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Book Review

**Spatial concerns in development: A Sri Lankan Perspective**  
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New Delhi

Hiran Dias

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## **BOOK REVIEW**

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## **Alcohol and Poverty: Are they Related? Empirical Study from Sri Lanka**

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**Abstract:** The relationship between alcohol and poverty in Sri Lanka is an important area to study to formulate better policies to eliminate poverty in Sri Lanka. The study used the Household Income and Expenditure Survey (HIES) of 2001/02 that covered 16,924 households (71,293 individuals) in seven provinces in Sri Lanka. This study identified the poor by the Sri Lankan official poverty line base which is calculated by the Department of Census and Statistics, Sri Lanka. The probit model was applied to measure the impact on alcohol and poverty. The findings reflect some facts which merit careful attention in the task of Sri Lankan poverty alleviation policies. Illegal alcohol consumption is prevalent in the rural and estate sector poor households. Developing the Sri Lankan alcohol policy would have positive impact towards the society, particularly in addressing poverty reduction issues.

### **Keywords:**

Alcohol policy, legal and illegal alcohol, Poverty, Probit Model, Sri Lanka.

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<sup>1</sup> Ruwan Jayathilaka is a research officer in the Institute of Policy Studies of Sri Lanka. Presently he is doing his postgraduate degree at the National University of Singapore, Singapore. He wishes to thank Professor Habibullah Khan and anonymous referees for helpful conversation and suggestions and constructive comments. He also thank Mr. A.C.W. Nanayakkara and Dr. Saman Kelegama who gave permission to access the HIES data set.

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## 1. Introduction

Alcohol has been one of the most commonly used chemical substances for intoxication by humans in history. Initially, alcohol was a powder and the word 'alcohol' originates from the Arabian term 'al-kuhul', meaning "the kohl" a powder for the eyes, which later came to mean "finely divided spirit" (World Health Organization, 2003). Alcoholic beverages date back to the very early part of man's history. Many archaeologists believe that wines made from grapes have existed for more than 10,000 years and that drinks such as mead and beer have existed for even longer. Throughout its history, alcohol has been used socially for many diverse purposes, such as calming feuds, giving courage in battle, sealing pacts, celebrating festivals, and seducing lovers. The Celts, Ancient Greeks, the Norse, Egyptians, and Babylonians all have records of production and consumption of alcoholic drinks. Currently, the purposeful production of alcoholic beverages is common in all cultures and reflects their cultural and religious peculiarities just as the geographical and sociological conditions. Countries place various legal restrictions on the sale of alcoholic drinks to young people. The manufacture and consumption of alcohol is found to some degree in most cultures and societies around the world, from hunter-gatherer tribes to organized nation states. The consumption of alcohol is often important at social events in such societies and may be an important aspect of a community's culture.

According to the World Health Organization (2003) alcohol is a generic term for many different chemical compounds, each with its own distinct properties. There are different types of alcohol. Some are used in chemistry laboratories and industry, e.g. isopropyl (or Isopropanol) and methyl (or Methanol) alcohol. Some are used by humans which is called the ethyl alcohol, also known as ethanol. This has been consumed by human beings for its intoxicating and mind-altering effects. The term 'alcohol', unless specified otherwise, refers to ethanol or ethyl alcohol. It is a thin, clear liquid with harsh burning taste and high volatility. It is usually consumed in diluted concentrations of absolute (i.e. 100 per cent) ethyl alcohol. It is

produced by a chemical reaction of fermentation in which yeast feeds on sugar or starch in certain plants, such as barley or grapes, and produces alcohol along with carbon dioxide. Ethanol can have different colours, tastes, potencies and flavours depending on the fruits or vegetables used in its manufacture, the process of manufacture and the additives used. Alcohol comes in different varieties. Wine, beer, whisky, rum, brandy, gin, liqueurs, arrack and toddy are the most common kind of alcohol. However, among the South-East Asia countries Sri Lanka produce the toddy and Arrack.

**Table 1: Types of local brews in the countries of the South-East Asia Region**

<b>Country</b>	<b>Local brews</b>
Bangladesh	Bangla Mad, Cholai, Tari
Bhutan	Ara
India	Arrack, Desi Sharab, Tari, Tharra
Indonesia	Palm wine
Nepal	Raksi, Tadi, Chayang, Tomb
Sri Lanka	Toddy, Arrack
Thailand	Oou, Krachae, Namtanmao, Sartha, Waark

However, in Sri Lanka, home based brewing is illegal. However, this is a lucrative underground business in most parts of the island. Illicit brew is known by many names ‘Kasippu’ (this is the most common and accepted name), ‘Heli Arrakku’ (archaic term means, Pot-Liquor), ‘Kashiya’ (which is a pet name derived from more mainstream term *Kasippu*), ‘Vell Beer’ (means, beer of the paddy field), ‘Katukambi’, ‘Suduwa’ (means, the white substance) depending on locality. The process of making this underground alcohol is not complicated. Alcohol is a hydrocarbon compound derived from fermented sugar. Scientifically, Alcohol is created when grains, fruits, or vegetables are fermented.

The paper is organized in 6 sections and Section 2 describes the literature review while Section 3 highlights the data, sample distribution and methodology. Section 4 presents results of the

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analysis. Section 5 discusses the policy implications and the last section is the conclusion.

## 2. Literature Review

Alcohol policies can be an effective way of controlling the damage from alcohol and the impacts on drinkers, non-drinker and their communities (Edwards *et al.* 1994). Alcohol policies could be effective in reducing harm at both individual and population level (Babor *et al.* 2003). Recent estimates emerging from research sponsored by the World Health Organization (WHO) indicates that alcohol contributes to 9.2 percent of disease, disability and death (Disability Adjusted Life Years or DALYs) in developed countries, just below tobacco (12.2%) and blood pressure. Literature on public opinion related to alcohol has grown progressively in the past 15 years. Moreover, these literature come into view from many countries, including Australia (Hawks *et al.*, 1993; Shanahan and Hewitt, 1999), Canada (Giesbrecht and Kavanagh, 1999; Anglin *et al.*, 2004), Finland (Ahlström and Österberg, 1992), Ireland (Hope, 2003), New Zealand (Casswell *et al.*, 1989; Sellman and Ariell, 1996), the UK (Alcohol Policy, 2000; Lancaster and Dudleston, 2001; Kara and Hutton, 2003), the USA (Schmidt *et al.*, 1990; Wagenaar and Streff, 1990; Hilton and Kaskutas, 1991; Room *et al.*, 1995; Wagenaar *et al.*, 2000; Harwood *et al.*, 2002; Latimer *et al.*, 2003) and six European countries (Hemstrom, 2002).

