



Lund University

School of Economics and Management
Department of Economics
Master's thesis 2007

Income Poverty

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A Case Study of Sri Lanka

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Acknowledgements

This study was made in Sri Lanka in November – December 2005. I would like to thank all the people I met in Sri Lanka for making my stay interesting and unforgettable. I am very grateful for their hospitality and their warm welcome. I would also like to express my appreciation to those who made this study possible and gave me access to valuable information. Special thanks to Professor S.S Colombage and Professor A.S Chandrabose at the Open University of Sri Lanka, Professor M. Sinnathambi, R. Jayaweera, D. Abeyrathna, K.Rajakaruna and S. Pathmanesan at the University of Peradeniya for their helpfulness and guidance. I would also like to thank the Centre For Poverty Analysis in Colombo as they so generously let me use their library and participate in their Annual Symposium on Poverty Research.

Finally would I like to thank my supervisors at the Department of Economics at Lund University, Alia Ahmad and Joakim Westerlund for their advice and help throughout the study. Last but certainly not least I would like to convey my thanks to the Swedish International Development Agency (SIDA) for the financial aid.

Abstract

Sri Lanka has been a leading example among developing nations in the fight against poverty. Human development has been a priority of the Sri Lankan government, and many social indicators are today more in line with those of a developed country. Still poverty is a severe and widespread problem in the country. The economic growth has been under the country's potential, and the unequal development has put the Western Province ahead of the other parts of the country. The aim of this study is to analyze the causes and determinants of poverty in Sri Lanka and to review the official poverty alleviation programme in Sri Lanka, Samurdhi. The focus will be on five determinants of poverty, infrastructure, access to land, access to microfinance, education and health. By putting these determinants in a country specific situation the regional variations and what impact the determinants have on the income can be explained. The analysis is completed with regressions estimated with OLS.

The conclusions that are drawn in this study are that all of the five determinants are interacting as they are closely connected. In order to reduce poverty in Sri Lanka all of them will have to be accounted for, but as the regional variations are so strong people living in remote areas are those most in need of measures. Improving the infrastructure can help reduce the domination of the Western province and get a more even distribution of public goods and economic activity.

The Samurdhi programme has a very holistic approach and the best intentions, but the problem in the targeting process, the costly administrative sector where corruption has been discovered and the politization of the programme make this programme inefficient. A poverty strategy like the Samurdhi is needed in Sri Lanka, and the exposure of these defaults will hopefully change the course today, so that the people most in need get the help they are entitled to

Key words: Sri Lanka, Income Poverty, Regressions

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1 Introduction

Poverty and how to fight world poverty has been given much attention in national and international arenas since the declaration of the Millennium Goals, by the United Nations in 2000. The definition of poverty is broader today and there is an increased acceptance that poverty is not only about economics. New elements have been recognized as crucial, such as the importance of the causes of poverty. But 799 million people in the developing world still go to bed hungry every night.

Poverty reduction in Sri Lanka is a mixed success. On the one hand recognizing the emphasis on health and education for development, Sri Lanka has been a leading example among developing nations. Remarkable achievements have been made and today the country has social indicators more in line with those of a developed nation. On the other hand poverty is still a big and widespread problem in the country. The slow pace and the unbalanced composition of the economic growth has slowed down and made the reduction in overall income poverty geographically uneven. The gap between rural and urban income has widened, as the gap between different provinces and regions.

1.1 Aim of the study

The objective of this study is to analyze income poverty and determinants of rural poverty in Sri Lanka. By highlighting different determinants of poverty in the Sri Lankan context, regional variations could be explained. The impact of these determinants on the household income will be estimated through district level data. The governmental official poverty alleviation programme, Samurdhi, will be reviewed and compared with the findings from the determinants.

1.2 Method and material

Poverty is affected by both macro- and microeconomic variables. In this study the focus is on microeconomic variables, analyzing poverty at a district level. Five determinants of poverty have been chosen according to existing theoretical and empirical literature, and these correlates will be analyzed using income regressions.

The material used in the study is a combination of theoretical material and secondary data. The data is mainly from the Sri Lankan Department of Census and Statistics and the Central Bank of Sri Lanka. The risk of data inaccuracy should not be underestimated. A limitation in the data is often the exclusion of North and East provinces, due to unsafe conditions in these areas. The lack of citizen cards for some of the Indian Tamils also has the effect that they are not included in the data.

1.3 Limitations

The data used is limiting, not only because of the risk of inaccuracy. Data at the household level is restricted which has narrowed down the possibilities of what to estimate. The number of regressions conducted has been reduced, but most importantly it has affected the representativeness of the conditions within the different determinants.

1.4 Disposition

The study begins in chapter two, *Conceptual Framework*, with a discussion about how to define and measure poverty. Rural poverty and the connection between economic growth and inequality will be discussed, and the chapter ends with a review of five determinants of poverty that will be discussed through the study. The third chapter, *Background*, will give a picture of the existing pre-conditions in Sri Lanka, including the official poverty alleviation program. Chapter four, *Determinants of Poverty*, puts the five determinants presented in chapter two in a country specific context, where they are analyzed and the regressions are

presented. The problems and weaknesses in the official poverty alleviation program will be discussed. The study ends with chapter five, *Conclusions*, where the result and conclusions are presented.

2 Conceptual framework

This chapter begins with a clarification of how poverty is defined and measured in the thesis, with a brief overview over OLS, the estimator used for conducting the regressions. A general discussion about rural poverty and the connections between economic growth and inequality will then be presented, followed by a review of five determinants of poverty identified as of great importance for income poverty.

2.1 Poverty: concept and definition

The definition of poverty needs to be clarified, as this has been one of the more controversial issues in poverty studies. (Tennakoon, 2000:16) Poverty in this thesis is defined according to the World Bank definition, “*poverty is pronounced deprivation in well-being*” (World Bank, 2005). The character of poverty is not only the material aspect where the daily survival is a struggle, but it also covers a wider dimension where the access to public goods and the vulnerability are accounted for. These entire components are important, as they affect the individual’s behaviour and the perceptions of their own situation. (World Bank, 2005) The general agreement on poverty is “*a condition of relative deprivation of basic human needs, reflected in unacceptably low living standards, chronic under-nutrition, persistent illiteracy, and low life expectancy*” (Tennakoon, 2000:45). The Department of Census and Statistics in Colombo defines poverty as any barrier to prosperity and is a lack of resources and opportunities, feelings of being disenfranchised from various support systems, and diminished feelings of empowerment to obtain these resources and opportunities. (Department of Census and Statistics, 2002) This multidimensionality that today is accepted raises the standards for more complete and complex strategies of poverty reduction.

2.2 Measuring poverty

The multidimensionality of poverty requires a measurement as comprehensive as the definition of poverty, in order to achieve an adequate result. The major approaches are *the monetary approach* which has traditionally dominated poverty measurement. The monetary approach “typically leads to measures based on goods and services consumed by a household and the household’s size and demographic composition” (Ravallion in Gunewardena, 2005:6). *The capabilities approach* defines poverty as not being able to do certain things (Gunewardena, 2005:7), the possibility for all individuals to live a life he or she values. (HDR, 2001) This approach tends to measure functionings such as health, education, housing, safety etc rather than the ability to achieve the functionings. *Social exclusion* is the third approach, which defines socially denied groups, such as handicapped or ethnic categories, rather than individuals. The contribution of this approach is to add the element of participation or inclusion. The fourth and last approach is the *participatory approach*, identifying the people themselves in changing their own situation, analysing their knowledge of life and conditions, and using this in order to plan and act. (Gunewardena, 2005:8) This thesis will look at the first approach, the monetary approach.

2.2.1 The monetary approach: Income poverty

When measuring the monetary approach of poverty two indicators, income and consumption, are most commonly used. Measuring consumption has the advantage of being close to a person’s well-being, and reflects the ability of a person or a household to meet their basic needs. The seasonal fluctuations according to harvest, make consumption a good measurement in poor rural economies. (World Bank) This thesis will instead use income as a measurement, an instrument that has been chosen because of the country specific situation. In Sri Lanka people are provided with access to basic social services, a factor that has contributed to achievements in human development, but at the same time the country has a very modest and uneven reduction in income poverty. (Narayan & Yoshida, 2005:1) Measuring income could in the case of Sri Lanka give a more correct picture of the situation. Income as a proxy for poverty also has advantages; household income is a convenient indicator for identifying the poor as in general poverty targeting is a strategy to increase the

income of the poor and thereby improve their living standards. Increased income is the main source of empowerment of the poor. It is a visible indicator by which one can follow the upward or downward movements in development. (Tennakoon, 2000:61)

2.2.2 Poverty Line

The purpose of estimating the poverty line is to capture the basic needs necessary to meet minimum living standards. (Department of Census and Statistics) By defining a consumption bundle including both food and non-food items, which are the corresponding nutritional requirements, and estimating the cost of purchasing this consumption bundle, this is captured. Identifying at what level a household is to be considered non poor entails drawing a line and households falling below this line are considered to be poor. The poverty line might be thought of as the minimum expenditure required for an individual or household to fulfil their basic needs. (World Bank) In Sri Lanka the absolute poverty line is used so that changes in poverty over time and across regions can easily be checked with reference to this same fixed poverty line. The official poverty line is stated every ten years, and from 2002 the Sri Lankan Poverty Line is per capita expenditure of 1423 Rs, at which level a person is able to meet the nutritional anchor of 2030 kilocalories. (Department of Census and Statistics)

2.2.3 OLS estimator

The regressions will be estimated with Ordinary Least Square-estimator (OLS) using the statistical program EViews 3.1. According to the Gauss-Markov theorem OLS is the best linear unbiased estimator, with the lowest variance of all estimators that are linear and unbiased. In order to avoid heteroskedasticity, when variables in the model have different variances and the OLS regression is no longer the most efficient, White's robust estimator will be used. The advantage with White's robust estimator is that the heteroskedasticity does not need to be known, and if no heteroskedasticity exists White's estimator will act as OLS. A Regression Specification Error Test (RESET-test) will also be used to detect if variables have wrongly being left out. (Westerlund, 2005:150)

2.3 Characteristics of rural poverty

“The rural poor in Asia are characterized by a number of general economic, demographic and social features, but the most common feature is landlessness or limited access to land.” (IFAD, 2002:19) Poor people living in remote areas often have a great disadvantage in infrastructural deprived remoteness, social backwardness, lack of access to education and health facilities. Large families as an insurance for the older is a traditional strategy for survival where the income flow goes from child to parents. The complexity of this reality for people living under these conditions also denies them power, there is lack of information about markets, business and collective organization, which makes them unequal against their opponents. Exclusion from the markets, by infrastructure or discrimination, makes it harder to exit poverty.

