization. On the other hand, the system also tends to create tensions arising out of an adversarial but dependent relationship between workers and the estate management.

58. These tensions also explain fundamental issues of mistrust between the workers and the management. The qualitative interviews revealed little satisfaction among residents with regard to any form of estate management – lack of competence in production and lack of care in human resource management were mentioned repeatedly as downward drivers in all but a few estates. While trade unions were acknowledged as representatives of the workers to the management, there was strong criticism of what was perceived to be the self-serving nature of the unions and leaders as well as the lack of representation (see Box 8.6).

Box 8.6: Perceptions on management and trade unions in estates

All through the study, little satisfaction was expressed with regard to any form of estate management. Considerable numbers of FGDs felt that the estate was deteriorating as a productive enterprise due to the management's lack of care and competence, and this was seen irrespective of the type of management. Going against the trend of perceptions, there were individual instances of managers who successfully managed the workforce and were seen by the community as a positive influence on their lives. In such cases, the workers relate to the specific manager rather than the management in the abstract.

"We cannot hope for a good future for the estate. The management is responsible for that. They are not caring for the tea bushes (no pruning, fertilizing) and the crop is going down every year. Along with that, our income is going down too. The management has no knowledge and the bushes are not maintained properly. They have grown tall and it is difficult to pluck……." (Male FGD, Tea, RPC, Badulla). "The management is not proper. 10 do work that can be done by 4. The estate is running at a loss. That's why we're not given any facilities. The company estates are better. That's because they maintain them well. For 5 years we didn't get EPF because it hadn't been entered." (Male FGD, Tea, State, Kandy)

"Compared to other factories this factory is better because the officers take care of us. If someone does not have a job they provide them with some job in the estate…." (Female FGD, Rubber, RPC, Kegalle). "After the new manager came, he made a lot of facilities, housing loans, sport ground; he has an idea of building a kovil." (59, F, Rubber, RPC, Ratnapura

Concerns were often expressed about the effectiveness of representatives, transparency and fairness in trade union dealings with members.

"…… Having votes here is not democracy. We are given votes only for the benefits of the politicians and trade unions." (Male FGD, Tea, RPC, Badulla). "All of us have to be members, but we don't get help worth of Rs. 35 per month. If two different members go to the Thalevar [union leader] to solve a problem, the decision may depend on whether he or she is a friend of the Thalevar." (Male FGD, Rubber, RPC, Ratnapura).

Source: CEPA (2005)

Evidence and perceptions on estate poverty trends

59. The discussion so far also has some implications for the question of what may have contributed to the increase in consumption poverty in estates from 1990-91 to 2002 seen from the HIES. While much caution is warranted in extrapolating from a "snapshot" view of economic conditions to explanations of time trends, these do provide a few clues. The perceptions of estate residents themselves on the direction of change are also helpful for a fuller understanding of dynamic shifts within the sector.

60. Firstly, as mentioned above, the full distribution of consumption is a far better indicator of welfare changes than the poverty headcount. And this suggests a small shift, rather than a drastic worsening of the entire distribution from 1990-91 to 2002. As to *why* this occurred, the CFSES offers a few insights, but not a clear story. On the one hand, the proportion of self-employed workers in the estate sector increased from 3 percent in 1996-97 to 10 percent in 2003-04; and more workers from estates now work in outside sectors like services and industry. On the other hand, regular employment in estates has shrunk from 68 to 49 percent, while casual employment has grown from 29 to 41 percent. This trend also appears to be consistent with households' perceptions about lower availability of work (as reported above) – probably due to some estates preferring to employ more casual labor than registered labor, that allows them more flexibility

during less profitable periods. Given the analysis in Section 8.2, the first trend is consistent with a *reduction* in poverty, and the second with an *increase*.

61. The CFSES also reports an increase in the fall in the number of income earners per household in the estates from 1996-97 to 2003-04, from 2.3 to 1.7 per household while it has remained unchanged for the country as a whole. The analysis here has indicated that this is associated with higher AI-poverty within a cross-section of the estate population. This demographic trend is therefore likely to have contributed to the rise in poverty in the estates. Interestingly, this has occurred even as dependency ratio has declined in the estates (58 percent in 1996-97 to 55 percent in 2003-04), as it has for the rest of the country. The fall in the number of income earners for the estates has meant that even as (age) dependency has declined, the dependency *per income earner* has increased for the estates, while it declined for the country.

62. *Perceptions of changes within the estate sector*: Overall, the residents perceived the overall living conditions on the estates to have deteriorated over the last 15 years. In contrast to this, there was a strong consensus among the individual households that the last 15 years had seen improvements at the household level, which is also consistent with the positive perceptions about trends in housing, sanitation and access to education reported earlier. The difference in the perception of improvement at the community versus household level is partly explained by the increasing role of non-estate employment, as seen by the employment trends from CFSES. This may have served to de-link the fortunes of the household from that of the estate community to a certain extent – even when the estate is not doing well, households can increase their income from external sources. There is also a clear pattern of better perceptions about improvements in community and households for RPCs than for privately managed estates (see Box 8.7). The qualitative study refers to poorer quality and availability of facilities in private estates, for example in housing and healthcare, which are consistent with these perceptions. While the Estate Survey results do not suggest systematic differences in availability of facilities or outcomes by management type, these numbers do not capture the intangible issues, like poor quality of services or management competence that often drive perceptions.

Box 8.7: Perceptions about changes in communities and households over last 15 years

The perception of deterioration of community was particularly strong in the tea sector, whereas in the rubber sector, there was an equal spread of opinion between deteriorating and improving conditions. The strongest differences in perception was seen between RPCs and privately owned and managed estates: 6 out of 9 community FGDs in private owned estates described conditions as deteriorating, compared with 9 out of 27 in the case of RPCs and 1 out 2 in the case of state-managed estates. In contrast to the assessment of communities at FGD level, household-level interviews in the qualitative study as well as the Estate Survey revealed that a significant majority of households in the sampled estates perceived an improvement in the last 15 years. 45 percent of the respondents to the Estate Survey reported that their position has improved in the last 15 years, while 21 percent reported deterioration. Households from RPCs were far more likely to report improvements than those in state-managed and private estates. While 47 percent of the Estate Survey respondents in RPC estates stated their condition has improved, 24 and 34 percent of those under state and private ownership respectively felt the same. 56 percent of residents of the state managed estates reported their conditions as "unchanged", indicating a strong sense of stagnation in these estates.

Source: CEPA (2005); MOP Estate Survey

63. *Attitudes of youth as an indicator of trends*: An important insight that emerged from the qualitative analysis, and is supported by the statistics on migration in Section 8.2, is that educated estate youth are often not willing to work on the estate, primarily due to the stigma associated with it. At the same time, salaried employment in the non-estate sectors was not easily available to this group, relegating most to unskilled or semi–skilled jobs. This could explain why urban migration may not result in immediate welfare improvements for households –outside

employment may not lead to increase in earnings, although it still may be attractive to estate youth as a longer-term investment into developing skills and links with outside markets.

64. The dislike for estate work was so strong that a number of youth FGD respondents reported remaining voluntarily unemployed awaiting a job that matched their aspirations, or employed in temporary activities like gem mining. This phenomenon might explain the fall in number of income earners reported in the CFSES, and is consistent with the labor shortages reported by some estate managers. The general perception was also that youth mobility has improved due to increased opportunities, especially in the rubber sector where the estates are located close to rapidly developing townships. Among the obstacles to such mobility, empirical results in this Section suggest that low level of educational attainment is a key factor. The youth respondents themselves cited marginalization– due to their Indian Tamil ethnicity and identity as "estate worker" – as an obstacle to gaining opportunities, even in instances where they possessed the required qualifications and expertise.

65. Thus, perceptions of estate residents about their direction of change are somewhat at odds with the statistical poverty trends reported in this chapter. This may just be due to the qualitative study being based on a small sample that is not representative of the population. In addition, one possible explanation could lie in the trend of increasing *opportunities* for estate residents to diversify their livelihoods and migrate outside the estates over the last 15 years – and especially among the youth. While in many cases outside employment may not have resulted in an improvement in household's earnings, they tend to represent greater integration with the outside world as well as expectations for better employment in future, both of which may translate to better perceptions among households about their current prospects.

66. At the same time, the perceptions were also largely negative, on the past as well as on future prospects, about conditions in the estates. This must be understood in the context of a number of factors discussed above: the adversarial relationship with management, disillusionment with trade unions, and a deep sense of marginalization caused by historical factors as well as the negative perceptions associated with estate work. The perceived way out of poverty therefore seems to primarily rest in households' ability to diversify out of estate work, particularly among the younger generation. And the empirical evidence in this chapter, across a cross-section of the estate population, largely supports such perceptions. However, the evidence also indicates that there are a number of constraints to households' ability to diversify effectively and appropriate policy initiatives can go a long way towards empowering households with the ability to make choices that improve their welfare.

8.3. Social and welfare programs in estates

67. Given the poverty and human development challenges faced by the estate population, social and anti-poverty programs can also play as critical drivers of change. It is therefore important to examine the coverage and access to such programs in the estates – to identify the patterns and the gaps in coverage, if any. This will also help understand whether such programs help reduce the extent of exclusion and marginalization reported by estate residents.

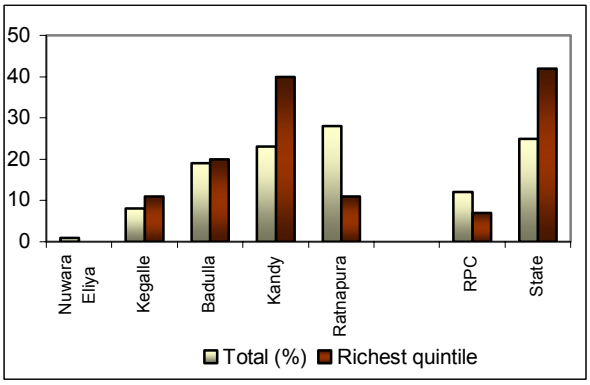
68. ***Cash transfers: Samurdhi and social welfare:*** Samurdhi cash transfers – as described in Chapter 2 – constitute the largest welfare program in the country. In theory, Samurdhi is targeted to the poor– although its coverage of more than 40 percent of the island's population implies that it also covers many among the non-poor. Other forms of transfers for welfare include those by the Social Welfare ministry, which cover much smaller number of families countrywide.

69. Coverage of the estate population by Samurdhi and social welfare transfers (combined) appears to be low. Only 13 percent of households in the Estate Survey sample report receiving

any cash transfers from the government – less than half of the HIES-based poverty headcount rate of the sector, and in stark contrast to the 41 percent coverage of Samurdhi for the country. The transfers do not appear to be well targeted (Annex, Table A-8.8). While AI is not as accurate a measure of poverty status as consumption expenditure, one would still expect better incidence than what is seen here: 28 percent of beneficiaries belong to the bottom 2 AI quintiles, compared to 23 percent in the top 2.

70. There is wide disparity in coverage by district and management type (see Annex, Table A-8.8). For example, 25 percent of sample households in state-managed estates receive transfers, compared to 12-13 percent of those in RPC and private estates (Figure 8-5). The extent of mis-targeting also varies widely by district and management type. 42 percent of state-managed estate households in the top AI-quintile receive the transfer, compared to only 7 percent of RPC-managed estate households of the same quintile. 40 percent of households in the top quintile in Kandy receive transfers, compared with 11 percent in Kegalle and Ratnapura.

Figure 8-5: Coverage of cash transfers in estates



71. Possession of NIC appears to matter for coverage. 13 percent of households whose head has NIC receive transfers, compared to 9 percent of those who do not. Interestingly, the coverage of the bottom 3 quintiles are noticeably higher for households whose heads have NICs than those who do not (Annex, Figure A-8.4). Thus, not just coverage, but also targeting appears to be more accurate among households whose heads have NICs than those who do not.

72. *Nutritional supplement through Thriposha*: Given the prevalence of malnutrition among estate women and children, the Thriposha Program, which targets food supplements to undernourished children under age 5 and pregnant and lactating women, is an important welfare program. The Estate Survey indicates coverage of Thriposha to be fairly high in the estates: about 80 percent of new mothers and 66 percent of young children reported receiving this supplement, although the proportion was lower in privately managed estates (62 and 47 percent respectively). Little can be said however about the targeting of the program since successful targeting depends on accurate identification of undernourished mothers or children.