The rationale for such research is diverse. In some cases, the focus is on the rank ordering of support across alcohol policy topics. In the North American context, there is a rough rank ordering of the level of support across alcohol policies, with typically greater generalized support for those policies that are narrowly focused i.e. interventions by alcohol sellers not to sell to alcohol to persons perceived to be intoxicated, the use of warning labels about the risks of drinking and increased prevention and treatment interventions (Kaskutas, 1993a). There is usually less support for those policies that control access to alcohol and potentially affect all consumers, such as higher taxes on alcoholic beverages, reduced density of outlets and shorter hours of sale (Giesbrecht and Greenfield, 1999).

Other research aims to identify demographic groups that tend to support or oppose certain policies (Anglin *et al.*, 2001). Older adults and women are found to be more supportive of policies on alcohol control than younger adults and men. Sometimes the goal is to plot changes in public opinion over time (Kaskutas, 1993b; Room *et al.*, 1995; Giesbrecht *et al.*, 2001), with certain core items used repeatedly to monitor trends. In the US, there are evidence of gradual declining support for most alcohol policies examined in surveys between the late 1980s and 1990s (Kaskutas, 1993b; Room *et al.*, 1995; Giesbrecht and Kavanagh, 1999; Giesbrecht *et al.*, 2001). The research also explores the relationship between public opinion and actual policy (e.g. Room *et al.*, 1995; Giesbrecht and Kavanagh, 1999; Anglin *et al.*, 2003). Researchers ask the question whether public opinion influences policy or vice versa (Casswell *et al.*, 1989; Kaskutas, 1993a), and what accounts for the differences in opinion across countries (Giesbrecht and Greenfield, 1999) and variations over time in public opinion as policies change (Ahlström and Österberg, 1992).

It must be noted that most research on alcohol suffers from data collection bias. The views of the respondents on alcohol policies may relate to their self-reported drinking, such as drinking status, level of alcohol consumption and drinking patterns. Therefore, in some studies, the heaviest drinkers were least likely to support alcohol policies, particularly those policies that reduce access to alcohol (Kaskutas, 1993b; Wagenaar *et al.*, 2000; Anglin *et al.*, 2001).

## **2.1 Comparison of alcohol consumption and the incidence of poverty**

“The reality about alcohol consumption is that developed countries are drinking less and, in contrast, consumption in developing countries is increasing” (The Globe). Many developing countries experience a rapid growth in alcohol consumption, as they are increasingly affected by cultural and economic globalization. In this



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section, we will present some comparison of alcohol consumption and the incidence of poverty using qualitative description of various statistics, focusing on South Asia and Southeast Asia.

Information presented to us suggests that alcohol consumption in developing countries could be exacerbating the problem of poverty. In most developing countries, alcohol consumption has greater negative impacts on the poor and rural communities. Alcohol consumption is higher among poor families in Sri Lanka and Malaysia. Moreover, poor households also tend to spend a larger percentage of their income on alcohol. In Malaysia, the biggest victim of alcohol consumption is the poor (GAPA<sup>2</sup>, 2002). Of the 200,000 rural Indian labourers drinkers who work in rubber and oil palm estate in Malaysia, a regular drinker can consume six bottles a day which work out to RM9 or about three-quarters of his daily wage. In a month, he can spend about RM300 on drinking which is equivalent to almost his entire monthly income. According to GAPA, poor urban families in Sri Lanka that consumed alcohol spend more than 30 per cent of their total expenditure on alcohol. Another survey conducted in six Sri Lanka districts found that between 30 and 50 per cent of income of low-income families was spent on alcohol and tobacco. In addition, a survey by GAPA in 1997 also found that the total expenditure on tobacco and alcohol exceeded the amount of government assistance given to the community under government's poverty alleviation programme in Sri Lanka. Given the situation mentioned above, alcohol consumption could indeed be a major factor in exacerbating poverty in those developing countries.

It should however be noted that drinking patterns in developing countries measured by per capita consumption figures do not necessarily present a true picture of their consumption pattern. Parallel with the international and more expensive alcoholic beverages, there exist the local, cheap, potent brews, both legal and illicit, which are not computed into the national statistics. In Sri Lanka, a community survey done by GAPA in eight villages showed

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<sup>2</sup> Global Alcohol Policy Alliance

that 71 per cent of respondents drink daily but 93 per cent of the respondents used locally produced alcohol which is not reflected in the national per capita consumption statistics. In Indonesia, the national consumption is only 2.7 per cent but Balinese showed a high prevalence of 40 per cent of locally produced palm wine. In addition, while Nepal per capita consumption is only 2.5 litres, there is also a substantial amount of home production and there is no data on consumption of informally produced alcohol. Even though data of informal sectors could not be obtained easily, the existence of such informal sectors would at least suggest that statistics of per capita consumption of alcohol in developing countries would be underestimated.

According to World Health Organization (WHO), global alcohol consumption has increased in recent decades, with most or all of this increase occurring in developing countries. Problems related to the use of intoxicating substances are known in all corners of the world but alcohol normally in the most prominent both in distribution and in number of users. Consumption of alcohol would costs a nation billions of dollars and such effects are more devastating on developing countries. The use of alcohol therefore constitutes a special challenge in developing societies.

Despite the difficulties of accurately estimating the hidden cost of alcohol consumption, the burden on any nation is bound to be substantial when the cost of medical care, loss of productivity through absenteeism, accidents at work, loss of job skills and damages to property, etc. are accounted for. According to WHO, alcohol abuse is one of the leading causes of death and disability worldwide responsible for 4 per cent of global deaths and disability, nearly as much as tobacco and five times the burden of illicit drugs. Alcohol consumption accounted for 1.8 million deaths per year world wide and was estimated to cause 20-30 per cent of oesophageal cancer, liver disease, motor vehicle accidents and homicide and other intentional injuries. According to the global burden of disease study sponsored by WHO and the World Bank, morbidity from alcohol, measured in years of life lost to disability,

has a greater impact on health than even malnutrition or poor sanitation. The study puts alcohol global health impacts on par with unsafe sex problem and above tobacco in terms of its contribution to the total number of years of life lost to death and disability as recorded in the DALY index. WHO had also attempted to estimate the direct and indirect health impact due to alcohol and it states that the increase on alcohol consumption in developing nations where health and economic systems are weakest is of great concern.

