Effects of the global financial crisis on the food security of poor urban households;
CASE STUDY COLOMBO, SRI LANKA

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This case study is one of **five case studies** implemented in the context of the study on the effects of the global crisis on the food security of poor urban households, including (next to Colombo):

- Mattah, Agbeko P.D. and Jonas Kofi Akpakli, Effects of the global financial crisis on the food security of poor urban households: CASE STUDY **ACCRA**, GHANA; Humanity Focus Foundation, Accra and RUAF Foundation, Leusden, July 2010.
- Yavich, Natalia et al, Effects of the global financial crisis on the food security of poor urban households: CASE STUDY **ROSARIO**, ARGENTINA; Investiga Más, Estudios de Salud y Sociedad, Rosario and RUAF Foundation, Leusden, July 2010
- Sanchez, Claudia Marcela and Yibby Forero, Effects of the global financial crisis on the food security of poor urban households: CASE STUDY **BOGOTA**, COLOMBIA; IPES-Colombia, Bogota and RUAF Foundation, Leusden, July 2010.
- Mwitwa Jacob and Phillimon Ng'andwe, Effects of the global financial crisis on the food security of poor urban households: CASE STUDY **KITWE**, ZAMBIA, School of Natural Resources, Copperbelt University, Kitwe and RUAF Foundation, Leusden, July 2010

Photos: by Faculty of Medicine, University of Colombo

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SUMMARY

The social and health costs of the economic slowdown resulting from the financial crisis and of the food crisis in Sri Lanka, has yet to be determined. The food-price crisis is expected to have long term effects on the nutritional status and health of the poor, with infants and preschool children being most vulnerable. An analysis of the indicators of nutritional status of infants, children and women, and coping strategies, both among the households as well as country policies as related to urban food security was undertaken as part of this survey.

The study areas were two randomly selected municipal administrative zone 'districts' (of a total of five zones) within the Colombo city. A sample of 600 households was selected from slum and middle income areas according to the specified design format. Demographic and socioeconomic data including coping strategies, and food intake data were obtained using the interviewer-administered questionnaire. Anthropometric data (weight and height) was collected from all children 0-6 years and from all women between 15-49 y in selected households.

The survey evidence indicates that the food crisis has significantly negatively impacted on the urban poor who were already affected by economic constraints and therefore vulnerable to poor nutritional status. Although policy actions to address these issues have been in place, there is room for improvement, with agricultural investment being the most plausible long-term strategy.

It is of significance to note that, despite the increase in the proportion of income spent on food in almost the entire population surveyed, yet, food intake is inadequate. Both qualitative and quantitative analysis revealed that major restrictions on food have been made by households, with deficient intake of both macro and micronutrient rich foods being of concern. The high prevalence of stunting, points to long term nutritional deficiency. Wasting accounts for recent inadequacy of both protein and energy in children which is substantiated by the food intake data. Coping strategies used by families were largely negative.

Issues of the urban poor in Sri Lanka, affecting all ethnic communities, are multifaceted, with deep rooted behaviours that make it difficult to successfully intervene for a total poverty alleviation target in the long term. While long term intervention strategies need to take a holistic approach, with food being one aspect, inputs towards income generation, social well-being and nutrition care practices for the under five year old child are needed. Long term policy inputs need to be in the direction of improved food security through economic development and agriculture. Our findings also provide insights into policy direction for the future to improve food security in Sri Lanka, and highlight that both short term and long term strategies need to be initiated in parallel.

CONTENTS

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LIST OF ACRONYMS

DHS	Demographic and Health survey
HARTI	Hector Kobbekaduwa Agrarian Research and Training Institute
IDRC	International Development Research Centre
MCH	Maternal and Child Health
PHC	Primary Health Care
PHM	Public Health Midwife
WHO	World Health Organisation
HIES	Household Income and Expenditure Survey

1. INTRODUCTION

The case study presented here is part of the "Study on the effects of the global financial crisis on the food security of poor urban households" that was undertaken in 5 cities by the RUAF Foundation on request of -and in collaboration with- the International Development Research Centre (IDRC) in Canada and UN Habitat, Nairobi.

The main objective of this study is to generate data that can help understand the extent to which rising food prices and the financial crisis are impacting on malnutrition levels in cities and how the policy and institutional context has been mitigating or exacerbating problems of food insecurity. It is hoped that the study will provide local actors with valuable information for the design of adequate policies and programmes to counteract the effects of the financial and food crisis.

An appraisal of the food security of households was conducted in selected low and middle income neighbourhoods of 5 cities in different continents through both quantitative and qualitative analysis, including Bogota (Colombia), Rosario (Argentina), Accra (Ghana), Kitwe (Zambia) and Colombo (Sri Lanka).

Although hunger is most often associated with low agriculture output, drought, and famine in rural areas, previous studies have shown that hunger is not always related to food production or availability; rather, in urban areas, other factors, such as income level, inadequate access to basic services and poor living conditions, play more significant roles. In cities, hunger is usually a consequence of people's inability to purchase food that it's both sufficient and nutritious.
Moreover, food represents about 60-80 percent of consumer spending by poor urban households in developing countries. Thus, variations in income or food prices directly translate into rising rates of malnutrition in urban areas.

The financial crisis has the potential to affect developing countries and the urban poor through economic retrenchment, negative effects on the terms of trade with the rich world and consequent job losses, especially in cities which are more directly embedded in the global economy. Because of the stage-wise nature of much household migration (Natali, 2009), the reduced remittances from family members working abroad can disproportionately affect urban households.

This financial crisis came at a time when most countries are still struggling with the impacts of rising food and fuel prices. Despite the decline in international cereal export prices from their peaks in the first half of 2008 and policy responses by governments, food prices have remained at high levels in many developing and low-income-food-deficit countries compared to five years ago. It is estimated by the World Bank that the high food and fuel prices alone have increased the number of extremely poor in the world by at least 100 million. In many cases, domestic prices are still higher than before and where they have declined, price reductions have been relatively much less than those in the international markets.

Among those at greatest risk are the urban poor that are dependent on the market to access food and since the share of food in their total expenditures is much higher than that of wealthier sections of the urban population. Especially female-headed urban households are vulnerable to the impacts of the financial crisis and rising food and fuel prices.
Against this background, UN Habitat and IDRC decided Mid 2009 to undertake this study in order to generate more data on the effects of the financial crisis and rising food prices on the urban poor and to provide local actors with valuable information for the design of adequate policies and programmes to counteract the effects of the financial and food crisis.

Four types of data were collected for this study:

- Information on the economic, policy and institutional context affecting food security, both pre-dating the crises and as positive or negative measures taken since the crises began.

- Data on the current livelihood assets and strategies of households in low and middle income areas of the case cities which reflect responses to external stresses, shocks and institutional circumstances and to the households' internal needs and constraints. These external and internal factors both pre-date and are directly related to the food price and the financial crises.
- Perceptions of survey respondents and Focus Group Discussion participants about how these recent crises have affected household livelihoods and what coping strategies they have explicitly adopted to secure their livelihoods, especially those related to food consumption.
- Anthropometric data measuring current nutritional "outcomes" among under six-year olds and fertile women between 15 and 49 years. Although the livelihood practices and coping strategies affecting food consumption which households have been pursuing contribute importantly to these nutrition "outcomes", there are other contributions, such as diseases and environmental circumstances which have not been included in the survey. In order to understand whether these nutritional outcomes have worsened since the crisis, in other words, whether the livelihood practices and coping strategies adopted by households since the food price and financial crises have had a more severe effect on nutrition the results of the anthropometric studies are compared as far as possible with earlier nutritional assessments.

In this report, the implementation and results of the case study in Colombo, Sri Lanka are represented.

The results of the comparative analysis of the outcomes of the 5 case studies are presented in the "Synthesis report".

2. ORGANIZATION AND METHODOLOGY OF THE STUDY

2.1 Introduction

The studies assessed current socio-economic circumstances of households, food practices, coping strategies, the policy environment and current nutritional status of women and young children.
The case study generated data through: 1. household surveys, 2. 24 hour food recall, 3. anthropometry of under-five year olds and women from 15 to 49, 4. Focus Group Discussions with key informants in the selected neighbourhoods and 5. Individual interviews with officials and experts were held in order to get their opinion on policy issues.
Factors that positively influenced the (quality of) the results of the study:

- Sampling strategy used.
- Data collectors were pre-trained in anthropometry and questionnaire administration.
- Quality control measures used in data collection.
- Cooperation of communities to participate in survey.

2.2 Composition of the survey team

The survey team consisted of the lead researcher and two co–investigators with experience in nutrition research, surveys and data collection. The planning of the survey was done by the team and the services of a statistician were obtained to assist with sampling strategy and data analysis. Anthropometric measurements and data collection using interviewer-administered questionnaires were carried out by medical officers with experience in anthropometry and data collection. They underwent further training in administration of questionnaires and anthropometry prior to commencement of data collection.

2.3 Sampling

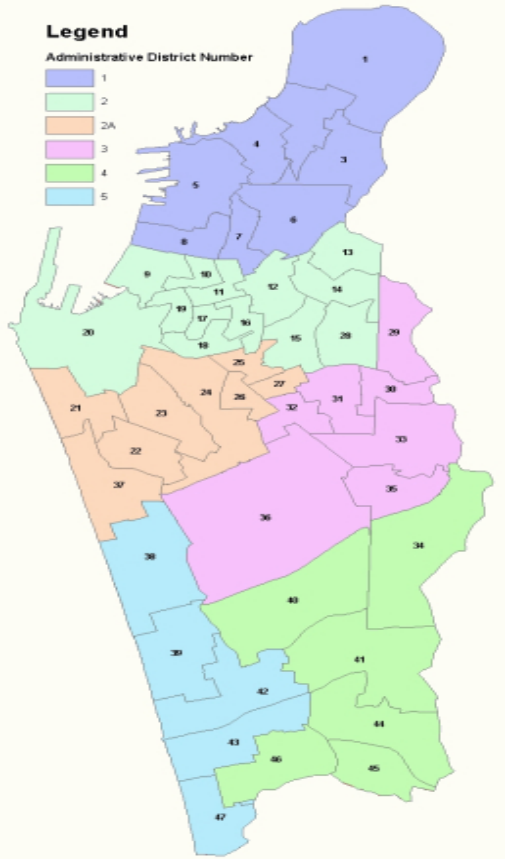
The Colombo Municipal Council area consists of six ‘districts’, each consisting of one to three Municipal health areas or centres. Two of these ‘districts’ were selected randomly from the six districts: District 1 (Modera) and District 3 (Borella). District 1 is divided into 3 health areas and District 3 into 2 health areas. The primary health care system ensures that the entire population is served through its health centres. The health centres carry out primary healthcare activities through its medical officers, public health nurses and the grassroots level health workers (the public health midwives). Each health area is divided into Public Health Midwife (PHM) areas each consisting of 750-1000 eligible families having married couples, pregnant women and children < 5 years of age.

The health centres, with the input of the public health midwives maintain a list of eligible families in each area. Following discussions with the office on Population Statistics, it was decided to use the Health centre area information rather than the census data, as eligible households are well documented. Mapping documents exist for all health centre areas and the location of all households is known. PHM areas that could be categorized as predominantly middle income or slum according to predefined criteria were selected (Thalagala, 2004).
Since ‘slum’ is a social grouping and ‘middle income’ is an income grouping, the statistical advice given was to use proven pre defined assessment criteria (based on a validated questionnaire of assets) of social classes in Sri Lanka to define both slum and middle income groups (Thalagala, 2004). Household assets are shown to relate closely with income and expenditure and assessing these variables are more objective and reliable than assessing income and expenditure[1]. The asset index divides households in Sri Lanka into 5 quintiles using cut off points generated by an asset index score. The quintiles are, poorest, second, middle, fourth and richest. Using the asset approach as an index to measure socio economic status, we

[1] HNP/Poverty Thematic Group of World Bank, 2000, www.worldbank.org/hnp

selected all households belonging to the second and middle quintiles as the middle income category. All slum households belonged to the poorest quintile. Factors taken into consideration in calculating the asset index included source of water supply, household assets, dwelling characteristics and type of latrine.

Figure 1 Map of Colombo Municipal Council Administrative Districts; Districts 1 and 3 were surveyed



Note: The numbers within each administrative district refer to Public Health Midwife areas

The number of selected PHM areas in both districts was 32. A PHM area was defined as a cluster and the number of clusters to be included was calculated based on the number of households (N = 300 households for slum and N = 300 households for middle income). The PHM areas were grouped under “middle income’ or ‘slum’ categories. Using the “eligible family register” in each PHM area, the number of eligible households in each area was enumerated. Then selection of clusters based on “probability proportionate to size” was done. Within each selected cluster a random selection of households was done. When recruiting households for the survey, a further verification of the randomly selected household was done by using the validated criteria for defining slum and middle income households.