73. ***Other social programs:*** The Estate Survey covered 6 broad types of social program: housing, toilet and water supply (sanitation), training and awareness, microcredit, crèche/child care facility, and early childhood development services. A program is considered "available" to all households in the community if at least one household from the community participates in or benefits from the program. The programs are provided mostly by government and NGOs, with government programs being the most prevalent. With the exception of sanitation programs that are relatively prevalent and appear to have led to improvements (as mentioned earlier), every other type of program is available to less than 50 percent of the sample households, and has a participation rate of 15 percent or less. The least prevalent programs are microcredit and childcare/crèche, with participation by only 10 percent of households (Annex, Tables A-8.9 and A-8.10). 54 percent of sample households do not participate in or benefit from *any* program. Not many clear patterns emerge about the incidence of the programs except that coverage of most seems to be higher in rubber estates than tea estates.

8.4. Implications for poverty reduction policies for the estate sector

74. The long-term economic prospects of the estate population are closely linked to the broader issues about profitability and future of the industry. While such comprehensive analysis must await a separate study, the analysis here does offer a few key policy messages. Although complex structural changes in the sector can occur only in the medium to long term, more immediate welfare gains can come from addressing some of the factors identified as critical drivers of economic mobility. These can be broadly characterized as facilitating *mobility and migration*, encouraging *self-employment and alternative skills development*, and expanding the provision of *state welfare services and other social programs*. A wide range of interventions can support these objectives: connecting estates better with nearby towns, improving the coverage of NICs particularly among the youth, increasing access to and quality of health and education, programs to develop knowledge and skills in alternative economic activities, and tackling alcoholism by involving communities and women and youth in particular.

75. *Social and welfare programs can also play an important role in effecting these changes*. The primary story that emerges there is one of inadequate coverage. The coverage of Samurdhi and other social welfare programs – that can play a key role in protecting the poorest and most vulnerable – is much below what is justified by the poverty rate in the sector. The explanation for this may well lie in the subjective method employed by Samurdhi in identifying beneficiaries (see Chapter 2). Adopting transparent criteria that includes indicators of poverty that are easily observable, as is being done in the North and East, may increase coverage and improve targeting among the estate population. Given the prevalence of malnutrition among women and children, a program like Thriposha is likely to play a valuable role in improving outcomes. While not much is known about the targeting of this program at this stage, it will be important to examine the adequacy of the program and its targeting effectiveness.

76. Other social programs – such as housing, livelihood generation through microcredit and training, childcare and early childhood development – also seem to have wide gaps in coverage. *Expansion of microfinance* in particular, which currently benefits only 10 percent of households (in the Estate Survey sample), can have wide-ranging economic benefits. The analysis in this chapter suggests at least two areas where better access to finance can have significant impact on poverty: setting up micro-enterprises and financing overseas migration, both of which are likely to have initial fixed costs that prevent poor households from making their optimal choices.

77. Low rates of participation by households, even when the programs are available in their communities, raises more questions: whether the problem lies in inadequate scale of these programs, or difficulties in mobilizing estate communities – especially for programs like microcredit that rely on community participation – or a combination of both. The success of such programs will depend on the ability to find the answers to these questions and design interventions accordingly. It will also be important to learn from the success stories – which the communities in the qualitative study identified as those that built awareness to change attitudes and behavior patterns in critical areas like sanitation, nutrition and schooling.

78. *Role of the estate management*: There could be a perceived tension between the estate management's incentives to facilitate such drivers of change, and the likelihood that such changes may further reduce the availability of labor for the estate sector. However, the long-term viability of the sector rests on its ability to attract workers from the labor market, independent of the typical structure that is in place currently. By actively encouraging the drivers of change as identified above, the estates can actually contribute to a positive image as employers and improve the status of estate work. The qualitative study revealed encouraging signs that some well-managed estates are increasingly seeing the value in taking such steps, and adopting them with a certain degree of success.

79. Finally, the long-term solution to poverty in the estates appears to lie in *mainstreaming the sector*. Perhaps the most enduring link between the current system and the enclave plantation past is residency of labor within commercial property, which limits movement of workers and marginalizes the population. Severing this link, perhaps by providing land rights to long-term residents, would relieve management of welfare responsibility towards the residents and residents of the obligation of having to provide labor to the estate. This would help mainstream the sector by changing the current parameters of the employer-employee relationship.

80. Such a solution will however not be easy to implement, and it is likely that large increases in labor productivity will be required for the industry to remain viable. To achieve that, it will be necessary to take a broad view of the sector and identify the type of re-structuring that will be required. There are shifts in tea and rubber production occurring naturally in Sri Lanka – seen in the higher productivity and increasing share of smallholdings in total production – that raises questions about the future of the estate sector in its current state and also hint at the kind of re-structuring that may be necessary. The survival of the industry, as well as the long-term welfare of its labor force, will depend on its ability to re-invent itself to achieve higher productivity and support higher wages.

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A. Annex

Annex 1

Table A-1.1: MDGs and Sri Lanka's position

MDG goals	Sri Lanka's position
Reduce the proportion of people living in extreme poverty by half between 1990 and 2015	**Poverty headcount ratio fell from 26% in 1990-91 to 23% in 2002**
Enroll all children in primary school by 2015	Net enrollment ratio in primary education (for age 6-10 years) reached 96% in 2002
Make progress towards gender equality and empowering women by eliminating gender disparity in primary and secondary school by 2005	Ratios of girls to boys in primary, secondary, and tertiary education reached 95%, 102% and 114%, respectively
Reduce infant and child mortality rates by two-thirds between 1990 and 2015	Infant mortality rate fell down from 18 in 1991 to 11 in 2002; child mortality rate declined from 22 in 1991 to 14 in 2002
Reduce maternal mortality rates by three-quarters between 1990 and 2015	Maternal mortality ratio declined from 42 in 1991 to 28 in 2002
Provide access for all who need reproductive health services by 2015	Contraceptive prevalence rate is high at 70 in 2000; 96% of births are attended by health staff

Sources: Selected Millennium development Goals Indicators, Department of Census and Statistics, Sri Lanka.

Table A-1.2: Military Spending (% of GDP)

	1995	2003
Sri Lanka	**5.3**	**2.5**
China	1.8	2.3
Korea, Rep	2.8	2.4
Malaysia	2.8	2.3
Thailand	2.1	1.3
Vietnam	NA	NA

Source: WDI 2005
Note: The definition of military expenditures is slightly different from Annual Report 2004 (Central Bank of Sri Lanka, 2005) to make international comparisons comparable.

Table A-1.3: Comparisons on rigidity of labor regulation in January 2005

	Difficulty of hiring index	*Rigidity of hours index*	*Difficulty of firing index*	*Firing costs (weeks of wages)*
Sri Lanka	**0**	**40**	**80**	**176**
China	11	40	40	90
Korea, Rep	44	60	30	90
Malaysia	0	20	10	65
Thailand	33	20	0	47
Viet Nam	44	40	70	98

Source: Doing business in 2006

Table A-1.4: Interest Rates in 2003 (%)[1]

	Lending	Real
Sri Lanka	10.3	5.1
China	5.3	3
Korea, Rep	6.2	3.9
Malaysia	6.3	2.7
Thailand	5.9	3.8
Vietnam	9.5	3.9

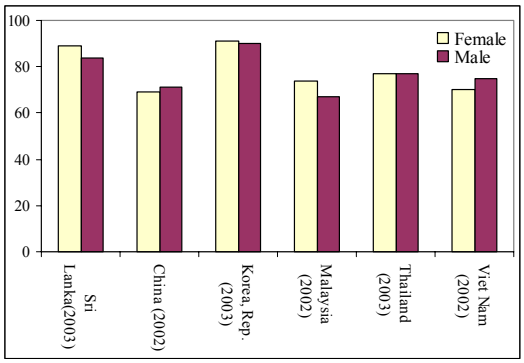
Source: WDI 2005

Table A-1.5: Public expenditure for the social sector (% of GDP)

Country	Education (2002/03)	Health (2002)
Sri Lanka	**2.2**	**1.5**
China	NA	2.6
Korea, Rep	4.3	2.6
Malaysia	7.9	2
Thailand	5.2	3.1
Vietnam	NA	1.5

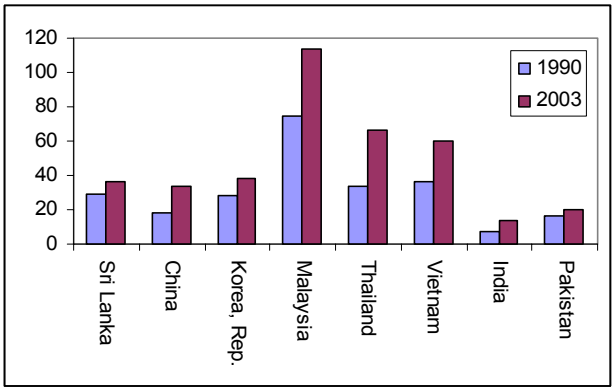
Source: Annual Report 2004 for Sri Lanka and WDI 2005
Note: Current and capital expenditure expressed as a percentage of GDP

Figure A-1.1. Gross Secondary School Enrollment Rate (%)



Source: Key Indicators 2005

Figure A-1.2: Exports of goods and services (% of GDP)



Source: WDI 2005

[1] Lending rates are collected by the IMF as representative interest rates offered by banks to residents. The terms and conditions attached to these rates differ by country, however, limiting their comparability. Real interest rates are calculated by adjusting the lending rates by an estimate of the inflation rate in the economy.

Annex 2

Projecting the rate poverty reduction: measures of elasticity of poverty reduction to growth

Although economic growth is the most powerful force for reducing income poverty, the extent of poverty reduction would be limited if benefits of the growth were skewed in favor of the rich. Therefore, projection of poverty reduction needs to estimate the impacts on poverty reduction of economic growth (growth effect) as well as of a change in income/consumption distribution (distributional effect).

Various methods are proposed to estimate the impacts: Datt and Ravallion (1992) propose a method based on an identity among poverty reduction, a change in mean income, and a change in its distribution. The method does not require any assumption on the income/consumption distribution but needs at least two household surveys for reference and comparison years. To estimate the growth effect, this method shifts the reference year's distribution so that its mean is equal to that of the comparison year. The difference in poverty rates between the reference distribution and the shifted one represents the sole impact of growth of mean income/consumption on poverty reduction. To estimate the distributional effect, the comparison year's distribution is shifted so that its mean is equal to the reference year's one. Since the reference year's distribution does not differ from the shifted one in mean income/consumption but in distribution, the difference in poverty rates between the reference distribution and the shifted one represents the sole impact of a distributional change on poverty reduction. The advantage of this approach is that no assumption is needed for the income/consumption distribution.

Bourguignon (2003) also proposes a method based on the growth-poverty-inequality identity. By assuming the income/consumption distribution is log normal, where the distribution is simply defined by its mean and standard deviation, the growth effect and the distributional effect can be represented as a simple function of a change in mean and standard error, respectively. This method has several advantages over others. First, it is parsimonious in that it needs only two parameters to estimate the effects, namely the mean and standard error of income/consumption distribution at the reference year. This means, in addition, that only one year of household survey is necessary for estimation. The extent of poverty reduction can be estimated by a bunch of poverty predictors; however, the more information a projection needs, the more likely the projection is to contain errors. Second, the formulas for both growth and distributional impacts are simple, as shown in Bourguignon (2003). Third, Bourguignon (2003) shows this method outperforms other methods in predicting the extent of poverty reduction. He found, using a cross-country and time series database, that the predicted rates of poverty reduction by his method fit to the actual rates better than those by other methods. This implies that the assumption on income/consumption distribution is not harmful in predicting poverty reduction. The innocuousness of the assumption is also enhanced by the fact that the growth effect between 1990-91 and 2002 in Sri Lanka estimated by this method is very similar to that of Datt and Ravallion's approach.

Quentin (2002) raises a question on independence between growth rates and distributional changes. For example, assuming a high growth rate and no change in income distribution could be unrealistic. He proposes to estimate the correlation between growth rates and changes in income distribution, and then compounds the direct impact from economic growth with the indirect impact through a distributional change caused by the growth. The downside of this approach is that the correlation needs to be estimated with very limited observations. In Sri Lanka, only three household surveys are currently comparable in estimating poverty headcount rates, implying the maximum two observations to estimate the correlation. Another concern is

about whether the correlation from the previous surveys can predict future relationship between growth rates and distributional changes. Structural changes in growth and inequality are often observed in a long time span.

