National Strategic Review of Food Security and Nutrition

Towards Zero Hunger

Research Team:

South Asia Policy and Research Institute
Institute of Policy Studies
Medical Research Institute
Hector Kobbekaduwa Agrarian Research and Training Institute
Department of Census and Statistics

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National Strategic Review of Food Security and Nutrition Towards Zero Hunger

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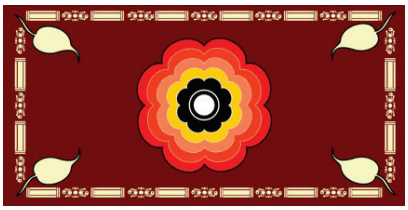

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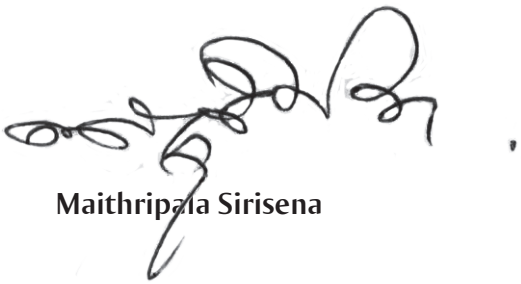
இலங்கை ஜனாதிபதி
President of Sri Lanka

It gives me great pleasure to release this message on the occasion of the launching of the Report of the National Strategic Review of Food Security & Nutrition, leading to Zero Hunger. This event is the culmination of a dedicated and arduous process led by the Government of Sri Lanka, supported by the World Food Programme, and coordinated by the South Asia Policy and Research Institute (SAPRI), towards ensuring food security and nutrition, and promoting sustainable agriculture in Sri Lanka.

Sri Lanka has endorsed the UN Sustainable Development Agenda 2030, containing 17 goals, foremost of which are Goals 1 and 2 that relate to Poverty Eradication and Zero Hunger respectively. The Government of Sri Lanka has declared 2017 as the Year of Poverty Eradication, targeting human development through the alleviation of poverty. Therefore, the release of the Report containing recommendations towards Zero Hunger is timely and significant as they will contribute to accelerating the human development process.

I extend my sincere thanks to former President Chandrika Bandaranaike Kumaratunga, Chair of SAPRI, for the dynamic leadership given to this endeavor as its Lead Convener. I also express my gratitude to the World Food Programme for the assistance provided, and thank everyone involved in the process for their contribution.



Maithripala Sirisena

3rd February 2017

Message from the Hon. Prime Minister

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இலங்கையின் பிரதம அமைச்சர்
Prime Minister of Sri Lanka

I take great pleasure in acknowledging the Report of the National Strategic Review of Food Security & Nutrition, leading to Zero Hunger.

I am pleased to extend my congratulations and appreciation to all those who participated and contributed to the Strategic Review process.

Against a background in which Sri Lanka is seeking to affirm its place within the international community, initiatives that empower human development of this nature are critical. Within this context, I note with pleasure the role played by former President Chandrika Bandaranaike Kumaratunga by assuming the responsibility of leading the Strategic Review towards a successful conclusion.

I would also like to offer my thanks to The World Food Programme for the generous support extended towards this initiative.

I am certain that the findings and recommendations of the Report will contribute immeasurably towards a greater level of development via processes such as action planning and related sectoral policy reviews and formation.

Ranil Wickremesinghe

Prime Minister

3rd February 2017

Message from Lead Convener

South Asia Policy and Research Institute

I am happy to see that the journey which began in September last year related the Strategic Review of Food Security and Nutrition in Sri Lanka leading to Zero Hunger has ended successfully and the Report of the Strategic Review is now being launched.

I am glad to have been a part of that process in the capacity of Lead Convener and follow the progress of its step-by-step approach. The most significant feature of this task was its inclusivity, the stakeholders having included the Government as well as the Non-Government at national, provincial and district levels.

The findings of the review and the recommendations that emerged will undoubtedly contribute to the national development planning and programmes in the multi-sectors of the country, leading towards achieving Zero Hunger, and, complement the national unity and reconciliation initiatives currently underway.

I deeply appreciate the patronage extended to this programme by the President and the Prime Minister of Sri Lanka and thank the world Food Programme for it support.

Chandrika Bandaranaike Kumaratunga
Chair, SAPRI and
Lead Convener of the Strategic Review

3rd February 2017

Foreword

Sustainable Development Goal 2 (SDG2) "end hunger, achieve food security and improved nutrition, and promote sustainable agriculture" must be given priority for a country to achieve its overall sustainable development objectives. SDG2 is intrinsically linked to all 17 SDG goals, globally adopted in 2015 by countries now in the process of nationalizing them. The President of Sri Lanka has declared 2017 as the Year of Alleviating Poverty, in line with SDG1.

While Sri Lanka made significant progress over the past 15 years during the Millennium Development Goal era, substantial challenges still exist. They will require, both innovation and synchronized efforts from the government, development partners and other stakeholders to address and achieve the SDGs.

A National Strategic Review of Food Security and Nutrition, leading to "Zero Hunger", was launched in September 2016 to accelerate the pace towards attaining SDG2 by 2030 in Sri Lanka. The Strategic Review was envisaged to make an expansive and inclusive study of the overall food security and nutrition situation in the country and identify key challenges to achieving Zero Hunger, including, gaps in policies and the national response; resources and institutional capacity. Following the study, recommendations were proposed for achieving SDG2 targets through integrated approaches across the economic, social and environment sectors.

The National Strategic Review was designed as an analytical, inclusive and multi-stakeholder consultative exercise to provide a comprehensive and detailed understanding of the existing food and nutrition context and challenges in Sri Lanka. The Strategic Review adds to the government's initiative to nationalize the SDGs and the programmes already underway, such as the Public Investment Programme (2017-2020), development of the four year Multi-Sector Action Plan for Nutrition (MSAPN 2017-2020), and the Food Production National Programme 2016-2018.

The review process was conducted by a research team comprising the Institute of Policy Studies (IPS), Hector Kobbekaduwa Agrarian Research and Training Institute (HARTI), Medical Research Institute (MRI) and Department of Census & Statistics (DCS), under the direction of the Lead Convener former President Chandrika Bandaranaike Kumaratunga, Chair, South Asia Policy & Research Institute (SAPRI).

In order to ensure the participation of a wide range of stakeholders in the process, an overarching Action Group was formed comprising the five pillars, (1) the government sector, represented by line ministries and including provincial and district officials, (2) the academia and professional organizations, (3) the private sector, (4) civil society and non-governmental organizations (NGOs), and (5) United Nations(UN) agencies. A multi-stakeholder group of related entities was also established as a larger forum to obtain greater inclusive views. The Strategic Review findings and the recommendations have been progressively shared and discussed, including with a High Level Committee comprising the Lead Convener, key Ministers and a cross sectorial representation of relevant stakeholders.

It is envisaged that the Strategic Review will provide a timely and meaningful contribution to the ongoing dialogue on the 2030 Agenda in Sri Lanka and the efforts underway or being planned by a multitude of actors to address the significant challenges of food security and nutrition. The research team expresses its sincere thanks to all those who provided their valuable inputs towards the development of this Strategic Review.

Geetha de Silva
Executive Director,
South Asia Policy & Research Institute

Executive Summary

National Framework for the 2030 Agenda

The 2030 Agenda for Sustainable Development was adopted by the United Nations General Assembly in September 2015. The Government of Sri Lanka pledged to support the 17 goals to be completed by 2030, with an emphasis on poverty, hunger, education, energy, inequalities, urban development, and climate change at the United Nations Sustainable Development Summit 2015 in New York. As the first action towards achieving the SDGs, the Ministry of Sustainable Development and Wildlife was established in 2015 mainly to develop and implement the roadmap towards achieving the Global Goals in Sri Lanka.

The Ministry has already launched the *National and Provincial Sustainable Development Engagement Platforms*, bringing together representation from the political sphere, administration, local government, civil society, academia, business, development agencies, women, and youth. One national platform and two provincial platforms have been completed with more provincial platforms being planned for 2017.

Furthermore, Sri Lanka's National Sustainable Development Act has been gazetted and is due to be tabled in Parliament. The proposed Sustainable Development Act will provide the necessary legal framework to establish a *National Policy and Strategy on Sustainable Development,* which will promote the integration of environmental, economic, and social factors in the making of all decisions by government, for a period of 15 years. The bill also will provide the basis for establishing a *legal and institutional framework* for implementing the 2030 Agenda through different sectoral line agencies, and other actors including civil society and private sector to facilitate *achieving national, regional, and international commitments* on sustainable development.

The Ministry has also has started to map the integrated systems thinking approach with the support of United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

In addition to the Ministry, A *Ministerial Sub-committee* was established in keeping with a memorandum submitted to the Cabinet by the President. The Ministerial Sub-Committee comprises five Cabinet Ministers and a Chief Minister of a Province and the Cabinet also granted their approval to appoint an Advisory Board to formulate the vision of the sustainable development goals for 2030.

Further, the *Presidential Secretariat has set up a new Office of Strategic Development Evaluation*, which will assess Sri Lanka's development performance and provide the President with key information on development status and prospects of SDG process in Sri Lanka.

Positioning National Food Security and Nutrition in SDG2 Agenda

1. Despite having made significant progress on several of human development and health indicators, Sri Lanka continues to struggle with respect to food security and nutrition. The Global Hunger Index (GHI) and Global Food Security Index (GFSI) rank Sri Lanka 84 out of 118 countries, and 65 out of 113 countries, respectively. Furthermore, the Global Nutrition Report suggests that Sri Lanka has among the highest wasting prevalence in the world, ranking 128 out of 130 countries. National nutritional indicators show poor nutrition status among children aged 6-59 months and women, particularly, those within reproductive age. Millennium Development Goals Country Report 2014 emphasizes that despite the significant progress towards achieving MDGs, further efforts are required to accelerate advancements on some MDGs, particularly related to food security and nutrition, to achieve the targets by 2015, and to sustain and further improve subsequent progress.

2. Poverty, with its intrinsic link to food security and nutrition, remains high in certain income and social strata despite impressive progress made over the last 20 years, leading H.E. the President of Sri Lanka to declare 2017 the Year of Alleviating Poverty. While Sri Lanka achieved significant

progress on the MDGs by lowering poverty head count ratio from 26.1 percent in 1990 to 6.7 percent in 2012-13, reaching the MDG target of halving the poverty levels well before the 2015 deadline and achieving the status of Middle Income Country, certain remaining and emerging concerns such as malnutrition, low agricultural productivity, and climatic shocks and erratic weather trends show no sign of abating, presenting a constant threat to poverty, food security and nutrition gains.

3. H. E. President Maithripala Sirisena launched the Government's Sustainable Era Initiative on 2nd January 2017. The plan has been titled as *Thirasara Yugayaka Thevasara Arambuma*. National and local governments have a major role to play to ensure that Sri Lanka successfully achieves the Sustainable Development Goal 2 (end hunger, achieve food security and improved nutrition, and promote sustainable agriculture) by 2030, including to ensure that policies and action plans are properly prioritised, implemented, resourced, monitored and evaluated. As made clear in this National Strategic Review, however, in order to achieve the SDG2 targets leading to Zero Hunger (Wickramasinghe, 2014; Francesco, et al., 2015) the government must design a properly planned, multi-sectoral and integrated approach for implementation, and an efficient monitoring and evaluation framework with the cooperation of a wide range of stakeholders, including the non-governmental organizations, civil society, the private sector as well as the population.

4. In this context, the major objectives of the National Strategic Review are to: analyse the food security and nutrition situation of the country; evaluate the policy and programmatic responses aimed at improving food security and nutrition; identify the gaps in accelerating progress towards SDG2 and finally, to provide key recommendations to all stakeholders for consideration and action.

5. The next section discusses the recent progress of food and nutrition security in Sri Lanka followed by a discussion on major remaining and emerging concerns that hinder the progress towards achieving food security and nutrition targets. The final section gives policy and strategic level recommendations that are further elaborated in the full report.

Recent progress of food security and nutrition situation in Sri Lanka

6. *Food security* is achieved when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. This definition by the Food and Agriculture Organization (FAO) highlights the multi-dimensional nature of food security and includes food availability, access, food use, and stability.

7. *Food Availability:* Domestic food availability in Sri Lanka is dependent on local production and the import of crop, livestock, and fish products. National-level food availability in Sri Lanka is currently not of great concern because it has been on the rise due to increased domestic food production and importation. At present, 80 percent of Sri Lanka's annual food requirement is produced domestically and 20 percent is imported.

8. *Domestic Food Production:* Sri Lanka is nearly self-sufficient in rice, the staple diet. Local production of other main supplementary food items such as vegetables and green leaves, pulses (except dhal and chick peas), root crops (except potato), spices and fruits exceed 70 percent of total availability. Fish and poultry are the major animal protein sources of the Sri Lankan diet; self-sufficiency rates of animal protein products exceed 97 percent except for processed products such as dried fish, canned fish, and powdered milk. Imported canned fish along with growing inland fish products are popular in inland areas which have little access to fresh fish. Local production of poultry products that include chicken and eggs has increased rapidly during the last few decades due to the modernization of the sector from a cottage industry to a more commercialized one, providing significantly higher self-sufficiency.

9. *Food Imports:* The staple food (rice) and other supplementary foods are normally imported when they are in short domestic supply due to different crises (e.g., droughts, floods, pest and

disease attacks, etc.). Although food imports have been increasing in absolute terms, their share in total imports and total exports has been slightly declining or has remained constant in recent years. While the share of agricultural exports in total exports was 25 percent, food imports - as a percentage of total exports - remains around 15 percent, which means the total value of food imports is sufficiently covered by the value of agricultural exports without putting much pressure on the balance of payments.