The focus on rural poverty has been chosen, as a common generalization about the poor is that they are living disproportionately in rural areas and working within agricultural related activities. (Todaro et al, 2003:229) But rural poverty is also an important subject when referring to poverty in general and in the urban areas. Improving the conditions in the agricultural sector will increase the food supply and may reduce the migrating to urban areas, which can help reduce urban poverty. (IFAD, 2001: 2) Migration from rural to urban areas in search of job opportunities is both a symptom of and a contributor to underdevelopment. (Todaro et al, 2003:335) Government in these countries tend to favour the urban areas, the productive lowlands, crops for export and manufacturing industries. This marginalizes the poor as the neglect of institutions has an isolation effect on people living in remote areas, and the transaction cost for product sales will be higher with the lack of public infrastructure. Marginalization can force people in this situation to overuse the natural resources in order to survive and make a living, leading to resource degradation and a greater extent of scarcity and poverty. (IFAD; 2002:34)

Identifying and targeting the chronic poor is a challenge. While some poor might find themselves in poverty during a short period of time, a transitory phenomenon, for a large number poverty is a permanent condition. Failing to identify the chronic poor means that resources can be denied those most in need, as a consequence of short time favourable circumstances that temporarily got them out of poverty, such as seasonality work. (IFAD, 2002:7)

2.4 Economic Growth and Inequality

The causality between economic growth and poverty reduction has been debated for many years. Kuznet's inverted U relationship between levels of income and inequality was, until recently, the most established view on the effect of growth on income distribution. Deininger and Squire found in the late 1990's that the support for Kuznet's curve was very weak and that periods of growth were as often associated with increase in inequality as declines. The nature of the growth can also have an affect. Biased growth can widen the gap even further if the rich get richer, while the poor get poorer. Ravallion and Chen found in 1997 a significant negative correlation between economic growth and changes in inequality, suggesting that growth reduces inequality rather than contributing to it. When looking at the distributional effect on growth Birdsall and Londono concluded that the initial inequalities in the distribution of assets have a clear negative effect on growth. Income inequality may not affect the overall growth potential in a country, but when incorporating the asset variable there seems to be a significant negative relationship. (Ferreira, 1999:9) Even though this empirical literature shows that growth and inequality appear to be uncorrelated it is known that broad based growth and low initial inequality are critical to accelerating progress toward the poverty goal. Growth does not explain all the variation in poverty reduction, and other factors must be included in the evaluation. (World Bank, 2005b:30)

2.5 Determinants of Poverty

When identifying the poor in a society a number of characteristics assist in the targeting process. In this thesis five factors are identified as decisive, (i) infrastructure, (ii) access to land, (iii) access to credit, (iv) education and (v) health. These factors have been chosen as low level as they increase the vulnerability to famine and diseases, and deprive the poor of power.(IFAD, 2002:19)

2.5.1 Infrastructure

Infrastructure is an essential part of poverty reduction. Roads, transport, access to ports and waterborne transports, clean water supply, energy and communication possibilities are important features and a foundation for development. Isolation through bad infrastructure facilities does not only limit the possibilities of income earnings but also makes people more vulnerable since remote communities are more likely to be impoverished by shocks such as drought, floods and famine. (Policy note 2005:8, PRS 2002:29) Access to services such as food and health services, facilities such as water and power, and access to opportunities are basic needs. In order to participate in markets and religious activities people need access. (Starkey et al, 2002:9) When this access is limited and time and effort are spent to access basic necessities, their living standard is reduced and economic growth is limited both directly and indirectly in the region. (WB, 2002:16) The infrastructures in poor countries often vary in quality, depending on weather, construction, season and maintenance which increase road user costs, poor quality and frequency of transport service, and low road safety. (WB, 2004:15)

2.5.2 Access to land

The relationship between land and poverty is like poverty itself, not one dimensional. Land can be used and seen in a variety of ways, as a production asset, income generator, family heritage or safety net. Land can act as a mean in the poverty alleviation process in different ways. (De Silva) One option is to expand the aggregated production, and through this distribute income via employment, an exchange that will lead to poverty reduction. Another option is the production at household level that covers the basic consumption for the household, and therefore reduces the poverty, but land is a limited resource. (Kanta Kumbhar) The relationship between access to land and poverty reduction is complicated, as it is dependent upon many variables such as the traditional land transfer structures and land tenure patterns, land entitlement, tenure security, ownership and user rights, and land market functionality. (Abey Suriya) As poverty remains a rural and agrarian phenomenon, growth and distribution in agriculture can be the key to a sustained reduction of rural poverty if the benefits of this growth are broad based. (IFAD, 2002:63)

2.5.3 Access to Capital: Microfinance

The traditional lending and credit markets excluded the poor segment of the population, but during the last years this has come to change. Grameen Bank in Bangladesh is an important example of how this new microfinance project can work and benefit both the community and the poor. Providing access to financial services is one way to help the poor increase their income and productivity. The objective of microfinance is to help the poor become self-employed and through this escape poverty, by giving small credit without security. Many microfinance programs are giving credit to a group of people in order to reach the poor and other vulnerable groups who lack access to formal financial institutions, such as women, and thereby empowering them. (R. Kandker, 1998:1) By this group lending policy the traditional requirement of outside guarantee has been eliminated, thereby inviting the poor into the credit market. A segment that generally has been excluded from the traditional lending market. (Ahmad & Colombage, 2006:34, 37) By enabling poor people to start their own enterprises and thereby increase their income, microfinance can help poor people raise their living conditions. Microfinance also provides savings and insurance facilities that reduce the vulnerability of poor people. By providing services like skills development training, advisory and counselling services, technical advice and market guidance, the microfinance institutions help the new entrepreneurs to start up their enterprise. (Ahmad & Colombage, 2006:5) Innovative policies have made it possible for microfinance institutions to provide services that commercial banks can not handle due to high administrative costs and lack of skilled personnel. Maximizing the number of borrowers and keeping the cost of funds low has been a pioneering concept. (Ahmad & Colombage, 2006:19)

2.5.4 Education and Employment

“All agree that the single most important key to development and poverty alleviation is education” (James D. Wolfensohn, World Bank President). Education has benefits both for the individual and the society. On an individual level productivity and increased income are two possible outcomes as education increases the chance of a well-paid employment. Looking at an aggregated level education can help empower the poor and reduce inequality. For the society an educated workforce is a foundation for a knowledge-based economy, which can be

linked to economic growth. The ability for a developing country to absorb modern technology, and improve productivity should in theory lead to higher income and improved economic performance. (World Bank, 2002¹, Todaro et al, 2003:360) By improving the educational level in a country people get the ability to better understand their legal rights and opportunities given, and it has an empowering effect on women which can lower the fertility rate and child mortality. (AK Sen, 2002:5) Education is both an outcome and a most important tool for development.

2.5.5 Health

Ill health can be both a consequence and cause of poverty, and is closely linked to education discussed above. For vulnerable households, payment for health services or illness of the income receiver with consequent loss of income as result, can be reasons why people end up poor or sink even deeper into poverty. High fertility resulting in large households restrains the income possibilities for women, and malnutrition can follow as resources become scarce. The financial resources required to pay for healthcare, clean water; food and good sanitation are in poor households not available. Not only the income is decisive, poorer regions tending to have health facilities with low quality lack many basic medicines and are run by poorly trained staff. Weak institutions in these communities tend to have social norms that are not conducive to good health. (WB, 2002²:203) Raising the health level in a country or community may improve the return to investment in education, increase the productivity, and as a result contribute to economic growth.

3 Background

The country specific situation in Sri Lanka will be reviewed in this chapter in order to understand the pre-conditions that exist. Finally the official poverty alleviation policy conducted in Sri Lanka over the last years up until today is presented.

3.1 Rural poverty

Poverty in Sri Lanka is a rural phenomenon 90 percent of the poor live in the rural areas, out of these 52 percent make their livelihood of agriculture. (Samaratunga & Marawila, 2005) Rural poverty in Sri Lanka is not homogeneous; the country has a complex and changing landscape which covers a wide spectrum of different conditions and prerequisites. The island shows a big variation in climate and environment, from the drier flat north central part, to the central hill country and the south-western wet zone.

The agricultural production in Sri Lanka had a 19 percent share of the GDP in 2003/04, and 33 percent of the population were employed in this sector the same year.(Central Bank, 2005:60) The major activities in agriculture are paddy, coconut, tea and rubber and the fishing industry. In recent years production of other subsidiary food crops and vegetables has improved, as farmers have shifted to these crops to ensure maximum use of the water available. This category also includes minor export crops, animal husbandry, sugarcane, tobacco and fruit. (CFS, 2005:42) The agricultural sector engages a majority of the rural population in Sri Lanka, but the non-farm activities are also an important source of income, providing employment for the poor in the rural areas. The growth in agricultural production can not absorb the increasing labour force in agricultural employment. The direct agricultural income is not enough to sustain their livelihood, either because of landlessness or insufficient owned or tenanted land. The insecure seasonality in agriculture also creates a need for a

supplementary income, and the fact that the majority of the rural population is involved in agriculture can be a misleading figure as many farmers today act only as part time farmers. Most rural non farm activities require little capital and generate more employment per unit of capital and are therefore suitable for poor household's requirements. (IFAD, 2002:83) Table 3.1 shows the widening poverty gap between the urban and the rural sector.