Within the randomly identified households the following were respondents were selected:

- The mother / primary care giver for interviewing and for weight/height measurements if between 15-49 years of age
- All children 0 – 6 years old for weight/height measurements.

2.4 Pre-implementation phase

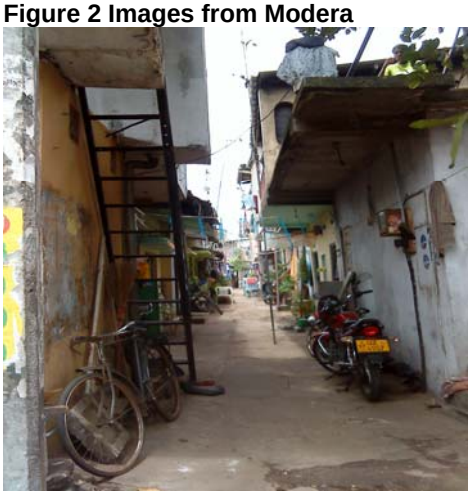
The selected sample areas were visited by the survey team prior to sample collection. The community was informed of the survey in each cluster through the Public health midwives of the areas who have extensive experience of working in these areas. They are respected by all

residents within the communities in which they serve. Other community leaders such as the priest of the area temple, and community volunteers were informed to gather support for the survey. Security issues were not a concern since the civil conflict has ended. The Public health midwives and community volunteers of areas encouraged the prospective participation of households.

2.5 Description of the two selected inner city districts

District 1 (Modera), is an ancient part of Colombo, historically the area where the Dutch and Portuguese settlers colonized. It is a multi religious and multi ethnic area with Sinhalese, Tamil, Moors (descendents of Arab traders) and Burghurs (descendents of the Dutch era). It is now mainly an industrial area with many small factories and businesses, with residential communities of low middle income groups and slum areas interspersed between business districts.

Figure 2 Images from Modera




District 3 (Borella) is a multi-religious and multi-ethnic area. The major ethnic communities in Borella are Sinhalese and Tamil. There are also many other minorities such as Moors and Burghers. The area has many Buddhist temples, Hindu Kovils and churches as well as mosques. It also contains the main railway hub of the country with railway yards and running sheds. A Technical College, many National Schools, the main National Hospital of Sri Lanka as well as other healthcare institutions and business institutions are located in District 3

Figure 3 Images from Borella


In both districts there are well defined slum settlements and middle income areas.
Slum areas
The slum areas were of many types; Old deteriorating tenements or subdivided derelict houses which are built of permanent material, are single roomed and compactly arranged in back to back rows. Others were single roomed shanties built of wood and with tin sheets for roofing and floors consisting of sand or cement. These were improvised and unauthorised shelters constructed by urban squatters on unauthorized state or private land, some of it unfit for human habitation. They had no regular water supply, inadequate sanitation or electricity supply and generally are in areas subject to regular flooding or situated near garbage dumps or on railway embankments. They are overcrowded and no space is available even to walk between houses. No animals or crops of significance were observed.

Middle income areas
These were small to average sized permanent housing with standard building materials. Some were in apartment buildings. They were authorized structures and had regular electricity, water and sanitation. Space, though was a constraint with most residences having no garden space. No crops which could be of nutritional value or small animal husbandry were observed.

2.6 Survey format

The survey includes 3 stages corresponding to the order of data collection from each household:

- *Stage 1*: Household composition: Name, gender and age of the members of each household in the sample were recorded.
- *Stage 2*: Anthropometric measurements. Weight and height of women of 15-49 years and the precise date of birth, weight and height of children between 0 and 6 years old was collected. Children 6 years old were included in section 2, where the precise date of birth was requested and weight/height measurements were taken. However, the anthropometric analysis was carried out only with the data for children 0- 5 years of age (and all children above 5 years were excluded).
- *Stage 3*: Information on the households and their strategies to cope with the crisis.

2.7 Implementation phase

2.7.1 Survey tools and quantitative data collection

Quantitative data collection included:

(i) Anthropometric and questionnaire data collection was done on the following target groups within each selected household:

a. The mother/primary caregiver was interviewed. In instances where the head of the household was female, the head of household provided information. If the female head of household was not present, the interviewers revisited the households to meet her wherever possible. In her absence, on the second or third visit, a responsible member of the household was requested to give the information.
b. The mother/primary care giver gave 24 hour recall data on food consumed.
c. All women between 15-49 years of age were measured for height and weight.
d. All children 0 – 6 years old were measured for height and weight.

Height was measured to the nearest 1 cm using length boards for children under 24 months (recumbent length) and standing height was measured for older children using height scales for children under 5 years and adults. The scales were lightweight scales with a digital screen designed and manufactured under the authority of the United Nations Children's Fund (UNICEF) for use in survey settings. Measuring boards were from Seca Productions for use in survey settings. The adult height was measured using Seca height scales.

Calibration of all equipment was done on each day of the survey using a standard weight. If a child had extreme values they were re-measured for verification.

(ii) Questionnaire for demographic, socio economic data including coping strategies and food intake data (Annex 1).
The questionnaire was evaluated for local relevance and some questions were modified and rephrased to enhance local understanding. Translation of the questionnaire into local languages Tamil and Sinhala was necessary since the population in Colombo city consists of the three major ethnic groups: Sinhala, Tamil and Moor, where the common languages used are Sinhala and Tamil.
Local pretesting of the survey format was done prior to the main survey. Relevant minor modifications were carried in the questionnaire out following the pre-test.

2.7.2 Selection and training of the data collection teams

The senior researcher and two co-investigators trained 5 teams of data collectors in data collection, anthropometry and constant cross checking of data throughout the study. Each team consisted of two junior medical officers who were already familiar with assessment of anthropometry and interview techniques. Each data collection team also consisted of a community worker to guide the way around in the selected areas and a labourer to carry the weight and height scales.

Each interviewer was given the opportunity to familiarize him/her self with the questionnaire and to administer the questionnaire to volunteers. The data collection teams had adequate practice with the equipment and survey formats in the pre-implementation phase.

2.7.3 Additional qualitative data collection

In addition to the survey and anthropometry, qualitative data was collected through key informant interviews, focus group discussions and review of secondary information.

(i) *Key person interviews* were held to get expert opinions on the policy responses adopted by the National Government to counteract rising hunger levels due to the financial and food crisis. In Sri Lanka, key policy decisions are taken at Central Government level and not at city level. Hence individuals interviewed were key analysts and decision makers at national level.
Interviews were carried out with officials of the Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), Ministry of Agriculture, Ministry of Trade, Institute of Policy Studies, Nutrition Coordination Division of the Ministry of Healthcare and Nutrition, the Colombo Municipal Council Health units
Policy responses were gathered by using a series of questions regarding the following topics:

1. Are there in place policies designed to mitigate adverse consequences of rising hunger levels? Since when? Are these national and/ or city policies?
2. Which kind of policy responses are in place and what have been their impact, effectiveness and sustainability?
3. Have there been conflicts/demonstrations (labour, violent) that have motivated a policy response with regard to food?
4. What have been the fluctuations in the prices of essential food items in the last two years in this city and what are the political events, market reasons, actual policies that have influenced the fluctuations? What should/could be done to reduce the fluctuation and rising food prices?

Community leaders and persons with significant community duties within the selected areas; teachers, priests, social workers and community leaders were also interviewed in depth on the local conditions, food situation, and peoples coping strategies. Also questions regarding the effects of excessive alcohol consumption on household food availability were included.

(ii*) Focus group discussions* were carried out among randomly selected mothers of children under five and public health midwives in the areas selected. Five focus groups were carried out and saturation point was achieved in the information received. Data was verified and coded by two independent researchers.

(iii) *Review of secondary data.* Documents were collected and analyzed that could throw light on the trends in the economy and food prices in the last few years as well as the government responses to these developments.

All qualitative data was gathered by the senior researcher and co- researchers. Identification of persons for focus groups and key person interviews was done by purposive sampling of experts in the fields of economics, agriculture, health, nutrition, trade and tariffs, food security and related to policy issues.

2.7.4 Data processing and analysis

The survey team checked the data prior to entry on SPSS version 15 for Windows. Anthropometric data entry and analysis was done separately for children < 5 years using the software package; WHO Anthro for Personal Computers, WHO. Data entry was on a data template prepared using the same titles and codes sent in the questionnaire. The questionnaires were checked for errors of data entry and completion prior to analysis.

The anthropometric data collected was compared with that of a standard reference population. The commonly used reference standards in Sri Lanka are the new WHO growth standards for children < 5 years, which were used in the WHO Multi centre Growth Reference Study (De Onis et al, 2006). These growth standards were used for the Sri Lanka Demographic and Health survey (DHS) (Department of Census and Statistics, 2007) and also regularly used to compile child anthropometric indicators in Sri Lanka by the Ministry of Healthcare and Nutrition.
For each of three standard indices of physical growth that describe the nutritional status of children -Height-for-age (stunting); Weight-for-height (wasting) and Weight-for-age (underweight)- standard deviations (Z-scores) from the mean of the reference population were calculated. Deviations of the indicators below -2 standard deviations (SD) of the z score indicate that the children are moderately and severely affected, while deviations below -3 SD of z score indicate that the children are severely affected.

The malnutrition levels from the collected data in Colombo city were compared to data from the data DHS 2007 survey, monitoring data obtained from the Colombo Municipal Council on Primary Health Care Services in 2007, 2008 (CMC, 2009) and a recent food and Nutrition security survey done by the Ministry of Health (2009).

3. DISCUSSION OF THE FINDINGS OF THE STUDY

3.1 The context

3.1.1 Sri Lanka

Sri Lanka is a small open economy with a land area of 62, 705 sq km, and a population of 20.01 million (DCS, 2007). The administration of the country has three tiers, namely, the Central Government, Provincial Government and the Local Government. The Central Government dictates policy and is the main administrative authority. The local government bodies are of three types; municipal councils, urban councils and Pradeshiya Sabhas. Municipal councils are established for cities and large towns, urban councils for less urbanized areas and Pradeshiya Sabhas for rural areas. Sri Lanka is classified as a low middle income country by the World Bank[2].

Sri Lanka was one of the first developing nations to invest in human resources and promote gender equality. As a result of welfare oriented government policy for over five decades, Sri Lanka has an extensive network of health and educational facilities. Human development indicators for health and education in Sri Lanka are almost equal to those in developed countries, with a life expectancy at birth of 72 years (UNICEF, 2009) and a high literacy rate (males; 97 % females 95%) (Department of Census and Statistics, 2004). However, poverty remains an issue affecting nearly one in four Sri Lankans.

Almost 30 years of conflict and the tsunami at the end of 2004 has greatly affected Sri Lanka's potential for economic progress, as will be discussed in more detail below.

3.1.2 City of Colombo

Colombo city is situated in the District of Colombo and is the commercial capital of the country. Colombo district is one of three districts within the Western Province, one of the nine provinces of Sri Lanka. Colombo city consists of the Municipal areas of Colombo and its suburbs as well as some rural areas, within the District of Colombo. Diverse ethnic communities of Sinhalese, Tamils, Moors and Malays coexist within Colombo city (DFID et al, 2002).

Though the administrative capital is in the nearby city of Sri Jayawardanapura Kotte, Colombo continues to be the financial and commercial capital of Sri Lanka (World Bank, 2007). Colombo city (Colombo Municipal Council area) covers an extent of 37.4 square kilometres and counts with a resident population of 637,865. In addition it has a floating population of 400,000 to 500,000 who commute to Colombo daily for employment, education and other purposes, thus burdening the city public services (Colombo Municipal Council Data, 2009). The municipal areas of Colombo are further divided into five smaller 'Districts' (Districts 1-5) which are the municipal administrative zones within the city. The Colombo Municipal Council, the local government authority has two major roles in the city. It acts as the implementing body for laws and as a service provider in the city for roads, sewage and waste disposal, rainwater disposal, sports and recreation, libraries, community health services, curative health services, and prevention of communicable diseases. Most of the council services reach the poor communities.

Colombo City itself accounts for nearly 30% of Sri Lanka's gross domestic product (GDP), predominantly from the service sector (27.6%), manufacturing (24.3%) trade and tourism (20.2%) (ADB, 2004). Within the city, one-third of its inhabitants, mostly those from under-served settlements find their livelihood in informal sector activities (ADB, 2004).