10. *Access to Food:* The availability of adequate food at the national level does not necessarily ensure economic and physical access to food at the household level. Per capita income has registered substantial increases over the last ten years or so, increasing threefold from Rs. 124,862 in 2000 to Rs. 533,398 in 2014 at current prices. This, along with the long term downward trend of overall poverty levels, gives an indication of improved economic access to food. Road networks in Sri Lanka have significantly expanded during the last ten years, improving the physical access to markets by producers and to food by households. The total number of road kilometres has increased by approximately 19 percent from 26,351 km in 2005 to 31,280 km in 2015.

11. *Nutrition:* Child and maternal nutrition status has shown some progress over time. The stunted and underweight population among children under 5 declined from 21.2 percent to 13.1 percent and 27.3 to 23.5 percent respectively during the period 1995/96 to 2012. Low birth weight declined from 21 percent in 1993 to 18 percent in 2012. Anaemia in children has declined from 25.2 percent in 2009/10, to 15.1 percent in 2012. The combined effect of improved availability, access to food and utilization along with the continuous progress in health services and Water and Sanitation and Hygiene (WASH) programmes is reflected in enhanced nutrition levels at the national level.

12. Despite the recent progress, food and nutrition insecurity outcomes are reflected in major immediate concerns -- high levels and disparity of malnutrition and micronutrient deficiencies. The causes for the above immediate concerns are many and could be either current or emerging. These concerns include yield stagnation, rising food prices, income inequality, poor infrastructure, high informal sector labour force, gender inequality, land fragmentation and degradation, urbanization, population aging and climate change.

Current Concerns

13. *Malnutrition:* The national nutrition and micronutrient survey (2012) of the Medical Research Institute (MRI) indicates that wasting has increased from 11.7 percent in 2009 to 19.6 percent in 2012, indicating a serious public nutrition situation according to the WHO global benchmark. With a prevalence of 19.6 percent, Sri Lanka is one of the highest wasting prevalence in the world, ranking 128 out of 130 countries. The high levels of acute malnutrition were found across the 25 districts surveyed in 2012, ranging between 14-35 percent. In addition, about a quarter of the children 6-59 months are underweight. Low Birth Weight (LBW) (birth weight < 2500 g) rates remain stagnant over the last decade, with almost 1 in 5 (18 percent) new borns in Sri Lanka having low birth weight, indicating a vicious cycle of malnutrition and the need for improved maternal nutrition. Fifteen percent of women 18-59 years were found too thin for their height and almost 25% of women were found to be overweight, with 7% of women obese. Further, in 2015, eighteen percent of pregnant women were found with Mid Upper Arm Circumference (MUAC) below 23 cm, indicating a poor maternal nutrition situation. The challenge is not just to ensure food security and nutrition for an estimated 5.2 million people currently undernourished, but also to feed the additional 2.4 million people expected to inhabit the island by 2050.

14. *Disparity in Malnutrition*: Severe regional disparity exists in the prevalence of malnutrition. Stunting among the poorest quintile (18 percent) is two times higher than the wealthiest quintile (9 percent) and ranges from 23.8 percent to 6.8 percent between districts. The level of stunting in the estate sector children (Nuwara Eliya: 23.8 percent, Badulla: 22.3%) is nearly three times higher than in urban areas (8 percent in Colombo). The districts of Kilinochchi (34.9 percent) and Monaragala

(28.8 percent) show the highest wasting rates. The highest prevalence of low birth weight (LBW) is in the estate / plantation sector (Nuwara Eliya, Badulla, and Ratnapura Districts) where access to and utilization of health services between the estate sector and the rest of the country shows marked disparity. Overall, previously war-affected districts, the estate sector, and certain farming areas such as Northern Mixed and South-eastern Rain-fed represent the worst levels of undernutrition.

15. *Micronutrient Deficiency*: Micronutrient deficiencies remain pervasive in Sri Lanka, with the average prevalence of anaemia in children aged 6-59 months and women of reproductive age found at 15.1 percent and 26 percent respectively; 50 percent of this is attributed to iron deficiency. The highest prevalence of anaemia (34 percent) is found during 6-11 months of age and then the second year of life (24 percent). In a recent nutrition survey (2015), 31.8 percent of women were found to be anaemic. Other micronutrient deficiencies are also a significant concern, especially Vitamin A and calcium.

16. *Yield Stagnation:* The yield levels of domestically grown food crops, including rice, have stagnated during recent times. Yield levels are unimpressive even by developing country standards. For example, only sorghum and cowpea have shown over 5 percent average yield growth, while rice and black gram have had negative yield growth during the last 5 years primarily due to a lack of investments in research and development. This yield stagnation has restricted the potential of increasing domestic food supply in the country. Domestic food production has also been stagnant in recent years along with yield stagnation. With the present levels of stagnation and low yield increases, Sri Lanka will not be able to cope with its national requirement, which is rising constantly given the growing population and real per capita income, let alone the SDG target of doubling agricultural productivity.

17. *Rising Food Prices:* The nominal prices of all food commodities show an increasing trend and this is attributable, on the demand side, to increasing food demand given the growing population and income, shift of consumer preference, and the net taxation of the food sector. On the supply side, fluctuations in domestic production as a result of erratic weather and haphazard changes of import duties and non-tariff barriers have been sources of short run price variations. The increasing cost of production has also been responsible for price rises in certain commodities. This food price increase affects the poor who are at risk when they are not protected from price increases. Higher food prices may lead poor households to limit their food consumption and shift to less nutritious diets, with negative effects on health and nutrition.

18. *Income Inequality:* The pattern of income distribution also determines to a significant extent the economic access to sufficient food at household level. Despite very high growth rates of household income levels, the distribution of income has not been equitable as shown in recent times. The data indicate that more than half of total household income in Sri Lanka is shared among only 20 percent of the total households of the country which is an income pattern that has remained unchanged from 1990/91 until now. Apart from that, income disparities are strongly evident between sectors, across provinces, particularly between the Western Province and other provinces, including a marked divide between the previously war-affected districts and the rest of the country. Also showing a similar trend, the affordability of a nutritious diet varies widely from 22 percent to 59 percent geographically.

19. *Poor Road and Marketing Infrastructure:* Poor infrastructure in rural areas is also a severe constraint to farmers for obtaining their inputs for marketing their produce, causing low productivity, depressed agricultural income, rural poverty, and food insecurity. There is significant district inequality in road density, where the density is relatively lower when moving beyond the Western Province. The Eastern Province; Mullaitivu and Mannar Districts in the Northern Province; and Monaragala District in the Uva Province, have serious road accessibility problems. Moreover, storage facilities and food processing capacities, including milling and refrigeration and canning facilities have not improved much over the years, restricting the access to nutritious food.

20. *High Informal Sector Labour Force*: Over 60 percent of employed persons are in the informal sector with little or no social security benefits (e.g., retirement and maternity benefits, sick leave, among others). The share of informal sector workers, especially women, is particularly high in the agriculture sector. Increasing informalisation of work is being seen in many formal sectors primarily due to the weaknesses of current regulations governing the labour market. Only a small share of informal sector workers has access to retirement schemes.

21. *Gender Inequality and Inequity* remain an intrinsic issue in the country due to their role in driving the prevalence of malnutrition and food insecurity. According to the Gender Gap Report 2016, Sri Lanka's gender equality ranking declined from 84 in 2015 to 100 in 2016 out of 144 countries, showing an increasing gender gap. The report highlights that despite high educational attainment and public health by Sri Lankan women, low economic and political participation are major contributing factors for declining gender equality.

Emerging Concerns

22. *Land Fragmentation and Degradation:* Out of the total land mass of Sri Lanka, only 50 percent is arable due to unsuitable terrain, inland water bodies, and forest conservations. The expanding population has exerted much pressure on the landmass, limiting its per capita availability. Increasing national production has been constrained by the lack of arable lands. Moreover, population growth and urbanization, land fragmentation, and consequent small-holder cultivation, is likely to have negative effects on productivity and is becoming a major concern in Sri Lanka. The average size of holdings less than 8 ha was 1.1 ha in 1962, and 0.8 ha in 1982. This figure has further decreased to 0.48 ha in 2002 based on the Agricultural Census 2002 which is the latest agricultural census which occurs once every 20 years. Also, the imperfections in the land market, land policy, and regulations perpetuate some problems relating to agricultural land utilization such as soil degradation, which affects food availability.

23. *Urbanization:* Urbanization, modern lifestyles, and time scarcity have contributed to an increase in food consumption outside of homes in Sri Lanka. A growing number of women employed outside their homes; the increased number of two-income households; higher incomes; more affordable and convenient fast-food outlets; and increased advertising and promotion by large foodservice chains tend to influence the way in which household food habits change. These have created unnecessary demands on unhealthy and less nutritious foods, alcohol, and cigarettes. The impact of changing food habits is reflected in increased obesity, overweight, and non-communicable diseases (NCD), such as high blood pressure and diabetes, particularly in the more educated, urban, high income and high social strata of society. Recent studies have found obesity levels to be between 14-16 percent and overweight to be over 28 percent. Another issue related to urbanization is labour outmigration and its negative impact on agriculture productivity, cost of production and thereby, food security and nutrition.

24. *Population Ageing:* As highlighted in the MDG country report 2014, the share of the population over the age of 60 will double and become one fourth of the total population by 2041. Population ageing raises concerns about the ability of the social protection system to cater to the needs of the growing number of elderly persons. Due to female longevity relative to that of men, there will be a larger proportion of aged women. This adds to existing gender-related concerns because many women are less likely to have adequate social protection due to the continuing low female labour force participation rate in the country.

25. *Climate Change:* While farmers have been in a continuous struggle to adapt to frequent climate shocks, predictions on the changes in Sri Lanka's climate parameters and its likely scenario are not conducive for positive agriculture growth in the country. Temperatures are continuously increasing, while the distribution and the variability of rainfall has drastically been changing, negatively impacting food security. Increased intensity and frequency of extreme weather events such as droughts and floods have also led to crop losses due to moisture stress and excess water. The projected drop in rice yields is higher for the Yala Season in low country dry and intermediate

zones which are predominantly agricultural (up to 6.5 percent drop by 2030). The effects of erratic rainfall and climate change are undermining the resilience of affected communities, while heightening the need for further investment and strengthening of nationwide emergency preparedness and response mechanisms.

26. *Food Safety:* Given the trends in urbanization, lifestyle change, and changes in food purchasing habits, people - especially in urban areas - will tend to buy more convenient food products and traditional fast foods (such as take-aways) from catering enterprises and street food vendors. Many such food products are considered to have additives such as artificial colours and preservatives that exceed permitted levels. Even though Sri Lanka has food safety regulations on food preparation (colouring, sweetness, iodized edible salt content, etc.), food packaging and labelling, the extent to which these regulations are implemented and enforced is questionable. Advertisements that promote fast food, particularly targeted at children, tend to create an unnecessary supply-driven demand for those unhealthy foods.

Gaps in Policy and Programmatic Response

27. Historically, actions and strategies focused on ensuring food security and nutrition in Sri Lanka were handled separately through the National Agricultural Policy of the Ministry of Agriculture, the National Nutrition Policy of the Ministry of Health and Indigenous Medicine, and several other policy documents of various ministries that are directly and indirectly related to food security and nutrition. Despite the multitude of different policies and programmes being implemented, the food security and nutrition objectives of the country are yet to be achieved due to the fragmented nature of the approach, insufficient coordination among the institutions and the absence of a central theme. Moreover, uncertain policy environments, conflicting policy objectives, extreme political ideologies and lack of financial and human resources could be considered as the gaps in policy and programmatic responses for addressing the current and emerging issues.

28. Currently, Government is in the process of developing national targets for all SDGs, coordinated by the Ministry of Sustainable Development and Wildlife. The World Health Assembly has set the following targets in line with Target 2.2, end all forms of malnutrition, to be achieved by 2025: 40% reduction in the number of children under 5 who are stunted; 50% reduction of anaemia in women of reproductive age; 30% reduction in low birth weight; no increase in childhood overweight; reduce and maintain childhood wasting to less than 5%.

Key Recommendations

The following list of specific policy and strategy recommendations presented are based on a large volume of information and consensual viewpoints collected from a variety of stakeholders involved in the extensive consultation process, analysed using the most recent and available research[1].

1. Adopt a cohesive sustainable agricultural approach by swiftly aligning the current agricultural practices and policies with the other food security and nutrition related policies to achieve the targets of SDG2 and to better face the serious contextual and climatic challenges ahead.
2. Undertake innovative and integrated strategies to address stagnant levels of acute malnutrition and low birth weight levels, along with micronutrient deficiencies, and trends of increasing levels of overweight and obesity linked to diet-related chronic diseases.
3. Address the major gaps and weaknesses in current social protection systems and existing safety-net programmes to ensure the poorest and most vulnerable groups, especially women, children, and elderly, are targeted and institutional coordination is improved.
4. Embrace public-private partnership approaches to create a facilitatory environment, especially to improve healthy food preferences and efficient and stable supply chains.
5. Strengthen public investment allocations for socially profitable interventions, particularly agricultural infrastructure development and agricultural research and extension while transitioning from output and input price subsidies.
6. Develop a national strategic food reserve to ensure the food availability and guarantee buffer stocks of essential commodities to stabilize prices for optimal consumption and sustenance of nutrition security.
7. Prioritize the implementation of the national climate adaptation plan, community-based resilience building, and emergency preparedness, together with livelihood diversification initiatives to better withstand repeated natural disasters and impacts of climate change.
8. Strengthen existing indemnity-based insurance programmes by focusing on improved affordability, accessibility, and trust of such programmes and promote index-based agricultural insurance programmes.

[1] Refer to table 12 for detailed Policy Recommendations including Strategies proposed to achieve the targets of Food Security and Nutrition in Sri Lanka

Chapter 1

Introduction

1.1. National Food Security and Nutrition in SDG2 Agenda

At the United Nations Sustainable Development Summit in September 2015, world leaders adopted the "2030 Agenda for Sustainable Development" which includes a set of 17 Sustainable Development Goals (SDGs) and 169 targets to be achieved by 2030. The SDGs and associated targets were built upon the achievements of the Millennium Development Goals (MDGs) that the world committed to achieve by the end of 2015 and will guide the decisions that will be taken on development in the world over the next 15 years. The MDGs, adopted in 2000, aimed at 8 goals that included reducing poverty and hunger; disease; gender inequality; child mortality; and improving environmental sustainability; maternal health; universal primary education; and partnerships for development.