In Malaysia, 38 per cent of those who died in road accidents are alcohol-related death. Alcoholics are also 16 times more likely to be absent from their work. In India, 300 died from methanol poisoning and 3000 suffer long term disabilities such as blindness due to alcohol consumption. In Sri Lanka, the number of liver cirrhosis patients is increasing and among oral cancer patient, 68 per cent were alcohol users. Moreover, in a country like India, where about 53 per cent of the population lives below the income poverty line, spending money on alcohol will have serious consequences. In India, heavy alcohol use takes a particular toll on the young, and has been linked to high rates of youthful criminal behaviour, injury, and impaired ability to achieve educational qualifications. Alcohol misuse is also one of the main killers of young men in India today. Domestic violence and an exacerbation of poverty have made alcohol misuse the single most important problem for women in India.

Nevertheless, the challenge facing developing countries is two-sided. Alcohol related problem become an additional burden on individuals, families and communities which have too many burdens to carry already, especially with poverty. On the other hand, experiences show that once developing countries have managed to start reducing poverty problems and create economic growth, alcohol consumption tends to rise. This in turn results in increasing health and social problems. In other word, as developing countries manage to combat poverty through economic development, alcohol will climb up the list of serious threats to public health and welfare of people. Given the complex relationship between alcohol, poverty and economic growth, alcohol consumption should be a part of

development strategies to combat poverty and therefore be viewed as a development issue.

## **2.2 Key issues on Poverty in Sri Lanka<sup>3</sup>**

Some of the key issues on poverty in Sri Lanka are listed below.

- i. While statistical data shows that the free education and free health services including efficient immunization programs have benefited the people of Sri Lanka immensely, the major poverty alleviation programs implemented in Sri Lanka since 1948, do not seem to have had the similar or desired effect on the poor people of this country.
- ii. While economic growth and sound macro-economic policies are essential for poverty reduction, it is absolutely essential to have sound pro-poor policies to deal with high levels of inequality of income, land and other assets for reduction of poverty effectively in this country.
- iii. Poverty reduction also requires effective safety nets to mitigate the impact of personal and natural calamities like droughts, floods, land slides, etc.
- iv. Inappropriately targeting the welfare benefits meant for destitute poor (which could be clearly seen from the results of the Household Income and Expenditure Survey (HIES), conducted by the Department of Census and Statistics (DCS)) is also one of the major reasons for persistent high incidence of poverty in this country, in spite of all the welfare programs implemented since independence.

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<sup>3</sup> Adapted from DCS (2006), Poverty in Sri Lanka-Issues and Options, Department of Census and Statistics – Sri Lanka, <http://www.statistics.gov.lk/poverty/POVERTY%20DOC%20BY%20AGWN.pdf>

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- v. Inadequacy of infrastructure facilities such as proper road network, water resources and electricity in many parts of rural Sri Lanka is one of the major issues which hamper the reduction of poverty.

### **2.3 The existing view about the alcohol policy in Sri Lanka**

In Sri Lanka, there exists side by side the illegal liquor (*Kasippu*) sector and the legal hard liquor sector. The 2004 WHO highlights that *Kasippu* makes up 92 percent of total alcohol consumption in Sri Lanka amounting to 625 million litres while legal alcohol consumption amounts to only 55 million litres. Thus, per capita consumption of hard liquor is about 36 litres and this is considered a high level of consumption<sup>4</sup>. If we look at the level of alcohol consumption for the past 5 years, the legal alcohol sector has grown by 10 – 12 percent while that of the illegal liquor sector has also been growing at a faster pace. Nevertheless, soft liquor consumption in Sri Lanka has been declining over the last 5 years while hard liquor consumption is increasing. Therefore, in Sri Lanka, hard liquor forms the majority of the alcohol consumption and is increasing at a fast rate. This is exactly exhibiting an opposite trend to the world wide alcohol consumption.

Alcohol related issues can be considered as one of the most controversial topics in the world, particularly in Sri Lanka. Some studies have shown that moderate consumption of alcohol is good for health while many other studies suggest that alcohol consumption is harmful. On one hand, non-health related studies have suggests that alcohol consumption is associated with celebration and pleasure, relaxation and reward. On the other hand, other non-health related studies argue that alcohol consumption is associated with criminal offences such assault and rape. Therefore, despite high rates of alcohol related public health and safety issues, regulation of alcohol consumption has met with ambivalence and strong resistance.

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<sup>4</sup> Total consumption of hard liquor is 680 million and total population is 19 million.

From the political point of view, reactions to alcohol regulations in Sri Lanka are often mixed. On one hand, taxation of alcohol is a major source of revenue for the Sri Lankan government and the government is dependent of these “sin revenue” to defraud its expenditure. On the other hand, since the alcohol industry is treated as a sin industry by some sectors of the population (particularly the civil society) the government needs to seek a balance of appeasing these groups of opposition for election purposes. Therefore, even if some alcohol regulations are passed, they are often not enforced effectively. It is because of such duplicitous policy of the Sri Lankan government, the effectiveness of alcohol policy in Sri Lanka is questionable.

From the alcohol industry (pro-alcohol activists) point of view, health issues related to alcohol consumption derived mainly from the consumption of *Kasippu* and not from the consumption of legal alcohol. Thus, regulation of alcohol should not be targeted at the legal alcohol sector since they do not contribute to the serious health issues. Moreover, the alcohol industry argues that doctors do recommend the consumption of moderate level of alcohol. Furthermore, it argues that health related issues are derived from excessive drinking not alcohol per se. They are arguing that high level of regulations could also result in the rise of bribery, underground industries, and illegal activities. Additionally, the alcohol industry suggest that anti-alcohol activities should be targeted at the illegal sector instead of the legal sector since regulation of the legal sector will lead to the rise of the illegal sector which will worsen the alcohol related problems in Sri Lanka. The alcohol industry suggests that regulation on advertising would lead to the rise of monopoly power which in the long run would be detrimental to the Sri Lanka economy and the welfare of the population. They are suggesting that advertisement is a form of informative tool to educate consumer in differentiating “good” alcohol and “bad” alcohol. However, such arguments are again debatable.