Problems of the city are slum and squatter settlements, degraded environment and an overloaded physical infrastructure (DFID et al, 2002). Some of the city's population live in slum and shanty settlements lacking proper basic facilities such as water supply, lighting, and toilets, and many are located in areas unsuited for residence such as inside canal banks, road reservations, and flood-prone areas in improvised housing structures (DFID et al, 2002). The cyclical nature of poverty traps caused by low levels of education, poor nutrition and

[2] Classification based on Gross National Income per capita between $976 - $3,855, 2008

underemployment being mostly associated with the informal sector, are evident at household level (World Bank, 2007). In contrast, middle class households enjoy basic facilities and services of the city.
In contrast to many other cities in the world, free education is available and accessible to all residents including those from slum settlements (Colombo Municipal Council, 2000). Furthermore, the local government, through the primary health care system has been successful for many years in providing community-level free health care, medical treatment, and other public services such as public transport and access to businesses. Primary health care (PHC) within Colombo Municipality is handled by the Municipal Council, as opposed to the rest of the country, where PHC is under the central government, the Ministry of Healthcare and Nutrition and the provincial Ministries of Health.
Although renewed debate is shaping up around issues of urban development, urban food security is given inadequate attention due to the emphasis on rural development and food security since a majority of the Sri Lankan population is rural (approximately 80 %).

3.1.3 Economic development

The structure of the economy has been gradually changing over the past 20-30 years from an agriculture based economy to one dominated by services (Sri Lanka, 2005). The trend for goods and services to override agriculture in contributing to the GDP, is reflected by services contributing to 56% of GDP, followed by the industrial sector at 26% and the agricultural sector at 18% by the end of 2004 (Sri Lanka, 2005). Sri Lanka's economy is predominantly a Small and Medium Enterprise (SME) economy where over 50% of our GDP is produced by the SME sector. Manufacture is dominated by the apparel (textiles) industry, food and beverages, as well as chemical and rubber based goods (Sri Lanka, 2005). Development in transportation, communication, financial services, trade and tourism has occurred due to liberalization, private sector participation, modernization and increased competition. Though agriculture now contributes less to the economy, its significance lies in its contribution to the national food supply, output and generation of employment for one-third of the workforce.
The economic role of the urban sector is growing in importance. The current urban population constitutes about 4.8 million persons (approximately 25 percent of the country's population); 1.3 million reside in Colombo, the capital of Sri Lanka (including greater Colombo). On average, the urban population is growing almost twice as fast as the rest of the population, and will likely reach 45 percent of the total population by 2015 (ADB, 2004).
The Government's key policy objectives relating to its balance of payments have been to diversify export earnings, trade and services, improve inflows from overseas employment and promote foreign investment and build external reserves (Sri Lanka, 2005). At the community level, several microfinance projects for rural development are underway. While these projects may not have direct application to the urban setting, through increased food production, a reduction in prices may be expected in the long term, with relevance to the urban sector.

Almost 30 years of conflict has greatly affected Sri Lanka's potential for economic progress. The conflict directly affected mainly the Tamil and moor population in the Northern and Eastern Province of Sri Lanka[3]. But the war affected all citizens of Sri Lanka in terms of the economic stagnation, with the poor being worst affected. The war has negatively impacted on productivity, efficiency of resource allocation and free mobility of inputs and finished products, island wide. Foreign investment inflows have been reduced due to constrained investment expansion and deterioration of market confidence. A significant extent of infrastructure such as roads, rail roads, telecommunications, electricity and housing have been destroyed, while agricultural and industrial resources have been heavily underutilized in conflict areas (Sri Lanka, 2005). Colombo, as the capital city has also borne many terrorist attacks which impacted on the economy. Many economic benefits of peace were expected from opening of markets and reintegrating economic activities. The rehabilitation and reconstruction of the northern and

[3] It is important to note that a considerable Tamil and moor population lives integrated with the other races in other districts especially in urban Colombo. This population has been in Colombo for many generations and is not directly affected by the conflict

eastern provinces will have their spill over effects contributing to economic growth of the country in the long term. However, the economic growth which was anticipated after the ending of the war proved elusive since the country is faced with an economic slowdown resulting from the global financial crisis and the food crisis (World Bank, 2008).

3.1.4 Poverty

Poverty in Sri Lanka, as a whole, includes both urban and rural. Since rural poverty accounts for a larger segment of the population, both statistics and policy is oriented towards rural poverty. When considering rural poverty, a number of constraints including economic, geographic, and poor infrastructure, lead to the poorer sections of the populations not having access to the more dynamic sectors of the economy. The official poverty line for Sri Lanka (DCS, 2008) is Rs. 2233 (US$ 19.76) real total expenditure per person per month. The average consumption per capita has increased by fifty percent for those in the richest consumption quintile (World Bank, 2007).
The total consumption of the population in the 5^{th} income quintile is 6.7 times larger than the 7.1 percent of total consumption which is shared by the poorest 20 percent of the population.
However, some reduction in poverty has been observed when the urban sector is taken as a whole (HIES 2006/7). Poverty in Colombo district has declined a little from a poverty headcount index of 6 % in 2002 (HIES 2002) to 5.4 % 2006/7 (HIES 2006/7). Rural poverty has declined less (HIES 2002, 2006/7). The difference in reduction of poverty in the urban sector is mostly due to economic growth in the Western Province, where Colombo city is situated.
Most urban poor work for casual wages (Tudawe 2000) and worked through the economic crisis (Sri Lanka 2009). However, it is likely that these workers have experienced a substantial reduction in their incomes though no data on their income levels are available. When considering foreign employment, which is quite limited since Sri Lanka is not a labour excess society, it is observed that job losses of migrant workers have not increased due to the crisis (Institute of Policy Studies, 2009), making that urban poor households receiving remittances are likely to be less affected by the economic crisis.

3.1.5 The food crisis

Since Sri Lanka is not a large open economy, it was not directly affected by the changes in the international financial markets unlike many other countries. The resulting economic slowdown did have some effect in terms of reductions in exports, tourism, and some reductions in the construction industry. However the global food price increases and fuel crisis did have an effect on the economy, as Sri Lanka imports a large percentage of its foods. Globally, the gradual rise of global food prices started in the early 2000s and was a result of an imbalance between the worlds demand and supply of food. Food prices were influenced by other developments such as diversion of limited resources for bio-fuel production or speculative buying of grain stocks. Gradually rising prices of fertilizer increased cost of production. The food crisis was thus eminent for a while and not sudden (Sri Lanka, 2009; Samaratunga, in press).

Sri Lanka has followed the global trend to derive its policy on agriculture essentially from trade centred general development policy, making itself sensitive to global fluctuations in food prices. All food items have increased in price from 2005 to 2009 and wheat prices have risen higher than rice from 2006 onwards. Especially wheat and dairy products seem to have been the major sources of the present food price inflation in Sri Lanka (Table 1). In contrast, since rice is largely home grown, the price of rice in Sri Lanka is more sensitive to the rising cost of production and the support price declared by the State to protect the rural poor farmer. It is unfortunate, though, that Sri Lanka has neglected the food production sector for more than two decades due to the preoccupation with improving trade and relying on imports for food. One cannot underestimate the importance of production of food even though trade may be encouraged, as production of feasible food crops is the basis for food security (Sri Lanka, 2009; Samaratunga, in press).

Table 1 Annual average retail prices of selected food Items in Colombo market (2005-2009)

	Sri Lankan Rupees per weight or unit				
Items	**2005**	**2006**	**2007**	**2008**	**2009[#]**
Rice (per kg)	31.39	30.96	40.03	65.17	63.16
Sugar (per kg)	41.62	57.85	53.19	63.09	77.67
Pulses (per kg)	82.63	101.58	119.84	141.62	140.87
Wheat flour (per kg)	30.50	35.00	50.95	73.30	70.27
Bread (per 450 g)	16.43	18.87	27.20	36.97	37.57
Coconut (per Nut)	17.03	15.82	21.35	31.49	24.13
Coconut oil (per 750 ml)	78.18	80.05	123.33	174.86	136.48
Eggs (per egg)	6.76	6.31	7.84	9.28	10.00
Milk Powder (per 400 g)	151.57	156.92	186.46	270.45	251.33
Fish (per kg)	260.64	302.00	370.51	434.13	460.61
Dried fish (per kg)	319.52	370.84	441.48	495.04	532.43
Meat (per animal)	242.23	254.43	303.16	335.97	285.30
Vegetables (per kg)	56.08	64.93	70.64	87.36	81.28
Fruits (per peace)	22.36	25.09	32.48	39.09	42.65

[#] 2009 up to September 2009,
Source: HARTI, 2009, US $ 1 = Sri Lankan rupees115.00.

Most South Asian economies experienced a slowdown in economic growth worsening of macroeconomic balances, and huge inflationary pressures, following the global financial crisis. Economic growth in Sri Lanka has come down from 7 percent during 2006-2007 to 6 percent in 2008 and expected to decline to 4 percent in 2009 (World Bank, 2009). Countries responded by partially adjusting domestic fuel prices, cutting development spending and tightening monetary policy. Access to foreign commercial credit has also been sharply curtailed by the rapid rise in the cost of borrowing.

The social and health costs of the economic slowdown and the food crisis in Sri Lanka, has yet to be determined. The food-price crisis is expected to have long term effects on the nutritional status of the most vulnerable segments of society the world over. In the event of crisis, the first and the worst hit are the poor, with infants and preschool children being the most vulnerable groups (UNSCN, 2009). Hence the impact of the crisis on a city or country is best assessed through nutrition and growth of children, mainly those of lower socio economic classes (UNSCN, 2009). A thorough analysis of the factors associated with coping strategies both among the households as well as the country as a whole in terms of its policies, paves the way to a better understanding of how each country faced the crisis: its strategies to overcome deleterious effects as manifested through effects on food and nutrition security, with nutritional status as an end point.

3.1.6 Absence of conflicts/riots/protests due to the food crisis

Sri Lanka has been fortunate not to have experienced conflicts arising due to the food crisis, as timely policies have been adopted to mitigate the crisis in the short and medium term. The impact of the war that prevailed in the country for over 20 years, and its impact on the economy, contributing to the very high inflation of 28 percent until the beginning of 2009, resulted in the urban poor being exposed to rising prices for a longer time than as a result of the crisis. However, the daily wages of unskilled and skilled workers have also increased during this period, although not in keeping with the price increases. Although tolerance on the part of the public is evident, especially in anticipation of improvement in the post war period, a negative nutritional impact is to be expected.

3.2 Changes in food habits due to the price fluctuations

The rise in food prices has led to a shift in consumption from wheat based products to rice. Both quantitative data and focus group discussions highlighted this fact. “Rice is eaten both as a preference and due to the increased cost of wheat” was mentioned in both slum and middle income areas. This shift is desirable in many ways: rice is more nutritious as most varieties eaten are less polished than the commonly available wheat flour (> 70 % extraction), and rice is usually eaten with more side dishes than wheat, thus adding variety to the diet. Further, consumption of rice benefits the local farmers and rice prices are less affected by changes in the global market as rice is home grown with only 4% being imported. It is important to take account of the fact that rice is the staple in Sri Lanka. Rice is eaten by all ethnic groups for 2-3 meals, with curries and may or may not include a non vegetarian item. Wheat is used to produce bread (commercially) or roti (home preparation) and usually eaten with one curry. Roti is never consumed on a daily basis although bread may be consumed more frequently. Other products such as hoppers, string hoppers, pittu can be made with rice flour or wheat flour. The Tamil population consumes dosai which is made from a mixture of wheat, pulses and rice, usually eaten with one curry.
Other than the significant shift towards eating rice, almost half the population in both groups claimed that their diet/food bracket had changed during the past year. Approximately 30 % in each community had changed both the quality and quantity of the food they ate, while approximately 15 % of population in slums claimed that they ate fewer meals than previously.

Table 2 Changes in food habits due to price fluctuations

	Households in slum areas (N=303)		**Middle Income households (N=300)**	
	n	**%**	**n**	**%**
Main source of food				
• Purchased	303	100	298	99.3
• Own produced		-	1	0.3
• Other		-	1	0.3
Staple foods usually eaten*				
• Rice	303	100	298	99.3
• Wheat	148	48.8	169	56.3
• Other grains & pulses	51	16.8	68	22.7
• Roots & tubers	37	12.2	35	11.7
Change in diet & food bracket in past year				
• Yes	141	46.5	140	46.7
• No	156	51.5	159	53.0
• NA	6	1.9	1	0.3
Type of change if any				
• Quantity only	23	7.6	20	6.7
• Quality only	47	15.5	44	14.7
• Both	90	29.7	72	24.0
• Introduce new foods	-	-	3	1.0
• NA	143	47.2	161	53.6
Average. No. of meals eaten/day				
• One	2	0.7	6	2
• Two	40	13.2	23	7.7
• Three	261	86.1	270	90
• NA	-	-	1	0.3
Number of meals/d compared to one year ago				
• Same	252	83.2	263	87.7
• Less	45	14.9	30	10.0
• More	1	0.3	5	1.7
• NA	5	1.6	2	0.7
Ate same type of food compared to one year ago				
• Yes	198	65.3	215	71.7
• No	96	31.7	76	25.3
• NA	9	2.9	9	3.0

NA = no answer * More than one answer was possible

3.3 Policy responses to the food crisis

The Sri Lankan policy responses to the food crises and future directions need to be analysed in the context of the local economic situation of Sri Lanka at present, and the tsunami at the end of 2004 and the limitations on growth imposed by the civil war which only ended in 2009.