Tables and figures:

Figure A-2.1: 95 percent confidence intervals of headcount ratios

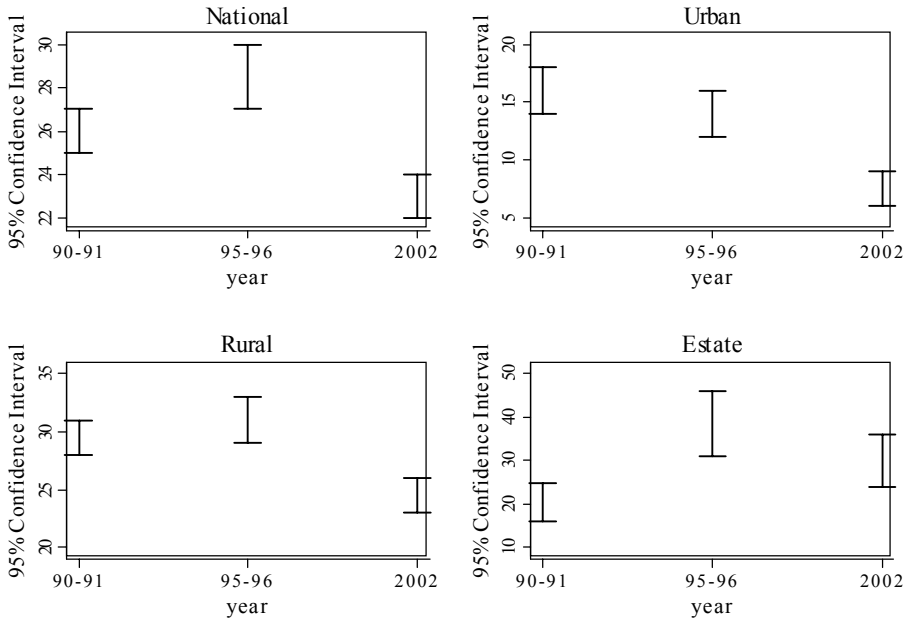


Figure A-2.2: Density and cumulative distribution of per capita expenditure

Pline=Rs. 1423

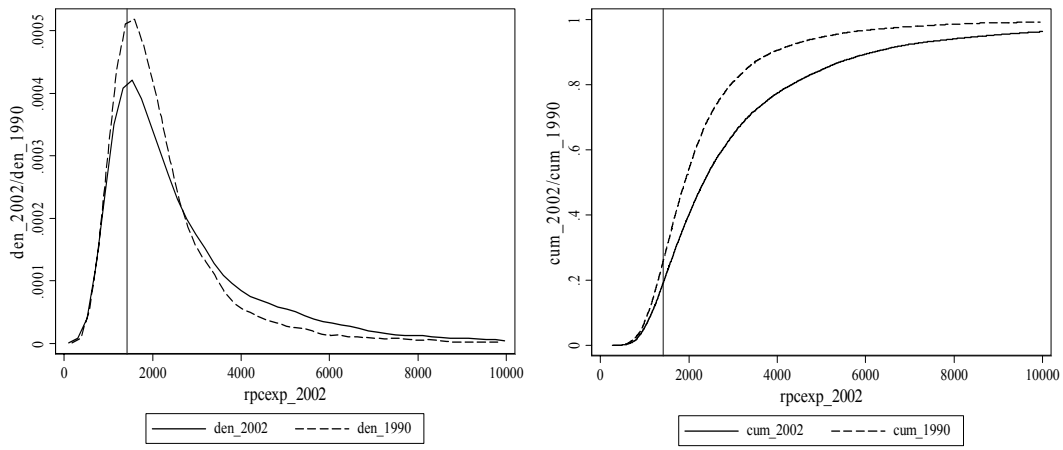
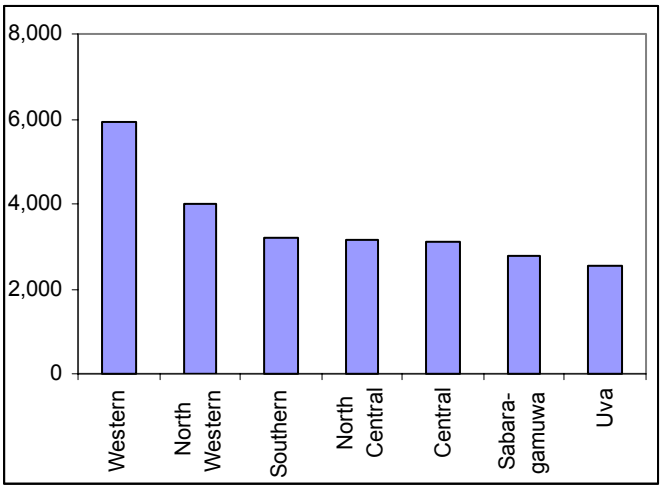


Figure A-2.3: Per capita nominal consumption expenditure (2003-04)



Source: CFSES report (2003-04)

Figure A-2.4: GICs of per capita income (pcinc) and consumption (pcexp) between 1995-96 and 2002

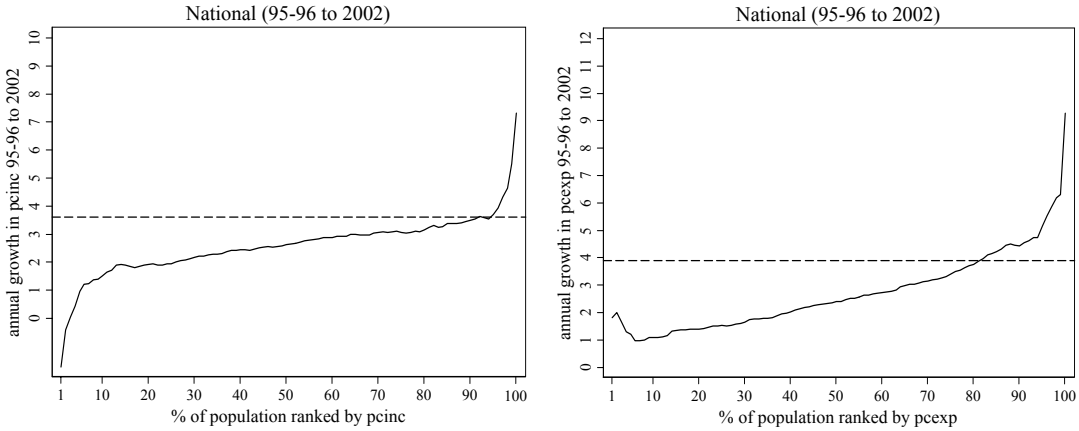


Table A-2.1: Ranking of districts by poverty headcount by districts

Province	*District*	*Rank (1990-91)*	*Rank (1995-96)*	*Rank (2002)*
Western	Colombo	2	1	1
	Gampaha	1	2	2
	Kalutara	14	6	4
Central	Kandy	17	13	8
	Matale	8	15	11
	Nuwara Eliya	3	9	5
Southern	Galle	10	10	9
	Matara	9	11	10
	Hambantota	15	8	13
North-West	Kurunegala	7	4	7
	Puttalam	4	7	12
North-Central	Anuradhapura	5	5	3
	Polonnaruwa	6	3	6
Uva	Badulla	11	14	16
	Monaragala	16	17	17
Sabaragamuwa	Ratnapura	12	16	15
	Kegalle	13	12	14

Source: HIES 90-91, 95-96, and 2002 (DCS)
Note: Districts in the Northern and Eastern provinces are excluded since no data are available from HIES

Table A-2.2: Comparison between per capita consumption and income

	Per capita income		Per Capita consumption	
Quintile	95-96	2002	95-96	2002
1	703	766	991	1068
2	1215	1381	1445	1596
3	1698	1984	1881	2168
4	2472	2952	2578	3117
5	5966	7809	5274	7325
Total	2411	2978	2434	3055
GINI	0.43	0.46	0.32	0.40

Source: IES 95-96 and 2002

Note: Quintiles of per capita consumption expenditure

Annex 3

Table A: Results of multivariate probit regression: probability of a household being poor
(all coefficients represent a change in probability for a marginal increase in an explanatory variable)

	Only District variables		**District & Divisional variables**	
	(1)	*(2)*	*(3)*	*(4)*
Household characteristics:				
Presence of elderly	-0.013+	-0.014*	-0.012+	-0.012+
Family member abroad	-0.077**	-0.077**	-0.078**	-0.077**
Presence of a child or children	0.054**	0.053**	0.054**	0.053**
Unemployment of the youth	0.047**	0.048**	0.046**	0.047**
Household size of 4-6 members	0.093**	0.093**	0.093**	0.092**
Household size > 6 members	0.239**	0.237**	0.238**	0.236**
Located in the rural sector	0.093**	0.093**	0.091**	0.087**
Located in the estate sector	0.037*	0.015	0.035*	0.008
At least one formal sector worker	-0.085**	-0.085**	-0.083**	-0.082**
At least one informal sector worker	0.064**	0.064**	0.067**	0.068**
Household head:				
Male	0.014+	0.015+	0.015+	0.016+
Unemployed	0.037+	0.038+	0.036+	0.038*
Inactive	0.026**	0.026**	0.027**	0.027**
Completed 5 grade of less	0.178**	0.176**	0.175**	0.171**
Completed 6-9 grades	0.092**	0.092**	0.092**	0.091**
Completed A/L or above	-0.076**	-0.076**	-0.075**	-0.074**
Working as ag wage worker	0.044**	0.042**	0.038**	0.034**
District characteristics:				
Share of agricultural employment in total paid employment of HHeads		0.001*		0.001**
Unemployment Rate	0.005**	0.000	0.004**	0.005**
Share of electricity use for lighting	-0.002**	-0.001*		
Share of HHeads with primary education		0.006**		
Accessibility index	-0.026*			
Characteristics of DS divisions:				
Accessibility index			-0.016**	
Share of using electricity			-0.001**	-0.001**
Share of HHeads with primary education				0.002**
# Observations	16924	16924	16924	16924

Source: Staff estimation based on HIES 2002 data
Notes: ** refers to 1 % significance, * 5%, and + 10%.
Accessibility index is omitted from the regressions with average educational attainment (for district or DS division) due to multicollinearity

Table A-3.1: Poverty Headcount Ratio by gender of household heads (%)

	1990-91	1995-96	2002
Male	26.0	29.1	23.0
Female	26.6	27.6	21.5

Table A-3.2: Poverty Headcount Ratio by ethnicity of household heads (%)

ETHNICITY	1990-91	1995-96	2002
Sinhala	26.3	28.3	22.3
Sri Lanka Tamil	26.2	30.8	26.8
Indian Tamil	18.8	37.3	25.7
Sri Lanka Moors	27.7	30.4	24.6

Table A-3.3: Poverty Headcount Ratio by religion of household heads (%)

RELIGION	1990-91	1995-96	2002
Buddhist	27.5	29.7	23.3
Hindu	22.3	35.4	27.8
Islam	26.5	29.4	23.3
Christian	15.1	13.5	11.0

Table A-3.4: Poverty incidence and access to infrastructure by district

District name	*Poverty Headcount Ratio (%)*	Average accessibility index	Average time to Colombo (min)	% of housing using electricity for lighting	% of housing units using gas for cooking fuel
Colombo	6	3.9	43	86	48
Gampaha	11	3.8	58	83	24
Kalutara	20	4.0	99	72	17
Kandy	25	3.2	184	71	14
Matale	30	3.1	219	51	6
Nuwara El	23	3.0	195	54	7
Galle	26	3.3	152	73	11
Matara	27	3.1	210	72	9
Hambantot	32	2.9	286	49	4
Kurunegal	25	3.2	166	52	4
Puttalam	31	3.0	195	52	8
Anuradhapura	20	2.9	309	49	6
Polonnaru	24	2.9	292	46	4
Badulla	37	2.9	251	59	6
Moneragal	37	2.7	316	31	3
Ratnapura	34	3.1	168	45	5
Kegalle	32	3.5	120	57	5
Correlation with HCR (%)	**-70**	**61**	**-71**	**-81**	

Source	HIES 2002 WB	ICS	ICS	CENSUS 2001	CENSUS 2001

Notes:
1. The accessibility index is calculated for every point as the sum of the population totals of surrounding cities and towns, inversely weighted by the road network travel time to each town. The numbers show the mean of the access values for all points that fall into a given district.
2. The average travel time to Colombo city is estimated travel time to each town based on geographical information of road network. The numbers show the mean of the travel time for all points that fall into a given district.
3. "HIES 2002 WB" denotes that the world bank staff calculated these figures using HIES 2002; "ICS" refers to "Sri Lanka: Improving the Rural and Urban Investment Climate (2004)".

Table A-3.5: Poverty and Educational Attainment of household heads

District name	Poverty Headcount Ratio (%)	% of hheads with tertiary education (higher than G.C.E. (O/L))	% of household heads with no schooling	Share of employed population in the agricultural sector
Colombo	6	42	3	2
Gampaha	11	30	3	9
Kalutara	20	30	3	20
Kandy	25	25	7	28
Matale	30	18	7	43
Nuwara Eliya	23	10	11	76
Galle	26	20	8	32
Matara	27	19	9	44
Hambantota	32	15	9	48
Kurunegala	25	21	5	37
Puttalam	31	16	5	36
Anuradhapura	20	20	6	59
Polonnaruwa	24	12	7	53
Badulla	37	17	14	69
Monaragala	37	13	13	71
Ratnapura	34	16	10	47
Kegalle	32	18	6	31
Correlation with HCR (%)		**-78**	**71**	**66**
Source:	DCS (2004)	Author's calclulation based on HIES 2002		LFS 2002

Table A-3.6: Poverty and unemployment rates by province

	Poverty Headcount Ratio (%)	Unemployment rate (%)
Western	11	8.9
North Central	21	8.4
Central	25	8.9
North Western	27	7.8
Southern	28	10.6
Sabaragamuwa	35	9.8
Uva	37	6.0
Correlation with HCR (%)		**-23.9**
Source	HIES 2002 WB	LFS 2002

*Notes:*LFS 2002 refers to "Annual Report of Sri Lanka Labor Force Survey 2002".