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From the anti-alcohol activists point of view (particularly the health activists), alcohol consumption has resulted in serious health and safety issues that adversely affect the Sri Lankan society. Health activists argue that the effect of alcohol consumption on health of the population is the third biggest issue in Sri Lanka following premature death caused by tobacco and high blood pressure. Moreover, other activists present studies that show the positive correlation of crime and alcohol consumption level which further suggests that there are net economic losses due to high level of alcohol consumption. Health care expenditures related to alcohol consumption and law enforcement expenditure such as policing outweigh the gain from the collection of tax revenues, bulk of which collected from alcohol taxation is not ploughed back into the infrastructure development of the country. Therefore, the government is not maximizing the benefits from the tax revenue even if there are regulations such as taxation of the legal alcohol sectors. In addition, alcohol consumption leads to the neglect and breakdown of families, particularly in the lower strata of society. Clearly, the anti-alcohol activists would suggest tax rate increment to increase the price of alcohol to reduce consumption. However, it must be noted that this may not deal sufficiently with the issues of over consumption of alcohol in Sri Lanka since this would only direct individual to the consumption of *Kasippu* which is arguably more detrimental to health.

Despite the different perspectives that exist in Sri Lanka, there is no conclusive scientific research to suggest whether the overall impact of the alcohol industry in Sri Lanka is a net gain or a net loss.

#### **2.4 Threat from the illegal alcohol production (Including the *Kasippu*)**

After taxing the alcohol pricing is going up and the productions of illegal industry become more and more attractive to the consumer. Illegal alcohol is more harmful due to the reason nobody knows how made and what the content is. It could be more probable to become a poison, since people lost their eyes, brain damages, paralyze, lots of health issues resulted from the consumption of *Kasippu*.

From the anti-alcohol point of view, both the illegal and legal alcohol products are very harmful to the country. Lot of health related issues comes from consuming alcohol and also the economic threat is there. In Sri Lanka, alcohol consumption is higher among poor families. In the rural area people drinks do so heavily, mainly locally produced alcohol and most of them are *Samurdhi*<sup>5</sup> beneficiaries. Thus, poor households tend to spend a greater percentage of their income on alcohol and government should provide some kind of support to the same target. Moreover, if their parents (father) are addicted to alcohol then the childhood development is at risk. There are no figures to prove this matter due to lack of data. These types of threats are less recognized and even not considered for discussion. This is the hidden threat and it might be very harmful to the country in the long term.

Normally *Kasippu* joint owners had a close nexus with police and politicians and get off with small fines or bribes, whenever raids are conducted. Sometimes police walks into illicit liquor joints and collect money from the vendors. Illicit liquor joints are tipped off in advance by a "friendly cop" before a police raid is conducted. Fines or jail terms are small.

## **2.5 Law enforcement authorities: Policies and Excise Department**

Police and Excise Department are the two main law enforcement authorities involved with alcohol production. However police officers can earn small amount of money through bribery by *Kasippu Mudalali* (Owner). They can be much more effective with the available resources and certainly a department like Excise Department probably needs more resources as well, to increase efficiency. Some are suggesting for the police and excise department to have public certificate and simultaneously encourage the civil society to come up with the weaknesses of those authorities.

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<sup>5</sup> This is a one type of Microfinance program in Sri Lanka



## **2.6 Underage consuming and alcohol abuse**

Underage consumption of alcohol should be treated on par with alcohol abuse. Proper education must be carried out to ensure that underage consumption of alcohol is reduced. According to the current act, sales of alcohol to individuals aged 21 and below are prohibited. Even though the act exists, there is no authority to implement it practically. Especially in rural areas, underage children can buy alcohol without any restrictions. Therefore, the younger generation could easily get their hands on both legal and illegal alcohol thus picking up the habit of alcohol consumption.

## **3. Data, sample distribution and Methodology**

### **3.1 Data and Sample distribution**

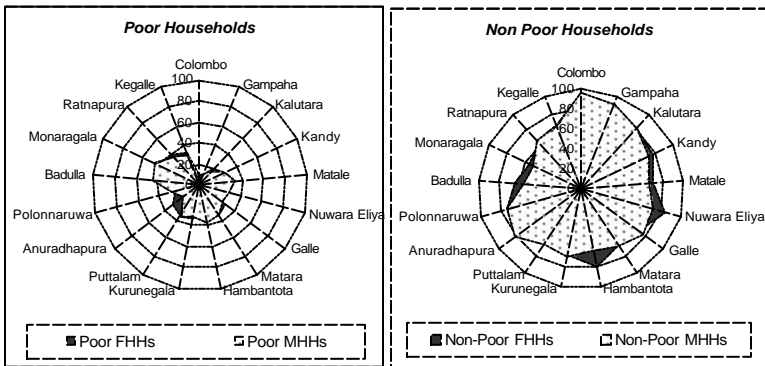
The study is based on an analysis of household survey in Sri Lanka, viz., HIES in year 2002. HIES conducts in every five years time by the Department of Census and Statistics. HIES of 2001/02 was the fifth series and was conducted during the period from January 2002 to December 2002. The survey included basic background information of the household members including household income and household consumption information on 14 different major food items and 10 other major non-food items. The major objective of the HIES is to provide reliable data on income and expenditure patterns of population of Sri Lanka. A two stage stratified random sample design was used in the survey. Urban, Rural and Estate sectors of the district are the domains for stratification. This survey covered 16,924 households (71,293 population) all provinces in the country excluding Northern and Eastern Provinces due to the unavailability of a proper sampling frame and conditions prevailed due to civil disturbances in those areas.

The size of the sample and distribution in the survey is presented in Appendix 1. It shows 25.7 percent of the population is poor and 74.3 percent are living above the poverty line. Proportion of the poor and non poor population is calculated in each sector, province and

district. Among the sector<sup>6</sup> wise comparison the highest proportion of the poor people (35.2 percent) is from Estate sector after Rural sector (29.3 percent). Uva, Sabaragamuwa and North Western provinces has recorded highest proportion of poor population.

According to the sample selection, a higher number of households were taken from the Colombo, Gampaha and Kandy while a bwer number of households were selected from Monaragala and Polonnaruwa districts. Sample selections were taken the account of national coverage of Sri Lanka by the DSC in 2002. However, the district wise comparison of the poor and non-poor households indicates that the highest proportion of poor households was recorded in Monaragala (46.8 percent) followed by Badulla (42.2 percent), Ratnapura (36.5 percent), Hambantota (34.6 percent) and Matale (33.0 percent) districts respectively.