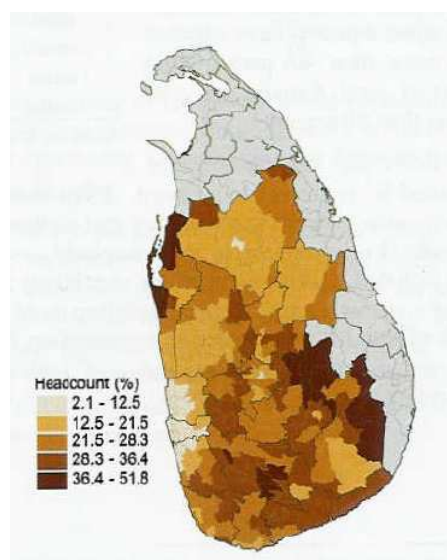
Table 3.1 Poverty headcount for Sri Lanka

	90-91	95-96	2002
National	26.1	28.8	22.7
Urban	16.3	14.0	7.9
Rural	29.4	30.9	24.7
Estate	20.5	38.4	30.0

(Ravallion, World Bank, 2004)

Poverty mapping is an effective statistical tool to visualise where poverty is present. The World Bank together with the Department of Census and Statistics in Sri Lanka has published the map below.

Figure 3.1: Poverty Map at DS division level



Source: The World Bank, Policy Note 2005

Figure 3.1 shows a map of poverty headcount ratios at the DS Division level¹ and illustrates some geographical characteristics of poverty incidence. As expected the poverty headcount

¹ Due to security issues in the Northern and Eastern Provinces the poverty map is not complete.

ratio is substantially lower around the Colombo district and the southern parts of the country have areas with higher rates of poverty. Pockets of severe poverty can be found in almost all parts of Sri Lanka, even in districts where the aggregated poverty rate is low, for example Kaluthara district in the Western Province. Table 3.2 shows the headcount index and population below the poverty line in each district 2002.

Table 3.2: Headcount Index and Population Below Poverty Line 2002

District	Headcount Index %	Population Below Poverty Line (Thousands)
Colombo	6	143
Gampaha	11	230
Kaluthara	20	223
Anuradapura	20	156
Nuwara Eliya	23	166
Polonnaruwa	24	89
Kandy	25	329
Kurunegala	25	384
Galle	26	269
Matara	27	219
Matale	30	136
Puttlam	31	232
Hambantota	32	179
Kegalle	32	265
Ratnapura	34	364
Badulla	37	303
Monaragala	37	155
All Districts	23	155

Source: Department of Census and Statistics

3.2 Economic Growth and Regional Disparities

The economic growth in Sri Lanka has been significantly below the country's potential during a long period of time. The liberalization reform launched in 1977 had a positive impact on the economy; the GDP grew steadily and reached a peak in 1982. But the outbreak of the conflict,

youth unrest in the south, fiscal imbalance and high inflation constrained the economic growth in the mid 1980s. Even so the country did achieve a growth rate performance of 4 – 5 percent per year during this period. (WB, 2004: iii) Structural reforms in late 1980 helped the economy back on its feet, and the growth rate was at 5 percent during 1993 – 1997. Since 1997 the growth rate has declined, and went down to an average growth of 2.3 percent between 1998 and 2002, with a negative growth rate of 1.4 percent in 2001. This setback can be connected to the politically uncertain environment, the prolonged conflict, infrastructure breakdowns and global recession. (Colombage, 2003:10) A small open economy like Sri Lanka is heavily influenced by the global economic growth, but in spite of the daunting surge in international oil prices Sri Lanka did reach a growth of 5.1 percentages in 2004. (Central Bank, 2005:7) This growth compared to the Asian neighbours was still at a very low rate, and in order to reduce poverty Sri Lanka needed to achieve a higher growth rate, in a manner that the poor people can more fully participate in. (WB, 2004:ii)

Regional disparities are a problem in Sri Lanka, both in the pattern of poverty and economic growth. The domination of the Western Province has continued to rise, provincial GDP from 1990 to 2002 revealed a rise in the share of the Western Province from 40.2 percentage to 48.1 percentage, even though the province accounted for only 29 percent of the nation's population. (Table 3.1) During the same period of time the share of the four low-activity provinces where 25 percent of the nation's population live, Eastern, Uva, North Central and Northern, fell from 22 percent of GDP in 1990 to 15 percent in 2002. (WB, 2004:19) As there does not exist any internal trade and investment barriers, this is due to the constraints in inadequate provision of public goods and poor infrastructure facilities. (Central Bank, 2005:9)

Table 3.3. Share of GDP by Province in percent

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
North-West	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

3.3 Income Inequality

The income inequality in Sri Lanka has increased over the years. The poorest 40 percent of the household's share of the total income declined from 15.6 percent in 96/97 to 14.1 percent in 2003/04, and the richest 20 percent of the households shared as much as 52.1 percent of the total income in 2003/04. (Figure 3.2) The income inequality *within* the provinces can also reveal divergence. People living in provinces with a generally low income level but with low inequality can be better off than those living in a province with a higher income level but with greater inequality. (Narayan & Yoshida, 2005:10)

Figure 3.2: Income distribution



Source: The Consumer Finance and Socio Economic Survey Report 2003/04

Table 3.4 points to the development in income per sector from 1996/97 to 2003/04.

Table 3.4 Monthly income for one household by sector

	1996/97	2003/2004
Urban	17.11	30.091
Rural	5.577	15.611
Estate	5.301	9.18
All Sectors	9.439	17.109

Source: The Consumer Finance and Socio Economic Survey Report 2003/04

3.4 Employment and Underemployment

The Sri Lankan population is very highly educated compared to other developing countries, the literacy rate in 2001 included 91 percentage of the population. (Department of Census and Statistics) The achievements in the educational sector do not correspond with the demands in the employment sector. An employed person is according to the Central Bank in Sri Lanka defined as a person who within the last seven days (i) has worked for pay, profit or unpaid family gain with at least one day requiring a minimum of one hour of work, or (ii) was not working, but was usually at work for pay, profit or unpaid family gain from which he was temporarily absent. (CFS, 2005:10) In 2003/04 the official employment rate¹ was 91.1 percent, according to the definition above. Of the 91.1 percentage a share of 24 percent were underemployed, i.e. that they were not fully occupied and willing to work more hours than they were currently engaged in. The highest level of underemployment is in the rural sector, where the predominance of agricultural activities can not guarantee regular minimum working hours and the activities are often seasonal or weather related. (CFS, 2005:64) When measuring employment according to these criteria rural workers who have a very unreliable work situation are included as employed. These workers get paid per day and get no compensation when ill or if the year's vintage is failing. An additional income is needed, and some families with a little land have a small business selling pepper, beans etc that grow in the garden, others try to find extra work in villages nearby. The alternative to set up an own business is often limited as input is a scarce recourse. (Gunnepana & Hantane Group) Traditions in the villages can also be a constraining factor for women. Sri Lankan women have a relatively

¹ The ratio of the number of employed persons to the total labour force.

favourable position within the family and the educational system, but class, ethnic status, historical and cultural forces can have a limiting influence on their possibilities to be a part of the labour force. (Malhotra & S. DeGraff, 1997)

Considering the level of education the unemployment rate was lowest among those with no education, while the rate increased with the level of education up to GCE / AL¹. The increased level of education in the country has raised the expectations of the young generation. The older generation works in the fields and estate, but the younger generation is not interested in taking over their jobs. Today the unemployment rate is most severe among young people between 15 and 18 years old, 36 percent, which could be explained by early school leavers, but in the age group 19-24 the rate is still at 30 percent. (CFS, 2005:68)

3.5 The Population

Sri Lanka is a country with an ethnically diverse population. Out of the population of 18.7 million people, the Sinhalese are the majority with 79 percent, followed by three minority groups; the Moors 8.9 percent, the Sri Lankan Tamils 6.3 percent and the Indian Tamils with 4.9 percent.² (Census of Population and Housing 2001) These variations are important to bear in mind when looking at the rural poverty in Sri Lanka as they have a significant affect. The colonisation heritage still has influence over the different minority groups. (WB, 2002:12) Language barriers, discrimination and, for some of the Indian Tamils, lack of citizenship cards have severe implications for their integration in the society and their rights as members of the community. Indian Tamils working in and living in the estates are often disadvantaged in terms of housing, amenities and nutrition (Gajanayake et al, 1991). Another increasingly important feature of the Sri Lankan population today is the age composition. During the past 40 years the composition has changed considerably as a consequence of fluctuations in birth and death rates, marriage patterns and of medical advances and health care progress affecting mortality rates. The median age went from 17 years in 1963, to 22 in 1986/87 and rose further to 28 in 2003/04. The Sri Lankan population is now getting closer to an old population. The implication of this is that elderly persons leaving the labour force become dependants at a

¹ The level just before going to University

² No enumeration was done in Jaffna, Mullaitivu and Kilinochchi district.

faster rate, which puts more pressure on the economic resources of the working population in the years to come. This will also lead to an increasing demand for health care and other facilities for the elderly, and the need for a national programme is rising. (CFS, 2005:21)

3.6 The Conflict

The poverty reduction in Sri Lanka has also slowed down during the years of the civil conflict. The northeast and the surrounding area which are directly affected by the civil conflict has over the years suffered the most from high economic and human costs, and today the conflict is expanding over the island. The poor bear a disproportionate share of the costs of the war, and with fewer opportunities to earn a living are they often forced to serve on both sides of the armed forces and bear a big burden in terms of loss of life, injury, dislocation and trauma. (WB, 2002:25) The more than twenty year old conflict has affected not only the daily lives with traditional economic activities such as fishing and agriculture, but the possibilities to get education and health care has also diminished. The growth in military expenditure from about a half percent of GDP in the 1970s to around 6 percent in 2000, has constrained other civil expenditure programs. (WB, 2004:9) The conflict has also limited the reforms in agriculture and rural areas in the country as a whole. It has brought a range of government policies that have had the unintended effect of reducing the capacity of farmers to enhance their productivity and competitiveness and respond to local and international market opportunities. (WB, 2004:13)