Table A-3.7: Poverty and unemployment rates by district

District name	*HCR*	Unemployment rate
Colombo	6	9.1
Gampaha	11	8.2
Kalutara	20	9.8
Kandy	25	11.6
Matale	30	7.6
Nuwara Eliya	23	5.4
Galle	26	8.8
Matara	27	11.0
Hambantota	32	13.3
Kurunegala	25	7.9
Puttalam	31	7.5
Anuradhapura	20	7.1
Polonnaruwa	24	11.7
Ratnapura	34	9.2
Kegalle	32	10.6
Badulla	37	6.3
Monaragala	37	5.2
Correlation with HCR (%)		**-8.3**
Source:	HIES 2002 WB	LFS 2002

Table A-3.8: Poverty and paid employees in the agricultural sector by district

District name	Poverty Headcount Ratio (%)	Share of agricultural paid employees in total employment (%)	Per capita monthly household income for households with heads working in the agricultural sector as paid employees
Colombo	6	2	2463
Gampaha	11	4	2873
Kalutara	20	6	1907
Kandy	25	10	2001
Matale	30	5	2435
Nuwara El	23	48	1996
Galle	26	16	2017
Matara	27	15	1811
Hambantot	32	14	1920
Kurunegal	25	6	2212
Puttalam	31	12	2280
Anuradhapura	20	19	2262
Polonnaru	24	12	1960
Badulla	37	27	2003
Moneragal	37	14	2088
Ratnapura	34	12	1467
Kegalle	32	10	1468
Correlation with HCR (%)		**26**	**-59**

Source: World Bank staff calculations using HIES 2002

Notes: The agricultural sector includes fishing and forest workers

Table A-3.9: Results of multivariate probit regression: probability of a household being poor
(all coefficients represent a change in probability for a marginal increase in an explanatory variable)
Sample excludes Colombo district

	With access variable	*With education & share of agri emp*
Household characteristics		
Presence of elderly	-0.016	-0.016
	(1.89)+	(1.90)+
Family member abroad	-0.091	-0.091
	(8.41)**	(8.40)**
Presence of a child or children	0.065	0.065
	(7.83)**	(7.78)**
Unemployment of the youth	0.048	0.049
	(5.00)**	(5.14)**
Household size of 4-6 members	0.105	0.105
	(12.10)**	(12.07)**
Household size more than 6 members	0.260	0.258
	(20.74)**	(20.61)**
Located in the rural sector	0.092	0.089
	(8.27)**	(7.98)**
Located in the estate sector	0.021	-0.002
	(1.07)	(0.10)
At least one formal sector worker	-0.095	-0.094
	(9.87)**	(9.74)**
At least one informal sector worker	0.075	0.076
	(9.74)**	(9.90)**
Characteristics of the household head		
Male	0.014	0.015
	(1.44)	(1.59)
Unemployed	0.033	0.035
	(1.48)	(1.54)
Inactive	0.034	0.033
	(3.22)**	(3.19)**
Completed 5 grade of less	0.186	0.183
	(13.55)**	(13.29)**
Completed 6-9 grades	0.100	0.100
	(7.31)**	(7.28)**
Completed A/L or above	-0.087	-0.087
	(3.98)**	(3.98)**
Working as agricultural wage worker	0.044	0.040
	(3.85)**	(3.48)**
District characteristics		
Share of agricultural employment of HHeads		0.000
		(0.84)
Unemployment Rate	0.004	0.004
	(2.79)**	(2.27)*
Characteristics of DS divisions		
Accessibility index	-0.012	
	(2.14)*	
Share of households using electricity	-0.001	-0.001
	(5.76)**	(2.53)*
Share of HHeads with primary education		0.002
		(3.73)**
Observations	14880	14880

Source: Staff estimation based on HIES 2002 data
Notes: ** refers to 1 % significance, * 5%, and + 10%.
Z-statistics are in parentheses

Table A-3.10: Regression of accessibility index of DS divisions

DS division characteristics	
Share of using electricity	0.022
	(7.01)**
Share of HHeads with primary education	-0.001
	(0.18)
District characteristics	
Share of agricultural employment of HHeads	-0.029
	(7.87)**
Unemployment Rate	-0.058
	(3.15)**
Constant	8.211
	(23.99)**
Observations	249
R-squared	0.71

Source:

Absolute value of t statistics in parentheses
+ significant at 10%; * significant at 5%; ** significant at 1%

Annex 4

Comparison of data sources for information on migration and remittance

Census of Population and Housing Condition 2001: The Census is supposed to be an authentic statutory record of all people resident in Sri Lanka. It not only provides the usual information on individual characteristics, availability of physical infrastructure, and housing conditions, etc., but also enquires about "leaving home". The questionnaire asks about the place of birth, the place of previous residence, and the length of stay in the current location. From Census data, migrants can be defined as someone who has previously resided somewhere other than the district of current residence. In principle, the Census covers all migration flows except for international migrants who went left Sri Lanka, and people who moved from one place to another within a district. The Census has been used in studies of internal migration focusing on patterns of inter-regional and rural-urban migration. Another major limitation of using the Census for migration analysis is its lack of information on remittances. The Census does ask whether there are any household members residing outside, but nothing is asked related to remittances received from them.

HIES and CFSES: HIES provides information on remittance from internal and international migrations. Households are asked whether there are any household members residing outside, and if so, how much remittances they sent in the last year. Such information is useful to measure the impact of remittance and migration on rural development and economic disparities among districts. Both surveys and especially CFSES provide information on demographic characteristics of internal and international migrants. Since the Census does not include this, the information from surveys is valuable in complementing the Census.

One potential issue is that the household surveys likely underestimate the size of migration. Migrants in these surveys are only those who live outside the current residence of the other members of the same household. Therefore, in contrast with the Census, if a household as a whole moved somewhere, these surveys would not treat them as migrants. In fact, the census indicates 80 percent of migrants into Colombo city moved with their household heads, suggesting a high probability that all household members moved into Colombo city. The HIES and the CFSES cannot elicit any information regarding such migrants, which may significantly bias profiles of migrants if they were exclusively relied upon for this information.

Figure A-4.1: The shares of domestic migrants and recent migrants (with less than 5 years of residence in Colombo city) by origin district

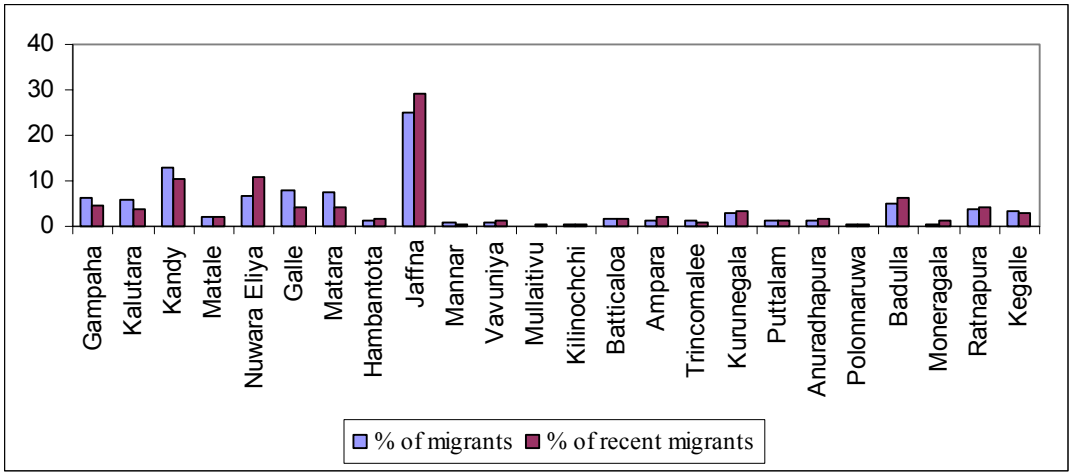


Figure A-4.2: The shares of poor population and recent migrants by origin districts (except for Northern and Eastern Provinces)

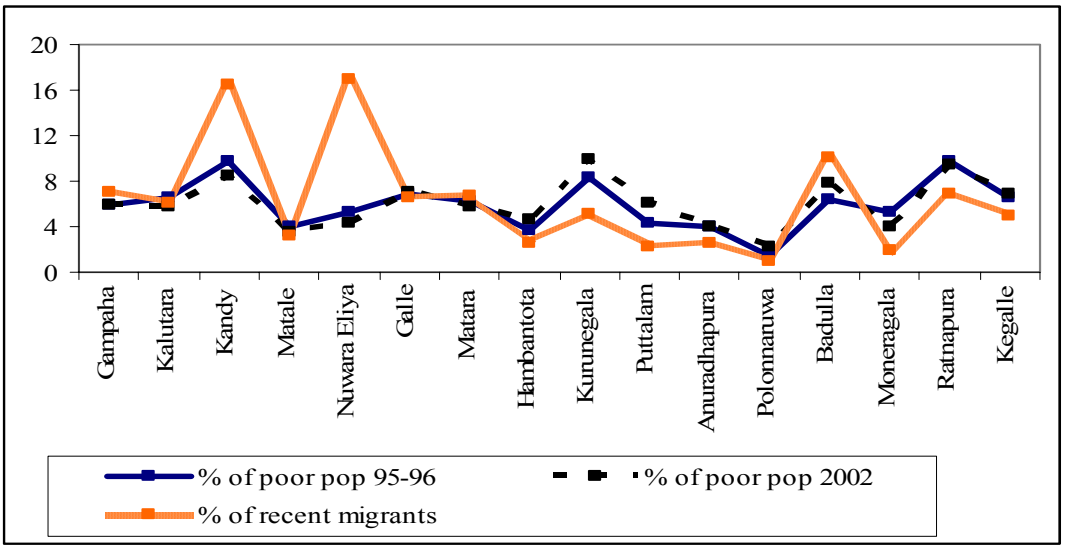


Figure A-4.3: Educational attainments and occupation for non-migrants and recent migrants by migration status of household heads

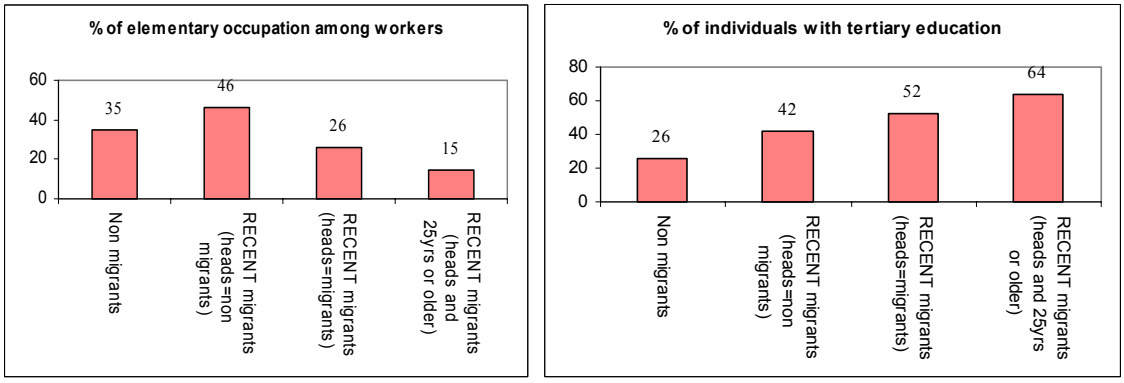


Figure A-4.4: Housing ownership by household heads' origin district

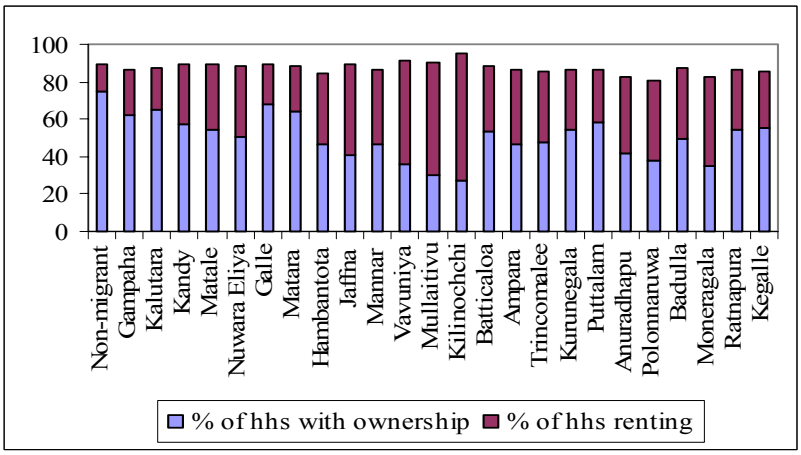
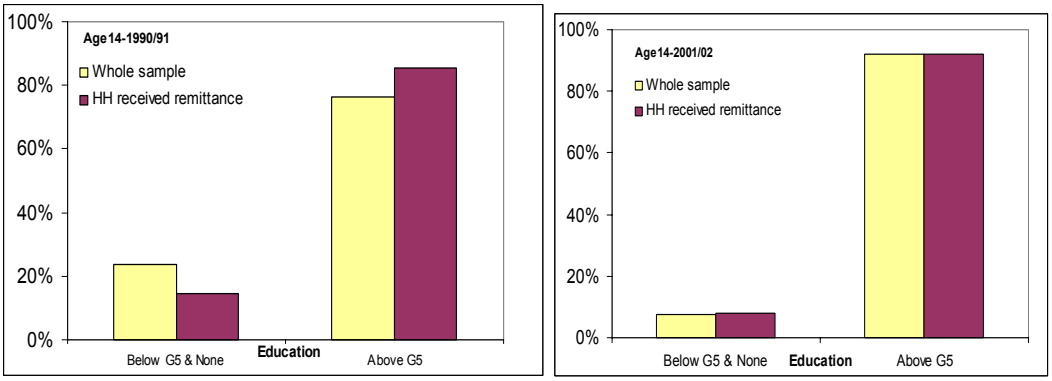