A World Bank report of the current economic climate of Sri Lanka states that: "*Difficult political and social environments that prevailed in Sri Lanka during the war reduced the ability to adjust to the terms of trade shock that preceded the financial crisis. Sri Lanka's reliance on foreign funding is relatively large, hence, worsening of macroeconomic difficulties was seen with sources of funding contracting due to the global financial crisis. High inflation and large current and fiscal account deficits are present. In order to reduce the deteriorating macro-balances, a tightening of monetary policy was undertaken. The energy price increases were passed to the consumer in order to reduce the fiscal deficit. The performance of the financial sector has improved over time. The role of foreign capital in Sri Lanka's domestic financial sector is limited. The main downside risk on the financial sector is a reduction in capital flows from outside, including for the government*" (World Bank, 2008).

However, the World Bank analysis further states that, "there is little risk of a financial collapse despite difficulties (World Bank, 2008). Sri Lanka has taken actions to reduce monetary growth and contain the fiscal deficit**.** This, along with lowering commodity prices since June 2008, has helped to reduce inflation which has come down sharply from a peak of 28 percent in June 2008 to 11 percent in January 2009.

3.3.1 Socio-economic policies

In Sri Lanka, policy decisions are made at central government level and are informed by data (available at provincial and district level) from the Census and Statistics Department and the Finance Ministry[4]. A comprehensive data collection procedure is adopted with island wide coverage. Employment data is available at district level. The DHS generates data relevant to food security such as Household Income and expenditure, food balance sheets, poverty indicators, and agricultural data, amongst other types of data required to inform policy. However, data is not available at city level since policy is generally implemented at provincial level and a majority of the population in Sri Lanka (80%) is rural.

National policies relating to agriculture, trade, livestock and fisheries, healthcare and nutrition have been developed and these address the needs of the poor. Agricultural policies and trade policies are designed to protect the rural poor farmer. While the urban poor are also included in these policies, there are no separate policies targeting them. Existing social safety nets for the poor are available to both rural and urban poor.

A very intensive inflation control program is in place. Government policies are directed at protecting the local farmer through reducing competitive imports. This is achieved through trade tariffs which protect the rural poor who are largely agricultural earners. Therefore, the urban poor are the worst affected in the crisis, but they are lesser in numbers than the rural poor. Another reason why urban poor are worst affected is because many live in temporary dwellings and fall through the social security nets, since most cash transfer services require a permanent address. This situation can be improved by changes in the criteria for eligibility. Small family size is a common feature in Sri Lanka which ensures lower family expenditure. Urban migration of the poor is due in part to better employment opportunities with higher wages. This balances against lower accessibility to cheap foods unlike in the rural areas. Redistribution of food within households with women eating less is common among the poor. As survival cost goes up, education and medication continues at the expense of food in Sri Lanka.

[4] http://www.statistics.gov.lk

3.3.2 The role of Primary Health Care for better nutrition

The primary health care system of Sri Lanka is well established and has a comprehensive free coverage to include all citizens of the country. Free health care including tertiary care is available to all, while private medical care is also available. The Maternal and Child health programme includes promotion of breast feeding, growth monitoring and promotion, immunization and food supplementation. Vulnerable women and children are entitled to a pre cooked food supplement known as Thriposha, which contains energy, protein vitamins and minerals. The Thriposha programme was established in the 1970's and not as a recent response to rising hunger levels. However, the effectiveness of the Thriposha program is in doubt with poor targeting, inadequate supplementation and leakage at all levels (Silva, 2008).

The widespread system of Maternal and Child Health (MCH) clinics and their outreach home visits by Public health midwives, have contributed to the consistent decline in infant and under-five mortality rates[5]. Sri Lanka is on target to achieving some of its Millennium Development Goals in health by 2015, except in nutrition. However, achieving nutritional adequacy among children and mothers has two distinct aspects: development of nutritional intervention strategies, working through the primary health care system, and development of the economic situation of the poorer segments of the population. Poverty alone is a strong negative influence on nutrition. While safety nets are one short term strategy which includes identifying at risk individuals and further care through the primary care system, the long term strategy is via economic development, which a health care delivery system alone cannot address.

3.3.3 Social safety nets

Several safety nets operate to protect the poor. The main programme is the Samurdhi social development and cash transfer scheme to the poor (Salih, 2000), which is the main island-wide poverty alleviation scheme. Despite coverage of approximately 40 % of the population, this cash transfer programme still misses a large proportion of the poor due to poor targeting (Colombo Municipal Council, 2009). Further, the cash transfer is very small and does not achieve meaningful levels (Colombo Municipal Council, 2009).

The Thriposha supplements for underweight pregnant and lactating women and children who are underweight or growth retarded up to 5 years is another island wide programme which is implemented island wide.
A food basket (Poshana Malla Programme) for pregnant women of low socio economic status (Samurdhi beneficiaries) was started in a few areas but has not been successful as yet due to inadequate coverage and logistical issues (Ministry of Healthcare and Nutrition, 2008).
The Ministry of Education and the decentralized provincial councils have started a mid- day meal programme for school children and a glass of milk for pre-school children, but these programmes have not been monitored or evaluated.

From the survey data it is apparent that these social security nets are not perceived by women as coping strategies. Reasons for this may be several. Firstly the cash transfer is not adequate (approximately $ 1.50/ month/individual) and the Thriposha food supplement does not reach those for whom it is intended, due to it being shared by the whole family, which makes it inadequate. The school programmes having not been monitored but are not likely to be of significant impact, due to their sporadic implementation. It is important to note that for all these programmes to have some collective positive effect, better planning, proper identification of target population, implementation and a comprehensive monitoring process is essential. Comprehensive social safety net programmes which include unconditional and conditional cash transfer to poor households have been suggested (Sri Lanka, 2009).

[5] Current maternal mortality ratio of 0.47/1000 live births and under-five child mortality rate of 12 in 1000 live births by 2015 (http://www.mdg.lk/inpages/thegoals/goal5_improve_maternal_health.shtml)

3.3.4 Agricultural policies

The response of the Ministry of Agriculture to the crisis was in the form of a national agricultural production programme named “Api Wavamu Rata Nagamu” (“Let us grow and improve the country”). One successful initiative was to reduce post harvest losses through provision of equipment for transport and storage on a non profit making basis. Others promote the use of abandoned paddy fields as well as the promotion of home gardening. However, the focus group discussions and expert interviews revealed that the implementation of home gardening focused mainly on the rural sector and hardly any agricultural input and support has been given to the urban sector.
Greater targeting of the urban sector by the Ministry of Agricultural is seen as difficult, but indirect targeting through price reduction is seen as possible.
However, the urban environment is also conducive to livelihood diversification by taking up food production as a source of supplementary income whilst increasing food security. One constraint is limited availability of credit, addressed in part by some banks in urban areas offering credit facilities for poor people, with a view to income generation. Agricultural technology inputs by HARTI and other similar organizations can assist development of self employment opportunities through urban agriculture. Greater coordination with existing interventions is needed. Observational data indicate that space is another major constraint to food production in the urban areas. Both HARTI and the Agricultural Ministry pointed out that special technologies for space confined conditions (e.g.: in containers, racks, rooftops, etc) need to be developed for urban growing, which requires basic and operational research.

The Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI) is responsible for promotion and development of agriculture through research, tracking price fluctuations of selected commodities of agricultural interest on an annual basis and researching the development of agricultural know-how in the country. On a smaller scale, HARTI undertakes ad hoc studies into food consumption patterns though there is no concerted effort to generate data in a way that it can be used to monitor ongoing agrarian technological input. Although some collaboration with other sectors such as health exists, there is potential for further improvement of inter-sectoral coordination.
Data generated from HARTI indicates that food security is not optimal, with low consumption of animal foods, fruits and pulses (HARTI 2005). Low income groups being at risk for food insecurity (HARTI 2008, unpublished data). However HARTI does not associate these observations with the food crisis in particular.

3.3.5 New National Nutrition Policy

Although Sri Lanka has many decades of experience with nutrition intervention programmes, malnutrition remains due to the lack of specific interventions for vulnerable populations and poor targeting and inadequacies in food supplements and subsidies. Community centred strategies to malnutrition with adequate monitoring and evaluation as well as coordination of these programmes is a priority for the future (Sri Lanka, 2009). Recently (November 2009), the new National Nutrition Policy for Sri Lanka was approved by the Government of Sri Lanka and is planned to be implemented through a strategic framework that has been designed by the Ministry of Healthcare and Nutrition. The new policy deals with issues of specific targeted nutrition interventions for vulnerable populations including the urban poor.

3.4 The demographic and socio-economic characteristics of the surveyed population

The general characteristics of the populations were similar in the poor and middle income areas (Table 3). Majority of the population in middle income group was Sinhala, followed by Tamil, and Moor, whereas, in the slums, the Tamils population was slightly higher, followed by Sinhala and Moor. The majority of people in both areas are Buddhist, followed by Hindu, Catholic and Islamic.

Table 3 Socio-demographic data of survey households

	Households in slum areas (N=303)		Middle Income households (N=300)	
	n	%	n	%
Number of household members				
a. Usual residents				
- Total	1630	100	1582	100
- Males	797	48.9	754	47.7
- Females	833	51.1	828	52.3
b. Visitors				
- Total	60	100	13	100
- Males	4	6.7	6	46.2
- Females	56	93.3	7	53.8
Total income of household				
- < Rs. 5000	7	2.3	2	0.7
- Rs. 5,000- 10,000	100	33.0	63	21.0
- Rs.11,000-30000	185	61.1	196	65.3
- >Rs. 30,000	11	3.6	39	13.0
Ethnicity of household head [1]				
- Sinhalese	120	39.6	174	58.0
- Tamil	133	43.9	84	28.0
- Muslim	48	15.8	40	13.3
- Burgher	2	0.7	1	0.3
- NA	-	-	1	0.3
Religion of household head				
- Catholic	58	19.1	61	20.3
- Protestant	6	2.0	5	1.7
- Islam	49	16.2	40	13.3
- Buddhism	102	33.7	130	43.3
- Hindu	86	28.4	62	20.7
- No religion	-	-	1	0.3
- NA	2	0.7	1	0.3

NA = not answered

Table 4 shows that in both slum and middle income areas, a majority of people (> 80 %) were resident in the area for over 3 years, which could indicate that in these neighbourhoods there was not a large influx of people from rural areas into the city due to the economic and food crisis. Even in slum areas, a majority of households claimed that they owned the house as well as the land on which their houses were built, a fact that could not be substantiated during the survey. The number of households that were squatting was very small (2 households in middle income areas and 3 in slum areas). Rented housing was fairly high even in the slum area (21% middle income, 16% slum). Some households were paying no rent and claimed that it was with consent of owner (middle income 24 households, slum 16 households).

Table 4 Duration of occupancy and ownership of house and land

	Households in slum areas (N=303)		Middle Income households (N=300)	
	n	%	n	%
Duration of occupancy				
• < 1 y	16	5.3	24	8.0
• 1-2 y	30	9.9	23	7.7
• ≥ 3	257	84.8	253	84.3
Ownership of the house				
• Own	234	77.2	211	70.3
• Rent/lease	48	15.8	62	20.7
• No rent (owner's consent)	16	5.3	24	8.0
• Squatting	3	1.0	2	0.7
• NA	2	0.7	1	0.3
Ownership of land				
• Own	239	78.9	215	71.7
• Rent/lease	43	14.2	60	20.0
• No rent (owner's consent)	18	5.9	22	7.3
• Squatting	3	1.0	3	1.0

The social distinction of the middle income and slum groups is apparent when employment details are considered (Table 5). Analysis of the employment details indicate distinct differences with the middle income group having more professionals and skilled workers and the slum dwellers having greater number of unskilled (daily paid) workers. A similar but small percentage of members from both areas were employed abroad.