3.7 Official poverty alleviation policy

Since independence in 1948 has the Sri Lankan government has taken several initiatives to contribute to the reduction of poverty in the country. These were up till the mid 1980s not presented as dedicated programmes for poverty reduction, but targeted the poor in society through subsidies of basic food commodities, education and health services etc. (Wanasinghe, 2004:8) The political climate in Sri Lanka affects the policies pursued to a very high degree, and they are very dependent on the ruling government and the political environment at the

time. Political connections have often influenced the regional investment allocation, provincial capital projects and public sector employment. This has resulted in a costly unwieldy public sector where 17 percentage of the total labour force in Sri Lanka are employed, giving a wage bill of 87 percent of provincial government expenditures. (ADB, 2001:30) The policy for poverty alleviation has shifted over the years in line with the findings stated above; successive governments have abandoned the anti-poverty policies pursued by their predecessors. In 1979 the food-stamp scheme was introduced, but was abandoned in favour of the Janasaviya program in 1989, the first program in the country that followed a clear poverty reduction strategy. This system was then replaced by the Samurdhi program, which has been pursued since 1994 and is still running today, with some modifications. (Sarvananthan, 2003:47)

4 Determinants of poverty in a Sri Lankan context

This chapter will follow up the determinants of poverty presented in the conceptual framework. The general nature of the determinants in a country specific context will take a more specific character, and highlight different aspects according to the situation in Sri Lanka. Data and regressions will complete the reviews of the determinants of poverty, followed by the main findings drawn within each subject. A multiple regression will be estimated including four of the five determinants. The chapter ends with a review of the poverty alleviation programme in the country, the Samurdhi Programme, and a discussion about the problems and weaknesses of this programme.

4.1 Infrastructure

The infrastructure in Sri Lanka is poorly developed. The poor living in rural areas have significantly less access to clean drinking water, sanitation, electricity, safe cooking fuel and communications than the wealthier households. The road network is limited, with only 10 percent of the paved roads in good condition due to lack of maintenance. Regional disparities are significant and the Western Province has a far better infrastructure than other provinces, where the situation is so severe that many roads are impassable during most of the year. Geographical isolation and poverty in Sri Lanka show a strong linkage, as measured by the correlation between the distance to the nearest market or city and poverty incidence. People living in remote areas are isolated from access to basic needs such as markets, information, and basic infrastructure facilities such as good roads, rail, port system, well-functioning bus networks and telecommunications. (Policy note 2005:8) People living in these remote areas with poor road networks have a great disadvantage as the possibility to take their products to the markets does not exist during most of the year, due to bad road conditions caused by the

seasonal weather. They then depend on people coming from the cities to buy up all their products, far below market price, and the former later sell the products at Polas, weekly markets, in the urban areas and make a considerable profit. (Piyadas)

The dataset used is the road length within each district divided into two categories, class A National Highways and the total road length regardless of the classification. The regression estimated will measure the correlation between household income at a district level and the two variables, National Highways and total road length in each administrative district. A dummy has been added for the districts affected by war¹ when the data was gathered in 2002, Jaffna, Mulativu, Batticaloa and Trincomalee. The data comes from the Road Development Authority in Sri Lanka, and the estimation will represent the situation in 2002.

The regression estimated is specified below.

$$\text{Log}(\text{Income}) = \alpha + \beta_1 \cdot \text{Log}(\text{Highway A}) + \beta_2 \cdot \text{Log}(\text{Total roads}) + \beta_3 \text{ dummy} + e \quad (1)$$

Table 4.1: Result of OLS estimation, Equation 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
α	9.632775	0.837439	11.50265	0.0000
<i>Highway A</i>	-0.347377	0.134618	-2.580462	0.0194
<i>Total roads</i>	0.224710	0.134083	1.675903	0.1120
<i>dummy</i>	-0.241022	0.101847	-2.366507	0.0301

R-squared 0.469654 Adjusted R-squared 0.376064

Data source: Household Income and Expenditure Survey and The Road Development Authority

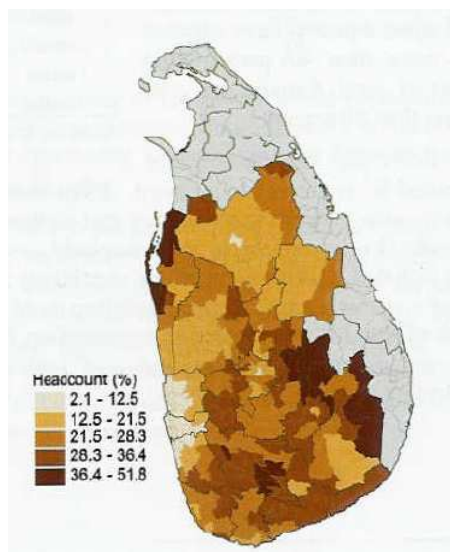
The estimation result contained in table 4.1 shows a significant relationship between income and *Highway A*, the length of highways in the district, at the 5 percent level of significance. The estimated coefficient of total road length is just inside the 10 percent level acceptance region but since the acceptance is so marginal my conclusion is that the total road length also affects the income. As *Highway A* and *Total roads* are connected there is a risk of multicollinearity which can explain why the coefficient for *Highway A* is negative. The dummy added for the districts affected by war is statistically significant at the 5 percent level, and the negative coefficient estimated tells us that war has a negative impact on the income, just as expected. The F- statistic version of the Ramsey Reset test on this regression has a p-value of 0.18, which tells us that the model estimated is correct and that no factors have

¹ The data from the north and northeast parts at Province level have here been generalised to District level.

wrongly been left out. The R-squared, a measure of goodness of fit of the regression model, is at an acceptable rate at 0.469 in comparison with other countries. The conclusion drawn from this result is that the regression estimated is well specified, and that there is a strong significant relationship between infrastructure and income.

The sizes of the districts vary, and a large district might have long roads without having good connections. In order to complete the estimation one more method will be employed. Poverty mapping presented in chapter 3.2 will here be reviewed and compared with the accessibility potential in the country. The two maps below have been published by the World Bank together with the Department of Census and Statistics in Sri Lanka.

Figure 4.1: Poverty Map at DS division level



Source: The World Bank, Policy Note 2005

Figure 4.2: Accessibility Potential

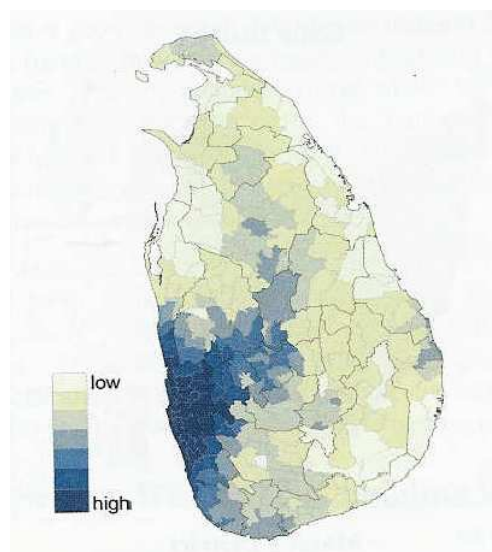


Figure 4.2 illustrates geographical isolation measured by distance to the nearest market / city, which seems to be highly correlated with poverty incidence. The accessibility index is calculated for every point as the sum of the population surrounding cities and towns, inversely weighted by the road network travel time to each town. The map clearly shows that the further away from the Colombo area one goes, the lower is the accessibility index. A comparison between figure 4.1 and figure 4.2 clearly points to a similar pattern, indicating a negative correlation between the poverty headcount ratio and the accessibility index. A simple regression made between these two figures confirms this correlation; a significant negative correlation exists. (Poverty Note, 2005:8)

The correlation between income poverty and infrastructure is, based on the above findings, very strong. The chance of earning an income increases the better the infrastructure is in the region. This is relevant for all people regardless of which sector or industry they are engaged in. For example the weekly market places, Polas, gives an opportunity to both buy and sell products or services. Infrastructure plays an important role, not only represented by roads like measured here, making it possible for people in remote areas to get access to clean water and health facilities. Sri Lanka has experienced many difficulties which might have slowed down or even stopped the development of infrastructure; war has been present in the country over the last decades, and recently the tsunami struck a big part of the country. Poor people are already vulnerable, living in remote areas where help is far away, and are less capable of not only coping but also recovering from illness, famine and natural disasters.

4.2 Access to Land

The high incidence and the spatial clustering of the poor in Sri Lanka are associated with lower ability and access to land. Studies have showed that landownership can be a crucial factor when looking at poverty. (A. Amarasinghe et al.) Today only 9 percent of the households do not own any type of land, but 47 percent only own their homestead land. Owners of both homestead and agricultural land are today 28 percent. The share of households with landownership was significantly higher in the rural sector, compared to the urban and estate sector. (CFS, 2005:94) These numbers could be misleading, as the state own 82 percentage of all the land in the country. Through the land reforms during the 1970s only 10 percentage of the promised land was given to the villages. (Alailima) This incomplete transfer of property rights of state lands alienated the farmers and Sri Lanka's inefficient land administration systems are major impediments to promoting investments in the rural areas and improving productivity in agriculture. The objectives of these land reforms were to remove the restrictions on sale, mortgage, lease and transfer of land permits and grants to farmers under the Land Development Ordinance (LDO), and to improve the cost efficiency, public confidence and transparency in the land administration system. (WB, 2004:27) In the Sri Lankan context land is considered an important asset, mainly because it determines the level of household security, accessibility to credit markets by the poor and the economic and sociocultural status of the individual landholder. (Abey Suriya)

The dataset used comes from the Census of Agriculture 2002. This census reports the number of agricultural holdings in the small holding sector and their extent, by district. The data used here is the extent of acres of agricultural holdings in the small holding sector in each district, divided by the rural population in the same district. The number of people living in rural areas has been taken from the Census of Population and Housing 2001. This number has been used in order to get the variable: extent acres in each district that each person living in the rural areas has access to. Due to unsafe conditions some of the northern districts are excluded. The regression estimated will measure the correlation between household income at a district level and the variable described above. The estimation is a time series analysis over the 1985/86 and 2001/02.