Figure A-4.5: Enrollment in secondary school for age 14 in 1990/91 and 2002



Source: Staff estimation based on HIES 1990/91 and 2002

Population density in and around Colombo:

In Figure A-4.6, each dot represents population density for a GN division in urban areas of Colombo District. Larger dots refer to population density for Colombo MC, while smaller dots for other GN divisions. It is clear from that the distribution of population density changes dramatically at around 10 km from the center of Colombo city. Inside 10 km from Colombo MC, the variation of population density is large and the average population density is high and declining with distance from the center. On the other hand, outside 10 km, the *variation in population density is small and does not change much with distance*. This suggests that there is a structural difference in habitation between inside and outside 10 km from the center. Finally, a satellite image also indicates that there is a clear continuation of habitation till 10 km from the center of Colombo city.

Figure A-4.6: Population density for urban areas in Colombo District

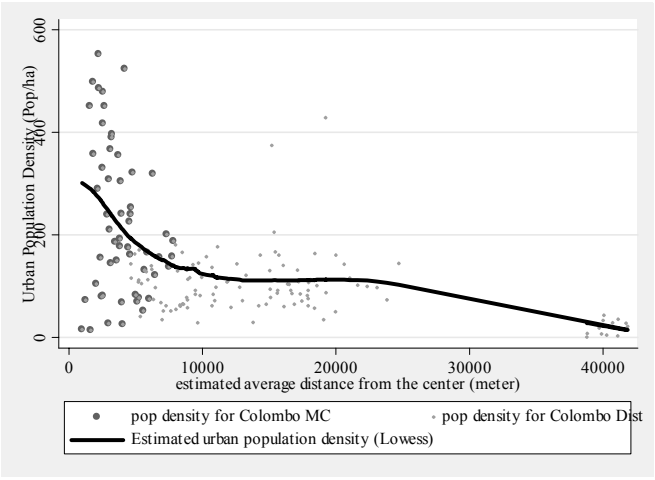


Table A-4.1: Education Attainments of Household Heads by migration status of household members

	1990/91				2001/02			
	Remittance only from Abroad	*Remittance only from Domestic*	*From Both*	*No remit-tance*	*Remittance only from Abroad*	*Remittance only from Domestic*	*From Both*	*No remit-tance*
No schooling	9%	13%	10%	11%	5%	7%	6%	6%
Up to G5	37%	41%	70%	43%	30%	37%	26%	34%
G6-8	24%	21%	3%	23%	23%	21%	28%	22%
G9&below degree	28%	24%	17%	22%	41%	35%	37%	36%
Degree&above	1%	1%	N/A	1%	0%	0%	3%	2%

Source: HIES 1990/91 and 2002

Table A-4.2: The average size of remittances (Rs per capita per month) in 2002

	All households				Households with remittance		
Consumption quintile	International	Internal	Total		International	Internal	Total
Poorest	6	7	13		131	140	271
2nd	14	8	22		205	127	332
3rd	32	18	50		378	211	589
4th	71	29	100		626	255	882
Richest	168	59	226		1377	482	1859
Overall	58	24	82		668	278	946

Source: Staff estimation using HIES 2002

Annex 5

The Health System in Sri Lanka

The government system consists of a network of hospitals providing both inpatient and outpatient care. This network includes three broad tiers of types of curative care institutions. The primary care institutions include Peripheral Units, Maternity Homes, Central Dispensaries and Maternity Homes, District Hospitals and Rural Hospitals. These primary care health facilities have maternity wards and offer basic medical care. A network of smaller facilities, called Central Dispensaries, provide mainly outpatient care such as treatment of minor injuries. Base and Provincial Hospitals, located mainly in large towns, provide secondary level care. Teaching and Special Hospitals provide tertiary care including treatment of cancer, tuberculosis, leprosy and other chronic diseases. At the end of 2002, there were 576 hospitals and 411 Central Dispensaries (Annual Health Bulletin, 2002). The primary, secondary and tertiary government health institutions together provided about 3 beds per 1000 individuals in 2002. This is higher than the South Asian average but comparable to other countries with GNP per capita similar to Sri Lanka's.

A breakdown of number of hospitals by provinces and districts shows that government health facilities are widely available throughout the island (Annual Health Bulletin, 2002). According to Hsiao (2000), the expansion in hospitals took place not on the basis on some planning criteria by the Ministry of Health but in response to demands from legislators (Hsiao (2000), page 37). Despite the good availability of facilities across districts, the availability of beds per 1000 population varies widely within provinces and across districts. Measured on a per thousand capita basis, Colombo has the highest availability of hospital beds at nearly 5 per 1000 capita while Vavuniya and Kilinochchi have the lowest availability at about 2 beds per 1000 capita.

The government health system does not include health facilities on estates. Health facilities on privately owned estates are managed by Regional Plantation Companies. Facilities on nationalized estates are managed by Janatha Estates Development Board and State Plantations Corporation. he estates have 52 hospitals, 192 Maternity Wards and 405 dispensaries. In 2001, the government took over 15 estate hospitals (Annual Health Bulletin, 2002).

The private sector in Sri Lanka consists of medical clinics and private hospitals. Since the government provides free inpatient care, the private sector mainly provides outpatient care and higher cost care to those who can pay. In 1997, private hospitals comprised less than 5 percent of total bed capacity (Hsiao, 2000).[2] There are an estimated 500 to 800 full-time private general practitioners who provide outpatient care from private clinics (Hsiao, 2000). Some of the private clinics are staffed by government medical officers working part time outside duty hours (before 8 am and after 4 pm) (Hsiao, 2000). Public sector doctors were granted right to private practice by the medical department in the 19th century since it was difficult to raise official salaries. This is similar to the practice in UK, Jamaica and Singapore. Public sector physicians have historically been paid wages below the market wage and senior government physicians obtain the bulk of their income from private practice. Full time private doctors and medical practitioners are concentrated in Western province, mainly in Colombo.

[2] Ministry of Health does not gather data on private health institutions. Hsiao (2000) reports statistics for the private sector based on a survey conducted in 1998.

Table A-5.1: Use of Maternal Health Services, by Wealth Quintiles and by Sector

	Wealth Quintiles		*Sector*			
	Poorest	Richest	Urban	Rural	Estate	Population Average
%who received Tetanus Toxoid Immunization	93.2	95.5	92.8	96.3	91.3	95.1
% who received Drugs to prevent Malaria	34.9	12.5	12.4	26.0	31.8	23.8
% who gave birth in an institution	91.4	99.2	98.9	98.2	81.2	96.7
% giving birth in Private Hospital	0.2	20.0	17.6	2.6	0.5	5.5
% who received prenatal visits by Midwife	75.6	80.7	76.8	89.0	41.3	82.9
% who visited facility for prenatal care	93.1	94.1	93.5	94.8	86.5	93.9
% advised on Complicated pregnancy symptoms	65.3	86.3	78.7	83.4	36.8	79.0
% receiving postnatal visits by midwife or medical officer	69.0	68.8	67.2	76.3	52.5	72.6

Notes: World Bank staff calculations using Sri Lanka Demographic and Health Survey (2000). Refers to maternal health services utilized during pregnancy by currently women aged 15-49 years with births within 5 years preceding the survey.

Table A-5.2: Children with Health Record, by Wealth Quintiles and by Sector

		Of those with Health Record	
	% with Child Health Development Record	Number of times weighed	Percentage Never weighed
By Wealth Quintiles			
Poorest	96.0	5.7	4.9
Richest	99.6	6.2	1.5
By Sector			
Urban	99.3	5.9	1.8
Rural	99.2	6.4	1.2
Estate	90.5	6.1	9.9
Population Average	*98.5*	*6.1*	*2.2*

Notes: World Bank staff calculations using Sri Lanka DHS (2000). Refers to children aged 3-59 months. Includes cases where the mother was not able to show the card. Number of times child was weighed obtained by enumerators' count of the number of dots on the growth chart in the health card.

Annex 6

Table A-6.1: Shares of Monthly Per Capita Incomes by Rural Expenditure Deciles & Source (2001/02)
Note: Other income includes incomes from Samurdhi, food Stamps, other cash receipts and rental income.

Deciles of Rural Per Capita Expenditures	Share of monthly per capita income from:						Total Monthly Per Capita Income (Rs)
	Agriculture	Agricultural Wages	Non-farm Enterprises	Non-farm Wages/Salaries	Remittances	Other	
Lowest	14%	14%	5%	39%	1%	27%	1,088
2	16%	10%	9%	38%	2%	25%	1,364
3	18%	9%	10%	38%	1%	25%	1,586
4	18%	8%	10%	38%	2%	24%	1,799
5	17%	5%	13%	38%	3%	25%	2,125
6	17%	4%	10%	39%	2%	28%	2,433
7	13%	3%	12%	41%	3%	28%	2,768
8	13%	1%	14%	39%	4%	29%	3,381
9	10%	1%	12%	42%	4%	31%	4,231
Highest	7%	0%	14%	41%	4%	34%	7,077
All	12%	3%	12%	40%	3%	29%	2,864

Source: Authors' calculations from HIES 2001/02.

Table A-6.2: Average annual growth in number employed, 1998-2002

Sector/Province	Labor employed in Agriculture				Labor employed in Non-agricultural Sector			
	Self employed	Unpaid family worker	Wage workers	Total	Self employed	Unpaid family worker	Wage workers	Total
Total Rural	3%	-7%	4%	0%	1%	-7%	4%	3%
Province								
Western	-5%	-5%	-13%	-10%	7%	-5%	6%	6%
Central	-5%	-18%	66%	7%	-1%	-18%	3%	0%
Southern	8%	22%	-1%	2%	4%	22%	4%	5%
North-Western	43%	22%	0%	12%	5%	22%	4%	4%
North-Central	-5%	10%	-24%	-8%	5%	10%	0%	1%
Uva	8%	-26%	4%	4%	-14%	-26%	13%	-2%
Sabaragamuwa	10%	0%	-1%	6%	-7%	0%	4%	1%

Source: Authors calculations using Sri Lanka Annual Labor Force Survey data.

Table A-6.3: Access to Technical Assistance from Extension Agencies by Source and Province, 1999/2000

Source of Agric. Extension Assistance	Percentage of Households With Access to Technical Assistance								
	Western	Central	Southern	North Eastern	North Western	North Central	Uva	Sabaragamuwa	Total
All agencies (government, NGOs, others)	4.6	16.7	4.6	4.6	17.1	36.3	5.2	14.6	15
Government	3.7	15.7	4.6	3.8	13.3	32.9	4.8	12.7	13.2

Source: World Bank 2003, based on SLIS 1999/2000.