**Figure 1: Distribution of the Poor and Non Poor FHHs<sup>7</sup> and MHHs<sup>8</sup>**



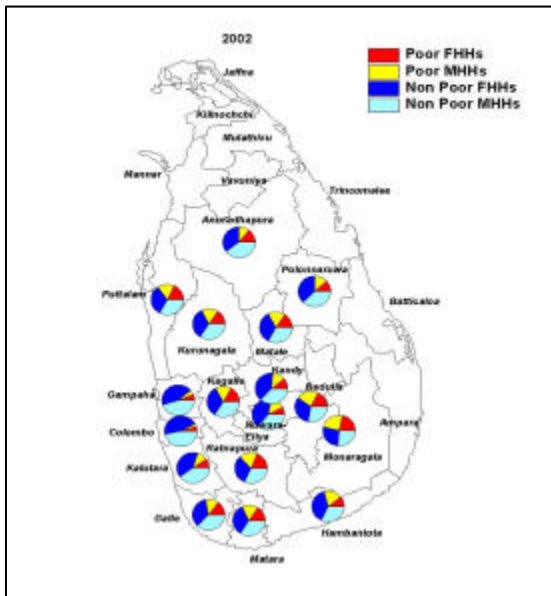
<sup>6</sup> In Sri Lanka, three sectors (Urban, Rural and Estate sector) can be seen. Area governed by either Municipal Council or Urban Council is considered as Urban Sector. Plantation areas, which are more than 20 acres of extent and having not less than 10 residential labourers, are considered as estate sector. Residential areas, which do not belong to urban sector or estate sector, are considered as rural sector.

<sup>7</sup> Female Headed Households

<sup>8</sup> Male Headed Households.

Moreover filled radar diagram in Figure one gives the snap shot of the distribution of the poor and non poor FHHs and MHHs. Kegalle, Ratnapura, Anuradhapura, Puttalam, Kurunegala, Gall, Kalutara, Gampaha and Colombo districts recorded relatively higher proportion of poor FHHs than the poor MHHs. Higher proportion of non poor FHHs were recorded in Monaragala, Badulla, Polonnaruwa, Hambantota, Nuwara Eliya, Matale and Kandy districts in comparison to Non poor MHHs.

**Figure 2: Regional Disparities of Proportion of Poor and Non Poor households -2002**



Moreover, Figure two gives the snap shot of the intra district variation of poor and non poor FHHs and MHHs. In 2002, Kurunegala, Puttalam and Anuradhapura district was reported as higher percentage of poor FHHs than the MHHs. Colombo, Gampaha was the lowest Poor FHHs represented districts.

### 3.2 Methodology

This study uses bi-variate and multivariate framework including discriminant analysis to identify the differences of poverty status between alcohol using households and non alcohol using households. For that, this study use the derivation of Cost of Basic Needs (CBN) approach<sup>9</sup> poverty line and that poverty line used to select poor and non poor households. In Sri Lanka, the person living in the households whose real per capita monthly total consumption expenditure is below Rs.1423 in year 2002 was considered as poor households.<sup>10</sup>

To attempt to explain impact on alcohol among the poor and non poor households, this study used the probit model which was introduced by Chester Ittner Bliss<sup>11</sup> in 1935. Probit model is an estimation technique for equations with dummy dependent variables that avoids the unboundedness problem of the linear probability model by using a variant of the cumulative normal distribution.<sup>12</sup>

$$P_i = \frac{1}{\sqrt{2\pi}} \int_0^{z_i} e^{-s^2/2} ds \quad (1)$$

$P_i$  = the probability that the dummy variable  $D_i=1$   
 $Z_i = \Phi^{-1}(P_i) = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_n X_{in}$       (2)  
 $s$  = a standardized normal variable

<sup>9</sup> DSC had been using a poverty line based on a Food-Energy-Intake (FEI) method but now use the method of CBN to derive the official poverty line in Sri Lanka.

<sup>10</sup> The official poverty line for December 2006 is Rs. 2291 at current price and now it has been increased to more than Rs.2291.

<sup>11</sup> Bliss, C.I. (1935), "The calculation of the dosage-mortality curve", *Annals of Applied Biology*, Vol.22 pp.134-67 .

<sup>12</sup> Studenmund A.H (2006), *Using Econometrics: A Practical Guide*, Pearson Education, 4<sup>th</sup> ed.

According to the literature where  $\Phi^{-1}$  is the inverse of the normal cumulative distribution function. Probit model is typically estimated by applying maximum likelihood techniques to the model in the form of equation (1), but the results are presented in the format of equation (2)

This study used probit model with, as a dependent variable, a dummy variable which takes the value 1 for poor<sup>13</sup> and 0 otherwise. The study considers the following independent variables.

$$\begin{aligned}
 P(\text{Poor} = 1) = Z_i(\mathbf{b}_0 + \mathbf{b}_1\text{Headship} + \mathbf{b}_2\text{FamilySize} + \mathbf{b}_3\text{Alcohol} \\
 + \mathbf{b}_4\text{PercentHealth} + \mathbf{b}_5\text{PercentEducation} \\
 + \mathbf{b}_6\text{PercentFood} + \mathbf{b}_7\text{ty\_al}) + \mathbf{e} \quad (3)
 \end{aligned}$$

The variable **Headship** is a dummy variable equal to 1 if the household is MHHs, 0 for FHHs. **Alcohol** is also a dummy variable regarding whether the households consumed alcohol or otherwise. **PercentHealth**, **PercentEducation** and **PercentFood** are the proportion of expenditure used for healthcare, education and food respectively. **ty\_al** is a dummy variable equal to 1 if the household using illegal and legal alcohol, 0 for only using legal alcohol households.

The coefficient of the model ( $\beta$ ) explains the relationship of independent variables in affecting the dependent variable, which is the *Poor* dummy variable. The logarithm of the coefficient will then explain the likelihood of the family being classified poor or non-poor given the changes in the effect of the explanatory variables. For the above, all regressions were made by using the STATA 9.0.