Considerable progress has been made on the MDGs in most of the countries including Sri Lanka. According to the "MDG Country Report 2014 - Sri Lanka", only 2 indicators out of a total of 26 indicators were off track (Nanayakkara, 2016). The proportion of population below the minimum level of dietary energy consumption, which is the most alarming off-track target, is directly related to food security and nutrition. It declined only marginally from the base year value of 51.3% in 1995/96 to 47.8% in 2012/13, which is significantly off the actual target of half of the base year value (26.2%) by 2015. Similarly, the share of poorest quintile in national consumption only declined from 8.9% in 1990/91 to 7.2% in 2012/13, indicating the need for more focus on further improvements (UNDP, 2015). Furthermore, there are still disparities among geographical regions and various socio-economic groups with pockets of poverty and food and nutrition insecurity, which need to be addressed in a more comprehensive framework beyond the MDG 2015 agenda.

Accordingly, Sri Lanka has done commendably well on most human development indicators. The health indicators have shown significant improvement, mainly due to universal free access to health services and governmental policies to strengthen the country's public healthcare system over the years. It has struggled, however, with nutrition indicators, particularly in relation to the nutritional status of children and women. The National Nutrition and Micronutrient Survey (2012) of the Medical Research Institute (MRI) indicated that wasting increased from 11.7 in 2009 to 19.6 in 2012, highlighting a critical public nutrition situation according to the World Health Organization benchmark. Based on this figure, Sri Lanka was ranked as having the third highest prevalence rate of wasting in the world (IFPRI, 2016). Furthermore, the prevalence of anaemia and the rate of low birth weight have stagnated in recent years. The food security situation in the country also has not achieved much progress, as depicted by Global Hunger Index (GHI) and Global Food Security Index (GFSI), which rank Sri Lanka at 84 out of 118 countries and 65 out of 113 countries in 2016.

Past policies and initiatives have not been very effective in terms of ensuring food and nutrition security due to lack of a multi-sectoral and holistic approach that integrate all sectors alike, including agriculture, health, social protection, among others. For example, the role of sustainable agriculture was not given sufficient priority in formulation of policies and strategies related to food security and nutrition. This is clearly visible in the looming issues that include productivity stagnation, the lack of investments on research and development and infrastructure, the high cost of nutritious food, lack of product diversification, and inefficient market linkages. Moreover, there are certain cross-cutting issues such as gender inequality, informalisation of employment, climate change, poor water quality and sanitation, and urbanization, which need increased attention in ensuring food security and nutrition. This substantiates the need for an integrated approach that goes beyond the MDGs, capturing a wider spectrum of economic, social, and environmental dimensions (IPS, 2016).

While the focus of MDGs was primarily to strengthen human development, the SDGs go beyond this. Food security and nutrition were key topics of discussion in the SDG framework and sustainable agriculture is viewed as the central element of attaining food security and nutrition under the SDG Goal

2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. The SDGs encompass the need for both nutrient sufficiency and diet quality in Goal 2, necessary in the short- and long-term to improve food security and to ensure good nutrition. This requires efforts to enhance access to healthy diets through sustainable agriculture; improved knowledge for healthy food preferences; stronger resilience of food systems to economic, climatic, and human-made shocks; and remediation of food-borne threats to consumers (IPS, 2016).

While the government has a major role to ensure that Sri Lanka successfully achieves the SDGs, including SDG2 by 2030, the government cannot do it without the cooperation of other stakeholders, including community members. This emphasizes the centrality of a multi-sectoral approach to achieve SDG2 targets on food security, nutrition, and sustainable agriculture.

In this context, this Strategic Review : analysed the current food security and nutrition situation in Sri Lanka and its inter-linkages with sustainable agriculture; reviewed current responses underway; and identified gaps and recommendations based on short-, medium-, and long-term perspectives.

1.2. Objectives

- To conduct a joint, comprehensive analysis of the food security, nutrition status, and sustainable agriculture and the targets of SDG2;
- To identify the food security and nutrition goals along with sustainable agriculture targets that are implied or established in national plans to facilitate progress toward SDG2 and Zero Hunger;
- To determine the progress that policies and programmes aimed at improving food security and nutrition have made so far and to identify any gaps in the response, resource availability, and institutional capacity;
- To discuss and prioritize actions that will be required to meet response gaps and accelerate progress toward Zero Hunger and finally, to provide some broad recommendations.

1.3. Strategic Review Methodology

1.3.1. Key Steps of the Strategic Review Process

The Strategic Review was an analytical and multi-stakeholder consultative exercise that: provided a comprehensive and detailed understanding of the food security and nutrition status of the country; identified key challenges to achieve Zero Hunger, including gaps in policies and the national response; outlined constraints relating to resources and institutional capacity; and proposed actionable areas where partners can better support the country to make significant progress toward achieving SDG2.

The review was processed in four major steps: (1) Analysis of the food security and nutrition situation; (2) Identification of gaps and issues in ensuring food and nutrition security; (3) Evaluation of the national policy and programmatic response; and (4) Recommendations to improve food security, nutrition, and sustainable agriculture.

A participatory and consultative approach that comprised multi-sectoral consultation, desk research, and field research was adopted throughout the strategic review process. Step 1 analysed the main trends and problems related to the food security and nutrition situation in Sri Lanka based on a set of selected indicators and followed by an evaluation of the causes of the problems. Information for this analysis was based mainly on a literature review and on secondary data sources. Step 2 identified the remaining and emerging gaps in food security, nutrition, and sustainable agriculture that hinder the achievements of SDG2. Step 3 evaluated the main national programmes and policies that have been implemented by different institutions to achieve food security, nutrition, and sustainable agriculture outcomes. This step primarily utilised the data and information from Key Informant Interviews (KIIs), consultations, and the review of national policy documents, programme frameworks, and financial reports. Step 4 involved the detailing of policy recommendations.

1.3.2. Data Collection

Data and information needed for the Strategic Review process were collected using different data collection tools that included consultation; desk research and key informant interviews. Consultations were done at two levels. Consultations were conducted by the Lead Convener, former President Madame Chandrika Bandaranaike Kumaratunga, through Multi-Stakeholder and Action Group meetings, and a High Level Committee. The Multi-Stakeholder group included central, provincial, district, and divisional level government representatives; non-governmental and civil society organizations; members of academia and the private sector; United Nations agencies; multilateral financial institutions; national experts; and donors. The Action Group was composed of the Strategic Review research team, assigned leads from each of the five main pillars (Government, UN, Civil Society, Academia and Private Sector); and members from these various institutions and entities. During these consultations, the Action Group directed the Strategic Review process to ensure that the objectives of the review were consistent with the 2030 Agenda for Sustainable Development, the Strategic Framework for Nutrition, and other existing or foreseeable national initiatives, plans, and frameworks pertaining to food security, nutrition, and sustainable agriculture.

A literature review was done to extract information from various types of documents, both published and unpublished. Documents included scientific reports, books, journal articles, working papers, research reports, web-based publications, national policy documents, programme frameworks, national evaluations, financial reports and budgets, funding reports, annual reports, monitoring reports, workshop proceedings, and other documents related to food and nutrition security in Sri Lanka. Both quantitative and descriptive information were collected. The research team used the desk research to identify the most important indicators to be used in the analysis for the Strategic Review. Only authenticated information from national surveys and major data-gathering operations were used to compute the required indicators. The data required for the indicators were collected from national surveys conducted by the Department of Census and Statistics (DCS), such as Household Income and Expenditure Survey (HIES), Labour Force Survey (LFS), Agricultural Census and Population Census, among others, and official publications of the Department of Agriculture, HARTI, and MRI. Other sources of information were considered from the Ministry of Health, Central Bank of Sri Lanka, Family Health Bureau (FHB) and Food and Agricultural Organization of the United Nations (FAO).

Field research was conducted in the form of Key Informant Interviews (KIIs) using semi-structured questionnaires. The selection of the key informants was based on the desk research and comprised representatives from most of the state, non-governmental, academic, community-based, and private institutions who are working in the fields of food security, nutrition and sustainable agriculture.

1.3.3. Conceptual Framework

Definitions of food security have been evolving rapidly from the initial form adopted at the World Food Summit of 1974 as "availability at all times of adequate world food supplies for basic food stuff to offset fluctuations in production and prices" (UN, 1975). This original macro-based definition has evolved over time to include micro-level dimensions of food accessibility and utilization as well. At present, the most widely used definition reads: 'food security exists when all people at all times, have physical, social, and economic access to sufficient, safe, and nutritious food, which meets their dietary needs and food preferences for an active and healthy life (FAO, 2003). This definition provides the basis for the four pillars of food security widely adopted today: *availability* at national level, *accessibility* and utilization at the household level, and the *stability* at all levels.

Food security is linked closely with malnutrition and is often one of the main underlying causes. Therefore, this Review uses a conceptual framework that has been developed based on the UNICEF conceptual framework of malnutrition (UNICEF, 1990) and the FAO food security concepts (FAO, 2003) as illustrated in Figure 1. In this model, malnutrition is viewed as one important dimension of a larger development problem that stretches across multiple sectors and social, political, economic, and cultural institutions.

Child and maternal malnutrition are outcomes of food and nutrition insecurity and have several causal factors. Therefore, solving such problems requires a proper understanding of causal factors. *Inadequate dietary intake* is often the immediate cause of undernutrition that could increase the likelihood of illness, loss of appetite, poor absorption, and worsened undernutrition. Dietary intake has its linkages with the four key food security pillars; 1. Food availability: the amount of food physically available in the country (macro level) through domestic food production and food imports; 2. Food Access: the physical (e.g. road networks and market infrastructure) and economic (e.g. household income and food prices) ability of a household to acquire adequate amounts of food from what is available to them through domestic market purchases[2] and transfer/aids; 3. Food utilization: proper use of accessible food by households to absorb correct amounts of nutrients, which is determined by the socio-cultural settings that include food preferences, habits, cultural practices, etc.); and 4. Stability of all above aspects that ensure food security and adequate nutrition at all times.

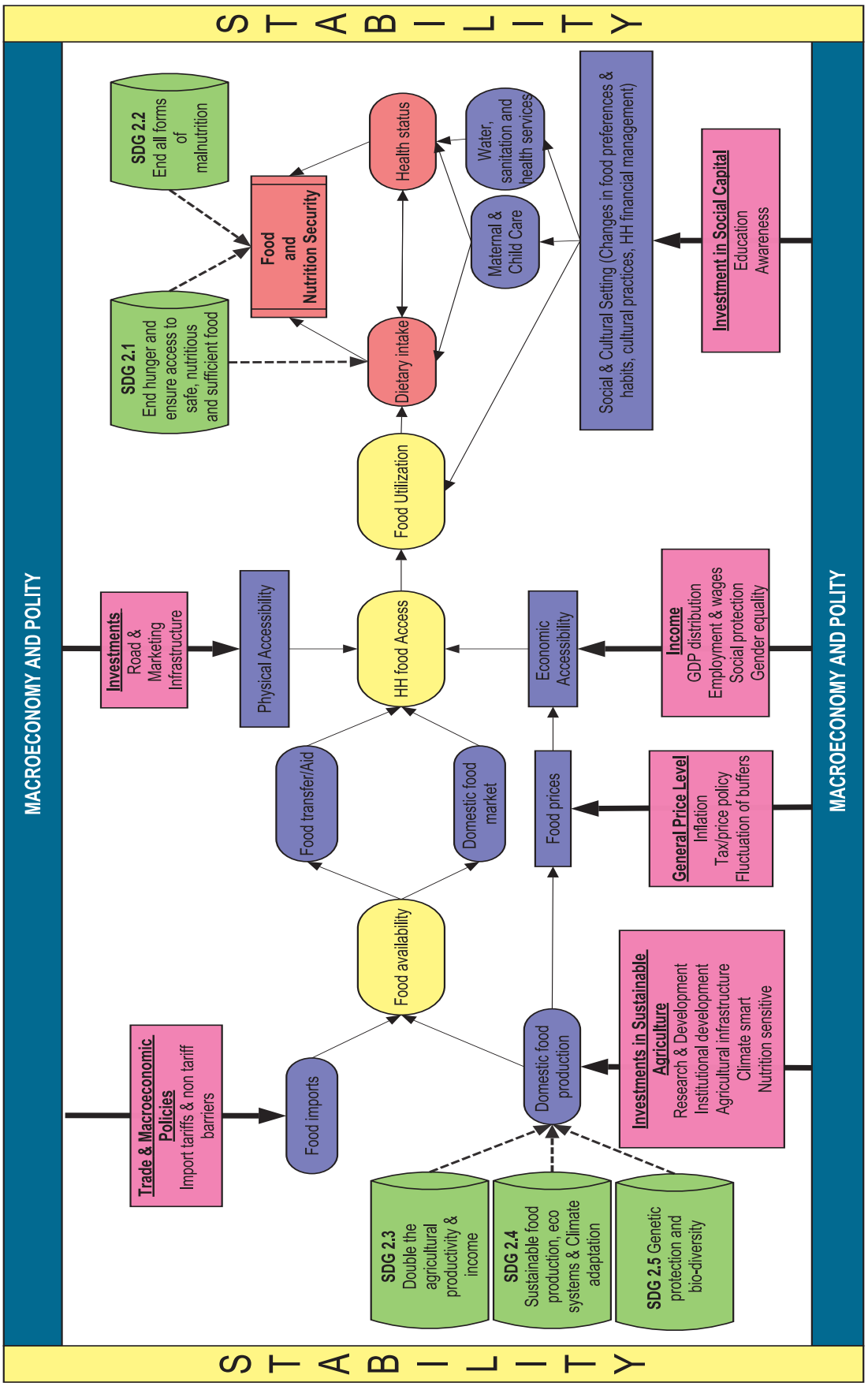
Other than the imperfections in the above different factors that affect dietary intake, there are some other *underlying* causes of malnutrition such as inadequate care for mothers and children, and inadequate access to health and environment services (water and sanitation). All these causes are determined by the socio-economic resources available to the household that include, socio-economic status (income, wealth), educational attainment, type of employment, gender roles within the household and community, nutrition knowledge, attitude and practices, and cultural norms and beliefs (IPS, 2016). These factors combined are rooted in the availability of various forms of resources to the household, including human, social, natural, physical, and financial resources, which are determined by the macro-economic situation and polity of the country. SDG 2 has several avenues at various critical points in the current framework to serve the purpose of ensuring food security, nutrition, and sustainable agriculture.