Table A-6.4: Share of Monthly Household Income Sources, 2001/02

Source of Income	Agricultural Households[1]	Paddy farmers	Tea/Rubber farmers	Fruit/Veg farmers	Coconut farmers	Other farmers	Other agricultural households	Non-agriculural households
AGRICULTURAL INCOME	31.6%	31.9%	47.4%	42.1%	21.6%	26.2%	34.3%	0.0%
Field income	7.1%	19.6%	0.7%	21.5%	1.3%	5.6%	0.8%	0.0%
Plantation income	11.1%	6.9%	41.3%	2.7%	16.8%	11.1%	0.6%	0.0%
Livestock income	1.1%	0.7%	0.1%	2.6%	0.5%	0.5%	2.7%	0.0%
Fisheries income	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%
Other agricultural income	2.0%	1.5%	0.9%	1.8%	0.9%	4.1%	1.6%	0.0%
Agricultural Labourers Salaries and Wages	9.8%	3.3%	4.4%	13.4%	2.1%	4.9%	27.0%	0.0%
NON-AGRICULTURAL INCOME	41.9%	43.3%	32.3%	30.5%	48.2%	43.8%	41.2%	68.5%
Non-agricultual wages and salaries	31.7%	32.5%	24.1%	23.6%	34.3%	33.2%	32.6%	52.4%
Non-agricultural activity income	10.2%	10.8%	8.2%	6.9%	14.0%	10.6%	8.6%	16.1%
TRANSFERS	5.1%	4.8%	4.4%	4.2%	6.7%	6.0%	3.8%	5.2%
Samurdhi/Food Stamps	1.9%	1.8%	1.6%	2.7%	1.2%	2.1%	2.0%	1.1%
Other cash receipts (pension and disability)	3.2%	3.1%	2.8%	1.5%	5.5%	3.8%	1.8%	4.1%
REMITTANCES	2.6%	2.5%	1.6%	3.5%	1.8%	3.5%	2.3%	3.0%
Aboard	1.4%	1.4%	0.9%	2.1%	1.1%	1.9%	1.3%	2.4%
Local	1.1%	1.0%	0.6%	1.3%	0.7%	1.6%	1.1%	0.6%
OTHER INCOME	18.8%	17.5%	14.3%	19.8%	21.7%	20.4%	18.4%	23.2%
Sample size:	8454	1831	768	565	773	2033	2484	4999
Poverty rate	24.1%	20.3%	20.2%	30.3%	13.9%	24.5%	30.3%	19.0%

Table A-6.5: Business Obstacles identified as "Most Important" Constraint by Rural Enterprises

	Electricity	Financial infrastructure	Market Demand	Market Information	Road Access	Road Quality	Water Supply
Entire Sample	25%	12%	11%	6%	8%	5%	7%
By Region							
West and Central	16%	15%	16%	3%	6%	7%	8%
North West and North Central	31%	15%	8%	3%	17%	3%	5%
South, Uva and Sabaragamuwa	23%	13%	13%	3%	10%	3%	4%
North and East	38%	2%	0%	18%	0%	8%	13%
By Industry							
Production	31%	8%	6%	8%	9%	6%	8%
Service	27%	15%	11%	3%	5%	3%	10%
Trade	19%	14%	16%	5%	10%	5%	5%
By Age							
Less than 2 Years	20%	15%	14%	5%	11%	6%	9%
2-5 Years	33%	13%	10%	3%	9%	7%	4%
5-10 Years	23%	11%	12%	7%	7%	5%	10%
More than 10 Years	24%	9%	8%	9%	7%	3%	8%
By Size							
1-2 Employees	25%	13%	10%	7%	9%	6%	8%
3-5 Employees	29%	11%	13%	2%	6%	2%	7%
More than 5 Employees	26%	7%	11%	2%	5%	4%	3%
By Type							
Household-based Enterprises	24%	8%	9%	9%	11%	7%	9%
Stand-alone Enterprises	26%	15%	12%	3%	7%	4%	6%

Note: The numbers represent the percent of firms reporting the constraint as their most important constraint.

Source: Jin et al, 2005.

Annex 7

Table A-7.1: Paddy Production 1980-2002

	Production (MT)				% Share of Total		
	1980	1990	2000	2002	1980	1990	2000
Sri Lanka	**2,134,000**	**2,539,000**	**2,861,000**	**-**	**100**	**100**	**100**
Northern Province	**248,000**	**137,000**	**84,000**	**181,947**	**11.6**	**5.4**	**3.0**
Jaffna	65,000	34,000	21,000	45,593		1.3	0.7
Kilinochchi		43,000	N.A.	36,165	3.0	1.7	-
Mannar	115,000	33,000	19,000	25,914	5.4	1.3	0.7
Mullaitivu	33,000	20,000	22,000	24,425	1.5	0.8	0.8
Vavuniya	36,000	7,000	22,000	49,850	1.7	0.3	0.8
Eastern Province	**439,000**	**483,000**	**602,000**	**N.A.**	**20.6**	**19.0**	**21.0**
Ampara	251,000	302,000	436,000	N.A.	11.7	11.9	15.2
Batticaloa	93,000	136,000	58,000	173,328	4.4	5.3	2.0
Trincomalee	95,000	45,000	107,000	99,073	4.5	1.8	3.7

Source: Department of Census and Statistics (2003), unpublished data.
North East Provincial Council (2003:64)
Note: Kilinochchi and Mullaitivu data for 2000 and Trincomalee data for 1990 are estimates

Table A-7.2: Fish Production 1980-2002

	Metric Ton				% Share of Total			
	1980	1990	2000	2002	1980	1990	2000	2002
Sri Lanka	**167,410**	**145,790**	**267,680**	**273,280**	**100**	**100**	**100**	**100**
Northern Province	**66,580**	**24,150**	**8,190**	**33,090**	**39.8**	**16.6**	**3.1**	**12.1**
Jaffna	41,310	14,450	-	8,340	24.7	9.9	N.A.	3.1
Kilinochchi	-	-	-	-	-	-	-	-
Mannar	14,730	7,410	-	20,930	8.8	5.1	-	7.7
Mullaitivu	10,540	2,290	-	3,820	6.3	1.6	-	1.4
Vavuniya	-	-	-	-	-	-	-	-
Eastern Province	**27,090**	**23,210**	**35,520**	**51,870**	**16.2**	**15.9**	**13.3**	**19.0**
Ampara	-	-	-	-	-	-	-	-
Batticaloa	11,780	13,630	20,980	32,890	7.0	9.3	7.8	12.0
Trincomalee	15,310	9,580	14,540	18,980	9.1	6.6	5.4	6.9

Source: Department of Census and Statistics (2003), unpublished data.

Table A-7.3: NE Population Living in Refugee Camps as a Result of Conflict and Tsunami

District	Conflict (end 2003)	Tsunami (Jan 2005)
Ampara	7,055	62,727
Batticaloa	1,964 (end 2002)	26,827
Trincomalee	4,630	19,515
Eastern Province	*13,649*	*109,069*
Jaffna	8,194	10,198
Kilinochchi	7,282 (end 2004)	305
Mannar	8,361 (end 2002)	0
Mullaitivu	8,529	11,993
Vavuniya	12,803	0
Northern Province	*45,169*	*22,496*
Total	***58,818***	***131,565***

Note: The figures for tsunami displaced in refugee camps may be inflated because of non-affected inmates as well.
Sources: Column 1- District Statistical Handbook, various districts, latest year available.
Column 2 - http://www.tafren.gov.lk/pdf/ActionPlanDraft_new.pdf

Table A-7.4: Housing Conditions 2003/04

	Western	Central	Southern	Northern (a)	Eastern	North Western	North Central	Uva	Sabaragamuwa	Sri Lanka
Type of ownership-own house	90.5	76.4	94.9	63.3	91.5	95.1	97.6	85.4	90.6	89.2
Floor area per Person (Sq. Mt.)	20.2	15.5	16.4	15.1	11.0	17.8	16.9	13.6	16.1	16.8
Rooms per Person	1.2	1.0	1.0	0.8	0.8	1.2	1.1	1.0	1.0	1.1
Wall Type - Bricks/Cement Block	79.5	68.6	79.3	81.2	76.9	81.4	79.2	73.7	67.9	76.5
Floor Type - Cement	84.4	73.2	80.3	81.1	79.6	81.0	65.3	63.6	75.4	77.9
Roof Type -Tile/Asbestor	86.2	59.3	91.1	75.9	76.5	78.0	76.0	71.0	77.7	78.7

Source: The Consumer Finances and Socio Economic Survey Report 2003/04, Central Bank of Sri Lanka

(a) Excluding Killinochchi, Mannar and Mullaitivu

Table A-7.5: Share of Selected Villages in Northeast by Level of Vulnerability 2004 (%)

DS divisions	*Extreme poverty: Code 5*	*Very high poverty: Code 4*	*High poverty: Code 3*	*Poor: Code 2*	*Lower poverty: Code 1*	*Displaced Villages*
Batticaloa District						
Koralaipattu South	60	20	8	10	2	-
Koralaipattu North	55	27	10	8	-	-
Trincomalee District						
Eachchilampattai	58	20	4	-	-	18
Kuchchaveli	43	20	10	7	11	10
Mannar District						
Madhu	40	8	14	13	7	18
Manthai West	32	30	20	13	1	4
Vavuniya District						
Vavuniya North	38	30	21	10	1	-

***Source**:* Centre for Information Resources Management (2004), Vulnerability Poverty Profile: Batticaloa District, December, North East Provincial Council, Trincomalee.

Table A-7.6: Annual and Average GDP Growth Rates by Province 1997-2003

	WESTERN	SOUTHERN	SABARAGAMUWA	CENTRAL	UVA	EASTERN	NORTH WESTERN	NORTH CENTRAL	NORTHERN	SRI LANKA
1997	7.7%	4.4%	-9.9%	11.1%	4.9%	9.0%	13.1%	-7.6%	20.7%	6.3%
1998	7.1%	10.3%	-8.4%	-1.9%	3.6%	16.1%	4.2%	-4.9%	9.1%	4.7%
1999	12.3%	7.3%	0.4%	-2.7%	-14.1%	-4.8%	-9.9%	20.2%	-8.1%	4.3%
2000	7.9%	4.6%	10.4%	8.6%	1.9%	-4.1%	6.5%	-1.0%	-9.1%	6.0%
2001	-4.2%	1.3%	-6.3%	-1.9%	15.6%	8.2%	0.9%	-5.6%	7.6%	-1.5%
2002	3.7%	2.2%	11.0%	5.5%	-4.0%	1.9%	0.3%	11.5%	17.0%	4.0%
2003	8.8%	8.7%	-6.0%	-0.7%	9.2%	19.1%	-3.1%	5.0%	8.3%	6.0%
				AVERAGE						
1997-2001	6.0%	5.5%	-3.0%	2.5%	1.9%	4.6%	2.7%	-0.2%	3.4%	3.9%
2002-2003	6.2%	5.4%	2.1%	2.3%	2.4%	10.1%	-1.4%	8.2%	12.6%	5.0%

Source: National Planning Department.

Annex 8

The evolution of ownership and management of estates

During the colonial period and first two decades of independence (1830 to 1972), the estates were owned by foreign ("sterling") companies registered under British law or local ("rupee") private companies registered under Sri Lankan law. Land was obtained through a series of Acts and Ordinances, which most often acquired land with little or no compensation paid to current owners/users. Labor was acquired through migrant labor from South India. Critics of this structure, even during the pre-independence period, saw it as an enclave of foreign capital, management and labor, which also deprived the rural population of their land and seriously affected their sustainability as peasant farmers.

Nationalization: These critiques culminated in the introduction of policies to end foreign ownership and unequal distribution of land. The Land Reform (Amendment) Law No.39 of 1975 resulted in the nationalization of all privately owned estates, with 417,957 acres of estate land owned or possessed by public companies vested in the Land Reform Commission. At the time, this represented about 63 percent of the country's tea acreage, 32 percent of the rubber acreage and 11 percent of the coconut acreage. The management of these entities was handed over to government organizations. In 1976, the government established the Janatha Estate Development Board and the State Plantations Corporation for plantation-style management to exploit economies of scale.

Re-privatization phase 1 (management): On the recommendations of a task force, the government decided to restructure the state owned plantations in 1992. The first phase of the program transferred only the management aspects of plantation, granted at a nominal annual rent of Rs.500. The government created 23 state-owned Regional Plantation Companies (RPCs) where each RPC entered into an agreement with a private company, the Management Agent (MA), chosen through an open bid procedure, where only Sri Lankan bidders were allowed. The MAs were contracted for an initial period of 5 ½ years with provision for extending by further periods of 5 years subject to certain levels of profitability. However, due to the short-term nature of the lease agreements, the newly formed MAs found it difficult to raise money to run the plantations.