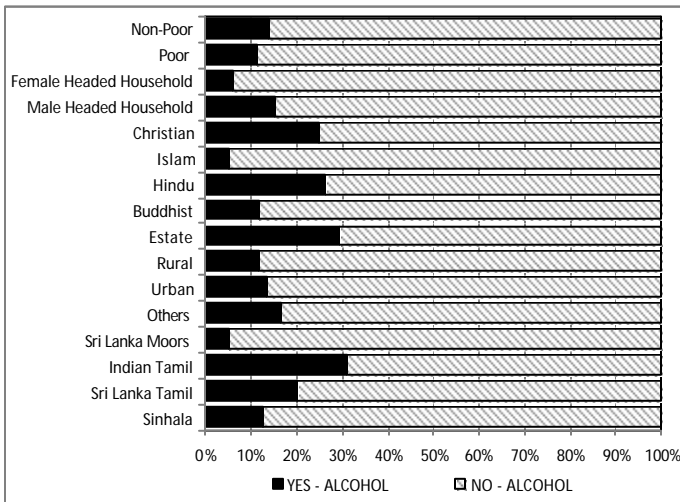
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<sup>13</sup> People who are living above the national poverty line are defined as non poor and the rest are as poor.

#### 4. Results

From the household survey conducted in Sri Lanka, it was evident that alcohol and poverty is indeed a social and economic problem. Figure three illustrated the ratio of alcohol consumption across ethnicity, religion, sector, gender headship and poverty status. Although the proportion of households being classified as poor was only 22 percent, nevertheless, the 11 percent of these poor households consumed alcohol as compared to 14 percent of those from non-poor households.

**Figure 3: Alcohol Consumption Ratio across Ethnicity, Religion, Sector, Gender Headship and Poverty Status**



The percentage of households with alcohol consumption was higher among the Tamils, both Sri Lankan and Indian, as compared to the other ethnic groups in Sri Lanka. Similarly, those in the estate sector are twice more likely to consume alcohol than those staying in urban or rural area. Religion, an important social indicator closely related to alcohol consumption, once again showed that Moslem households

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were less likely to consume alcohol as compared to Hindus or Christians.

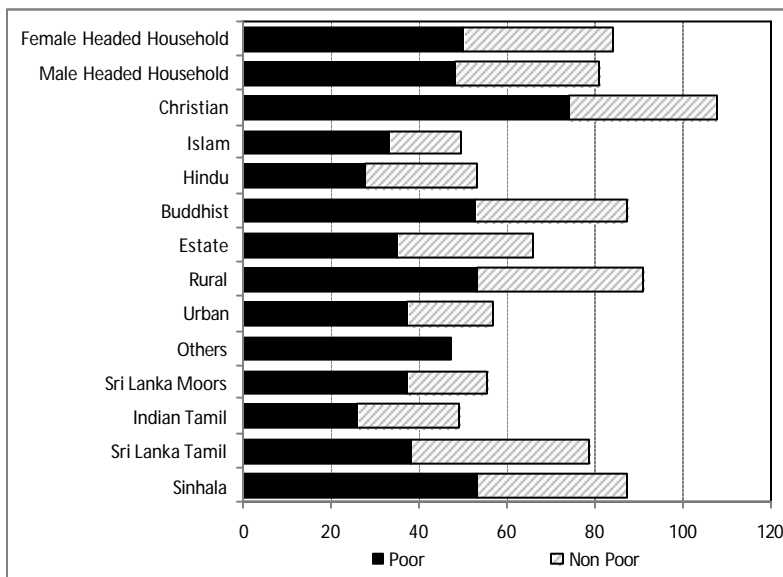
It was also clear that female-headed households are less likely to consume alcohol as compared to families headed by a male. Only six percent of female-headed households consume alcohol as compared to 15 percent of male-headed households.

Probing further, to understand the relationship between poverty and alcohol consumption, the percentage of expenditure on healthcare and education over the total expenditure were studied. It was found that, on average, households with alcohol consumption allocated 1.87 percent and 1.70 percent of their expenditure to healthcare and education respectively while households without alcohol consumption allocated 2.74 percent and 1.95 percent to the same sectors. However, percentage of expenditure on education among the poor households was similar (1.41 percent for those with alcohol consumption and 1.42 percent for those without alcohol consumption), regardless whether they consumed alcohol or otherwise. This partly has to reflect that the decision to invest in education lies more in the poverty status of the family and not in the alcohol consumption factor. However the same could not be observed among the non-poor households, when comparing the alcohol consumption indication.

As mentioned previously, the legality of alcohol is another important issue regarding alcohol and poverty. Among the poor households, 48 percent of them consumed illegal alcohol as compared to 32 percent from the non-poor households. Figure four shows the percentage of households from poor and non-poor categories in consuming illegal alcohol. This breakdown according to gender headship again showed that about half of poor households consumed illegal alcohol, regardless of male or female headship in the family.

An alarming finding in the religious comparison showed that 74 percent of poor Christian households consumed illegal alcohol, as compared to 53 percent Buddhist, 28 percent Hindu and 33 percent Moslem among the poor households.

**Figure 4: Percentage of Poor and Non-Poor Households' Consumption of Illegal Alcohol across Ethnicity, Religion, Sector and Gender Headship**



Furthermore, illegal alcohol is also more prevalent among the poor households regardless of the sector which the household is located. Thirty-eight percent of poor urban households consumed illegal alcohol as compared to 19 percent among the non-poor households while 53 percent and 35 percent of poor rural and estate households as compared to 38 percent and 31 percent of non-poor households respectively.

Table two illustrates the result of the probit models. The first specification comprised all households that consumed alcohol while the second specification is the no alcohol consumption households. The third specification model includes the variable of alcohol legality among the alcohol consuming households.



**Table 2: Probit model results**

Variable	Specification					
	1		2		3	
Headship (1=Male)	-0.1163***	-(3.73)	-0.8030**	-(2.44)	0.1481***	(1.20)
Familysize	0.2022***	(28.55)	0.2012***	(25.99)	0.2696***	(13.63)
PercentHealth	-0.0036	-(1.00)	-0.0052	-(1.35)	0.0048	(0.35)
PercentEducation	0.0026	(0.60)	0.0009	(0.19)	0.0217*	(1.68)
PercentFood	0.1983***	(46.34)	0.2097***	(44.83)	0.2023***	(14.22)
Alcohol Legality (1=Illegal)					0.1654**	(2.26)
Constant	-4.6817	-(53.95)	-4.8096	-(51.30)	-5.9042	-(18.24)
Area under ROC curve	0.8299		0.8382		0.8385	
Log-Likelihood	-6681.7912		-5749.7962		-802.8497	
Number of Observation	2250		14642		2250	

Note: \*\*\*, \*\*, \* Significant at the 0.01, 0.05, and 0.10 level, respectively; Data in brackets are z value

From Table 2, it was evident that female headed households were significantly poorer than male-headed households, regardless of the alcohol consuming phenomena. Similarly, as family size increases, the probabilities that the households are poor were generally similar, but the probability increased significantly when the legality of alcohol is taken into account.