The regression estimated is specified below.

$$\text{Log}(\text{Income}) = \alpha + \beta \cdot \text{Log}(\text{Acres per rural inhabitant}) + e \quad (2)$$

Table 4.2: Result of OLS estimation, Equation 2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
α	7.676215	0.425965	18.02077	0.0000
<i>Acres per rural inhabitant</i>	-0.566132	0.287146	-1.971582	0.0574
R-squared	0.100671	Adjusted R-squared	0.072567	

Data source: Census of Agriculture 2002

The estimation results contained in table 4.2 show a non-significant relationship at the 5 percent level between household income and acres per rural inhabitant. Even though the F-statistic version of the Ramsey Reset test on this regression has a p-value of 0.515 the R-squared is at a low level and the estimated slope coefficient on *Acres per rural inhabitant* coefficient is negative. This result does make land an important but not significant factor when explaining the income level, which could be explained by failing crops and low productivity. Owning land does not necessarily mean that the land is used in the most cost efficient manner, and that production is taking place.

Land is an important factor when explaining rural poverty, but poverty can not be explained in terms of land alone. The role of the agricultural sector is changing as developing countries

develop. In Sri Lanka the stagnation of this sector during the 1990s, and the growth of the industry and service sector, could be indicators that things are about to, or need to change. Today many farmers in Sri Lanka only work as part-time farmers. Due to seasonality and insufficient income they need a supplementary income. The importance of non-farm activities for the rural population stresses the development of the infrastructure to increase the possibilities of income earnings. In remote areas where no job alternatives exist and therefore no opportunity costs, cultivation of the own land has zero labour cost and might be the best alternative even if it is not cost efficient. Small landowners are very vulnerable to external forces and may be better off by renting out the land to someone with the technical advantage who can cultivate the land in a more productive manner. By renting the land out they have a safe income without risk of seasonal fluctuations.

The inconsistent pattern where some rural areas are very poor and others not, can not only be explained by land access. Water is another contributing factor that largely determines the outcome of the harvest, and thereby the income it may generate. Technology is another important aspect, strongly associated with productivity. Among others land is an important contributor to increased income of the poor, but this relationship is not one dimensional and a broader view is required to find the successful combination.

4.3 Access to Capital: Microfinance

Microfinance has been taking place in Sri Lanka in some form since the beginning of the last century under the British Government. Today several microfinance projects are operating in Sri Lanka. Under the Samurdhi Programme one of the components is to generate savings through a microfinance scheme, and other major institutions and programmes include Regional Development Banks (RDBs), Self-Employment Promotion through Micro-Enterprise Credit (Surathura Scheme), Saravodaya Economic Enterprise Development Services (SEEDS), Gami Pubuduwa Scheme, Thrift and Credit Co-operative Societies (TCCSs), Credit Scheme – SANASA, Janasakthi Banking Societies and Women's Development Federation. These schemes together with thousands of other organizations involved in small credit projects are spread over the country. (Colombage, 2004:5) The

expectations of microfinance are to contribute to the development of the country, where the low income groups take an active part in the process.

Microfinance is considered beneficial for both the poor and the society, but experience has showed that this is not always the case. The rural population living in small villages with a strong agricultural tradition experience that the business environment is limited. (Hantane Group & Kandy Estate) Product diversification is scarce as new entrepreneurs tend to continue their traditional family enterprises, as the knowledge and markets are familiar. Hard reliance on basic products associated with low value added and small scale production bring low profit and low productivity. Small enterprises having products relying on the natural environment are very vulnerable as external factors such as crop failure easily can end the business. The lack of economies of scale and the lack of collaboration between the small enterprises result in many small enterprises with similar products in the same village, all having problems to make profits. (Ahmad & Colombage, 2006:60, 82)

The limitation in household data has not made it possible to estimate an equation. Instead data tables from a research project under the principal researchers Prof. Alia Ahmad and Prof. S.S Colombage are used to illustrate the situation. Their study is based on a household sample survey conducted in five selected districts: Hambantota, Moneralaga, Nuwara Eliya, Badulla and Batticaloa.

Microfinance has an impact on society in a variety of ways, but focus here will be on income at the household level. The tables below present the development for income on household level during the last 12 months. A distinction has been made between clients of microfinance institutions and those who are not. Table 4.3 shows the changes in income, changes that do not clearly point to the advantage of being a client. The differences between clients and non-clients are not statistically significant. (Ahmad & Colombage, 2006:54)

Table 4.3: Changes in Income Over the Last 12 Months

Change	% of Clients	% of Non-clients
Household income		
Declined substantially	2.5	1.9
Declined	17.3	22.9
Remained unchanged	25.2	40.1
Increased	8.6	21.0
Increased substantially	8.2	5.7
Client's income		
Declined substantially	3.0	0.6
Declined	19.1	26.1
Remained unchanged	24.8	47.8
Increased	15.9	22.9
Increased substantially	0.7	0.6

Data source: Ahmad & Colombage 2006¹

Expanded enterprise and starting up a new business are the two major factors contributing to an increased income, as seen in table 4.4.

Table 4.4: Reasons for Increase in Income

Reason	% of Clients	% of Non-clients
Expanded the enterprise	9.5	5.1
Started a new enterprise	5.4	3.8
Bought inputs at low cost	1.1	0.0
Sold goods to new markets	1.4	0.0
Got a job	1.4	5.1
Got the loan without delay	1.5	0.0
Other	3.8	7.0

Data source: Ahmad & Colombage 2006¹

The major reasons for a decrease in income are illness of a client or a household member, and a decline in agricultural outputs. This points to the vulnerability these small enterprises experience, both in terms of the hard dependency on the traditional agricultural sector and the

¹ Research project undertaken by the Open University of Sri Lanka and University of Lund. A household sample survey conducted in Hambantota, Moneragala Districts, Nuwara Eliya, Badulla and Batticaloa.

fact that the enterprise is run by the client herself or himself and has thereby no backup if becoming sick.

Table 4.5: Reasons for Decrease in Income

Reason	% of Clients	% of Non-clients
Illness of the client or a household member	9.0	9.6
Decline in sales	5.2	1.9
Difficult to find inputs	3.8	1.9
Decline in agricultural output	9.2	12.7
Loss of job	1.7	0.6
Inability to get the loan in time	0.6	0.0
Other	5.1	2.5

Data source: Ahmad & Colombage 2006¹

Due to data limitation on household level the findings presented here will be of a more general nature. By offering credit to poor people a chance is given them to start or expand a business that can generate a higher income. The service given with insurance facility, advice regarding the enterprise and saving are all very positive components. But the idea behind this credit that all people can be entrepreneurs, can unfortunately not be met by all. The outcome from being a client in a microfinance program depends on many variables; knowledge of product and market, dependency on agriculture and external factors, problems to make a profit and other entrepreneurs in the surroundings. Table 4.5 points to the vulnerability of these small enterprises, illness or crops failure one year can be the end for the business. The targeting of these projects is one aspect to consider as the benefit for the poorest in the society can be questioned. (Morduch, 1999:1600, Colombage, 2004:5) An identified determination of impact is the initial income. Loans which produce the greatest percentage increase are the incomes of the not so poor, while the income of the extreme poor is less likely to increase. (Shaw, 2004:1247) The bad coordination between different institutes, together with the high number of projects running, often lead to the fact that the same people who are involved in several projects are too poor to save in them all. The design of the projects in question and the relationship between the banks and their customer also affect the result, where social factors can play an explanatory role when it comes to credit discipline. (van Bastelaer, 2000:17) Microfinance has proven to be a success in other countries, and has the same possibilities to succeed in Sri Lanka. The achievement through microfinance should not be underestimated,

and the bias towards woman and rural villages can be considered as a major outcome. The impact on income as seen in table 4.3 is positive even though not significant. Further conclusions will have to wait until more research has been done.

4.4 Education and Employment

The education system in Sri Lanka has achieved major results regarding the educational level of the population in general. In spite of this positive development many young Sri Lankans are having problems finding work. When job is a scarce resource, pressure is put even on those with required qualifications to obtain more qualifications. The limited number of places at University is further aggravating the situation as only a small percentage of those eligible are accepted. (Gunawardena, 1993:126) The main objectives of students are to get a University Diploma, a diploma that is not always sufficient to get a job. (Piyadasa) The examination dominated education system that gave birth to a parallel industry in the form of extra school tutoring gives an academic focus. Studies have showed that employers in Sri Lanka look for more than educational credentials where personal development and transferable skills are important. (Gunawardena, 1993:129) This waiting behaviour¹, of having expectations of white-collar job can not be met by the market, and points out the necessity of an educational reform in order to solve the mismatch between the education system and the labour market needs. Public sector jobs are usually more attractive as they often are more secure, a higher benefit as old age pension requires less effort and give more prestige. These factors combined with the government preference for hiring the unemployed, young jobseekers rather remain inactive than taking available jobs out of the public sector. (Rama, 2003:511)

Gender biases are more apparent in occupation demanding a higher education. The social acceptance of women's employment is relatively high in Sri Lanka, but one explanation for why occupational gender biases arise is the type and quality of education given. Women tend to be more unprepared for the more remunerative employment opportunities that follow economic growth. This is because women more often take a general art curriculum and are severely underrepresented in the sciences. (Malhotra et al. 1997:382) "University education in

¹ The World Bank introduced the term "waiting behaviour" for unemployed not willing to take available jobs but prefer waiting for a "better" job

Sri Lanka, which is a public sector monopoly, suffers from both the failure to meet the demand and failure to supply a quality education in many fields compatible with global trends.” (Central Bank, 2005:72)

The dataset used from the Department of Census and Statistics consists of the number of pupils and the number of teacher in schools; grade 1-9, by district for 85/86, 90/91, 95/96 and 2002. In order to estimate what effect the quality of the school and teaching has on the income the simple regression below measures the correlation between household income and the number of children per teacher ratio, at a district level.