Solving the immediate causes is often done by short-term measures, such as giving nutrition supplements. Changes in the underlying causes are more complex, requiring more time with medium and longer-term strategies. Changes in basic causes are the most complex and require much longer time for resolution.

Following the above framework, the Review analyses the current situation of food security and nutrition and the responses by the different stakeholders in order to examine the gaps. It is followed by a discussion on short-, medium-, and long-term recommendations to ensure food security and nutrition situation of the country.

[2] Own production might come here for certain households.

Figure 1 : Conceptual Framework



Chapter 2

Recent Progress of Food Security and Nutrition Status in Sri Lanka

2.1. Domestic Food Production and Food Imports

Existing data indicate that domestic food production has a positive trend, with Sri Lanka having achieved near self-sufficiency in several of the food commodities, mainly rice and vegetables. The data shows that Sri Lanka is well-positioned to import the remaining required foods, given agricultural export values sufficiently cover food import value without putting much pressure on the country's balance of payments.

Domestic food availability in Sri Lanka is dependent on local production and imports of food crops, livestock products, and fish. Table 1 shows the average national food supply in Sri Lanka in 2014 (DCS, 2014). Domestic agriculture provides more than 80 percent of Sri Lanka's food requirement. Rice is the staple diet item of Sri Lankans. Other food crops such as pulses, roots and tuber crops, vegetables and green leaves, condiments, and fruits play a supplementary role.

Table 1 : Food availability in Sri Lanka in 2014

Items	Production		Gross Imports		*Available Supply ('000mt)	**Food Net ('000mt)	Food (g/ day)
	Quantity ('000mt)	% supply	Quantity ('000mt)	% supply			
Cereals	4,835.36	0.9	522.03	9.7	5,356.79	3,477.31	469.37
Roots, Tubers & Other Starchy Food	421.87	77.4	123.2	22.6	545.07	411.61	54.93
Sugar	54.86	9.3	538.97	90.9	592.90	556.48	75.11
Pulses & Nuts	69.02	30.0	161.23	70.0	230.25	219.89	29.68
Vegetable	1,055.71	86.4	184.26	15.1	1,221.35	1,109.00	149.70
Soya	4.16	90.4	0.48	10.4	4.60	4.60	0.62
Fruits	609.81	94.8	62.48	9.7	643.14	631.93	85.3
Meat	162.05	98.3	2.77	1.7	164.82	164.82	22.25
Eggs	92.81	100.0	0	0.0	92.81	91.14	12.30
Fish (i) Fresh	512.84	101.1	15.84	3.1	507.32	200.34	27.04
(ii) Dried & Salted	68.2	64.5	37.61	35.5	105.81	105.81	14.28
(iii) Tinned Fish	1.12	4.9	21.84	95.1	22.96	22.96	3.10
Milk (i) Fresh	278.01	100.0	0	0.0	278.01	179.58	24.24
(ii) Whole Dried	11.61	11.4	89.91	88.3	101.85	101.23	13.66
(iii) Condensed	7.34	99.2	0.02	0.3	7.40	7.40	1.00
(iv) Milk Food	10.48	99.7	0.03	0.3	10.51	10.51	1.42
Oil & Fats	939.42	102.4	18.54	2.0	917.54	755.15	101.92
Total	**9,134.67**	**84.6**	**1,779.21**	**16.5**	**10,803.13**	**8,049.76**	**1,085.92**

* (Production + Imports) - (Change in Stocks + Exports) ** Quantities for Seed, Animal Feed, Waste, processing & Manufacturing are excluded

Source: Food Balance Sheets (2014), Department of Census and Statistics of Sri Lanka

Sri Lanka is nearly self-sufficient in rice and the local production of other main food sources: vegetables and green leaves, pulses (except dhal and chick pea), root crops (except potato), spices and fruits, exceed 70 percent of the total availability. Pulses play a considerable role in the Sri Lankan diet as they provide protein to most of the low-income strata who are deprived of expensive animal protein sources. Sri Lanka produces a variety of pulses that include mung bean, cowpea, black gram and soybean.

Fish and poultry are the major animal protein sources of the Sri Lankan diet. Domestic production of animal protein products exceed 98 percent, except for processed products such as dried fish, canned fish, and powdered milk. Sri Lanka is a net exporter of fish while local fish production comes from both marine sources (88 percent) and inland fisheries (12 percent). Imported canned fish, along with growing inland fish products, are popular in inland areas with little access to fresh fish. Local production of poultry products that include chicken and eggs has increased rapidly during the last few decades due to the modernization of the sector from a cottage industry to a more commercialized one with a significantly higher level of self-sufficiency (Senaratne, et al., 2015).

When main agricultural commodities are in short supply, causing an increase in retail prices, the government augments supply using imports to meet the domestic market demand and to stabilize prices. Rice is imported to meet shortfalls in local production due to different crises (e.g., droughts, floods, pest and disease attacks, etc.) and sometimes to meet the demand from tourist hotels, restaurants, and affluent consumers for expensive and quality varieties such as Basmati. Moreover, significant financial resources are spent on importing a few supplementary foods items that are not locally produced in sufficient quantities, such as wheat, sugar, dhal, potatoes, powdered milk, onions, and chillies. Smaller quantities of fresh vegetables such as orange, grapes, mandarins, and apples are also imported to Sri Lanka each year (Weerahewa, et al., 2015).

Wheat is the biggest imported food item followed by sugar, milk products, and fish in terms of value. These four items account for 65 percent of the total food import budget of Rs. 220,828 million in 2015, generating a significant burden to the local economy. Wheat flour products that include bread are the major substitute for the staple food, rice. Since wheat is not cultivated in Sri Lanka, the country spends a significant amount on wheat flour imports (Rs. 44,994 million). The import value of sugar amounts to Rs. 34,164 million. Sri Lanka relies heavily on imported milk powder (Rs. 34,088 million) to meet its growing consumer demand due to an insignificant amount of local production. A large amount of foreign exchange is spent annually on the import of dried and canned fish as well. The annual value of imported fish products exceeded Rs. 29,000 million in 2015 (CBSL, 2016). Chicken is also imported to overcome the occasional shortfalls in the country (Weerahewa, et al., 2015).

Although food imports have been increasing in absolute terms, their share in total available supply has been declining. Also, the share of food imports in total imports and total exports has been slightly declining or constant in recent years. Moreover, the share of agricultural exports in total exports remains around 25 percent and the food imports as a percentage of total exports remains around 15 percent in recent years.

2.2. Availability of Nutrients in the Diet

The effect of improved availability is reflected in the enhanced availability of macronutrients in the diet at national level. The Medical Research Institute of Sri Lanka (MRI) recommends daily per capita calorie and protein levels of 2,030 Kcal and 53 grams, respectively. According to the Sri Lankan food-based dietary guidelines (FBGD), approximately half or two-thirds of the total daily energy requirement should come from starch, 10-15% from protein and 15-30% from fat source foods (Ministry of Health, 2011).

The quantities of average daily per capita availability of calorie, protein, and fat by major food commodities are presented in Table 2. On average, 2,863 kilocalories of energy, 75 grams of protein and 49 grams of fat can be received daily from the available food for an average Sri Lankan. About 47 percent of the available calories and 36 percent of total available protein are provided by cereals due to bulk consumption of rice and wheat flour, which is the major substitute for rice (DCS, 2014). The average Sri Lankan consumes around 300g of rice daily. Oils and fats and sugar are the next two significant providers of calories. Fish is the main source of animal protein and it contributes more protein than pulses, meat, milk, and eggs due to the high availability of marine and fresh water fish.

Table 2 : Per capita daily availability of macronutrients

Items	Calories per day	Protein Gms per day	Fat Gms per day
Cereals	1627.20	34.30	1.75
Roots, Tubers & Other Starchy Food	71.57	0.61	0.09
Sugar	300.34	0.00	0.00
Pulses & Nuts	109.04	7.51	1.99
Vegetable (including Onions)	82.74	3.88	0.54
T. V. P.	2.31	0.31	0.02
Fruits	86.74	1.09	0.26
Meat	27.63	5.50	0.63
Eggs	21.38	1.63	1.63
Fish (i) Fresh	35.99	5.28	1.48
(ii) Dried & Salted	35.01	7.24	0.58
(iii) Tinned Fish	5.33	0.65	0.03
Milk (i) Fresh	19.90	0.85	1.34
(ii) Whole Dried	67.80	3.52	3.65
(iii) Condensed	3.25	0.07	0.09
(iv) Milk Food	0.85	0.06	0.00
Oil & Fats (including Coconut)	366.34	3.03	34.76
Total	2,863.42	75.53	48.84

Source: Food balance sheet (2014), Department of Census and statistics of Sri Lanka

Available data indicate that per capita daily calorie and protein intakes have increased from 2,430 kcals in 2005 to 2,863 kcals in 2013 and from 60g in 2005 to 75g in 2013 respectively (Table 3). These consumption levels easily meet the recommendations from MRI and the national Food Based Dietary Guidelines(FBDG).

Table 3 : Per capita availability of calories and Protein from 2005-2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Calorie (Kcal)	2,430	2,419	2,369	2,552	2,434	2,688	2,573	2,691	2,863
Protein (g)	60	60	60	61	62	67	66	69	75

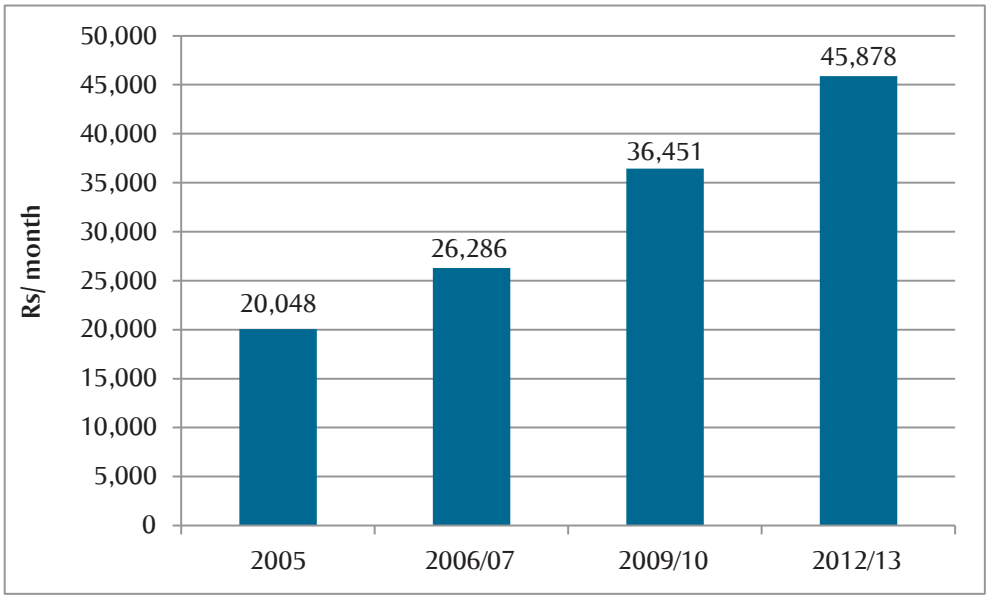
Source: Food Balance Sheets (2005-2013), Department of Census and statistics of Sri Lanka

2.3. Access to Food

Access to food, both physical and economical, has seen a remarkable improvement over the last decade. The level of income, income distribution, and food prices mainly determine the economic access to food at the household level while physical accessibility is determined by the availability of roads and marketing infrastructure (Kodithuwakku, et al., 2011). The availability of food providing required nutrients at national level, however, does not necessarily ensure food security at the household level. Hence, it is important to determine if the national food availability translates to consumption/access to food at the household level.

The level of income and poverty determine, to a significant extent, access to enough food at the household level. Mean household incomes have registered substantial increases over the years, increasing from Rs. 20,048 in 2005 to Rs. 45,878 in 2012/13 at current prices (Figure 2). This, along with the long term downward trend of overall poverty levels, gives an indication of improved economic access to food. Poverty is a major determinant of food insecurity which, in turn, leads to malnutrition. Based on the national poverty line, the incidence of poverty in the country declined steadily from 26.1% in 1990/91 to 6.7% in 2012/13. The proportion of population living below the global poverty line of USD1.25 a day, fell from 15.0% in 1990/91 to 3.5% in 2012/13. The proportion of population below the general poverty line of USD 2.00 a day, declined from 49.5% in 1990/91 to 19.6% in 2012/13 (Nanayakkara, 2016). However, the gap between general and extreme poverty levels indicates a serious potential vulnerability due to various natural and economic shocks.

Figure 2 : Trends in household income over HIES survey periods



Source: HIES (2005-2012/13), Department of Census and Statistics of Sri Lanka

In order to maintain food accessibility by households, the country needs general infrastructure, such as roads, and some specific infrastructure facilities, such as private and public storage facilities and food distribution outlets.