However, from the model, it was also evident that the expenditure on education and healthcare has no significant effect on the poverty status. A plausible explanation is that current expenditure on these aspects do not yield immediate effect on poverty status as this model could only explain the stationary effect without time-frame estimation. As for the proportion of food expenditure over total expenditure increase, the probability the household become poor increased by 20 percent.

Regarding the issue of alcohol legality, the model reflected that households that consumed illegal alcohol have a greater probability of approximately 16 percent more likely to be categorized as poor. This finding further indicates the relationship between poor households and the consumption of alcohol, particularly illegal alcohol.

However, our study demonstrates the area under the Receiver Operating Characteristic (ROC) curve for each model. The area under the ROC curves in this study is over 80 per cent, and thus the study fits more efficiently to explain determinants of poverty.

At present alcohol drinking is recognized as one of the most important risks to human health. Previous research studies (see Rodgers *et al.*, (2004) have predicted that around 4 per cent of the burden of disease worldwide comes about as a result of drinking alcohol, which can be a factor in a wide range of health problems. In addition alcohol consumption contributes to more than 60 health problems. These include chronic diseases such as cirrhosis of the liver and certain cancers, as well as poor health resulting from

trauma, violence, and accidental injuries. For these reasons, most governments try to control the consumption of alcohol through laws, although very few countries ban alcohol entirely. On the other hand, World Health Assembly has recommended that its member countries develop national control policies to prevent excessive alcohol use; there is a huge variation between national policies. It is also very unclear whether there is any link between the strictness of legislation regarding alcohol control in any given country and how much people in that country actually drink. This is common for Sri Lanka. Therefore, it is important to measure the strength of alcohol policies in Sri Lanka with the other countries. Strength of alcohol policies can be measured by Alcohol Policy Index. This kind of indexes provides straightforward tool for facilitating international comparisons such as SAARC, South-East Asian and other developed countries. It can help policymakers review and strengthen existing regulations aimed at minimizing alcohol related harm and estimate the likely impact of policy changes.

## **5. Policy Implications**

Many developing countries experience a rapid growth in alcohol consumption as they increasingly become affected by economic globalization. WHO sponsored study (Alcohol in developing societies) suggests that “among the many factors influencing national levels of alcohol use, a country’s economic fortunes and level of income are quite important. This implies that as economic development occurs, in the absence of mitigating influences such as religious prohibitions, alcohol consumption and resulting problems are likely to climb with rising incomes. .... this is likely to present developing nations with new or greater levels of alcohol-related problems, and new challenges to develop effective alcohol policies to reduce or prevent them” (WHO 2002).

In most developing countries, increasing alcohol consumption has been accompanied with long-standing trends of shift from home-produced, local alcohol beverages towards industrial beer and liquor

brands sold in a commercial market (World Bank 2007). However, in Sri Lanka, we are observing a reverse trend: there is a shift from industrial beer and liquor to the illegal liquor Kasippu. In such a scenario, it is of great importance that Sri Lankan government focuses alcohol policies in dealing with the illegal sectors alcohol production and consumption rather than focusing them on the legal alcohol sector.

### **5.1 Ineffectiveness of prohibition and taxation of alcohol in Sri Lanka**

Experience has shown that extreme restrictions on alcohol availability, such as banning can lower drinking and reduce alcohol problems. Yet these restrictions often have adverse side effects, such as the rise of black market (WHO Report 2002). Prohibiting alcohol production, sale and consumption is an extreme response to the social and health consequences of alcohol over consumption. Some doubt prohibition's effectiveness, but other use evidence from India to show that it can reduce the proportion of population drinking (Bird and O'Neil 2004). Complete prohibition has been found to have a significant effect on the proportion of the population drinking alcohol in India, reducing the number by around 22% and home brewed production increased because of its difficulties to police. In Sri Lanka, there exist major informal and illegal sectors. This would suggest that prohibition could have little impact on the consumption of alcohol in Sri Lanka since majority of the consumption in Sri Lanka are home brew and illegal alcohol. Moreover, prohibition would have less impact in rural than in urban area and in Sri Lanka, the majority of alcohol consumption problems lies in the rural areas. Therefore, prohibition in Sri Lanka would not be effective in solving the alcohol issues.

In addition, there are arguments that increased retail price through increased taxation could reduce alcohol consumption and resultant problems. Moreover, to benefit from such policy, countries need to optimize the benefits obtainable through increased alcohol taxation,

as source of increase government revenue and as a public health measure. However, taxation does not solve the alcohol consumption issues in Sri Lanka because taxation could only be applied to the legal sector. It is not applicable to the illegal sector. Most of Sri Lanka's alcohol consumption, as mentioned earlier, derived from the illegal sector. Moreover, even if Sri Lanka does earn enormous tax revenue from the taxation of alcohol from the legal sector, the government is not optimizing the use of the revenue to develop infrastructure development. In addition, with higher taxation and thus higher prices, it will only drive consumers to purchase their alcohol from the illegal sector which is more harmful than those produced by the legal sector. Therefore, taxation of alcohol is ineffective in reducing alcohol consumption in Sri Lanka.

## **5.2 Importance of dealing with alcohol dependency issues**

Treatment of people with alcohol dependence is generally recognized as a necessary component of a national response. But the full range of interventions needed is not readily appreciated (WHO 2002). Policy makers in Sri Lanka tend to give low priority to the treatment of alcohol dependency. Individual alcohol consumption is often seen as being down to individual choice, with over consumption resulting from personal weakness (Bird and O'Neil 2004). Rather than being regarded as a health issue, policy makers tend to link alcohol-related problems with poverty and the erosion of traditional values.

Alcohol dependence in Sri Lanka needs to be considered both in terms of its impact on health and its links with impoverishment. In order for policies to control over-consumption and dependence to have any hope of success, public opinion would have to regard alcohol dependence as both widespread and a source of problems (Bird and O'Neil 2004). Nevertheless, we recognized that even with widespread support, successful policies are difficult to develop and implement in Sri Lanka where much of the production and consumption is in the illegal sector.

Nevertheless, for alcohol policies to be effective they should be complemented with programmes to treat people with alcohol dependence. Effective programmes are likely to incorporate early recognition, psychological treatment, treatment of the medical problems associated with dependence, identifying alternatives to drinking in high risk situation and providing families with support (Bird and O'Neil 2004). However, they are unlikely to be given priority in Sri Lanka until the scale of the damage done by alcohol dependence is more widely recognized. Therefore, one policy recommendation is for Sri Lankan government to promoting optimal therapeutic interventions to deal with alcohol dependency.