The regression estimated is specified below.

$$\text{Log (Income)} = \alpha + \beta \cdot \text{Log (Number of Pupils per Teacher)} + e \quad (3)$$

Table 4.6: Result of OLS estimation, Equation 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
α	14.07256	1.872356	7.515962	0.0000
<i>Number of pupils per Teacher</i>	-1.843904	0.600854	-3.068807	0.0031
R-squared	0.177010	Adjusted R-squared	0.164540	

Data source: Department of Census and Statistics

The estimation shows that statistical significance at 1 percent level exists between income and the quality of the school. The coefficient is negative as more pupils per teacher would lower the income. The significance at the 1 percent level stresses the importance of education, and that income is influenced by education at the lower grades. The F- statistic version of the Ramsey Reset test on this regression shows relevance at the 5 percent level, but the R-squared is relatively low. The low R-squared can be explained by the governmental long lasting policy to provide uniform educational opportunities which has raised the number of children attending classes in all provinces, even the poorest. Education on primary and tertiary level is not a representative measurement in the case of Sri Lanka, as it usually is in developing countries. Another contributing factor is that income and quality in school are measured the same year, where the impact of the education given can not be measured.

Table 4.7 shows the unemployment rate on provincial level, by level of education and sex. This table indicates that the unemployment rate is highest in the Eastern province,¹ followed by the Southern and Saragamuwa province. When looking at the education level the highest unemployment rate is for the most educated in the Eastern province, 29.2 percent, followed by Uva province, 27.3 percent. The highest category of unemployment is among the educated females.

Table 4.7: Unemployment Rate on Provincial level by level of Education and Sex

Province	Total	Level of Education			
		Below grade 5	Grade 5-9 Years 6-10	GCE (O/L) NCGE	GCE (A/L) & above ²
Both Sexes					
Total	8.3	2.0	6.9	12.3	16.8
Western	8.1	3.8	7.8	9.2	10.0
Central	6.6	1.3	6.4	10.2	16.8
Southern	9.8	1.6	7.5	15.2	22.6
Northern ³	9.2	1.2	4.6	14.5	28.7
Eastern	10.5	1.7	6.4	20.0	29.2
North Western	7.6	2.9	5.2	13.7	15.9
North Central	8.1	1.5	6.9	14.4	20.6
Uva	7.1	1.3	4.9	13.2	27.3
Sabaragamuwa	9.0	1.6	9.0	11.8	22.6
Male					
Total	6.0	2.0	5.5	9.2	10.5
Western	6.6	4.1	6.6	8.1	6.3
Central	4.6	0.9	5.3	7.0	8.1
Southern	7.1	1.4	6.5	12.0	13.3
Northern ¹	4.7	1.4	2.6	8.8	14.4
Eastern	6.9	1.3	4.4	13.2	23.2
North Western	5.4	2.4	3.6	11.1	12.8
North Central	5.3	1.2	5.0	10.0	11.2
Uva	4.8	1.5	4.7	7.3	14.6
Sabaragamuwa	6.4	2.2	6.7	7.3	16.2
Female					
Total	12.8	2.0	10.6	18.6	23.8
Western	11.5	3.3	11.1	12.0	14.8
Central	10.0	1.7	9.1	16.2	25.5
Southern	14.5	1.8	9.9	21.1	30.8
Northern ¹	23.3	0.3	13.7	30.2	22.8
Eastern	20.7	3.0	13.6	36.1	37.9
North Western	12.1	4.0	9.7	18.6	19.1
North Central	13.3	2.0	11.2	22.8	30.4
Uva	10.4	1.1	5.4	22.4	38.4
Sabaragamuwa	13.7	0.8	14.5	20.1	28.7

Data source: Department of Census and Statistics: Annual Report of the Sri Lankan Labour Force 2004

¹ Northern province excluded as it is not complete

² University Level / National Colleges of Education

³ Mullaitivu and Kilinochchi districts are not included

In order to see if the possibilities of employment depend on the average level of education a hypothesis will be tested. The null hypothesis that no difference exists on the average level of education is tested against the alternative hypothesis that there is a difference. A t-statistic of 9.04 that rejects the null hypothesis means that the null hypothesis needs to be rejected at the 5 percent level¹. This means that they are separated as the t-statistic indicates. The possibilities of getting an employment would actually decrease with a higher level of education according to this result.

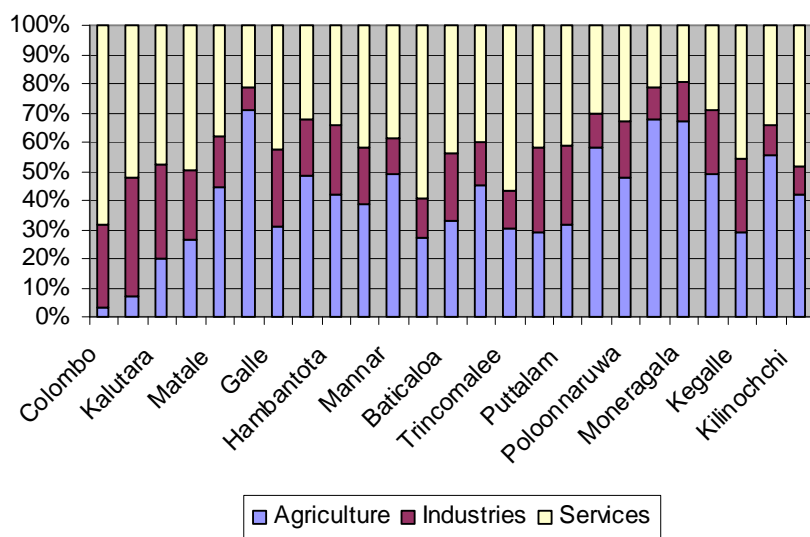
In order to see if the possibilities of getting employment are higher if you are male², the null hypothesis that no difference exists will be tested against the alternative hypothesis that the possibilities increase if you are male. The t-statistic 4.69 rejects the null hypothesis with a statistical significance. The gender does matter when looking at the possibilities of getting an employment, educated females have a disadvantage.

Figure 4.3 shows the percentage distribution of employed population by major industry groups for districts. The table reveals the variation among the districts; agriculture is the dominating industry group in all other districts except districts in the Western province, and it varies from 3.1 percent in Colombo to 70.8 percent in Nuwara Eliya. The service and industry sector have a higher percentages among more urbanized districts.

¹ See appendix 1 for complete calculations

² \bar{x} = the average level of employment

Figure 4.3: Percentage Distribution of Major Industry Groups by districts



Data source: Department of Census and Statistics: Annual Report of the Sri Lankan Labour Force 2004

The correlation between income, education and employment is of a very complex nature, and many factors are relevant. Education on a primary and secondary level has universal enrolment; the Sri Lankan population is very well educated. This basic education helps the poor in terms of their every day life; they can easily search for and understand information, health instruction etc. The unemployment statistics also show that this part of the population with only basic education have the lowest unemployment rates (Table 4.7). In order to look behind the statistics, one has to see where these people live and work. What kind of labour is in demand changes depending on the location in the country. Figure 4.3 shows how different the distribution of industries is where agriculture is still the most dominating sector. The dependency on the agricultural sector can be one explanation for the persistence of poverty. The agricultural sector had an output per capita that remained almost unchanged over an entire decade, and registered negative growth during certain years between 1991 – 2001, while the output per capita grew annually for both the industry and service sectors. Even so there are no signs of a labour shift away from the agricultural sector, on the contrary the sector registered an increase in the number of people employed in 2002 compared to 1991. (Narayan & Yoshida, 2005:10) Better educated people have higher unemployment rates, but also this varies according to location. The Western province has the lowest unemployment rates for people with GCE level and above, both among women and men. The Western province is the hub in Sri Lanka, and both the supply of higher education and demand for

educated are higher in this province. One aspect of the unemployment rates for highly educated is the waiting behaviour. Well educated people prefer staying unemployed while waiting for the perfect job, than taking something not so good in the meantime. The expectations of a white collar job can not be met by the market, which also points to the mismatch between the education given and the employer's demand. The female unemployment is higher than for males. One explanation is the different education chosen with women more likely to take an education that makes them more unprepared for employment opportunities emerging with economic growth. More important are the economic position, ethnic identity and demographic composition in the household, factors in the Sri Lankan society that influence the expectations of a young woman's work behaviour. (DeGraff & Malhotra, 1997:383) Historical and cultural forces where the Sri Lankan woman often has a prominent role are both an interesting and difficult combination. To reach higher income through education and thereby better employment is not evident, but in the case of Sri Lanka a big challenge lies in the mismatch between education and employer's demand.