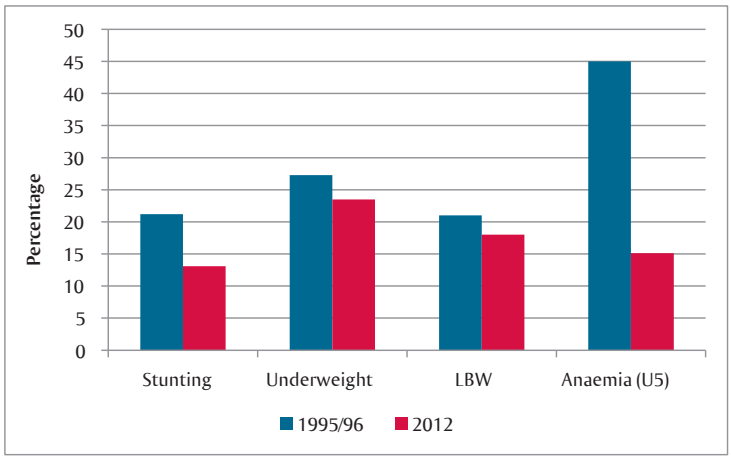
The development of rural infrastructure through the repair and maintenance of rural roads and bridges are important determinants of agricultural productivity, rural poverty, and food insecurity. Poor infrastructure in rural areas is a severe constraint to farmers obtaining their agricultural inputs and marketing their produce. This leads to low productivity, depressed agricultural income, rural poverty, and food insecurity. Road networks in Sri Lanka have significantly expanded during the last decade with the total number of road kilometres increased from 26,351 km in 2005 to 31,280 km in 2015.

2.4. Achievements in Nutrition Outcome

As stated previously, the prevalence of malnutrition (both over- and under-) provides a good indication of a country's development due to its complex causality. Malnutrition slows down growth, increases the risk of illnesses, affects cognitive development, and diminishes work capacity and labour productivity as children develop into adults. Under-nutrition poses severe economic costs to the nation's productivity and economic growth.

Significant achievements have been made in the overall health situation in Sri Lanka in the past few decades. Continued government policy towards providing free universal health services has led to a steady improvement in Sri Lanka's health indicators, particularly in relation to maternal mortality (32.5 per 100,000 live births), infant mortality (8.6 per 1,000 live births) and life expectancy (74.3 years in 2013) (CBSL, 2016). Also, child and maternal nutrition status have shown some progress over time (Figure 3). Stunting and underweight among children under 5 have declined from 21.2 percent to 13.1 percent and from 27.3 to 23.5 percent respectively during the period 1995/96 to 2012. Low birth weight declined from 21 percent in 1993 to 18 percent in 2012. Anaemia in children has declined from 25.2 percent in 2009-10 to 15.1 percent in 2012. According to the Demographic Health Survey (DHS) 2006/2007, the prevalence of exclusive breastfeeding in Sri Lanka is high, with over 75% of children 0-6 months exclusively breastfed (DCS, 2007). A reduced disease burden, improved availability of and access to health services, and improved coverage and availability of Water and Sanitation and Hygiene (WASH) programmes have enhanced these improvements. The high level of services for maternal care is also reflected in the Global Gender Gap Index 2016; Sri Lanka has achieved significant gender parity in terms of access to health services, with over 90% uptake of antenatal and postnatal services and survival rates ranking one of the best amongst 144 countries.

Figure 3 : Reduction in the prevalence of under-nutrition



Source: Jayatissa et al., (2012)

Current Concerns on Progressing Towards SDG2

Chapter 3

Despite the achievements, a number of major concerns still remain in terms of food security and nutrition. The major gaps to achieve SDG 2 include the increasing double burden of malnutrition (over- and under-nutrition); the high cost of a nutritious diet, rendering it unaffordable; diminishing levels of productivity; and unsustainable agricultural practices. Sri Lanka is also impacted by frequent natural disasters, such as drought and floods, as a result of climate change. Further, regional disparities exist with widespread pockets of poverty. The following section elaborates major concerns prevailing in the country.

3.1. Malnutrition

Available information suggests that malnutrition, including under-nutrition and over-nutrition, remain challenging. Stagnant levels of acute malnutrition and low birth weight, along with micronutrient deficiencies, and increasing levels of overweight and obesity causing diet-related chronic diseases, are the key nutrition-related issues in the country.

The National Nutrition and Micronutrient Survey (2012) of the Medical Research Institute (MRI) indicates that the prevalence of acute malnutrition has increased from 11.7 percent in 2009 to 19.6 percent in 2012, indicating a serious public nutrition situation according to the WHO global benchmark. With a prevalence of 19.6 percent, Sri Lanka has the third highest wasting prevalence in the world, ranking 128 out of 130 countries (IFPRI, 2016). The high levels of acute malnutrition were found across the 25 districts surveyed in 2012, ranging between 14-35 percent. Further, nearly 40,000 children under five years suffer from severe acute malnutrition contributing to 400 child deaths every year in Sri Lanka.

Chronic malnutrition, although relatively low in Sri Lanka, remains prevalent in about 1 in 10 children below 5 years of age (13%) and about a quarter (25%) of children are underweight. The context of Sri Lanka remains unique in the world where the rate of wasting is higher than chronic malnutrition (Figure 4). The nutritional status of a woman, before and during pregnancy, is important for the long-term health of both the mother and her child. Poor maternal nutritional status is associated with adverse perinatal impacts for both. In a recent survey by MRI amongst pregnant women, the prevalence of low mid-upper-arm circumference (MUAC) below 23 cm was found in 1 of 5 women (18 percent), indicating a poor maternal nutrition situation. Further, in 2012, 15% of women 18-59 years were found too thin for their height and almost 25% of women were found to be overweight, with 7% of women obese.

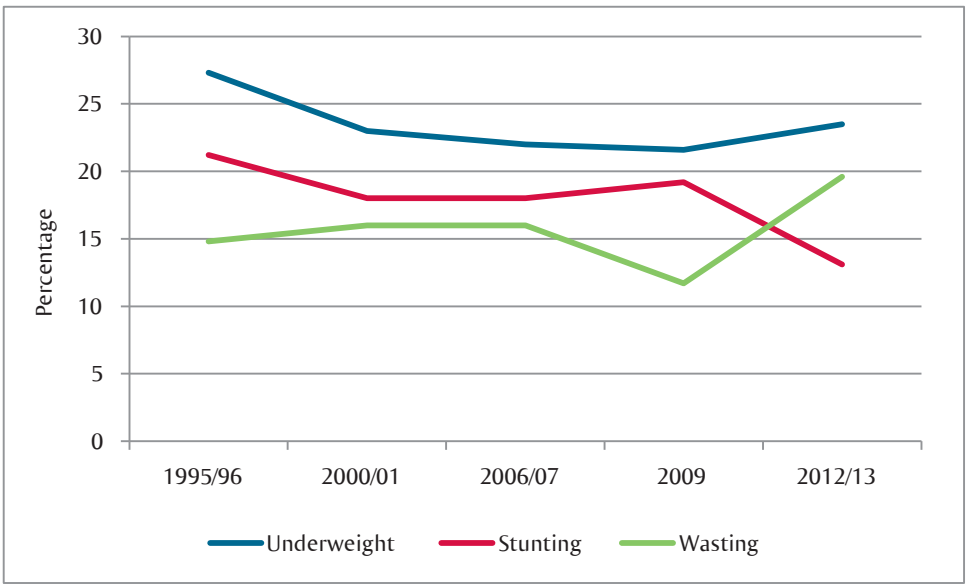
In addition to the poor maternal nutrition status, Low Birth Weight (birth weight $<$ 2500 g) rates remain stagnant over the last decade with almost 1 in 5 new born infants (18 percent) in Sri Lanka born with low birth weight, indicating a vicious cycle of malnutrition and the need for improved maternal nutrition.

Optimum nutrition during the first two years of a child's life is particularly important, contributing to reduced risks of morbidity, mortality, and chronic disease, and fostering better development overall. The World Health Organization (WHO) recommends early initiation of breastfeeding within one hour of birth; exclusive breastfeeding for the first six months of life; and introduction of nutritionally-adequate and safe complementary (solid) foods at six months together with continued breastfeeding up to two years of age or beyond. Limited data is available to inform the current practice in Sri Lanka, however the Sri Lankan DHS 2006/2007 reported 75.5% of infants 0-5 months were exclusively breastfed. Although this rate is comparatively high, the survey results showed that the percentage of exclusively breastfed infants reduced with age, and only 53.4 percent of children 4-5 months were exclusively breastfed as compared to 92.2 percent in children in the 0-1 month age group and 83.4 percent in the 2-3 months age group (Agampodi, et al., 2009).

Moreover, 84 percent of infants aged 6–8 months were introduced to complementary foods. The proportion of infants aged 6–8 months who consumed eggs (7.5%), fruits and vegetables other than those rich in vitamin A (29.6%), and flesh foods (35.2%) was low. Of children aged 6–23 months, the minimum dietary diversity was 71%, minimum meal frequency 88%, and minimum acceptable diet 68%. Children who lived in the tea estate sector had a lower dietary diversity and minimum acceptable diet than children in urban and rural areas. Other determinants of not receiving a diverse or acceptable diet were lower maternal education and lower wealth index (Senarath, et al., 2012).

It is also interesting to note that the prevalence of acute malnutrition increases significantly with age, from 10.5 % in children aged 6-11 months to 21.7 % in children 48 -59 months, indicating potential issues related to care practices for older age children.

Figure 4 : Prevalence of Wasting, Stunting and Underweight in Children under 5 years

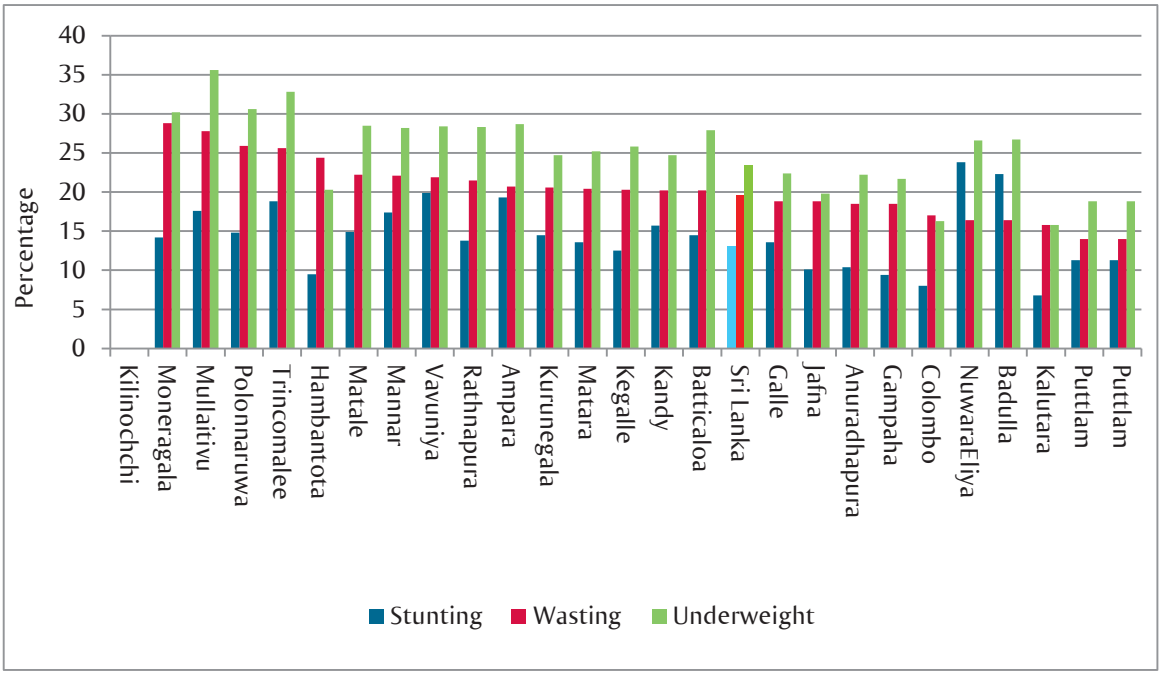


Source: Jayatissa, et al., (2012)

It is noteworthy that severe regional disparity exists in the prevalence of malnutrition rates (Figure 5). Stunting among the poorest quintile (18 percent) is two times higher than in the wealthiest quintile (9 percent) and ranges from 23.8 percent to 6.8 percent between districts. The level of stunting in the estate sector children (Nuwara Eliya: 23.8 percent, Badulla: 22.3%) is nearly three times higher than urban areas (8 percent in Colombo). The districts of Kilinochchi (34.9 percent) and Monaragala (28.8 percent) show the highest wasting rates. The highest prevalence of LBW is in the estate / plantation sector (Nuwara Eliya, Badulla and Ratnapura Districts) where access to and utilization of health services between the estate sector and the rest of the country shows marked disparity (Jayawardena, 2014). Overall, the previously war-affected districts, the estate sector, and certain farming areas such as Northern Mixed and South eastern Rain-fed represent the worst levels of undernutrition.

If not prevented, malnutrition continues throughout a human's life-cycle, with school-age children particularly vulnerable. 30 percent (1 in 3) children aged 6-12 years in Sri Lanka are underweight, 6.1 percent overweight and 3 percent obese, indicating the double burden of malnutrition (MRI, 2016).

Figure 5 : Disparity of malnutrition



Source: Family Health Bureau, *Annual Report 2013*, Ministry of Health, Colombo.

Micronutrient deficiency remains pervasive in Sri Lanka, with the average prevalence of anaemia in children aged 6-59 months and women of reproductive age found at 15.1 percent and 26 percent respectively, 50 percent of which is attributed to iron deficiency (Jayatissa, et al., 2012). The highest prevalence of anaemia (34 percent) is found at 6-11 months of age, then during the second year of life (24 percent). In the recent nutrition survey (2014), 31.8 percent of women were found to be anaemic. Anaemia is also found in 1 in 10 (11.7 percent) school children aged 6 – 12 years. Jayatissa et al. (2014) have found that the children who did not report having had diarrhoea within the preceding 2 weeks and those who consumed food items belonging to food groups grains/roots/tubers, dairy products and meat/fish were less likely to be anaemic. Also, children who did not have access to micronutrient supplements and deworming facilities showed a higher prevalence of anaemia. This indicates a clear relationship between anaemic prevalence and factors such as unavailability of clean water, proper sanitation, and imbalanced dietary intake and emphasizes the importance of providing micronutrient supplements for those suffering from such deficiencies and those living in vulnerable areas. Other micronutrients, especially vitamin A, calcium, and zinc deficiencies are also of concern.