Table 5 Employment details of working members of households

Employment	Middle income (N=466)		Slum (N=452)	
	N	%	n	%
Accountant, executive, teacher office manager, business owner, priest/religious leader	97	20.8	19	4.2 *
Nurse, pharmacist, nursing asst, PHM, armed forces, technical officer, travel agent	23	4.9	04	0.9
Clerk, office worker computer operator, small businessman (e.g. trader)	46	9.9	34	7.5
Skilled workers; carpenter, mason, factory worker, driver, traffic warden	153	32.8	75	16.6 *
Shop assistant, three wheeler driver,	90	19.3	87	19.2
Unskilled labourer, housemaid	33	7.1	214	47.3 *
Working abroad	20	4.3	18	4
Retired	4	0.9	1	2

* significantly different (P < 0.05)

Almost one fifth of the households were headed by females in both slum and middle income areas (Table 6). Most male household heads were employed. A larger number of female heads in the middle income households were unemployed when compared to the slum areas. Culturally, middle class women prefer to be unemployed, which needs to be taken into account when interpreting these figures.

Table 6. Head of household; employment

	Households in slum areas (N=303)		Middle Income households (N=300)	
	n	%	n	%
Sex of head of household				
- Male	252	83.2	240	80.0
- Female	51	16.8	59	19.7
- NA	-	-	1	0.3
Current employment				
a. Male head of households				
- Working	230	93.9	219	92.8
- Not working	15	6.1	17	7.2
b. Female head of households				
- Working	17	36.2	11	19.6
- Not working	30	63.8	45	80.4
Has worked in the past 2 months				
- Yes	247	81.5	234	78.0
- No	41	13.5	59	19.7
- NA	15	4.9	7	2.3

NA = not answered

Table 7 indicates that several of the slum and middle income households had more than one income earner, while only a very small percentage had no sources of income. The distribution is similar in the slum and middle income groups.

Table 7 Number of sources of income slum and middle income households

	Slum areas		Middle income groups	
	n	%	n	%
No definite source of income	4	1.3	0	0.3
Single source of income	217	68.9	183	60.2
Two sources of income	56	16.8	82	27
Three sources of income	29	9.2	27	8.9
More than three sources of income	9	2.3	11	3.7

Comparison of the income categories between ethnic groups revealed no statistically significant differences (by Chi square test) between ethnic groups in both areas (Table 8).

Table 8 Income of head of household by ethnic group

Households	Income groups							
	< Rs. 9999 (N=103)		Rs.10000-19999 (N=269)		Rs.20000-29999 (N=126)		Rs. 30000 (N=95)	
	n	%	n	%	n	%	n	%
Sinhala	50	48.5	104	38.7	64	50.8	48	50.5
Tamil	37	35.9	103	38.3	44	44.5	34	35.8
Moor	16	15.5	40	14.9	18	34.9	13	13.4

3.5 Women's nutritional status

The BMI data of women aged 15-49 years indicate that 13.3 (n = 44) percent women in middle income areas and 16.1 percent (n = 56) in slum areas were thin as indicated by a BMI < 18.5 kg/m2 (Table 9). The data available in DHS 06/07 for women's BMI indicate that in the lowest and second income quintile respectively, the percentage of thin women was 27.4 and 21.2 respectively (DCS 2007). Though, no direct comparison is possible with our data, the women in our study had a lower percentage of thin women.

Table 9 BMI data of women 15-49 years of age

	BMI in kg/m2									
	< 18.5		18.5 - 22.99		23.0 - 24.99		25 - 30		> 30	
	n	%	n	%	n	%	n	%	n	%
Women in slums (N=347)	56	16.1	93	26.8	49	14.1	83	23.9	66	19.0
In middle income households (N=330)	44	13.3	86	26.0	40	12.1	103	31.2	57	17.3
All women (N=677)	100	18.2	179	26.4	89	13.1	186	24.5	123	18.2

There were no significant differences in BMI between the different income categories (Table 10). The prevalence of both underweight and overweight/obese was similar across all income categories when the total population was analysed together.

Table 10 Women's BMI by income groups in total population

BMI categories	< Rs. 9999 (N=104)		Rs.10000-19999 (N=301)		Rs.20000-29999 (N=144)		> Rs. 30000 (N=106)	
	n	%	n	%	n	%	n	%
< 18.5 kg/m^2	16	15.4	43	14.3	21	14.6	18	16.9
18.5-22.99 kg/m^2	25	24.0	85	28.2	38	26.4	36	33.9
23.-24.99 kg/m^2	21	20.2	54	17.9	26	18.1	15	14.2
25-30 kg/m^2	27	25.9	68	22.6	33	22.9	23	21.7
> 30 kg/m^2	15	14.4	54	17.9	26	18.1	14	13.2

This may indicate that within the households, women in households with a higher income are not nutritionally any better than the lower income categories. The reason for this is probably multi-factorial. Firstly, BMI is not the only indicator of nutrition. We did not assess micronutrient levels, if these were assessed, we might have seen a difference between the two social groups. Secondly, although more people in middle income neighbourhoods are in the higher employment categories than in slum areas, financial issues affect nutrition in both groups. In Sri Lanka, the income of people engaged in an occupation requiring higher education levels is not necessarily much higher than persons working in occupations requiring less education i.e. teachers, nurses, office workers, with similar income distribution in both slum and middle income groups. However these households are clearly middle income by our categorization, as based on an asset criteria, and by education and occupation. They have better basic facilities, better homes and have a higher quality of life, but are affected by financial pressures and the food crisis. This is reflected in the analysis of coping strategies by occupation that will be presented below. Food price increase was felt across all occupation categories and they all made changes in the proportion of money spent on food. More people from unskilled worker categories got a second job the in the higher occupation categories. This would account for the fact that even in the slum areas, high income categories were observed while the higher occupation categories were mainly from the middle income area, as expected. Furthermore, undeclared income is common among the slum population. In summary, while a clear division exists between the slum and middle income areas in terms of social indicators such as occupation, education and assets, the income distribution is similar. With worsening financial pressures, the middle income groups are affected to the same degree as the slum dwellers which fact is clearly reflected in the women's and children's anthropometric indicators, which do not significantly differ between slum and middle income.

There were no statistically significant differences in the BMI categories of women between ethnic groups, within each population (Table 11).

Table 11 Women's BMI by ethnicity (BMI categorized according to WHO criteria)

	BMI in kg/m2									
	< 18.5		18.5 - 22.99		23.0- 24.99		25-30		> 30	
	n	%	n	%	n	%	n	%	n	%
Sinhala (n = 300)	43	14.3	89	29.7	49	16.3	77	25.7	42	14.0
Tamil (n = 243)	35	14.4	67	27.6	47	19.3	53	21.8	41	16.8
Moor (n = 102)	19	18.6	24	23.5	17	16.7	21	20.6	21	20.5

Previous studies document that female headed households among the poor are more disadvantaged than male headed households (Gunewardane 1999). In our population however, only few differences were observed between male and female headed households (see also table 20). A significant proportion of women in both areas had reduced their food intake and no differences were observed between female and male headed households in both slum and middle income areas (Table 12).

Table 12 BMI of women in female headed vs male headed households

	BMI in kg/m2									
	< 18.5		18.5-22.99		23.0-24.99		25-30		> 30	
	n	%	n	%	n	%	n	%	n	%
Slum areas										
Women in female headed hh's (N = 64)	10	15.7	18	28.1	09	14.0	12	18.8	15	23.4
Women in male headed hh's (N= 283)	46	16.3	75	26.5	40	14.1	71	25.1	51	18.0
All women (N= 347)	56	16.1	93	26.8	49	14.1	83	23.9	66	19.0
Middle income households										
Women in female headed hh's (N=72)	10	13.9	18	25.0	06	8.3	28	38.9	10	13.9
Women in male headed hh's (N=258)	34	13.2	68	26.4	34	13.2	75	29.1	47	18.2
All women (N=330)	44	13.3	86	26.0	40	12.1	103	31.2	57	17.3

The prevalence of low BMI in both areas is in line with the number of households reporting reduced food intake in both slum and middle income areas (Table 19). However a greater concern in these populations is the fact that low income and reduced buying power has led to poor quality meals, which are high in macronutrients and low in micronutrients. Both quantitative and qualitative data showed that the reductions were in the quality of food, with some households indicating reductions in quantity as well. Intake of fruits, vegetables, pulses, animal products were reduced (Table 2). The only positive change being a shift from wheat to rice.
Poor quality diets are often high in staple foods but lack micronutrients, and may predispose to overweight if eaten in excess, despite low micronutrient status. Our population had an unacceptably high prevalence of women with BMI > 23 kg/m^2. With the rise in prevalence of overweight and diabetes in the developing countries even among low socioeconomic groups, poor quality diets and the high prevalence of overweight and obesity documented here is a concern.

3.6 Nutritional status of children 0 – 5 years of age

Anthropometry data was generated for a total of 343 children from the slum area and 335 children from middle income area in the age group of 0 – 5 years. A rising prevalence of stunting and wasting is seen, mostly after the age of 6 months in both areas. Rates of exclusive breast feeding up to six months is high in Sri Lanka, with feeding issues being apparent during the complementary feeding stage. Hence the rising prevalence of malnutrition coincides with the differences in feeding patterns. Surveys and studies done previously indicate that the major problem in nutrition is during complementary feeding practices (Ministry of Healthcare and Nutrition, 2008; Gunewardana, 1999). Poor feeding practices such as inadequate quantity, quality and diversity, and lack of feeding during illness due to cultural practices are a problem in infant and young child feeding in Sri Lanka.
The proportion of children from the slum and middle income areas who are stunted (height for age < 2SD of z score) is given in Table 13. Peak stunting among slum children was between 36 to 47 months while peak stunting in middle income children was at 24-35 months. The prevalence of stunting, which reflects long term malnutrition, begins to peak in the middle income area at a much earlier age than in the slum area. In the slum area, stunting of older children is higher in prevalence when compared to the middle income group, pointing to a greater length of time of undernutrition in the slum area.

Table 13. Height-for-Age (stunting) of children 0 - 5 years

Slum population							
Age group	**N**	**% < -3SD of z score**	**95% CI**	**% < -2SD of z score**	**95% CI**	**Mean**	**SD**
Total	342	18.7	14.4, 23%	32.7	27.6%, 37.9%	-1.22	1.94
0-5	36	8.3	0%, 18.8%	19.4	5.1%, 33.8%	-0.31	1.64
6-11	37	5.40	0%, 14%	13.5	1.1%, 25.9%	-0.46	1.77
12-23	85	21.2	11.9%, 30.5%	36.5	25.6%, 47.3%	-1.2	2.37
24-35	79	21.5	11.8%, 31.2%	32.9	21.9%, 43.9%	-1.46	1.86
36-47	57	24.6	12.5%, 36.6%	42.1	28.4%, 55.8%	-1.78	1.59
48-60	48	20.8	8.3%, 33.4%	39.6	24.7%, 54.5%	-1.45	1.59
Middle income group							
Total	330	12.7	9%, 16.5%	24.5	19.8%, 29.3%	-0.98	1.78
0-5	30	0	0%, 1.7%	6.7	0%, 17.3%	0.29	1.5
6-11	42	7.1	0%, 16.1%	11.9	0.9%, 22.9%	-0.23	1.84
12-23	78	15.4	6.7%, 24%	29.5	18.7%, 40.2%	-1.21	1.8
24-35	52	15.4	4.6%, 26.2%	34.6	20.7%, 48.5%	-1.55	1.49
36-47	61	14.8	5%, 24.5%	21.3	10.2%, 32.4%	-1.23	1.79
48-60	67	14.9	5.6%, 24.2%	29.9	18.1%, 41.6%	-1.1	1.68

The weight-for-height (wasting) scores are similar in both slum and middle income populations (Table 14). Wasting levels of 29.2 % (slum) and 22.1 % (middle income) are unacceptably high, indicating the presence of severe and moderate acute malnutrition.

Table 14 Weight for height (wasting) of children 0 - 5 years

Slum population							
Age group	**N**	**% < -3SD of z score**	**(95% CI)**	**% < -2SD of z score**	**95% CI**	**Mean**	**SD**
Total	342	10.8	7.4%, 14.3%	29.2	24.3%, 34.2%	-0.98	1.72
0-5	35	5.7	0%, 14.8%	20	5.3%, 34.7%	-0.81	1.59
6-11	38	7.9	0%, 17.8%	10.5	0%, 21.6%	-0.4	1.58
12-23	88	13.6	5.9%, 21.4%	33	22.6%, 43.3%	-0.98	1.76
24-35	75	12	4%, 20%	37.3	25.7%, 48.9%	-1.37	1.42
36-47	58	12.1	2.8%, 21.3%	25.9	13.7%, 38%	-0.85	1.98
48-60	47	8.5	0%, 17.6%	36.2	21.4%, 51%	-1.16	1.84
Middle income group							
Age group	**N**	**% < -3SD of z score**	**(95% CI)**	**% < -2SD of z score**	**95% CI**	**Mean**	**SD**
Total	320	8.1	5%,11.3%	18.4	14%,22.8%	-0.72	1.63
0-5	25	8.0	0%,20.3%	28.0	8.4%,47.6%	-0.98	1.38
6-11	39	5.1	0%,13.3%	17.9	4.6%,31.3%	-0.85	1.39
12-23	81	6.2	0.3%12%	14.8	6.5%,23.2%	-0.28	1.82
24-35	51	9.8	0.7%,18.9%	17.6	6.2%,29.1%	-0.83	1.73
36-47	57	12.3	2.9%,21.7%	21.1	9.6%,.32.5%	-0.85	1.62
48-60	63	7.9	0.5%,15.4%	19.0	8.6%,29.5%	-0.94	1.47

Table 15 indicates the percentage of children within our sample populations who were found to be underweight (acute malnutrition). Children from slum areas showed a significantly higher prevalence of underweight (weight for age < -2SD of z score) than those from middle income households.