Re-privatization phase 2 (selling controlling interest): In February 1995, the newly elected government decided in favor of a fuller privatization of State Plantations. A program for the sale of controlling interests in the RPCs was announced in June 1995, with the following elements: (a) reduction of the lease period from 99 years to 50 years and the nominal lease rentals to be increased substantially from Rs.500 per year per estate and revised annually; (b) MAs of RPCs that had shown operational profits were eligible to purchase 51 per cent of the shares at the Colombo Stock Exchange market price on an all or nothing basis; (c) 20 per cent of the shares to be offered for sale to the general public; (d) 10 percent of the shares to be distributed free of charge among the employees of the RPCs; (e) the remaining to belong to the government for the time being; and (f) government to own a Golden Share in each RPC in order to exercise control over certain affairs.

Asset index

Due to the lack of consumption information in the survey, Asset Index is used to capture the well-being of estate households.[3] The principal component method is used to choose appropriate weights of household assets for the index (Filmer and Pritchett, 2001). The basic idea of principal component is to find a linear combination of the asset variables that contains the most information. The assets used are listed in the footnote.[4] The Asset Index (AI) performs well in terms of robustness, internal coherence and external validity. The asset index is proven to be robust to the choice of assets since the ranking of households do not change much after excluding certain assets. The Spearman rank correlations of the base case asset index (including all assets) and other indices (calculated with more limited number of assets) are high and significant in all cases. The internal coherence of the Asset Index is shown by the fact that households in the higher AI quintile own more assets. External validity can be shown by comparing the Asset Index to household attributes that are conventionally correlated with poverty such as education. Households in higher AI-quintiles have higher education attainment.

Survey Methodology

Both the quantitative survey and the qualitative survey were conducted during the same period, between October and December 2005. The surveys cover estate sector, defined by the DCS as plantation areas of more than 20 acres in extent that have at least 10 residential labourers. The quantitative survey covered more estates and households, while the qualitative survey employed more instruments and hold in-dept interviews with various stake holders. Differences between methodologies of the two surveys are summarized below.

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[3] The asset index, or the first principal component, is expressed as

$AssetIndex_i = \sum_{k=1}^{K} s_k (a_{ki} - \overline{a}_k) / s_k$, where a_{ki} is the value of asset *k* that household i has, $\overline{a}_k$ is the mean, and s_k is the standard deviation of the asset *k*.

[4] Own vehicle ; Own motorcycle; Own TV; Own radio or recorder; Own VCR/VCD Player; Own refrigerator; Own telephone (land or cellular); Own sewing machine; Number of water buffaloes; Number of cows; Number of goats ; Number of pigs; Number of poultry; Own farm with title; Own farm with grant or permit; Own farm without document; Own home plot with title; Own home plot with grant or permit; Own home plot without document; Own dwelling with title; Own dwelling with grant or permit; Own dwelling without document; Number of rooms; Dwelling type-Line room (DB); Dwelling type-Line room (SB); Dwelling type-Twin cottage; Dwelling type-Separate house; Dwelling type-Temporary Shed; Dwelling type-Upstairs Barrack; Cooking fuel-Firewood; Cooking fuel-Sawdust/paddy husk; Cooking fuel-Kerosene; Cooking fuel-Gas; Cooking fuel-Electricity; Wall-Brick; Wall-Mud; Wall-Wood; Wall-Metal sheet; Roof-Concrete; Roof-Tile; Roof-Tin sheet; Roof-Asbestos; Roof-Cadjan/palmyrah/thatch; Floor-Terrazzo/ tile; Floor-Cement; Floor-Wood; Floor-Dung/mud; Floor-Sand; Amenities-Electricity - Main grid; Amenities-Electricity - Non grid; Amenities-Own toilet; Amenities-Home garden plot; Source of drinking water-Inside well; Source of drinking water-Outside well; Source of drinking water-Unprotected well; Source of drinking water-Tube well; Source of drinking water-Public tab; Source of drinking water-Inside tap; Source of drinking water-River/tank; Toilet-Water seal; Toilet-Pour flush; Toilet-Pit; Toilet-Bucket latrine. Most asset variables take 0 and 1 values, unless indicated otherwise.

	Qualitative Survey	**Quantitative Survey**
Number of estates	20 estates*	50 estates divided into 100 PSUs**
Number of households	157 households	1030 households (1007 responded)
Methodology	3-stage sampling Level 1: basic criteria (based on crop, district, and province-level poverty), Level 2: estate (based on management type, size, remoteness, and type of labor), Level 3: household (equally split households into 3 categories, stratify HH in selected estates into 'bottom', 'medium' and 'top' based on FGD assessment).	50 estates were selected purposively from 5 districts with significant estate activity based on management type, and crop and remoteness. The DCS then applied the stratification and drew a sample of 100 PSUs from a total of 668 census blocks in the 50 estates. About 10 households per PSU were randomly drawn and interviewed.
Coverage: Crop	10 tea and 10 rubber estates.	35 tea and 15 rubber estates, reflecting greater extent of tea estates in Sri Lanka.
Coverage: Districts	Nuwara Eliya, Badulla, Kandy, Ratnapura, Kegalle and Kalutara	Nuwara Eliya, Badulla, Kandy, Ratnapura, and Kegalle
Coverage: Management type	More private estates than in the quantitative survey	Only 4 private estates in Kandy and Ratnapura districts, out of the initial 50 estates.
Coverage of resident workers	FGD may cover non-resident estate workers	Only households located in the estates
Survey Instruments	Office Based Information, Community Time Line, Female FGD, Male FGD, Youth FGD, Individual Life Story, and Additional Key Person Interviews.	Household questionnnaire (by a respondent within the households) and community questionnnaire (by key informants). Certain topics in the are answered by the female household heads or spouses of heads.
Remark	*The sample estates in the qualitative survey are a subset of the quantitative survey, with the exception of seven estates that do not overlap with the quantitative sample.*	

Note: Number of estates. Initially, 50 estates were selected; however, the survey was conducted in fewer estates because of the difficulty in identifying small, privately owned estates. This problem resulted in the small sample size of households in privately managed estates.

*For the community-level data collection in large estates, an estate division was defined as a 'community'; in small and medium estates, respondents viewed the entire estate as a 'community'.

**In the final data set, the household survey was conducted in about 106 PSUs.

Figure A-8.1: NIC ownership among estate population

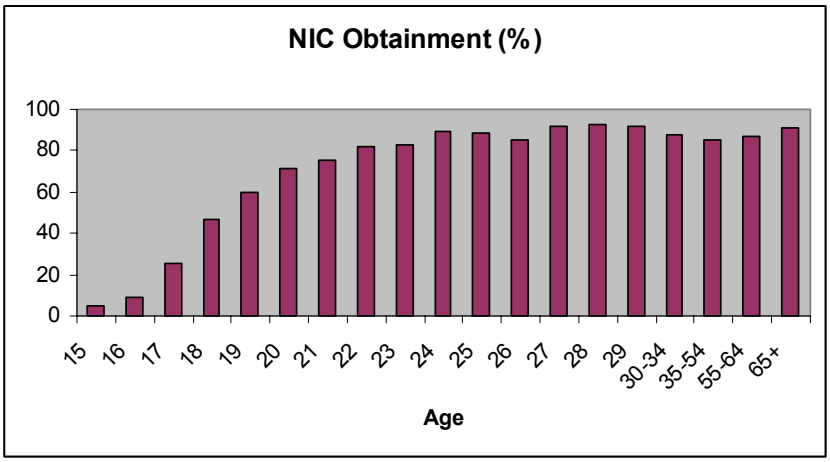


Figure A-8.2: Percentage of migrants to estate population by age group

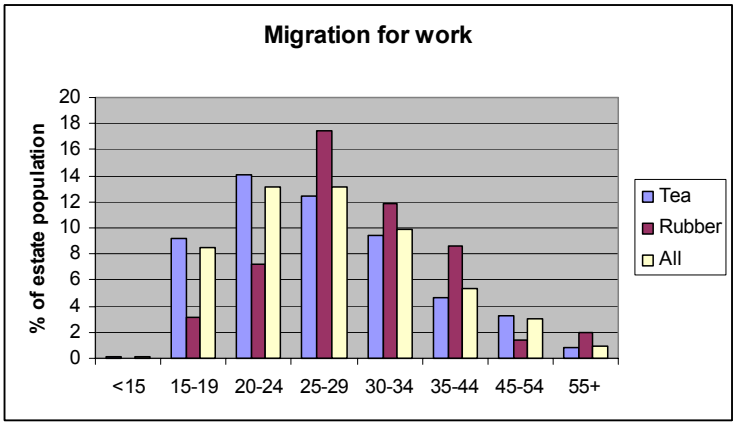
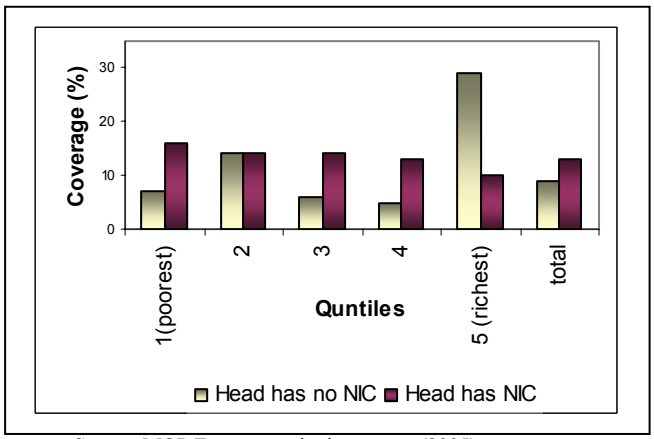


Figure A-8.3: Coverage of transfers by NIC



Source: MOP Estate quantitative survey (2005)

Table A-8.1: Poverty profile: Multivariate regression results

	(1) OLS	(2) Probit	(3) OLS
Estate's major crop is rubber	0.081	0.114	0.093
	(0.62)	(1.57)	(0.70)
Estate's management: State	0.417	0.838	0.357
	(1.06)	(20.88)**	(0.90)
Estate's management: Private	0.391	-0.192	0.415
	(2.03)*	(2.66)**	(2.11)*
District dummy: Kandy	-0.153	-0.354	-0.102
	(0.40)	(.)	(0.27)
District dummy: Nuwara	0.280	-0.057	0.302
	(4.19)**	(1.50)	(4.27)**
District dummy: Ratnapura	-0.352	0.216	-0.376
	(3.10)**	(3.28)**	(3.16)**
District dummy: Kagalle	-0.395	0.105	-0.405
	(2.62)**	(1.25)	(2.64)**
Road passable all year	0.186	-0.101	0.185
	(3.31)**	(3.12)**	(3.25)**
Distance to the nearest town (Km)			-0.004
			(0.76)
HH size	0.093	-0.054	0.097
	(6.32)**	(5.79)**	(6.04)**
Head edu: grade 6-9	0.356	-0.120	0.350
	(6.14)**	(3.81)**	(6.04)**
Head edu: O level or above	1.251	-0.232	1.254
	(11.98)**	(5.01)**	(11.95)**
Head's age	0.006	-0.003	0.006
	(2.76)**	(2.51)*	(2.41)*
Head has National ID	0.306	-0.131	0.291
	(3.71)**	(2.76)**	(3.52)**
Prop. Of female FM	-0.178	-0.000	-0.171
	(1.44)	(0.00)	(1.38)
Head is Indian Tamil	-0.129	-0.004	-0.151
	(2.03)*	(0.11)	(2.33)*
Live in estate over 20 years	-0.172	0.057	-0.180
	(2.50)*	(1.45)	(2.61)**
Prop. of employed FM			0.078
			(0.60)
Dependency ratio	-0.135	0.066	-0.125
	(3.16)**	(2.76)**	(2.73)**
Dummy: HH has migrant(s) working abroad	0.416	-0.051	0.399
	(3.13)**	(0.73)	(3.00)**
HH receive income from estate wages and salaries			-0.140
			(2.05)*
HH receive income from outside wages and salaries			0.018
			(0.32)
HH receive income from entrepreneurial sources	0.308	-0.154	0.295
	(3.63)**	(3.24)**	(3.44)**
HH is member of trade unions or political parties			0.063

			(0.90)
HH participated in housing program(s) (dummy)	0.298	-0.147	0.236
	(4.19)**	(3.72)**	(3.00)**
HH participated in other social program(s) (dummy)			0.085
			(1.44)
Constant	-1.050		-0.998
	(5.85)**		(4.60)**
Observations	951	974	951
R-squared	0.30		0.31

Note: * significant at 5%; ** significant at 1% Absolute value of t statistics in parentheses "Prop. of emp. FM" refers to proportion of employed family members. OLS: Ordinary Least Squared Note: Model (1) is the main regression where all the essential attributes are regressed against asset index with OLS, the dependent variable. Model (2) employs the same right hand sight variables, but use poverty status (0-1) as dependent variable. Reported values in Model (2) are marginal effects. Badulla is the omitted district; therefore, the coefficients are changes in welfare compared to Badulla.