Also, there is a wide inter-district variation in the prevalence of such deficiencies (Jayatissa et al. 2014). For example: prevalence of iron deficiency was highest in Matale (45.4%) and lowest in Mullaitivu (12.9%) and iron deficiency among children was highest in Kilinochchi (12.9%) and lowest in Batticaloa (3.0%). Also, there is a relatively high prevalence (47.6%) of calcium deficiency with a wide inter-district variation ranging from 23.1% in the Badulla District and 70.3% in the Matale District. Inter-district variations in the prevalence of zinc deficiency showed a wide variation with approximately 15% prevalence in some districts and less than 1% in others.

Food intake patterns play an essential role in the maintenance of health and well-being at both individual and population levels. Food products supply energy and essential macro- and micro-nutrients; however, over- or under-consumption of available food has the potential to cause serious health consequences. In Sri Lanka, limited data is available on food consumption patterns due to the lack of national level food intake surveys.

Further to the increasing levels of overweight and obesity amongst adult population, the prevalence of non-communicable diseases (NCD) are on the rise, contributing to more than three quarters of all deaths in the country (WHO, 2014). The NCD epidemic is partially associated with unhealthy dietary habits, particularly those related to cardiovascular diseases, hypertension, and diabetes. According to the STEP survey carried out by the Ministry of Health in 2015, 72% of adults aged 18-69 ate less than 5 servings of fruit and/or vegetables on average per day. In addition, 21.8 % of adults always or often added salt or salty sauce to their food before eating or while they were eating (WHO, 2015).

Further, based on the study conducted by Jayawardena et al (2013), which assessed the food consumption pattern of Sri Lanka adults, it was found that the consumption of fruits and vegetables was below the minimum recommendations of the Food Based Dietary Guidelines (Ministry of Health, 2011). The study found a substantial proportion of the Sri Lankan population does not consume a varied and balanced diet, which is suggestive of a close association between the nutrition-related NCD in the country and unhealthy eating habits. Nearly 70% of adults exceeded the maximum daily recommendation for starch. In contrast to their starch consumption, participants reported very low intakes of other food groups. Only one quarter of Sri Lankans did not report consumption of meat and pulses. The study suggested lack of perceived social pressure and awareness on increasing fruit and vegetable intake as the reason for the low intake of fruits and vegetables. Moreover, people's low purchasing ability and seasonal variation of fruits and vegetable prices may have adversely affected consumption levels.

3.2. Economic Access to Food

3.2.1 Income Inequality

Sri Lanka has experienced economic growth as reflected in the high Gross Domestic Product (GDP) over the past few years, with over 5% growth in 2016. In 2010, Sri Lanka was upgraded to a lower-middle income status. Despite this positive economic growth, income inequality remains an issue of concern. Differences in the income distribution between the poorest and richest wealth quintiles, represented by the Gini ratio, shows negative trends of income inequality, from 0.47 in 2005 to 0.48 in 2012/13 for household income and remaining constant at 0.40 for household expenditure.

Table 4 presents the average household income and Gini coefficients of household income by sector and province. Considering the average monthly household income among three sectors, both rural and estate sector households have an average income value less than the national average income of Rs. 45,878. However the average monthly income value of rural households (Rs. 41,478) is much closer to the national average value. That value of the urban households is about Rs. 69,880 which is far higher than the national figure. But the relevant figure for the Estate sector (Rs. 30,220) is remarkably lower than the national average. When the provinces are compared, Western Province has reported the highest household income level, while all the other provinces have reported values less than the national average. From the district figures, except for Colombo, Gampaha and Kalutara, which are located within Western Province, all the other districts have recorded average income levels less than the national average (DCS, 2013).

Table 4 : Average household income and Gini coefficients of income by sector and province

	Mean household income	Gini
Sri Lanka	45878	0.48
Sector		
Urban	69880	0.51
Rural	41478	0.45
Estate	30220	0.39
Province		
Western	64152	0.47
Central	40149	0.44
Southern	41834	0.45
Northern	34286	0.48
Eastern	30676	0.45
North-western	42756	0.47
North-central	36632	0.39
Uva	35638	0.48
Sabaragamuwa	40375	0.46

Source: HIES (2012/13), Department of Census and Statistics of Sri Lanka

The table further reveals that the Gini coefficient of the mean household income in urban sector (0.51) is relatively higher than that of the rural (0.45) and estate (0.39) sectors as well as national average (0.48). The mean income inequality is reported as the lowest in the estate sector reports. Despite the considerable differences of inequality values among sectors, there is no substantial differences in inequality among provinces (0.44-0.48); except North Central Province that has the lowest inequality value of 0.39. Among districts, Mannar and Anuradhapura report the lowest Gini coefficient (0.37) and Moneragala reports the highest Gini coefficient (0.53) for household income (DCS, 2013).

The pattern of income distribution also determines, to a significant extent, the economic access to sufficient food at the household level. Despite very high growth rates of household income levels, distribution of income has not been equitable as shown in recent times. The data indicate that more than half of the total household income in the country is shared among only 20 percent of the total households in the country, which is an income pattern that has remained unchanged throughout the period from 1990/91 to date (Table 5).

Table 5 : Distribution of income shares over income decile and sectors

Decile group	Income group (Rs.)	Percentage of households (%)				Share of income (%)			
		Total (%)	Urban (%)	Rural (%)	Estate (%)	Total (%)	Urban (%)	Rural (%)	Estate (%)
1	Less than 10,836	10.0	4.5	11.0	14.1	1.5	0.5	1.8	3.3
2	10,836 - 16,531	10.0	6.3	10.6	13.8	3.0	1.2	3.5	6.3
3	16,532 - 21,286	10.0	6.3	10.6	13.8	4.1	1.7	4.8	8.8
4	21,287 - 25,903	10.0	7.5	10.4	13.0	5.1	2.5	5.9	10.1
5	25,904 - 30,814	10.0	8.1	10.3	12.2	6.2	3.3	7.0	11.4
6	30,815 - 36,758	10.0	9.3	10.2	10.1	7.3	4.5	8.2	11.2
7	36,759 -45,000	10.0	10.9	10.0	8.3	8.9	6.4	9.8	11.1
8	45,001 - 57,495	10.0	12.1	9.6	6.3	10.9	8.8	11.8	10.4
9	57,496 - 83,815	10.0	15.6	9.0	4.9	14.9	15.4	14.9	11.0
10	More than 83,815	10.0	19.4	8.3	3.5	38.0	55.8	32.3	16.5

Source: HIES (2012/13), Department of Census and Statistics of Sri Lanka

Apart from that, income inequality has a strong divide between sectors, across provinces, particularly between the Western Province and other provinces, including a marked divide between the districts that were affected by the war and the rest of the country. The inequality between the rich and the poor is also widening. Table 5 further shows that the proportion of the poor are disproportionately concentrated in the estate sector, with more than half of the estate sector households falling within the poorest 40 percent households of the country. Income inequality is further exaggerated within the estate sector. Only 28.5 % of the total estate sector household income is shared among these poorest households. Even though only 24.6 % of urban sector households are among the poorest, they receive only 5.9 % of urban household income which indicates that the income gap between the rich and poor is even worse in the urban context. The evidence available suggests that the development policies and programmes should focus on these sectoral and regional variations in order to reap real food security and nutrition benefits.

Moreover, based on the Household Income and Expenditure Surveys (HIES) data, the poorest people in Sri Lanka are those living in households headed by "agricultural or non-agricultural labourers," "skilled agricultural workers," and "persons who are disabled or too old to work." The bulk of the poor are largely rural-based and the majority rely on subsistence agriculture for their livelihoods (DCS, 2013).

In addition to income inequality between sectors and regions, gender disparity in income distribution needs to be closely monitored. Sri Lanka has seen a positive trend over the last two decades in the proportion of unemployment, from 7.6 % unemployment in 2000 to 4.7 % in 2015, within the formal sectors, including public services, agriculture, industry and trade (DCS, 2015). However, the labor force participation rate of women is half that of men with 35.3% female participation as compared to the 75.9% male participation rate, making women more vulnerable to poverty (DCS, 2014). .As of 2013, there were 2.6 million more men employed than women (UNFPA, 2016).

The male/female income ratio for the urban sector is 1.8 while the rural sector is 1.6, (for example, the median income is Rs. 7,930 for males and Rs. 5,000 for females) (Marga Institute, 2012). As a result, the comparative difference in the poverty situation of men and women is significant. Per capita income (purchasing power parity) was USD 5,078 for females, compared with USD 13,616 for males in 2013,

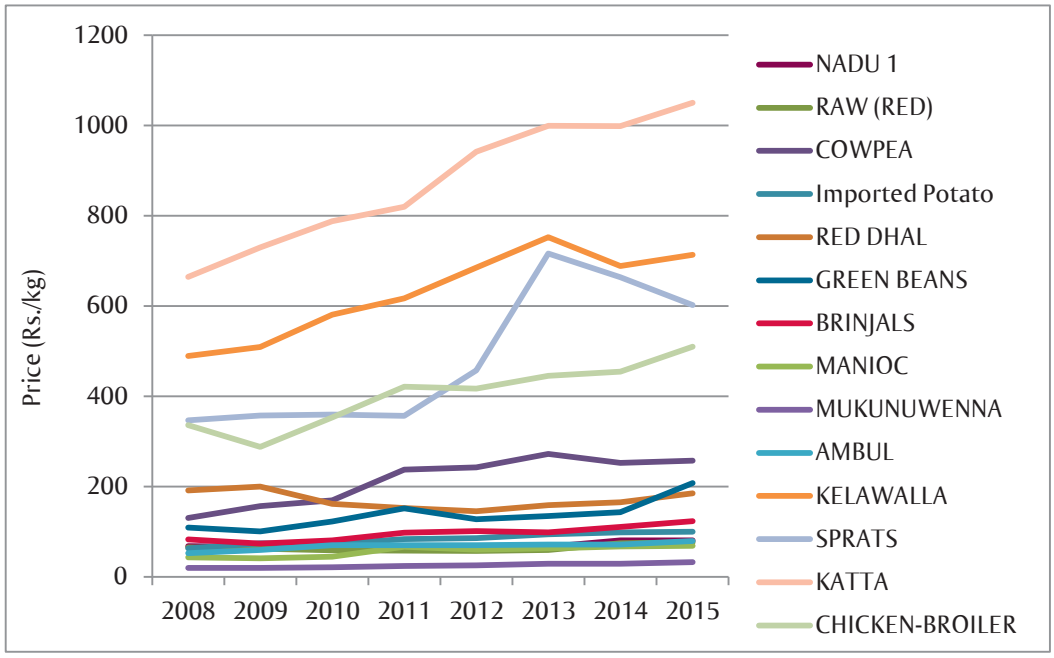
while the differentiation in estimated earned income was similar (USD 5,030 for females versus USD 13,180 for males.). This is also true for the estate sector, where women were paid lower wages, worked longer hours, and had minimal facilities (ADB, 2015).

3.2.2 Food Price Rises and High Costs of Nutritious Diets

The fluctuation in the prices of agricultural produce has been a general phenomenon in Sri Lanka as a result of the lack of economy of scale and unorganized national food production planning. It has also been influenced by the institutional and political environment (IPS, 2008).

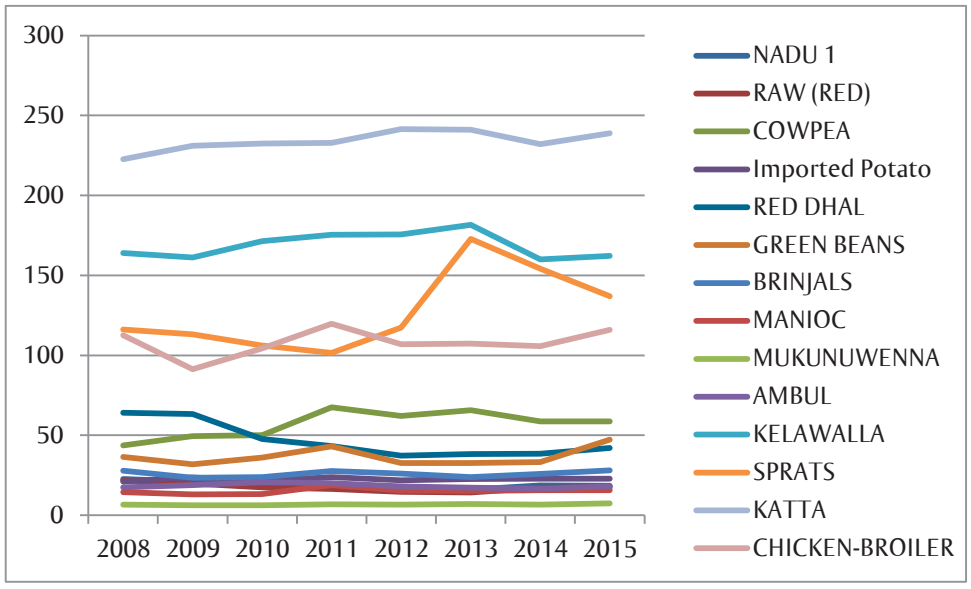
Figure 6 shows the changes in the nominal retail price of some selected food commodities. The nominal prices of all food commodities showed increasing trends, which could be attributed to increasing total food demand as a result of the growing population; increased real disposable income; net taxation of the food sector; and inflation. The added demand for fishery and livestock products and fruits and vegetables could be attributed to the shifts in consumers' preference, influenced by income growth, and resulting in increased demand of high value foods, including protein-rich and, maybe, less nutritious sugary products. On the supply side, fluctuations of domestic production as a result of erratic weather and haphazard changes of import duties and non-tariff barriers have been the sources of short-run price variations. The increasing cost of production has also been responsible for price volatility in certain commodities (Weerahewa, et al., 2015). Despite the rise of all nominal prices, Figure 7 shows mixed results for real prices primarily due to persistent devaluation of the Sri Lankan Rupee.