Table 15. Weight for age children 0 – 5 years

Slum population							
Age group	**N**	**% < -3SD of z score**	**95% CI**	**% < -2SD of z score**	**95% CI**	**Mean**	**SD**
Total	343	13.8	10.1%, 17.5%	34.5	29.5%, 39.6%	-1.48	1.46
0-5	31	7.9	0%, 17.8%	15.8	2.9%, 28.7%	-0.98	1.48
6-11	45	12.5	1%, 24%	17.5	4.5%, 30.5%	-0.73	1.78
12-23	85	14.3	6.5%, 22%	35.2	24.8%, 45.5%	-1.49	1.4
24-35	55	14.6	6.4%, 22.9%	41.5	30.2%, 52.7%	-1.75	1.41
36-47	60	19.4	8.7%, 30%	43.5	30.4%, 56.7%	-1.77	1.34
48-60	67	10.2	0.7%, 19.7%	38.8	24.1%, 53.4%	-1.68	1.24
Middle income group							
Age group	**N**	**% < -3SD of z score**	**95% CI**	**% < -2SD of z score**	**95% CI**	**Mean**	**SD**
Total	343	11.1	7.6%, 14.5%	26.5	21.7%, 31.3%	-1.26	1.43
0-5	31	6.5	0%, 16.7%	22.6	6.2%, 38.9%	-0.75	1.41
6-11	45	11.1	0.8%, 21.4%	24.4	10.8%, 38.1%	-1.03	1.85
12-23	85	10.6	3.5%, 17.7%	20	10.9%, 29.1%	-1.11	1.43
24-35	55	16.4	5.7%, 27%	36.4	22.7%, 50%	-1.65	1.33
36-47	60	10	1.6%, 18.4%	31.7	19.1%, 44.3%	-1.43	1.21
48-60	67	10.4	2.4%, 18.5%	25.4	14.2%, 36.5%	-1.38	1.3

Our findings are in contrast with the DHS survey findings of 2006/7 (DCS, 2007; table 16) where only 8.2 % of children in Colombo district were stunted. In our data also a higher percentage of children who have weight for height < 2 SD of z scores (wasting) and a markedly higher proportion of underweight children. However, comparison of the data is not well possible since the DHS data is representative of the entire Colombo District and all social classes, while our

data collection was limited to the lowest and middle social classes in inner city areas within Colombo city.

Table 16 DHS 2006/7 data on nutritional status of children in Colombo District

Height for age				Weight for height			Weight for age		
Age group	% < -3SD of z score	% below -2SD of Z score	Mean z score	% < -3SD of z score	% below -2SD of Z score	Mean z score	% < -3SD of z score	% < -2SD of Z score	Mean z score
0-60 months	1.4	8.4	0.6	2.1	13.2	1.9	1.5	14.1	0.9

Source: DCS, 2007

However, preliminary findings from a new Food and Nutrition Security survey carried out by the Medical Research Institute of the Ministry of Healthcare and Nutrition in collaboration with the UNICEF and World Food Program (Ministry of Healthcare and Nutrition 2009) is in contrast to the DHS data. This survey too examined the nutrition status of children 0- 5 years in 9 districts of Sri Lanka including the District of Colombo. The total number of children assessed in all districts was 2588. Prevalence of wasting (weight for height < -2SD) was 17.4 %, severe wasting 3.2 %, prevalence of stunting (height for age < -2SD) was 13.4 % and prevalence of underweight (weight for age < -2SD) was 22.3%. The data from the food and nutrition security survey show a much higher prevalence of malnutrition than the DHS data for Colombo district.

3.7 Food intake by children 0-5 years (24 hour food recall)

Food consumption patterns among children in both areas are extremely inadequate and are a major cause for concern. A large proportion of the children do not even have adequate staple foods. Although nearly half of the children consumes cereal 3 times a day, 22% middle income and 23% slum children eat only two cereal based meals and 12% middle income and 9% slum children eat cereals only once a day. Pulses are not eaten by 74% middle income and 65% slum population. Over half the population of both areas do not eat yellow vegetables, roots and tubers and green leafy vegetables. 81% middle income and 88% slum population do not eat yellow fruit. Other fruit is not eaten by more than half of the population. However meat, chicken and fish and eggs are consumed by more children. The consumption of milk products is very low in both areas. Snacks are consumed by more than half of the population, and liquids are taken frequently. Focus groups also indicated a preference for animal foods over the cheaper plant based foods despite the high cost of animal foods.

The Dietary diversity score gives an indication of the adequacy of diversity when all food groups are considered. However a major limitation is that it does not give an indication of quantities. A dietary diversity score was calculated for children in slum and middle income children (aged between 1 and 5 years) using the 24 hour recall data. The score was based on 6 food groups; starchy products, dairy products, legumes, green vegetables, fruits and meat, fish and eggs (as one group) according to WHO criteria.
There was no significant difference in mean dietary diversity scores for children 0 – 5 years between the slum and the middle income area (slum 3.84 ± 1.2, middle income 3.83 ± 1.4). The percentage of children with adequate dietary diversity (dietary diversity score of 4 or more food groups was also similar in the two areas (slum 67 %, middle income 66.3 %).
However, when the dietary diversity was compared among income groups in each area (Table 17) the lower income groups (those with income Rs. < 9999) in slum areas, had very low dietary diversity scores, while the highest income category in the slum area had higher diversity scores. This difference was not so marked in middle income households.

Table 17 Proportion children 0- 5 years with adequate dietary diversity according to household income

	Income Rs. 9999	Income > Rs.30,000
Slum	37.6 %	85 %
Middle income	55.5 %	96.2 %

With regard to food consumption patterns of children 0-5 years, triangulation of data sources led to the same conclusion, highlighting that in both areas animal products are eaten in preference to fruits and vegetables. However this occurs at the expense of achieving adequacy of diversity, probable reduction in quantity and reduced consumption of staple foods.
Effect of income on diversity is slightly more marked in the slum than the middle income area. Given the inadequate nutritional status in children from both areas, and given the reduced available income to spend on food, these findings highlight the need for investment in programmes for young child care practices, using available resources.

Table 18 Food consumption patterns among children in both areas

Slum			Middle income		
Vegetables	Meats	Fruit	Vegetables	Meats	Fruit
69 %	77.2 %	37.5 %	61.4 %	78.7 %	44 %
50 %	30 %	40 %	60.3 %	87.1 %	43.6 %

3.8 Coping Strategies at Households Level

It is evident from the quantitative analysis and the focus groups that households are clearly affected by the price increases. Almost all households were aware of the price changes (Table 19). Key person interviews of community leaders revealed that the urban poor are affected by price changes and consume inadequate food. However, the price increases initiated before the global food crisis and the community leaders attribute them to the civil war mainly. Improvement in conditions is expected in the post war period by the community. However, the 2008 food price increases and loss of jobs, next to factors related to alcohol and other social issues, may have made the poor more vulnerable than before.
Their coping strategies are largely through reducing the quality and quantity of food, as a large proportion of their income is spent on food (Table 19).

Table 19. Coping strategies of households

	Households in slum areas (n=303)		Middle Income households (n=300)	
	n	%	N	%
Noticed a change in price of products in the past year				
• Yes	296	97.7	288	96.0
• No	4	1.3	10	3.3
• NA	3	0.9	2	0.7
Got a second job				
• Yes	26	8.6	30	10.0
• No	233	76.9	224	74.7
• NA	44	14.5	36	12.0
Growing own food				
• Yes	2	0.7	1	0.3
• No	257	84.8	251	83.7
• NA	44	14.5	48	16.0
Sending children to rural areas				
• Yes	2	0.7	-	-
• No	256	84.5	252	84.0
• NA	45	14.9	48	16.0

Table 19 continued

	Households in slum areas (n=303)		Middle Income households (n=300	
	N	**%**	**N**	**%**
Taking children out of school				
• Yes	7	2.3	2	0.7
• No	252	83.2	250	83.3
• NA	44	14.5	48	12.7
Relying on relative				
• Yes	43	14.2	22	7.3
• No	216	71.3	234	78.0
• NA	44	14.5	44	14.7
Reduced consumption of other goods				
• Yes	185	61.1	183	61.0
• No	74	24.4	74	24.7
• NA	43	14.2	33	11.0
Reduced spending on extras such as holidays, trips				
• Yes	63	20.8	66	22.0
• No	196	64.7	186	62.0
• NA	44	14.5	48	16.0
Proportion of income spent on food				
• Almost none	1	0.3	4	1.3
• Less than half	15	5.0	21	7.0
• About half	39	12.9	36	12.0
• More than half	166	54.8	186	62.0
• All	81	26.7	51	17.0
• NA	1	0.3	2	0.7
Share food with neighbours				
• Yes	63	20.8	58	19.3
• No	240	79.2	242	80.7
Sharing increased since 2007				
• Yes	12	4.0	4	1.3
• No	250	82.5	172	57.3
• NA	41	13.5	124	41.3
Food intake of women in household decreased in past year				
• Yes	102	33.7	80	26.7
• No	199	65.7	217	72.3
• NA	2	0.7	3	1.0
Foods omitted from diet or reduced in past year				
• Yes	168	55.4	158	52.7
• No	135	44.6	142	47.3
Proportion of money spent on food				
• Increased	292	96.4	290	96.7
• Reduced	9	3.0	9	3.0
• Unchanged	2	0.7	1	0.3
Proportion of money spent on transport, health, education				
• Increased	276	91.1	263	87.7
• Reduced	18	5.9	29	9.7
• Unchanged	9	3.0	8	2.7
Member of household lost a job in the past year				
• Yes	52	17.2	28	9.3
• No	250	82.5	271	90.3
• NA	1	0.3	1	0.3

NA= not answered

Over 50% of households in both areas spend more than half of their income on food. While they have not cut down significantly on education, and free health services are available, there are no significant positive coping strategies adopted by these subjects other then reduction of food ensues. Since they are heavily dependent on commercially available food and do not grow their own food, price increases have directly translated into reduced consumption. A very high proportion of the study population in both areas (96%) claimed that the proportion of income spent on food has increased during the past year. 27% women in the Middle income and 34% women in the slum have reduced food intake in the past year. More than half of the households in both areas omitted some items of food from their diet.

Both quality and quantity of food has reduced in 24% of the households in the middle income and 30% in the slum population. The number of meals has reduced in a small but significant number of households (10% middle income and 15% slum). Majority in both areas ate three meals a day. 25% and 32% in each area had changed the type of foods that they were eating. Although a fair number of households indicated that they share food, very few said that sharing has increased in the last year. Food sharing as a coping strategy is not usually practiced by Sri Lankan households as was evident from the focus group discussions and the no increase of sharing in the last year (crisis). The reported sharing of food in the survey may occur for cultural reasons among relatives and/or might be due to a misunderstood interpretation of the survey question.
Around 10 % in both areas got a second job to supplement income. They do not grow their own food nor send their children to rural areas. Only few households removed their children from school (two in the Middle Income and 7 in the slum area). A greater number of households were relying on their relatives for support. 61% of households in both areas (also) reduced the consumption of other consumer goods.

A very significant observation is that almost one fifth of slum households had experienced loss of employment. It is not possible to draw a definitive conclusion on whether this is higher than the rate of job loss experienced before the crisis, considering that most of the slum population are employed in casual daily paid work. However, it suffices to say that this loss would no doubt affect income and hence food consumption.
Another significant fact to note is that coping strategies were not different for male and female headed households in both slum and middle income areas (Table 20).