### **5.3 Advertising, Promotion and Awareness**

According to United Nations Office on Drugs and Crime, the alcohol industry is willing to spend heavily on marketing to maintain product images and create barriers to entry for other firms. Throughout the world you find examples of heavy marketing both for local and international brands. Often the companies have licensing and other agreements or they own part of each other. A lot of the commercials are tuned towards new user groups such as young people, women and ethnic groups who traditionally did not drink. Sponsorships of cultural, sports and other events are often used in order to give the companies an image of social responsibility. In at least some developing country markets, the international marketers use campaigns and tactics that would be unacceptable in their home markets.

As further emphasized by Fekjaer (1998) promotion is not advertising. And the alcohol trade is not the only agent promoting commercial benefits. National policies usually focus on paid promotions namely formal advertising. This is no surprise, as the easiest targets for restrictions are the obvious or frank advertisements. Formal advertisements may not be the most powerful promotions. National legislature is generally helpless in

controlling the promotion of alcohol through covert means. A good example is how alcohol is linked to sporting events. The association of alcohol with sports is not limited to direct advertising and sponsorship. Portrayals of alcohol in the mass media can serve to enhance its appeal, especially to vulnerable population such as young people. Therefore tighter legislation on the advertising and promotion methods needs to be enhanced, particular through those methods that have great influence on the general public.

On the contrary, policies should also be focusing on educating the public regarding the danger and consequences of alcohol dependency problem. It is for the utmost importance to create awareness of the implication in consuming illegal alcohol. Awareness campaigns could in various forms, such as educating school children and media awareness programmes, allowing more aggressive awareness such as highlighting the negative consequences of consuming illegal alcohol.

Furthermore, civic consciousness is also important to create further awareness of the responsibilities of citizen towards the use of alcohol. Through these awareness campaign, public could be educated on the detrimental effect of alcohol in general as well as ways to avoid addiction in terms of alcohol dependency, which would affect the social-bearing of the individual and the family.

Therefore, the two-pronged policy in limiting advertising and promotion from the alcohol companies and at the same time creating awareness and educating the public could be the important measure needed to tackle the problem of alcohol, particularly consumption of illegal alcohol.

#### **5.4 Importance of community level intervention**

In an attempt to reduce alcohol-related harm, the role that individual communities can play is not greatly emphasized, but communities do have a major role (Bird and O'neil 2004). Communities, more than

policy makers, could be effective in achieving the goal of reducing alcohol consumption. Responses to reduce alcohol-related problems should not be left to policy makers alone. Issues such as availability of alcohol in Sri Lanka are definitely within a community's scope. The requirements of a national strategy can be derived from the changes that were proposed for community action. The specific measures available to achieve them are obviously different from those at community level. But national efforts must facilitate the desired changes at community level (Fekjaer 1998). Useful national alcohol policies are known. But they are not widely accepted, primarily because they are made a subject of controversy. The relative cost-effectiveness of different strategies varies according to the country situation. Therefore, relative weights should be given to both national and community level policies depending on the current situation of Sri Lanka.

## **6. Conclusion**

In conclusion, alcohol and poverty are two major issues that are closely related, particularly in Sri Lanka. High proportion of poor households' expenditure spent on alcohol illustrated the strong relationship between the two. However, the study further reinforced the importance of the problem of illegal alcohol consumption and the level of poverty. Without doubt, illegal alcohol consumption is especially prevalent in poor households, particularly those from rural and estate sector. Therefore, the most effective alcohol policy is to implement multiple policies with strategies to ban illegal alcohol with no political interferences over the implementation of the policies. If such circumstances are given due consideration, then developing an alcohol policy would have significant positive impact towards the society, particularly in addressing poverty reduction issues.



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**Appendix 1: Distribution of Poor and Non Poor FHHs and MHHs by Sector, Province and District - 2002**

Province	FHHs		MHHs		Total	
	Population %		Population %		Population %	
	Poor	Non Poor	Poor	Non Poor	Poor	Non Poor
<b>Poor and non-poor status</b>	24.1	75.9	26.0	74.0	25.7	74.3
<b>Sector</b>						
Urban	9.9	90.1	9.2	90.8	9.4	90.6
Rural	27.8	72.2	29.6	70.4	29.3	70.7
Estate	40.3	59.7	34.3	65.7	35.2	64.8
<b>Province</b>						
Western	12.9	87.1	10.5	89.5	11.0	89.0
Central	22.2	77.8	28.3	71.7	27.1	72.9
Southern	28.8	71.2	30.8	69.2	30.4	69.6
North Western	33.4	66.6	32.6	67.4	32.7	67.3
North Central	27.3	72.7	22.8	77.2	23.5	76.5
Uva	38.4	61.6	44.8	55.2	43.9	56.1
Sabaragamuwa	36.1	63.9	35.0	65.0	35.1	64.9

District						
Colombo	9.4	90.6	5.0	95.0	5.9	94.1
Gampaha	11.8	88.2	10.5	89.5	10.8	89.2
Kalutara	20.6	79.4	19.0	81.0	19.3	80.7
Kandy	21.1	78.9	26.1	73.9	25.1	74.9
Matale	31.1	68.9	33.4	66.6	33.0	67.0
Nuwara Eliya	15.7	84.3	28.1	71.9	26.4	73.6
Galle	29.6	70.4	25.3	74.7	26.1	73.9
Matara	32.4	67.6	32.4	67.6	32.4	67.6
Hambantota	21.6	78.4	36.9	63.1	34.6	65.4
Kurunegala	32.6	67.4	31.3	68.7	31.6	68.4
Puttalam	35.2	64.8	34.8	65.2	34.9	65.1
Anuradhapura	30.2	69.8	19.6	80.4	21.3	78.7
Polonnaruwa	24.7	75.3	26.2	73.8	25.9	74.1
Badulla	35.9	64.1	43.3	56.7	42.2	57.8
Monaragala	44.3	55.7	47.1	52.9	46.8	53.2
Ratnapura	38.2	61.8	36.2	63.8	36.5	63.5
Kegalle	33.3	66.7	32.3	67.7	32.5	67.5

Total (N)

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Source: Calculated using data from Household Income and Expenditure 2001/2002.