4.5 Health

When comparing key health statistics with other countries, Sri Lanka shows a high health level with a life expectancy of 74 years, just over the world mean of 73.9. (HDR, 2005) Despite this positive development with low infant mortality and immunization programmes for children, Sri Lanka still has areas that need improvements. Alcoholism is a serious health problem and a social menace in modern Sri Lanka. The consumption of legally produced alcohol during the last twenty to thirty years shows a four fold increase. The high consumers are mostly middle aged men, but during the last period, 1998 – 2004, the abuse by younger men rose at an alarming rate of 37 percent. (Department of Census and Statistics) Alcohol has today an important role to play on bigger occasions where much alcohol is served, otherwise it is not seen as a proper arrangement. Celebrations can put families into long debts in order to finance alcohol at these occasions. Individual drinking has also an important cost, with over 10 percent of the male respondents in a survey¹ report spending their entire income or more on alcohol. Alcohol has an enormous effect on the communities and at an individual level. Having one, or the only, wage earner in a household spending a bigger part of the income on

¹ "Alcohol and Poverty in Sri Lanka" a study conducted by the Norwegian researcher Bergljot Baklien and the Sri Lankan Professor Diyanath Samarasinghe, commissioned by FORUT 2003-2004

alcohol, is also to run the risk of losing employment. Besides the direct economic effect, the domestic and gender based violence is seen as a natural consequence of alcohol use. Woman being abused and deprivation of the needs of children are regarded as a misfortune and fate rather than a matter of special concern. (Baklien et al, 2004:141)

The government health care programmes provided to all without targeting have been experiencing difficulties. Frequent labour disputes cripple the service and put the general public into inconvenience. (Central Bank, 2005:71) The non functioning free health service is a problem in the remote areas. Lacking equipment and tools either forces the population in remote areas to travel further to get proper treatment, or to choose no treatment. (Hantane Group) The estate population has been disadvantaged, in terms of housing, nutrition and sanitation. Their mortality rate has been exceptionally high for the country and life expectancy around 11 years less than the general population. Inadequate staffing and poor quality of the service provided on the estate give higher indirect costs in terms of time spent on travel and queues, time taken away from the daily work and wage. (Gajanayke et al, 1991:802) The major outbreaks of Dengue Fever and Dengue Hemorrhagic Fever together with a worried population put harder pressure on the system to function.

The dataset from the Registrar and General’s Department where infant mortality is measured covers the years 90/91, 95/96 and 2002. The northern districts are excluded due to unsafe conditions. In the regression estimated to detect the correlation between household income at district level and health, health is represented by the rate of infant mortality per district. The alcohol study by FORUT was conducted in nine different social settings, in the dry zone, wet zone, tea estate, fishing village and urban slum, using qualitative methods.

The regression estimated is specified below.

$$\text{Log}(\text{Income}) = \alpha + \beta \cdot (\text{Infant mortality}) + e \quad (4)$$

Table 4.8: Result of OLS estimation, Equation 4

Variable	Coefficient	Std. Error	t-Statistic	Prob.
α	9.319941	0.306245	30.43294	0.0000
<i>Infant mortality</i>	-0.255832	0.113377	-2.256483	0.0285
R-squared	0.080730	Adjusted R-squared	0.061969	

Data source: Department of Census and Statistics, Registrar General’s Department

The estimation result reported in table 4.8 shows that there is a significant relationship between income and infant mortality at the 5 percent level. The F- statistic version of the Ramsey Reset test on this regression has a p-value of 0.616, which tells us that the model estimated is correct and that no factors have wrongly been left out. Together with the low p-value 0.0285 this regression is significant when explaining income levels. The negative coefficient on *Infant mortality* is expected as mortality has a negative impact on the income.

Table 4.9 shows the levels of malnutrition in the different sectors, and how they are linked to the mother's educational level.

Table 4.9: Undernourished children under five years of age

Characteristics	2000			1993		
	Stunted %	Wasted %	Underweight %	Stunted %	Wasted %	Underweight %
Total	13.5	14.0	29.4	23.8	15.5	37.7
Sector						
Colombo	7.4	10.1	18.2	19.7	12.2	31.2
Other urban	8.6	6.3	21.3	16.8	16.8	29.9
Rural	12.8	15.9	30.8	22.9	16.4	38.3
Estate	33.8	11.8	44.1	53.7	9.5	52.1
Educational Level of Mother						
No education	35.7	18.4	48.0	46.0	16.7	53.9
Primary	23.8	15.9	41.4	33.6	18.7	47.8
Secondary	12.7	15.0	31.7	22.6	16.8	39.1
GCE O/L	9.9	14.7	24.8	13.0	11.3	24.6
BCE A/L & Higher	5.4	7.6	13.3			

Data source: Department of Census and Statistics

The overall malnutrition was reduced from 1993 to 2000, but when comparing the different sectors a great divergence is showed. The estate sector has an alarming rate of undernourished children, and even if it declined between the years 1993 and 2000 this difference is only marginal. The educational level of the mother seems to be related to the level of malnutrition; the higher the education, the lower the level of undernourished children.

Alcohol is a rising problem in Sri Lanka. Table 4.10 shows the frequency use. Even if 63 percent never consume alcohol, as much as 20 percentages are using alcohol daily or frequently. Interesting to note is also that out of the 63 percent that never consumes alcohol

140 were women and only 53 men. How the behaviour of those who are drunk is experienced and seen is showed in table 4.11¹.

Table 4.10: Frequency of alcohol use

	Percentage
Daily	8
2-6 days per week	12
Once a week or less	17
Never	63
Total	100

Data source: FORUT 2004

Table 4.11: Drunken fighting behaviour

Behaviour	Daily or frequent drinkers ²	Abstainers or infrequent drinkers
More fights	48	87
Less fights	21	5
No difference	31	8
Total	100	100

Data source: FORUT 2004

The perception of alcohol has changed and the image of using alcohol can be seen in table 4.12. Frequent drinkers tend to see alcohol as a way to enjoy life more, and those not consuming see the opposite.

Table 4.12: Image of alcohol user

Image	Daily or frequent drinkers ²	Abstainers or infrequent drinkers
Enjoys life more	48	17
Enjoys life less	34	69
No difference	18	14
Total	100	100

Data source: FORUT 2004

The overall indicators for health in Sri Lanka are showing a good result, but when looking behind these numbers at regions and sectors a different picture appears. The high quality of the health service provided in some areas is a result of the priority made by the government; the challenge is to provide the same high quality all over the country, even in the remote and estate areas. The lowest quality level needs to rise. Information about health care, how to discover illness and when to seek professional care are important aspects that many people, especially in the estate sector, do not have. As can be seen in table 5.10 the mother's level of education is connected to the child's health. This connection can also be interpreted as the

¹ The question asked is how you or they behave when drunk, as a difference is made between those consuming alcohol and not.

² Daily or frequent drinkers are those drinking daily or 2-6 times a week, here 20 percent out of those 306 participating (151 female and 155 male) from 11 districts.

alternative cost for poor people to attend classes being too high, and these are the same people having problems finding food for the day. But a formal education is needed to make use of information available from the media. This necessity of information and knowledge also incorporates alcohol and the consequences of using alcohol. The impact of alcohol can be devastating for a household, an already fragile income is jeopardised and alcohol can bring a heavy social burden. A small percentage in the survey behind the data presented even had an alcohol expenditure exceeding their income, and even more used the entire income on consumption. Table 4.12 shows that both those consuming and those who never consume alcohol experience that the fighting behaviour increases when drinking, behaviour that can risk the health of other household members.

4.6 Multiple Regression

The five determinants presented above are all part of the poverty situation in Sri Lanka. Four of these, infrastructure, land, education and health will be analyzed here in a multiple regression. Microfinance will be left out due to data limitations.

A multiple regression over the four determinants of poverty infrastructure, land, education and health has been possible to estimate with some limitations. The regression will only represent the situation in 2002, and northern parts of the country have been left out due to lack of data.

$$\begin{aligned} \text{Log (Income)} = & \alpha + \beta_1 \cdot \text{Log (Total roads)} + \beta_2 \cdot \text{Log (Number of Pupils per Teacher)} \\ & + \beta_3 \cdot \text{Log (Infant mortality)} + \beta_4 \cdot \text{Log (Acres per rural inhabitant)} + e \end{aligned} \quad (5)$$

Table 4.13: Result of OLS estimation, Equation 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
α	7.848938	1.210110	6.486137	0.0000
<i>Total roads</i>	0.231440	0.126309	1.832334	0.0918
<i>Number of Pupils per Teacher</i>	-0.010371	0.316091	-0.032809	0.9744
<i>Infant mortality</i>	-0.130296	0.060626	-2.149190	0.0527
<i>Acres per rural inhabitant</i>	-0.216785	0.035301	-6.141031	0.0001
R-squared	0.778025	Adjusted R-squared	0.704034	

. The F- statistic version of the Ramsey Reset test on this regression has a p-value of 0.33, which tells us that the model estimated is correctly specified. The high R-square of 0.778 further supports the relevance of this model and the negative coefficients are consistent with the individual regressions made. The coefficients can be interpreted as elasticity, all things equal the income would increase by 0.231 percent if the *Total roads* increased by 1 percent. This elasticity also tells us, all things equal, that the income would decrease by 0.217 percent if the *Acres per rural inhabitant* decreased with 1 percent. The multiple regression shows the mutual relationship between the four determinants and their impact on the income. Infrastructure, health and access to land are all significantly connected to the income and stress the importance of a broader view in the fight against poverty, where all these factors can contribute.

4.7 The Samurdhi Programme

The objectives of the Samurdhi programme are to integrate youth, women and disadvantaged groups into economic and social development activities, and to promote social stability and alleviate poverty. In order to reach these objectives both short- and long-term strategies have been adopted. The short-term strategy involves poverty cushioning components such as income support, a social insurance scheme and social developments programmes. The long-term strategies focus on poverty reduction through social mobilisation, empowerment and integrated rural development. The aim is both to protect the poor by reducing their vulnerability and to assist them to graduate out of poverty. (Gunatilaka et al, 1997) The programme has three major components; the first is a provision of consumption transfer,

monthly coupons that can be exchanged for goods in the local co-operative store. This component claims 80 percentage of the total Samurdhi budget. The second component is the Development and Credit Scheme a programme carried out by Samurdhi banks. This microfinance scheme intends to stimulate new income generating activities or expanding an existing business. (Ahmad & Colombage, 2006:16) Saving is a part of the beneficiary programme, and only members of the Samurdhi Banks are eligible for loans. The third component is a workfare and social development programme, a source of temporary wage employment in backward areas where the project aims to benefit the community, such as roads etc.(Glinskaya, 2000:7, Salih, 2000:8) Under this third components lies a Marketing, Agricultural and Animal Husbandry and Fisheries Development Programme. (Ministry of Samurdhi, 2004:27) This broader approach with three components is an attempt at finding a holistic solution of poverty alleviation. The programme is implemented island wide in contrast to its forerunner, Janasaviya, which was implemented in rounds focusing on one area at a time.