Table 20 Coping strategies for male and female headed households in the two types of community

	Slum areas				Middle income group			
	Male headed households (N = 256)		Female headed households (N = 50)		Male Headed households (N = 240)		Female headed households (N =59)	
	n	%	N	%	n	%	n	%
No. of families who noticed a change in diet in past year	114	44.7	26	52.0	112	46.7	28	47.5
No. of families where meal frequency/day has reduced in last year	114	12.5	13	26.0	24	10.0	05	8.5
No. of families who have had a change in quality and quantity of their diet	74	29.0	15	30.0	58	24.2	14	23.4
No. of families **not** eating same type of food as last year	82	32.2	14	28.0	58	24.2	18	30.5
No. of families who have increased relying on relatives	37	14.5	8	16.0	17	7.1	05	8.5
No. of families who have reduced consumption of other foods	156	61.2	29	58	150	62.5	32	54.2

The proportion of income spent on food was very high in the skilled and unskilled worker categories, indicating that they were the most affected (Table 21).

Table 21. Proportion of income spent on food

	Higher (teachers, businessmen, accountants)		Nurses, pharmacists clerks, office workers		Skilled worker		Unskilled workers, shop assistants	
	N	%	N	%	N	%	N	%
< 50 % of income	2	2.9	2	3.2	9	6.9	20	5.2
> 50 % of income	42	62.6	34	55.7	75	58.1	213	55.7
Total income	10	6.7	10	6.1	22	17.5	104	27.2

When coping strategies were analysed across occupations differences were observed in the different employment categories (Table 22). Taking a second job was more common in the skilled and unskilled worker categories when compared to professionals and office workers. This reflects a social concept which makes it more difficult for higher occupational categories to supplement their income, and also helps to understand why occupation categories do not reflect the income division and why some slum households have as high incomes as households in the middle income area.

Table 22 Coping strategies across occupation categories

	Higher (teachers, businessmen, accountants)		Nurses, pharmacist clerks, office workers		Skilled workers		Unskilled workers, shop assistants	
	n	%	n	%	n	%	n	%
Getting second job	6	8.9	6	9.8	22	17.0	50	13.0
Sending children to rural areas	0		0		0		4	0.10
Food reduction in women	11	16.4	8	13.1	9	6.9	25	6.5
Growing own food	0		0		0		5	1.3
Change in quantity	4	5.9	4	6.5	7	5.4	29	7.6
Change in quality	12	7.9	11	8.0	26	20.1	76	19.8
Taking children out of school	1	1.4	0		3	2.3	9	2.3
Relying on relatives	5	7.4	0		14	10.8	37	9.6
Reduced consumption of other goods	43	64.2	41	67.2	76	58.9	223	58.3

Focus groups among women and PHMs in slums

All those interviewed had felt that food is too expensive and buying power had reduced. Rice is eaten both as a preference and due to the increased cost of wheat. Reductions made were both in quality and quantity of food. Regarding quantity, a reduction was observed in all food items: some families had reduced from 3 to only 2 meals/day in which rice was consumed, often with one side dish. However many families maintained the 3 rice based meals. Those who did consume fruits daily are unable to do so now, not even once/weekly in some cases. Less quantity of milk powder drunk by all, as tea drinking has reduced, when drunk, only plain tea is consumed. Eggs are hardly bought now even though children prefer it. The practice of choosing foods that are the cheapest, including for vegetables, means that people are less concerned about nutrition or quality, but mainly about cost. Food sharing is not practiced in these urban areas, and little support is available from the extended family is as they too are in a similar situation. Women have reduced their intake in terms of both quality and quantity. Thriposha (food supplement) is shared with family. The health workers also noted that people sell Thriposha.

Fuel cost increases have led to changes in the type of fuel being used, form gas to kerosene. Fuel is bought in smaller amounts at a time. A further coping strategy to the increase in fuel cost has been to increase the purchase of less nutritious food from out rather than cook at home.

The “bread and gravy” meals bought by the slum dwellers are cheaper than cooking a meal at home, especially in smaller households, but offers very little in terms of nutrition.
Increase in transport cost has translated into using cheaper transport means such as walking or changing from trishaw to bus. A shift from private to government medical care was documented, with less money spent on medication.
No reductions were made on education. However few parents cannot send kids to preschool as preschool is sometimes paid school. Children are sent directly to school at grade one (5 years). A concern was raised by health care workers that child care may be compromised due to an increase in the number of mothers going abroad leaving children to the care of others. This was also raised by the local religious leader. However the link between this and the current crisis is difficult to establish.

Slum households have a mixture of monthly and daily paid workers. Buying of food and rations is often on a daily basis due to high cost. When there is lack of funds purchasing from the local shops on a credit basis (loans) is practiced. This results in some debt which is often paid off by pawning valuables. Some loss-of-jobs have occurred, mainly in the construction industry with no opportunity for a new job for periods as long as 4 – 5 months, increasing the financial burden of the household. Not many receive the cash transfer that is targeted to the poor by the government. This is corroborated by the survey, as cash transfer has not been mentioned as a coping strategy.
The focus group also revealed that the implementation of the national home gardening programme hardly attended the urban sector and no agricultural input and support has been provided there.

The discussions in the focus group and with community leaders also reveal that alcohol and drugs are a significant issue in this community. The quantitative survey data showed that expenditure on alcohol reduced the amount of money available for food in 19% of slum population while it was only 10% in the middle income area. A greater percentage of households in the slum area (28.7%) when compared to the middle income households (15%) reported that smoking also reduced money available for food. These findings highlight the significant differences that exist between these two socially distinct areas that are not explained by income alone. The key person interview evidence also shows that women are often involved in dealing with drugs and in video games, while their husbands are in prison. This is a social issue that worsens the situation at household level, although it cannot be directly attributed to the present crisis.

Focus groups among women and PHMs in middle income areas

Increased prices were evidenced in food and all other areas. Increases in prices observed and most felt were in sugar, dhal, potato, fruit, milk powder, coconut, infant cereal, infant milk powder. The staple has not changed, with rice being eaten for three meals rather than wheat products. However, here too quantity and quality of food consumed is reduced. Reduction is mainly in meats, fish, and egg which have reduced in quantity when compared to previous years. Pulses have reduced in frequency. However the participants and the family health workers noted that taste preferences were for meats and fish rather than cheaper pulses and vegetables, hence sometimes, animal foods are bought even if it means buying a lesser quantity, in preference to the less expensive vegetables and pulses. Three to four side dishes which were made earlier has been reduced to two and a fish. Reducing variety is more practical than reducing quantity. Even fish is difficult now, which is often replaced by dried fish. Dark green leafy vegetables which are usually a component of the daily diet due to its relatively low cost is also increasingly difficult due to the increased prices of the condiments that go with it. Foods popular with the children such as egg and egg based puddings, coconut, and cheese, are now not a frequent part of the diet anymore. Fruits that used to be consumed were banana, guava, papaya, wood apple, seasonal mango and avocado. However nowadays, only banana is eaten frequently. Tea is drunk with milk only once a day.

In the middle income area, the night meal that usually was bought from out earlier for social reasons (often a special meal and more expensive than the meals bought by the slum dwellers) is now cooked only at home as a cost cutting measure. Hence in this instance, the coping strategy is to forgo such social costs related to food, and cook a more basic meal at home.

Food redistribution is seen, with women eating less in quantity. Food sharing is not observed in this area as everyone is in the same situation.

There is no agricultural input for home gardening in these areas. The lack of space and mosquito breeding are perceived constraints to home gardening and is a reflection of the lack of know-how on appropriate methodologies for food production in space confined urban areas.

Kerosene is used when gas is expensive, or gas is bought in small containers, as there is no space for fire wood stoves. Firewood is also not available. Electricity saving by compromised use of lights and television is widely practiced.
Some reduction in spending on health care is observed by shifting from private to government clinics.
Less money is spent on transport and cloths, and reductions on extras for enjoyment.
The focus group felt very strongly regarding education of their children, saying “We will not compromise on education even if there is no food”.

Some are living off savings due to loss of jobs in the Middle East, or garment sector, or due to lack of the extra work that was usually enjoyed.
Some women have taken a second job in lending money, keeping guests, preparing and selling food, giving tuition or undertake another small business in the house to supplement the family income. Some women have also started to work outside the house leaving kids/ baby with grandmother. However, quantitative data indicate that the number of women taking second job is low (15 women in the middle income group and 17 women in the slum).

Despite all coping mechanisms, no saving is possible, which increases vulnerability to the need to buy on loan during emergencies. Buying on credit is practiced even for food, although it is mostly for clothing. Bills are paid at the end of the month or week when salary comes in, failing which, valuables are used as security to obtain loans at very high interest rates.

4 CONCLUSION

The survey evidence indicates that the food crisis has significantly negatively impacted on the urban poor who were already affected by economic constraints and therefore vulnerable to poor nutritional status. Although policy actions to address these issues have been in place, there is room for improvement.

Food intake and nutritional status of women and children in the surveyed households in slums and middle income areas of Colombo City are cause for concern. Both in women and children a reduction in consumption of fruits, vegetables, pulses and animal products indicate a reduction in quality. BMI data of women show that this population has both under and over nutrition. Both of which could be attributed to a poor quality diet. There were no differences between the ethnic groups in income or nutritional status of women within each area. This is an expected finding as these different ethnic groups coexist within the Colombo city as they have done for many generations and are not directly affected by the civil war. However all communities face the issues of poverty as well as the economic slowdown the country has faced for many years.

Assessment of survey data shows that the lower employment categories face the greatest hardships, which is reflected in their coping strategies. A larger proportion of the unskilled worker categories spent a high percentage of their income on food. Some had resorted to finding a second job. Coping strategies were largely through reductions food quality and quantity as well as reduction of extras, transport and use of free health care rather than paid healthcare. Analysis of coping strategies at household level, highlight a significant social cost to the society that has occurred due to financial drain. Curtailing basic necessities such as food, clothes, electricity, and transport in order to survive has a significant social impact on the growth and wellbeing of these young children. This is further compounded by the possibility of reduced maternal care due to mothers undertaking additional employment locally or overseas. The social consequences of these adjustments will have far reaching effects on this young generation.

Taken together, both qualitative and quantitative analysis of both areas revealed that major restrictions on food have been made by households, with deficient intake of both macro and micronutrient rich foods being of concern. The overall high prevalence of stunting points to long term nutritional deficiency and wasting accounts for recent inadequacy of both protein and energy in children, which is substantiated by the food intake analysis. The prevalence of stunting and underweight tended to be higher among children in slums than in middle income households. A point to note here is that, in Sri Lanka, free health care is available both at primary and tertiary level to acceptably high standards and is accessible to even the poorest of the poor. Since nutritional inadequacy is multi-factorial, effectiveness of nutrition and health based intervention is dependent on factors that go beyond what is achievable through the health care system alone.

The issues of the urban poor in Sri Lanka, are multifaceted, with deep rooted behaviours that make it difficult to successfully intervene for a total poverty alleviation target in the long term. Intervention strategies need to take a holistic approach, where food and nutritional care practices is closely combined with strategies to enhanced employment and income generation. Intervention strategies with long term goals must be initiated in parallel to short term relief support in the form of safety nets. Issues that need to be addressed when creating such safety nets are largely operational with targeting being the main concern.

School dropout due to financial difficulty, was extremely low reflecting that education is considered a priority even over food in most cases. This, together with the very high literacy rate already present in Sri Lanka will no doubt be a strong basis upon which policy changes can take place in agriculture and targeted economic development which will focus on food and nutrition security.

In conclusion, this analysis shed light on the significant negative impact faced by the slum and middle income communities as a result of the food price crisis which has been superimposed on

a background of deprivation leading to unacceptable food consumption patterns, the effects of which are reflected in their anthropometric indices.
This is cause for concern and requires immediate action in the form of short and long term intervention strategies. Our findings also provide insights into policy direction for the future to improve food security in Sri Lanka, and highlight that both short term and long term strategies need to be initiated in parallel.

Agricultural investment is the most plausible long-term strategy, and needs to go beyond expansion of agricultural area through land development and yield expansion through development of new technology in order to improve food security. Area expansion is not feasible or profitable and further increases in cultivated area would result in resource degradation. Higher yields, crop varieties that are nutrient rich and more tolerant or resistant to pests and droughts and new varieties and hybrids better suited for various agro ecological conditions will reduce risks and uncertainty and enhance sustainability in production. Increasing costs of production due to continuously rising oil prices require new cost reducing technologies. Accelerated investment in agricultural research and technological improvements is required.