Figure 6 : Average nominal consumer prices of some selected food commodities



Source: Hector Kobbekaduwa Agrarian Research and Training Institute

Figure 7 : Average real consumer prices of some selected food commodities



Source: Hector Kobbekaduwa Agrarian Research and Training Institute

Food prices determine the cost of diet and whether households are able to afford sufficiently nutritious foods. Higher food prices may lead poor households to limit their food consumption and shift to less nutritious diets, with negative effects on health and nutrition. The recent HARTI Cost of Diet study (2014/2015) indicated that 22 to 59 percent of households in Sri Lanka cannot afford the cost of nutritious diet (WFP and HARTI, 2015). Regional differences are significant. For example, the lowest proportions of the population who cannot afford a nutritious diet reside in Colombo, while nearly half of the households in the Eastern and Uva Provinces cannot afford an adequately nutritious diet.

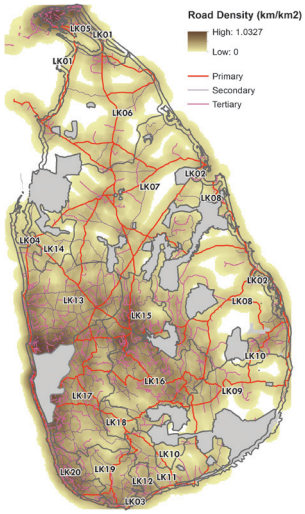
3.3. Physical Access : Roads and Marketing Infrastructure

As WFP (Food Security Atlas, 2015) highlights, road density is a key parameter that determines the access to daily markets with a diverse range of food items. There is significant district inequality in road density, where the density is relatively lower when moving beyond the Western Province (Figure 8). For example, the Eastern Province; Mullaitivu and Mannar Districts in the Northern Province; and Monaragala in the Uva Province, all have serious road accessibility problems. Apart from density, road quality and width are the major gaps affecting access to food markets in rural areas, especially in the estate sector and certain areas in the up-country districts. People in the estate sector are thus isolated from the rest of the society and they have to travel great distances to access markets, especially to get healthy foods like fish.

Despite national level food availability, there are availability constraints at the level of administrative districts and even within the districts due to poor distribution affecting household access to food. The district capitals may have enough food stocks for the entire district, but the real issue could relate to intra-district distribution at the village level.

Moreover, storage facilities and milling capacities and refrigeration and canning facilities have not improved much over the years to gain better access to food. Poor infrastructure in rural areas is a severe constraint to farmers for obtaining their agricultural inputs and for marketing their produce, causing low productivity, depressed agricultural income, rural poverty, and food insecurity. One important observation is that the areas with poor road access tend to be the areas with the highest proportion of poverty.

Figure 8 : Road desity distribution (km/ 1 sq.km)



Source: Food Security Atlas, 2015

The marketing of agricultural produce has been a perennial problem. The abolishment of the Paddy Marketing Board (PMB) and the Cooperative Wholesale Establishment (CWE) in 1980s and 1990s caused a serious setback to food security in Sri Lanka, as these were the key government bodies for the regulation of the availability of essential food items (Kelegama, et al., 2000). CWE in particular had a major role in making food available regularly to low income groups at affordable prices. Although PMB was reinstated in 2007, there has not been sufficient strategies to reserve grains and crops to meet the national requirement. The two major issues in the agriculture sector that are associated with the poor marketing infrastructure are: (1) At harvest time, farmers find it difficult to sell their produce at prices that cover their costs of production; (2) Prices of agricultural commodities are high at consumer levels, but often low at the farm gate. The reduction of marketing margins could significantly contribute to both reducing consumer prices and farmers receiving better prices, thus enhancing food security.

3.4. Sustainable Agricultural Practice

3.4.1. Yield Stagnation

The important questions on whether Sri Lanka is producing enough food emerges as the national requirement constantly rises over the years due to population growth (1 percent from 2009-2013) and the growth of per capita income (7 percent from 2009-2013). Therefore, the challenge is not just to ensure food security to the estimated 4.7 million currently undernourished people, but also to feed 2.4 million people expected to inhabit the island by 2050 (UNDP, 2014). Increasing production could be achieved by either increasing land extent, or improving productivity, or a combination of both.

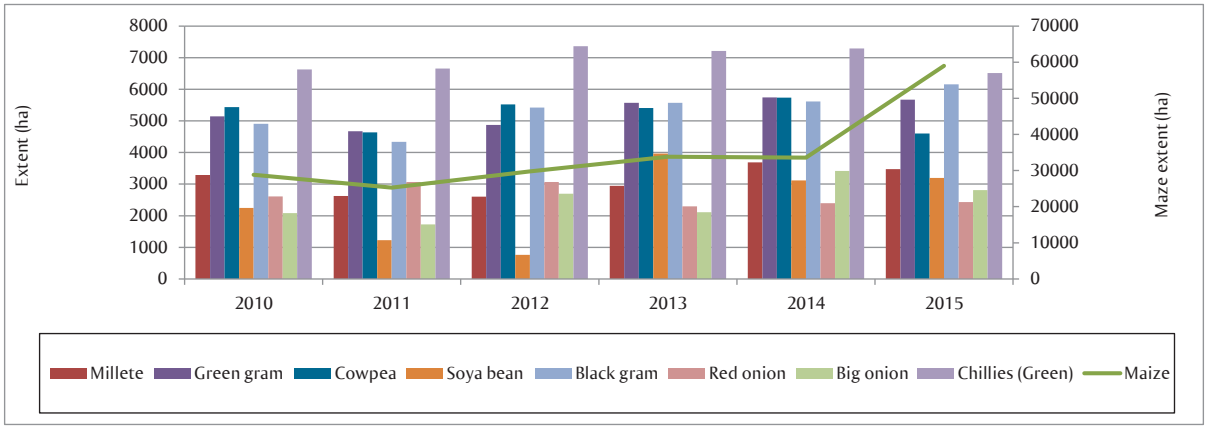
Bringing more land into cultivation, however, is difficult due to the lack of arable lands, which is partly a result of limited expansion in irrigated areas in recent times (Table 6). The cultivated extent has been constant or improved slightly since the 2000s with the exception of a few crops like maize, mainly due to the present lack of new arable land to be brought under agriculture (Figure 9).

Table 6 : Recent trends in the expansion of arable land and irrigated area

Year	2008	2009	2010	2011	2012	2013
% arable land	0.19	0.18	0.19	0.21	0.20	0.21
% irrigated area	0.09	0.09	0.09	0.09	0.09	0.09

Source:FAOSTAT (http://www.fao.org/faostat/en/#data)

Figure 9 : Recent trends in the extent of food crops



Source: Department of Census and Statistics of Sri Lanka

Therefore, unless there is a substantial increase in present yield levels, domestic production will not be able to meet national requirements even under present levels of per capita food consumption, creating future food security problems. Table 7 shows the yield trends for past five years and compares the projected yield levels with targeted yield levels. The yield levels of domestically grown food crops, including rice, have stagnated during recent times at unimpressive levels even by developing country standards. Only sorghum and cowpea have shown over five percent average yield growth while rice and black gram have negative yield growth during the last five years. With the present levels of yield increases, Sri Lanka will be unable to meet national targeted yield levels.

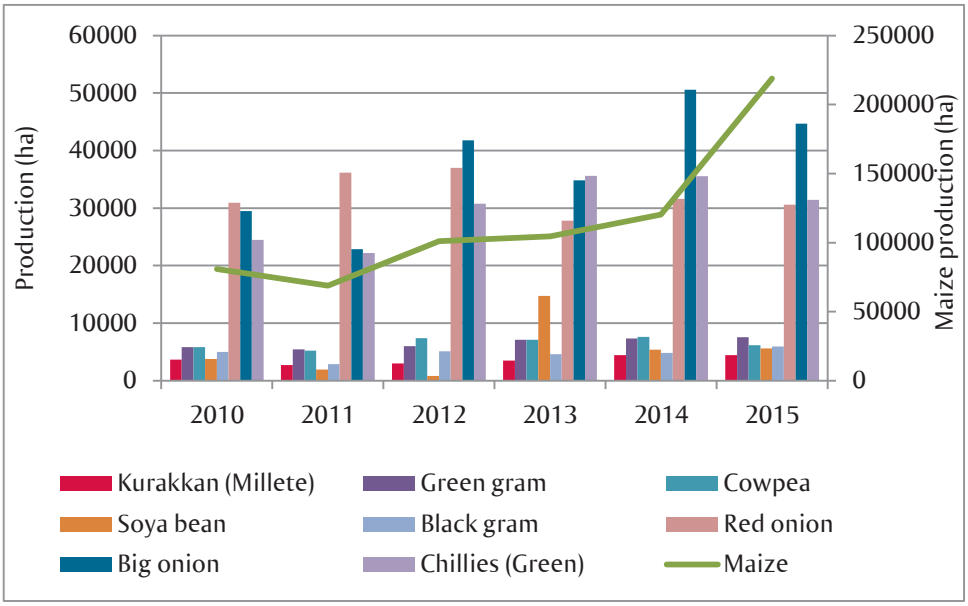
Table 7 : Yield trend, projections and targets of major food crops

Food product	Yield (t/ha)						% change	Yield projection		Targeted yield, (t/ha)	
	2010	2011	2012	2013	2014	2015		2018	2025	2018	2025
Rice	4.5	4.0	4.4	4.3	4.3	4.4	-0.2	4.4	4.3	5.5	6
Maize	3.2	3.2	3.7	3.1	3.4	3.7	3.5	4.1	5.2	7.5	9
Sorghum	1.2	1.4	1.5	1.4	1.4	1.7	7.9	2.1	3.6	4	4.5
Green gram	1.2	1.2	1.3	1.3	1.3	1.3	3.0	1.5	1.8	2.8	3
Cowpea	1.1	1.2	1.4	1.3	1.3	1.4	5.2	1.6	2.3	2.8	3
Soya bean	1.8	1.5	1.2	1.8	1.7	1.8	3.2	2.0	2.5	4	4.5
Black gram	1.0	0.8	1.0	0.9	0.9	0.9	-2.1	0.8	0.7	2.5	3
Ground nuts	1.5	2.0	2.0	2.0	2.1	1.7	4.6	2.0	2.7	2.5	2.8
Red onion	11.9	11.8	11.9	12.1	13.0	12.5	1.1	13.0	14.0	14	16
Big onion	11.4	10.8	12.7	13.2	14.3	12.2	2.1	13.0	15.0	40	45
Chillies	3.7	3.4	4.0	4.8	4.6	4.7	5.3	5.5	7.9	35	40

Source: DCS crop yield data and FCRDI yield targets

This yield stagnation has restricted the potential of increasing domestic food supply in the country in parallel to the rising demand for food, as shown by the recent trends in domestic food production (Figure 10).

Figure 10 : Recent trends in the production of food crops



Source: Department of Census and Statistics of Sri Lanka

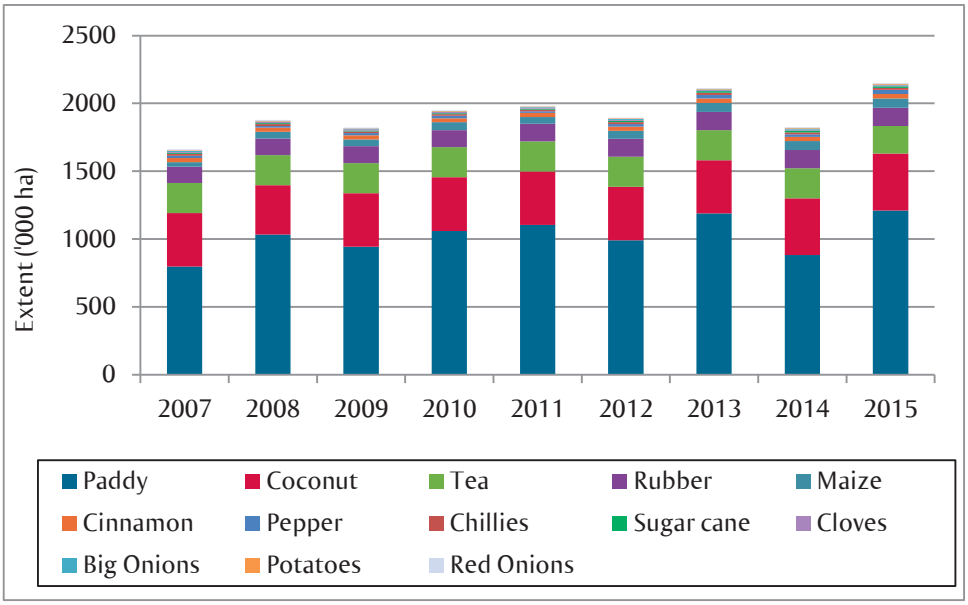
The use of varieties with low resistance to biotic and abiotic stresses and employment of obsolete cultivation technologies due to the lack of investment on research and development (R&D) and less

commercialization have all led to poor yields. Other contributing factors include small scale agricultural practices, poor marketing and infrastructure facilities, and a lack of policy and institutional support. Thus, concerted efforts are needed to improve agricultural productivity and thereby to increase food availability in the country, reduce prices, and increase farm incomes which would effectively lead to a reduction in hunger.