Table A-8.2: Labor market and education outcomes of estate population by NIC status

		Age Group					
		15-19	*20-24*	*25-34*	*35-54*	*55-64*	*Total*
	NIC obtainment (%)	30.2	80.5	88.9	85.1	87.0	77.0
Education							
No NIC	Grade 6-9 (%)	73.3	54.1	25.0	21.7	13.7	49.6
	O level or more (%)	14.1	4.7	1.4	1.8	3.9	8.1
With NIC	Grade 6-9 (%)	59.7	53.1	49.0	32.5	21.2	39.6
	O level or more (%)	31.3	29.0	15.8	8.0	5.9	14.1
Total	Grade 6-9 (%)	69.2	53.3	46.4	30.9	20.2	41.9
	O level or more (%)	19.3	24.3	14.2	7.1	5.6	12.7
Employment							
No NIC	Employment (%)	24.0	64.7	93.1	81.3	41.2	50.6
	Unemployment (%)	5.1	12.9	1.4	2.4	2.0	4.8
	Days worked	4.8	12.5	17.5	15.9	6.7	9.8
With NIC	Employment (%)	34.7	61.9	87.5	86.0	47.6	74.1
	Unemployment (%)	10.4	13.1	3.8	0.8	0.6	3.9
	Days worked	7.0	12.7	18.7	18.0	9.3	15.5
Total	Employment (%)	27.3	62.5	88.1	85.3	46.8	68.7
	Unemployment (%)	6.7	13.0	3.5	1.1	0.8	4.1
	Days worked	5.5	12.7	18.6	17.7	9.0	14.2
Earnings							
No NIC	Outside earnings	374	520	636	663	618	504
	Estate earnings	380	1,468	1,894	1,789	411	998
	Total earnings	754	1,988	2,530	2,451	1,029	1,502
With NIC	Outside earnings	876	1,131	1,754	1,209	835	1,256
	Estate earnings	345	888	1,661	1,874	1,007	1,457
	Total earnings	1,221	2,019	3,415	3,083	1,842	2,713
Total	Outside earnings	525	1,012	1,630	1,128	806	1,083
	Estate earnings	369	1,001	1,687	1,861	929	1,351
	Total earnings	895	2,013	3,316	2,989	1,736	2,434

Note: Outside earnings refer to earnings from works outside estates. Earnings are in Rupees per month. Days worked refer to number of days worked last month.

Table A-8.3: Labor market profile of estate population

	Total Earnings	*Total days*	*% O/L +*	*% of workers*
Work status of primary employment				
Estate-casual	3,327	23	2.9	56.79
Estate-regular	4,210	24	21.6	9.45
Inside-casual	3,222	21	11.6	2.2
Outside-casual	3,693	19	10.2	15.07
Outside-regular	5,000	24	27.3	10.11
Inside-self	6,993	24	26.8	2.86
Outside-self	4,652	25	21.0	3.17
Employer	24,000	28	57.1	0.36
All workers	3,853	22	9.9	100
Estate job category				
Factory	3,238	23	6.1	12.63
Field	3,262	23	3.0	75.52
Sundry	4,486	24	4.5	6.77
Supervisor	5,433	27	51.4	2.69
Other	5,817	26	35.5	2.39
All estate workers	3,462	23	5.5	100
Non-estate sector				
Agriculture	4,003	20	9.5	30.13
Industry	4,303	22	16.8	20.54
Trade	4,757	25	17.8	21.89
Service	5,711	23	26.8	27.44
All non-estate workers	4,698	22	17.5	100

Note: Services sector includes workers in "other" industries. Total earnings include earnings of the workers from all sources, be it primary, secondary or estate works. "% O/L +" refers to percentage of worker who attain O level or higher education. Tabulation is based on population 15 years and over who are gainfully employed (i.e. H108 category 1 to 8).

Table A-8.4: Profile of estate households with migrants

	Destination		
	Urban	Abroad	All*
Size of estate			
Smaller than 150	16	1	17
151-250 acres	16	3	20
251-500 acres	13	5	18
Larger than 500	2	8	11
District			
Badulla	6	1	7
Kandy	12	10	24
Kegalle	6	12	19
Nuwara Eliya	26	3	29
Ratnapura	3	3	7
Management			

RPC	13	4	17
State	14	12	27
Private	3	0	3
Major crop			
Tea	14	3	18
Rubber	5	10	17
Ethnicity of head			
Sinhala	3	2	6
Sri Lankan Tamil	14	8	23
Indian Tamil	14	3	18
Muslim	0	0	0
Head has National ID card			
No	12	4	20
Yes	13	4	17
Head of household's education attainment			
No schooling	11	4	18
Grade 1 – 5	15	5	20
Grade 6 – 9	11	3	13
O level	17	2	21
A level and beyond	12	0	12
Total	13	4	17

Note: Migrants refer to individuals who used to live in households in the past 5 years, migrated for work only*: "All" includes a small group of households whose migrants work in rural areas.

Table A-8.5: Coefficients of migration and remittance variables on asset index

Dependent Variable: Asset Index (AI)

	Urban Migration		**Overseas Migration**	
	(1)	(2)	(3)	(4)
Work in urban areas	-0.121	0.021		
	(1.51)	(0.14)		
Work in urban areas and remit regularly		-0.192		
		(1.13)		
Work abroad			0.431	0.071
			(3.20)**	(0.37)
Work abroad and remit regularly				0.684
				(2.65)**
Observations	970	970	970	970
R-squared	0.27	0.27	0.28	0.28

Note: OLS regression coefficients of migration and remittance variables on asset index. The following explanatory variables are used in all models: *Crop*; *Estate management*: State; *District dummys*: Nuwara Eliya, Ratnapura, Kegalle; *HH size*; *Head's education*: grade 6-9, O level or above; *Head's age*; *Head has National ID*; *Head is Indian Tamil*; *Length of residency> 20 years*; and *Road passable all year*.

Table A-8.6: Probit regression of likelihood of an estate household having a migrant

	Urban Migration	Overseas Migration
	(1)	(2)
Estate's management: State	0.535	1.471
	(2.08)*	(4.03)**
District dummy: Nuwara Eliya	1.048	0.643
	(6.74)**	(2.05)*
District dummy: Ratnapura	-0.079	0.701
	(0.31)	(1.89)
District dummy: Kagalle	0.155	1.598
	(0.64)	(4.93)**
HH size	0.277	0.186
	(8.08)**	(3.81)**
Head edu: grade 6-9	0.012	-0.185
	(0.09)	(0.92)
Head edu: O level or above	0.465	-0.708
	(2.02)*	(1.50)
Head's age	-0.001	-0.015
	(0.23)	(1.88)
Head has National ID	-0.267	0.144
	(1.42)	(0.52)
Head is Indian Tamil	-0.113	-0.097
	(0.77)	(0.50)
Live in estate over 20 years	0.356	0.157
	(2.12)*	(0.68)
Prop. of female FM	1.216	-0.424
	(4.02)**	(1.01)
Presence of children aged 6 or younger	-0.650	-0.292
	(4.34)**	(1.48)
Presence of children aged 7-14	-0.560	-0.119
	(4.07)**	(0.62)
Presence of FM aged 65 or more	-0.063	0.209
	(0.40)	(0.97)
Constant	-3.271	-2.606
	(7.60)**	(4.59)**
Observations	1002	1002

Absolute value of z statistics in parentheses; * significant at 5%; ** significant at 1%
Note: Household size before migration is the sum of current household size and number of migrants.
Dependent variables: (1) urban migration: household has any migrant(s) working in urban Sri Lanka; (2) overseas migration: household has any migrant(s) working abroad.

Table A-8.7: Characteristics of households by migration destination and remittance

Destination	*Urban Sri Lanka*			*Abroad*			*No migration*
Remit regularly	*Yes*	*No*	*Total*	*Yes*	*No*	*Total*	
Asset Index	-0.02	0.04	-0.01	0.56	-0.19	0.20	-0.02
AI-Poverty rate (%)	22	28	23	25	42	33	31
Earnings per worker	3560	3644	3581	4377	3842	4116	3469
Earnings per capita	1740	2215	1858	2087	1674	1886	1796
Total HH earnings	6597	10068	7458	8649	7973	8320	7220
% HH members who work:							
off-estate in agriculture	6	8	6	3	14	8	10
off-estate in industry	6	15	8	16	8	12	5
off-estate in trade	7	4	6	7	16	11	5
off-estate in services	4	14	6	8	10	9	3
estate casual employees	59	36	53	47	15	32	51
estate regular employees	1	6	3	13	18	15	10
estate: total	60	42	56	60	33	47	62
% of HH head attained:							
grade 1-5 edu.	56	34	50	60	53	56	43
grade 6-9 edu.	20	44	26	25	21	23	33
O/L or better	9	9	9	0	5	3	7
% highest edu in HH is O/L or better	23	19	22	20	11	15	22

Table A-8.8: Percentages of households receiving cash transfer (Samurdhi/social welfare)

	Asset index quintile					
	1 (poorest)	2	3	4	5 (richest)	Total
Size of estate						
Smaller than 150	8	15	20	15	9	13
151-250 acres	20	10	12	9	4	11
251-500 acres	14	17	8	10	6	12
Larger than 500	8	13	21	17	9	13
District						
Kandy	13	0	13	36	40	23
Nuwara Eliya	0	0	5	0	0	1
Badulla	26	15	15	23	20	19
Ratnapura	29	39	32	17	11	28
Kegalle	4	13	8	9	11	8
Management						
RPC	13	14	13	12	7	12
State	13	0	18	40	42	25
Private	33	25	9	0	0	13
Major crop						
Tea	17	12	11	12	10	12
Rubber	7	19	30	19	13	15
Ethnicity of head						
Sinhala	20	25	30	20	11	17
Sri Lankan Tamil	15	27	14	19	27	20
Indian Tamil	12	9	12	10	7	10

Muslim	100			33	20	33
Head has National ID card						
No	7	14	6	5	29	9
Yes	16	14	14	13	10	13
Head of household's education attainment						
No schooling	13	18	14	18	22	16
Grade 1 – 5	14	12	11	13	7	12
Grade 6 – 9	16	15	14	10	15	14
O level	0	0	29	17	3	8
A level and beyond	0	0	50	0	0	4
Total	14	14	13	13	10	13

Table A-8.9: Access to social programs (%)

	Housing	Water/toilet	Training	Microcredit	Crech	ECD	None
Size of estate							
Smaller than 150	51	68	60	44	25	28	25
151-250 acres	59	74	50	35	38	36	8
251-500 acres	47	71	35	36	41	50	12
Larger than 500	54	86	31	21	61	61	0
District							
Kandy	55	71	15	45	41	30	0
Nuwara Eliya	37	55	57	30	27	30	17
Badulla	59	72	31	25	22	50	19
Ratnapura	56	94	57	86	69	56	0
Kegalle	58	100	42	25	68	34	0
Management							
RPC	50	72	47	36	38	42	13
State	49	68	17	51	34	34	0
Private	74	100	26	51	49	29	0
Major crop							
Tea	49	68	42	35	31	40	14
Rubber	61	95	57	49	73	44	0
Total	51	73	44	38	38	41	12

Note: The table shows percentages of households living in community where the social programs exist. ECD refers to early childhood development program. None refers to communities where none of the social program exists.

Table A-8.10: Participation by households in social programs (%)

	Housing	Water/toilet	Training	Microcredit	Crech	ECD	None
Size of estate							
Smaller than 150	13	21	13	7	7	7	64
151-250 acres	18	26	12	8	11	9	55
251-500 acres	18	23	8	9	12	14	48
Larger than 500	13	28	6	10	19	14	51
District							
Kandy	12	26	2	11	11	3	50
Nuwara Eliya	16	18	16	5	8	8	59
Badulla	19	26	6	3	8	12	57
Ratnapura	14	28	11	36	21	19	35
Kegalle	9	30	6	3	14	6	58
Management							
RPC	16	24	11	9	11	11	54
State	10	25	2	12	10	3	49
Private	12	21	9	24	9	9	51
Major crop							
Tea	16	23	11	8	10	11	54
Rubber	13	28	8	15	17	10	52
Ethnicity of head							
Sinhala	13	17	7	13	11	10	61
Sri Lankan Tamil	18	24	3	5	10	9	56
Indian Tamil	15	25	13	10	11	11	52
Muslim	10	10	0	20	0	10	60
Head has National ID card							
No	18	25	7	9	9	9	55
Yes	15	24	11	10	11	11	54
Head of household's education attainment							
No schooling	17	25	11	8	9	11	56
Grade 1 – 5	15	24	10	8	10	11	54
Grade 6 – 9	15	25	9	12	13	11	50
O level	12	19	10	13	12	4	60
A level and beyond	25	21	21	17	13	13	67
Total	15	24	10	10	11	11	54

Note: ECD refers to early childhood development program. None refers to households that did not participated in any programs.