Recommendations for policy to increase food security in the long term should be based on the principal that investment in human capital at the expense of economic growth in the short term will ensure food security in the long term:

1. Solutions should target affordability, availability and accessibility
2. Domestic food production and trade must be looked into with the correct balance. Trade policy has to be transparent so that the local producers' incentives are addressed. Stability to the food commodity market can be achieved through national buffer stocks.
3. More resource allocation for development of new technology for food production and utilization aimed at a steady growth in domestic production.
4. Reduction of post harvest losses in agriculture.
5. Micro level food security, through direct government intervention in the short and medium term, needs to be well coordinated to overcome the current operational issues. Food aid has to be backed by efficient stock maintenance and food surveillance
6. Food security programmes need to be whole diet targeted in order to address macro and micronutrient status. This should also account for population growth, inter sectoral and inter provincial movement of population, income growth and changes in income distribution.
7. Information generation through research and transfer to the policy makers.
8. Social issues affecting intra-household food insecurity such as alcoholism have to be addressed through social interventions and nutritional education should be further strengthened.
9. Production at household level and village or provincial level, of diverse traditional food crops should be encouraged for better nutritional security (Sri Lanka, 2009; Samaratunga; Samaratunga, 2008).
10. In addition, urban agriculture should be promoted to supplement the foods purchased. The strategies developed to promote urban agriculture should be disseminated to the public and research carried out to improve its effectiveness.

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ANNEX 1: SURVEY QUESTIONNAIRE

2009 NUTRITION SURVEY QUESTIONNAIRE

Good morning, afternoon or evening!!, My name is …….. and I am working for the Faculty of Medicine, University of Colombo. We are currently working with RUAF Foundation and IDRC for UN –Habitat to conduct a research into the effects of the global financial crisis on food security of urban households. Your household was selected for this project and we will be grateful if you could kindly allow us a few minutes to ask you some questions concerning members of your household, your food among other things. We will also measure the height of and weight of children (under 6) and women between ages 15-49. Thank you

IDENTIFICATION	
PHM Area and No.. _____	☐
PHM"s NAME	☐☐
Municipal District_____	☐☐☐
HOUSEHOLD NUMBER_____ ADDRESS & ____ ……	☐☐☐
…… ……..	☐☐
NAME OF HOUSEHOLD HEAD _____	☐☐

INTERVIEWER VISITS		
DATE (***DD/MM/YY***)	_____ (FIRST VISIT)	_____ (SECOND VISIT)
INTERVIEWER'S NAME	_____	

	TOTAL ELIGIBLE CHILDREN ☐☐

SUPERVISOR		OFFICE EDITOR	KEYED BY
NAME _____ DATE _____ ☐☐		☐☐	☐☐

SECTION 1 HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	ELIGIBILITY
	Please give names of the persons who usually live in your household starting with the head of the household	What is the relationship of (NAME) to the head of the household?*	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?	CIRCLE LINE NUMBER OF ALL CHILDREN UNDER AGE 6
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
01		☐☐	M F 1 2	YES NO 1 2	YES NO 1 2	IN YEARS ☐☐	01
02		☐☐	1 2	1 2	1 2	☐☐	02
03		☐☐	1 2	1 2	1 2	☐☐	03
04		☐☐	1 2	1 2	1 2	☐☐	04
05		☐☐	1 2	1 2	1 2	☐☐	05
06		☐☐	1 2	1 2	1 2	☐☐	06
07		☐☐	1 2	1 2	1 2	☐☐	07
08		☐☐	1 2	1 2	1 2	☐☐	08
09		☐☐	1 2	1 2	1 2	☐☐	09
10		☐☐	1 2	1 2	1 2	☐☐	10

* CODES FOR Q.3 RELATIONSHIP TO HEAD OF HOUSEHOLD:

01 = HEAD
02 = WIFE/HUSBAND/PARTNER
03 = SON OR DAUGHTER
04 = SON-IN-LAW OR DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER OR SISTER/ IN LAW
09 = CO-WIFE
10 = OTHER RELATIVE
11 = ADOPTED/FOSTER/ STEPCHILD
12 = NOT RELATED
98 = DOES NOT KNOW

LINE NO.	EDUCATION	MARITAL STATUS	PLACE OF ORIGIN	ETHNICITY	RELIGION
	What is the highest educational level of (NAME)?	What is (NAME's) current Marital Status?	What town/village does (NAME) come from? 01= Colombo District 02= out of Colombo	Which Ethnic group does (NAME) belong?	What is (NAME's) religious affiliation?
(9)	(10)	(11)	(12)	(13)	(14)
01	☐	☐	---------- ☐☐	☐☐	☐
02	☐	☐	---------- ☐☐	☐☐	☐
03	☐	☐	---------- ☐☐	☐☐	☐
04	☐	☐	---------- ☐☐	☐☐	☐
05	☐	☐	---------- ☐☐	☐☐	☐
06	☐	☐	---------- ☐☐	☐☐	☐
07	☐	☐	---------- ☐☐	☐☐	☐
08	☐	☐	---------- ☐☐	☐☐	☐
09	☐	☐	---------- ☐☐	☐☐	☐

CODE for Q10
1= No Education
2 = Primary
3= Middle school
4= Secondary (O levels)
5= Vocational/Technical
6=Post Secondary (Agric/Nursing/Teacher)
7=Tertiary(University/Polytechnic)

CODE for Q11
1= Never Married (Single)
2= Married
4= Separated
5= Divorced
6= Widowed

CODE for Q13
01= Sinhala
02= Tamil
03= Muslim/Moor/Malay
04= Burgher

CODE for Q14
1= Catholic
2= Protestant
5= Islam
7= No Religion
8= Buddhist
9 = Hindu

SECTION 2 WEIGHTS AND HEIGHT MEASUREMENT OF WOMEN

CHECK COLUMNS (8) (2) AND (7): RECORD LINE NUMBER, NAME AND AGE OF WOMEN 15-49 years

WOMEN 15-49				WEIGHT & HEIGHT MEASUREMENT - WOMEN 15-49			
LINE NO. FROM COL.(8)	**NAME** FROM COL.(2)	**AGE** FROM COL.(7)		**WEIGHT (kg)**	**HEIGHT (Cm)**		**RESULT** 1 MEASURED 2 NOT PRESENT 3 REFUSED 6 OTHER
(15)	**(16)**	**(17)**	**(18)**	**(19)**	**(20)**	**(21)**	**(22)**
☐☐		YEARS ☐☐		☐☐☐.☐	☐☐☐.☐		☐
☐☐		☐☐		☐☐☐.☐	☐☐☐.☐		☐
☐☐		☐☐		☐☐☐.☐	☐☐☐.☐		☐
☐☐		☐☐		☐☐☐.☐	☐☐☐.☐		☐
☐☐		☐☐		☐☐☐.☐	☐☐☐.☐		☐

WEIGHT AND HEIGHT MEASUREMENT OF CHILDREN

Check columns (8) (2) and (7): record line number, name, & age of children under age 6

CHILDREN UNDER AGE 6				WGT & HT OF CHILDREN BORN IN 2003 OR LATER			
LINE NO. FROM COL (8)	**NAME** **FROM COL.(2)**	**AGE** **FROM COL.(7)**	**What is (NAME)=s date of birth**? (Check Health card/ birth cert)	**WEIGHT (kg)**	**HEIGHT (cm)**	MEASURE LYING DOWN OR STAND.	**RESULT** 1 MEASURED 2 NOT PRESENT 3 REFUSED 6 OTHER
			DAY MONTH YEAR			**LY STAND** **1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	
				0 .	.	**1 2**	

TICK HERE IF CONTINUATION SHEET USE ☐

SECTION 3 HOUSEHOLDS COPING STRATEGY TO THE CRISIS

LINE NO.	EMPLOYMENT/ OCCUPATION		
	Is (NAME) currently working?	HAS (NAME) done any work in the last 12 months?	What is (NAME's) occupation (kind of work he/she mainly does? (describe job)
(23)	(24)	(25)	(26)
01	YES NO 1 2	YES NO 1 2	---------- ☐☐
02	YES NO 1 2	YES NO 1 2	---------- ☐☐
03	YES NO 1 2	YES NO 1 2	---------- ☐☐
04	YES NO 1 2	YES NO 1 2	---------- ☐☐
05	YES NO 1 2	1 2	---------- ☐☐
06	YES NO 1 2	YES NO 1 2	---------- ☐☐
07	YES NO 1 2	YES NO 1 2	---------- ☐☐
08	YES NO 1 2	YES NO 1 2	---------- ☐☐

LINE NO. (child's name can be added for clarity)	**In total how many times yesterday during the day/night did CHILD (NAME) drink (ITEM) (No of times)**					
	Plain water	**Commercial Produced Infant Formula**	**Any other milk such as tinned, powdered, or fresh animal milk?**	**other**	**Fruit juice**	**Any other liquids? Tea, coffee, fizzy drinks**
(27)	(28)	(29)	(30)	(30 a) breast milk	(31)	(32)
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						

Now I would like to ask you about the types of foods child (NAME) ate over the last 24 hours.

LINE NO. (child's name can be added for clarity)	**in total, how many <u>times</u> yesterday during the day or at night did (name) eat (item)?**					
	Food made from grains; rice/ rice flour products, wheat/ wheat flour products, local grains? Gram, kadala etc **(34)**		Pumpkin, carrots, or yellow sweet potatoes?	Any other food made from roots or tubers, e.g. potatoes, yams, mannioc, or other local roots or tubers (innala ect) ?	Any green leafy vegetables ?	Mango , papaya ?
(33)	Cereals	Pulses	(35)	(36)	(37)	(38)
01						
02						
03						
04						
05						
06						
07						
08						

LINE NO.	**in total, how many <u>times</u> yesterday during the day or at night did (name) eat (item)?**				
	other fruits & vegetables; bananas, apples, green beans, guava, avocados, tomatoes, oranges, pineapples, passion fruit?	Meat, chicken, fish (small, large, dried), liver, or eggs?	Any food made from legumes, e.g. lentils, beans, dambala, soybeans, pulses, or peanuts?	Curd, cheese, ice cream or yoghurt?	Snacks (solid/semi solid) e.g. biscuits ?
(40)	(41)	(42)	(43)	(44)	(45)
01					
02					
03					
04					
05					
06					
07					
08					

HOUSEHOLD INFORMATION (MULTIPLE RESPONSES ALLOWED)

46	How long has your household been living continuously here	Below one year……..……1 Between one and two years…… 2 Three years or more…… 3
47	Does your household own this structure (house, flat, shack), do you rent it, or do you live here without paying?	Owns…….. 1 Pays rent/lease…… 2 No rent,with consent of Owner……..3 No rent,, squatting……..4
48	Does your household own the land on which the structure (house, flat, shack) sits?	Owns……..1 Pays rent/lease…… 2 No rent,with consent of Owner……3 No rent,, squatting……4
49	What is the main source of food you consume?	Purchases…… 1 Own produces……2 Own stock…… 3 Gifts or Aid……..4 Other (specify)……5
50	Which of the following food types does your household usually eat (staple food) ?	Rice and rice flour based food… …… 1 Wheat and Wheat flour Based food……2 Other Grains and pulses …… .3 Roots and tubers ……..4
51	Has your diet and food bracket changed in the past year?	Yes…… 1 No……...2 *if no*, *skip to Q 53*
52	If yes what type of change did you notice?	Change in quantity……..1 Change in quality…… 2 Change in quantity and quality……..3 Introduce new food items…… 4
53	Compared to one year ago, are you eating the same number of meals per day?	Same……1 Less…… 2 More…… 3
54	On average, how many meals do you eat per day?	Once……..1 Twice…… 2 Three times…… 3 Four or more……4
55	Compared to one year ago, are you eating the same type of food?	Yes…… 1 No……..2

56	Did you notice any change in the prices of products in the past one year?	Yes……1 No……2 *skip to 58*
57	(If yes) With increase in food prices, how do you take care of yourself?	Got a second job……1 Growing own food…… ..2 Sending children to rural areas……3 Taking children out of school…… 4 Relying on relatives……5 Have reduced consumption of other goods……6 Other (specify)…… 7
58	How many income earners do you have in your household? (Cross check from Q 24)	……
59	Taking into consideration the number of income earners in your household, what is the total income of your household (Rs/month)?	……
60	On average, how much of your household income is spent on food?	Almost none……1 Less than half……2 About half……3 More than half……4 All……5 None, His income is all saved……6
61	Do you share food with your neighbours ?	Yes No 1 2
62	If yes, since 2007, has sharing increased?	1 2
63	Has food intake of the women of the household decreased in the past year	1 2
64	Have food items got omitted from the diet or reduced in the past year	1 2

65	The proportion of money spent on transport, health, education	Increased 1	Reduced 2
66	The proportion of money spent on food	Increased 1	Reduced 2
67	Has any member of this household lost a job in the past year ?	Yes 1	No 2
68	Loss of a middle eastern job in the last year	Yes 1	No 2
69	Is excessive intake of alcohol a problem in this household?	Yes 1	No 2
70	If yes, does it affect the money available for food	Yes 1	No 2
71	Is money spent on excessive smoking a problem in this household?	Yes 1	No 2
72	If yes, does it affect the money available for food	Yes 1	No 2