4.6.1 Weaknesses within the Samurdhi Programme

The Samurdhi Programme has had difficulties in targeting the poor in the country since the beginning. The poorer districts and provinces have a bigger share of the Samurdhi benefits, but it is the targeting within these that are the problem. The World Bank found in the year 2000 that almost 40 percent of households ranked in the lowest expenditure quintile were missed out, while many not so poor families receives consumption grants and other forms of benefits. (Glinskaya, 2000:2) In 2002 32.5 percent of all the households were beneficiaries from the Samurdhi Programme, out of these only 14.4 percent were classified as poor households, and the other 18.1 percent non poor households. Two years later the number of households benefiting had increased to 41 percent, but the population living below the poverty line was only 19 percent. (HIES, 2002:20, Central Bank of Sri Lanka, 2004:75) This problem of targeting reflects the Sri Lankan history of politicization of poverty reduction programmes; the Samurdhi Programme rest on a political-economic framework. (Salih, 2000:15) Ethnic discrimination within the targeting process has also been reported by independent studies¹. (ADB, 2001:30)The identifying process of beneficiaries is based on

¹ Gunatilaka et al, 1997 and the World Bank 2000

income. Families receiving less than Rs 1500 per month are divided into categories depending on the number of family members, and the grant from Samurdhi is based on this information (See appendix 2). This process has an extensive administrative sector for its disposal. Local politicians recommend an officer, niyamakas, who identifies the households in need of benefit, and are also expected to supervise these in saving training. This is a weak link in the chain, and politicians have a lot of influence over the identification process. Being a beneficiary appears to be an award for political loyalty of the governing party, and a threat of removal from the beneficiary list if the household intends to vote for the party in opposition. (Glinskaya, 2000:9, 20) An additional problem is the corruption among these officials (Ranathunga), leaving a heavy burden on the already very costly administrative sector. The politicization of poverty programs has eroded the effectiveness with which public services are provided to the poor. This failure of political governance of not putting national priorities above party politics has contributed to increase poverty and human deprivation. These factors, all taken together, make the outcome of this targeted poverty alleviation programme comparable to one that is not targeted. (Glinskaya, 2000:15) The projects running under the Samurdhi Programme are several and the vision of the Ministry of Samurdhi and Poverty Alleviation “*Prosperous Country, Free of Poverty*” sets a high ambition, but whether or not the programme has been successful is not clear. Stated in the *Vision, Mission and Objectives of the Ministry* (Progress 2004 and Programme 2005) are goals so extensive that they cover all the areas and necessity for Sri Lanka. The high number of employees in the Samurdhi Programme together with the high ambition stated could be seen as very promising for future developments, but taking into account all the weaknesses presented, there is a risk that this is an inefficient organization. If the people most in need are not reached by the programme this is a failure regardless of the objectives stated.

5 Conclusions

Income poverty in the rural areas of Sri Lanka is in some degree dependent on all the determinants discussed in this study. None of these can alone explain or end poverty, but when interacting they can all contribute. Infrastructure has showed the strongest correlation with income poverty and is thereby an important factor in the poverty alleviation process. Improving the infrastructure can help reduce the domination of the Western province and get a more even distribution of public goods and economic activity. Through an improved infrastructure higher education can be more accessible for people living in remote areas, and the chances of getting a job demanding higher education increase as the economic activity spreads over the country. The possibilities of income earnings for people living in remote areas could increase as the markets would be more accessible and the options for non agricultural activities increase. Better infrastructure can facilitate many aspects of the poverty alleviation process, but all factors call for attention.

The role of land is important but not decisive when explaining poverty in rural areas. A high dependency on external factors such as weather makes land an uncertain source of income for the small farmer. The agricultural sector and microfinance are closely related. Land has been viewed as a security for loans in the traditional lending market, a security not necessary for microfinance institutions. The options to start up a small enterprise in the remote areas and get a supplementary income have increased with the microfinance institutions. Even if microfinance can help out in a variety of situations not everyone succeeds as an entrepreneur. This is a very interesting area where more research could help improve the outcomes of these small enterprises.

The mismatch between the education given and the demand on the markets reveals the need to evaluate the relevance of the education given. Education is an important sector, but an educated population is not itself the goal. It is what education does for the individual and the society that counts. Sri Lanka has a high educational level today, but if this knowledge is not

made use of it will not contribute to the development of the country or the poverty reduction. For a developing country to absorb modern technology and improve productivity, that can lead to higher income for the individual and a stronger economic growth for society, it is of highest importance to not only have an educated workforce but to have a workforce with the right education. An education prepared for the future, regardless of the gender.

Free health facilities are a Sri Lankan strategy pursued, a strategy that needs to continue but with some improvements. The standard of the health services provided is dependent on where in the country you are, and poorer regions tend to have poorer facilities. Once again this puts the already vulnerable poor in a hard situation, the access they have to health facilities is not always sufficient. Better quality of the health service and more information about how different diseases appear are treated and information about how to handle alcohol is important. To remove or restrict the Kasippu outlets, the alcohol most frequent drinkers consume, could be a preventive measure reducing the consumption. Over 10 percent or more of the men spend their entire income and sometimes more on alcohol¹. Expenses that are most likely to hit the poorer families. When targeting the poor the alcohol aspect should be present, to help the most deprived and alcohol compromised families. These are worse off families who need help to be able to exit poverty.

The Samurdhi Programme has the best intentions, and when reading their stated programme and goals one finds them very comprehensive. All of the determinants presented in this study are represented. But the question about how they are going to reach these goals is not fully answered. The targeting problems this programme has had since the beginning and the costly administrative sector, where corruption has been discovered, are great challenges that need to be handled in order to reach the goals. The Samurdhi Programme has been acting as a reward for political loyalty, and the objective of the programme has been lost along the way. The exposing of these problems in the media can hopefully change the course today, so that the people most in need get the help they are entitled to.

When looking at these five determinants in a Sri Lankan context the regional variations appear to be very strong. The Western Province is the hub of the country where the main part of the country's economic activity takes place, which makes it hard for remote areas to be an

¹ According to the FORUT study

active part of the economic growth and the country's development. This inequality which can be seen in all of the determinants discussed above makes me draw the final conclusion in this study that infrastructure is of greatest importance in Sri Lanka. Infrastructure can help improve the income for the poor living in rural areas through many different channels and they will be able to be an active part in the developing process. A more dynamic study where improvements of the infrastructure can be measured and evaluated could give important knowledge about the extent to which the situation of the poor is improved.

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Appendix 1: Complete calculations chapter 4.4

Employment depending on educational level

In order to see if the possibilities of employment depend on the level of education a hypothesis be tested. The H_0 hypothesis that no difference exists is tested against H_1 that there is a difference.

$$H_0 : \mu_1 - \mu_2 = 0$$

$$H_1 : \mu_1 - \mu_2 \neq 0$$

Higher level of education:

$$\sum x : 193,7 \qquad \bar{x} : 21,52 \qquad x^2 : 4502,55 \qquad n : 9$$

Lower level of education:

$$\sum x : 16,9 \qquad \bar{x} : 1,8778 \qquad x^2 : 37,93 \qquad n : 9$$

$$s = \sqrt{\frac{\sum x^2 - \frac{(\sum x)^2}{n}}{n-1}}$$

$$s_{high} = \sqrt{\frac{4502,55 - \left(\frac{193,7^2}{9}\right)}{8}} = \sqrt{41,7125} = 6,459$$

$$s_{low} = \sqrt{\frac{37,93 - \left(\frac{16,9^2}{9}\right)}{8}} = \sqrt{0,7745} = 0,88$$

$$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

$$s_p^2 = \frac{(9-1)6,458^2 + (9-1)0,88^2}{9+9-2} = 21,24$$

$$t = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)}{\sqrt{s_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$t = \frac{21,52 - 1,8778}{\sqrt{21,24 \left(\frac{1}{9} + \frac{1}{9} \right)}} = 9,041$$

Employment depending on gender

In order to see if there is a higher possibility of getting employed if you are male, the hypothesis H_0 that no difference exists will be tested against H_1 that the possibilities increase if you are male.

$$H_0 : \mu_1 = \mu_2$$

$$H_1 : \mu_1 > \mu_2$$

Men

$$\sum x : 120,1 \quad \sum x^2 : 1792,67 \quad n : 9 \quad x^2 : 13,34$$

Woman

$$\sum x : 270,4 \quad \sum x^2 : 88848,6 \quad n : 9 \quad x^2 : 30,04$$

$$s_{men} = \sqrt{\frac{1792,67 - \left(\frac{120,1^2}{9} \right)}{8}} = 4,8734$$

$$s_{\text{women}} = \sqrt{\frac{8848,6 - \left(\frac{270,4^2}{9}\right)}{8}} = 9,5168$$

$$s_p^2 = \frac{(9-1)4,8734^2 + (9-1)9,5168^2}{16} = 57,1592$$

$$t = \frac{30,04 - 13,34}{\sqrt{57,1597 \left(\frac{1}{9} + \frac{1}{9}\right)}} = 4,6857$$

Appendix 2: Samurdhi eligibility criteria

Samurdhi eligibility criteria

Families receiving less than Rs. 1500 per month and household size	Grant size
6 or more	Rs. 1000/-
3 or more	Rs. 600/-
2	Rs. 350/-
1	Rs. 250/-
Former Janasaviya recipients	Rs. 400/-
Families whose income has improved due to empowerment but still actively contributing to the Samurdhi Programme	Rs. 140/-

Source: Ministry of Samurdhi and Poverty Alleviation Progress 2004 and Programmes 2005

Appendix 3: Map over Sri Lanka