3.4.2. Slow diversification towards the production of nutritious food

Diversification in agricultural production is not a new concept in Sri Lanka. The national level cropping system has been subject to several attempts of diversification focusing on both the estate and food crop sector during the last four or five decades. Though farmers have a tendency to diversify into livestock, especially poultry and horticulture (fruit and vegetable), the diversification at farm level has been limited. Also, there are visible differences in the level of diversification at provincial levels and among various household income classes. Figure 11 shows the slow diversification trends and the limited production base, which is dominated by few crops.

Figure 11: Land use pattern in Sri Lanka



Source: Economic and Social Statistics of Sri Lanka-2015, Central Bank of Sri Lanka

There are several constraints to promoting agricultural diversification in Sri Lanka. These include young people leaving the agriculture sector; a lack of market orientation in cultivation; bio-physical and environmental constraints related to land and water; market imperfections; uncompetitive agricultural enterprises; and other opportunities created by rapid growth of the non-farm sector (Weerahewa, et al., 2015). In this context, if agricultural diversification is to be adopted as a viable strategy to improve farm incomes, it needs to be coupled with interventions to correct market failures that include investment in research, infrastructure, and information management.

Livestock and fisheries are two important subsectors of the food and agriculture sector of Sri Lanka. The livestock industry is relatively new in Sri Lanka, but fisheries has a history going back some centuries. Nevertheless, these have not received due attention from the state, particularly compared to food crop agriculture, especially rice.

Lack of agricultural diversification has created a significant gap between available foods and those which are required to ensure proper nutrition levels. For example, the national availability of

vegetables and fruits at 230 g in 2014, is well below the WHO/FAO (2003) [3] recommended rate of 400 grams of vegetables and fruits per day. There is not much difference in the national availability of other nutritious foods such as meat and fish, which remain a concern in terms of ensuring food security and nutrition and achieving SDG2.

3.5. Gender Inequality

Achieving gender equality is key to ensuring sustainable development. Gender issues linking to food security and nutrition are inextricable parts of the vicious cycle of poverty. Gender inequality can be a cause as well as an effect of food insecurity and malnutrition. Higher levels of gender inequality have been directly associated with higher levels of undernutrition, both acute and chronic. Gender and nutrition are not stand-alone issues; agriculture, nutrition, health, and gender are interlinked and can be mutually reinforcing (FAO, 2012). Worldwide, women and girls are overrepresented among those who are food-insecure, with an estimated 60% of undernourished people being women or girls (ADB, 2013). In Sri Lanka, with changing demography, the dependency ratio at 60.2 is high, constituting mainly of those above 60 years and children. Female life expectancy in Sri Lanka is also increasing (females at 77.4 years compared to males at 71.2 years in 2013) (UNFPA, 2016). Due to the longer life expectancy of females, there is even greater need for more support related to health, income, and other caring facilities for women (UNFPA, 2016).

Sri Lanka has seen a positive trend over previous decades in the number of women being employed in the formal sectors, including public services, agriculture, industry and trade. However, the labor force participation rate of women is half that of men, with 35.3% female participation as compared to the 75.9% male participation rate (DCS, 2014). Geographical disparities exist, with even less proportion of females participating in the labor force in the Northern Province. This low participation is in spite of the high proportion of women enrolled in universities, at nearly 60% of female students in universities (UNDP, 2015). Therefore, the trend of women taking the lead in education is not being translated into actual labor force participation, urgently necessitating more investments to increase women's participation in the labor force.

Unequal access to skills and markets, and increased demand for low-skills and low-cost female labor have also pushed women to migrate internally within Sri Lanka and externally to other countries, mainly as factory workers or domestic workers. The outflow of labor from Sri Lanka increased from 0.4% in the late 1970s to nearly 80% in the 1990s and declined, not in numbers but as a proportion of migrant workers, to 55% in 2006 and to 49.1% in 2010. One of the significant features of Sri Lanka's migrant worker population is that 34% of the migrant workforce comprises women in low-skilled work in the domestic sector. Migrant workers continue to be the highest avenue of foreign revenue earnings for the country. Nonetheless, migration poses particular challenges of inclusion.

Most female migrants are married, have children, and come from lower-income groups. At the same time, women's migration has impacted the family left behind, most notably, the children in the household, with broader implications for society. With the primary caregiver absent, children are sometimes found to be more exposed to abuse, including sexual abuse and poor care practice, which could in turn be one of the causes of undernutrition, juvenile delinquencies, absence from school, and other social issues (UNDP, 2016).

Although women in Sri Lanka contribute considerably to the reproductive domain and the economy of Sri Lanka, 20.4% of women are considered as unpaid family workers, while only 3% of men are unpaid family workers. In Sri Lanka, the contribution of the reproductive sector by women is high. This is mainly due to the common culture that the woman in the house should take care of the children and do household work such as laundry, purchasing provisions, cleaning and cooking, all of which directly contribute to reproductive output (ADB, 2015). Although women in Sri Lanka are increasingly employed, they are still expected to shoulder the responsibility of household affairs. Household work is perceived to be exclusively 'women's work' by both men and many women. Hence, studies have shown that women have a daily work load of 14 hours to cope with their economic, social, and domestic roles, while men work 9 hours a day (Herath, 2015).

[3] http://www.who.int/dietphysicalactivity/publications/f&v_promotion_initiative_report.pdf

Chapter 4

Emerging Concerns on Progressing Towards SDG2

While the aforementioned issues are continuous causes of concerns in the country, there are certain emerging issues that have the potential to affect the food security and nutrition situation and need further attention. The emerging concerns include repeated climate shocks, land degradation, ageing population, urbanization, and shift in workforce pattern. This section focuses on the major emerging issues that have an impact on ensuring food security and nutrition and achieving SDG2.

4.1. Climate Change and Vulnerabilities

Sri Lanka has a tropical climate characterized by two monsoon seasons. Mean annual temperature and rainfall vary from 27ºC in the lowlands to 15ºC in the central highlands and 5,000 mm in the central highlands to 1,000 mm in the north-western and south-eastern lowlands (Ahmed, et al., 2014). While, agriculture in Sri Lanka has evolved in parallel with the prevailing climatic conditions, it has been evident during recent decades that available farming experiences and traditions are becoming less useful in the process of farm planning (Punyawardena, 2002).

While farmers have been in a continuous struggle to adapt to climate shocks that they experience frequently, predictions on the changes in climate parameters and the likely scenario are not conducive for the agriculture in the country. As shown by the projections in Table 8, temperature and the rainfall are continuously increasing, impacting agricultural productivity due to the change in the optimum temperature required for photosynthesis, risking the agriculture sector growth and food security. Apart from the direct impact of increased variability of rainfall and the rise of ambient temperature, indirect effects of increased rainfall intensities worsen land degradation, especially in hilly areas. Moreover, increased occurrence of rainfall irregularities causes severe damages to existing irrigation infrastructure, water scarcity, and salinization of agricultural lands affecting the crop production (Punyawardena, 2002). Increased intensity and frequency of extreme weather events, such as droughts and floods lead to crops losses due to moisture stress and excess water (Imbulana, et al., 2006).

Table 8 : Temperature and precipitation projections under different scenarios

Parameter	Increase by		
	2030	2050	2080
Temperature	1.0°C–1.1°C	1.3°C–1.8°C	2.3°C–3.6°C
Rainfall	3.6%–11.0%	15.8%–25%	31.3%–39.6%

Source: Ahmed and Supachalasai (2014)

Ahmed and Supachalasai (2014) has projected that climate change will negatively affect rice yields in different major agro-climatic zones of the country (Table 9). The projected drop in rice yields is higher in Yala Season and low country dry and intermediate zones which are predominantly agricultural. An increase in temperature by 2 degrees Celsius and a 27 percent loss of agriculture income is expected (Seo, et al., 2005).

Table 9 : Impact of climate change on rice yield in Sri Lanka

Agro-climatic zone	Current yield (kg/ha)		% change in 2030		% change in 2050		% change in 2080	
	Maha	**Yala**	**Maha**	**Yala**	**Maha**	**Yala**	**Maha**	**Yala**
Dry-Low	3,498	3,863	-4.2	-6.5	-16.1	-19.8	-29.1	-34.2
Intermediate-Low	4,885	4,612	-2.7	-3.5	-10.6	-15.1	-24.8	-31.5
Intermediate-Mid	4,992	4,761	-1.9	-3.1	-9.3	-12.7	-22.5	-30.3
Intermediate-Upland	3,492	2,955	-1.3	-2.7	-7.5	-11.4	-20.3	-27.5
Wet-Low	3,910	3,711	-0.9	-1.5	-6.0	-10.4	-19.4	-25.1
Wet-Mid	3,538	2,795	-0.8	-1.4	-3.6	-8.2	-18.3	-23.6
Wet-Upland	3,134	2,706	5.7	3.1	2.1	-2.0	-8.6	-12.4

Source: Ahmed and Supachalasai (2014)

While farming communities are universally identified as a vulnerable group to climate change within the farming community, women are recognized as particularly vulnerable, as females play a large role in planting, harvesting and post-harvest processing. Women farmers currently account for 45-80 percent of all food production in developing countries depending on the region. In Sri Lanka, more women than men are employed in the agricultural sector, making them more vulnerable to the impact of climate change. In the context of climate change, traditional food sources become more unpredictable and scarce. Women face loss of income as well as harvests - often their sole sources of food and income. Related increases in food prices make food more inaccessible to poor people, in particular to women and girls whose health has been found to decline more than male health in times of food shortages. Furthermore, women are often excluded from decision-making on access to and the use of land and resources critical to their livelihoods. For these reasons, it is important that the rights of rural women are ensured in regards to food security, non-discriminatory access to resources, and equitable participation in decision-making processes[4].

Besides women, farmers in the Northern and Eastern regions that were affected by the war can be considered as a highly vulnerable group to climate change as these areas are located in the dry zone, which is susceptible to climate hazards and their adaptive capacity to climate change was seriously affected due to the prolonged conflict that ended in 2009 (Senaratne, et al. 2016).

Being a small developing country, the most appropriate response to climate change would be in general adaptation, rather than mitigation. It has been revealed that with adaptation, the vulnerability of agriculture to climate change can largely be reduced (Droogers, 2004). Many agricultural adaptation options have been suggested in the literature and include a wide range of micro-level options such as crop diversification and altering the timing of operations; income diversification; micro-finance and insurance; efficient water management techniques; and improvement of agricultural markets.

[4] http://www.wcdrr.org/wcdrr-data/uploads/854/Women_and_Climate_Change_Factsheet_UNWomenWatch.pdf

4.2. Land Fragmentation and Degradation

Out of the total land mass of Sri Lanka, only 50 percent is arable due to unsuitable terrain, inland water bodies, and forest conservations. The expanding population has exerted much pressure on the landmass, limiting its per capita availability. Increasing national production has been constrained by the lack of arable lands. Moreover, due to population growth and urbanization, land fragmentation and consequent small holding cultivation, which is likely to have negative effects on productivity, is becoming a major concern in Sri Lanka. The average size of holdings less than 8 ha was 1.3 ha in 1946, 1.1 ha in 1962, and 0.8 ha in 1982. This figure was 0.48 ha in 2002 based on the Agricultural Census 2002[5].

Also, imperfections in land policy and regulations are argued to generate some problems relating to agricultural development such as nonviable holdings, environmental degradation, and low productivity (Samaratunga, et al., 2005). The limited agricultural land market in Sri Lanka, resulting from state regulations and ill-defined property rights, is likely to prevent inter-income group land transactions necessary for size adjustments, leading to continuation with small non-viable holdings. A lack of policy focus on land resource management has resulted in environmental degradation, such as soil erosion and downstream sedimentation due to improper land use for agricultural purposes, especially on hilly slopes in the up country (Samaratunga, 2011). Similarly, a lack of secure property rights offers fewer incentives to the operators, making them economically unstable and unsustainable. This creates disinterest in farming activities leading to the sluggishness in the sector. Also, restrictions on land transfers, especially on ownership and mortgaging, prevent lands from being transferred to the most efficient uses and users who would be willing to invest in improving land quality. This too leads to land degradation in the long run and low productivity (IPS, 2015).

Also, regardless of the size of the lands the transaction costs are high and unbearable to the poor, preventing them from acquiring lands in the market. Hence, the poor who are interested in farming are often left with non-economical plots of land. They have no option but to subdivide the small plots of land among heirs in each generation and this has become a serious problem in the state-distributed lands in the settlements (IPS, 2004). These small land owners, in the absence of an option go for non-profit-maximizing portfolios in order to diversify their risk, will use little or no improved technology and will be less efficient in the long run (Samaratunga, 2011).

Hence, reforming current national land use policy to foster a shift from low value to high value agriculture, addressing the issues of low productivity, efficiency and equity implications for marginalized and vulnerable groups, and strengthening the organizational and institutional framework for land management by bringing all the scattered institutions with duplicating responsibilities under one umbrella body are timely requirements.

4.3. Urbanization, Food Insecurity and Malnutrition

Sri Lanka's urban landscape is dominated by small urban settlements clustered along the coast. More than 25 percent of the population lives within 1 kilometer of the coast, a strip of land constituting only 5 percent of the country's area[6] . The size distribution of urban areas is dominated by small settlements: there are only 6 cities with a population of more than 100,000, 34 intermediate or medium-size towns of 20,000–100,000, and 94 small towns of fewer than 20,000. Based on the 2012 Census definition of urban areas, only 18.2% percent[7] of the population lives in urban areas, suggesting that Sri Lanka has very low urbanization relative to its per capita income.

The Sri Lanka Government, however, is in the process of developing the Western Region Megapolis plan, which is an urban planning, zoning, and development project aimed at creating a megapolis in Sri Lanka's Western Province by 2030. This plans aims at creating a megacity comparable to those of

5 Agricultural Censuses are done once in every 20 years and the next agricultural Census would be in 2022.
6 http://www.unhabitat.lk/downloads/wburbanpolicy.pdf
7 Department of Census and Statistic 2012

Dubai, Singapore, and others. Therefore, the trend in urbanization towards megacity is anticipated[8].

Urbanization can affect all of the four dimensions of food security: availability, accessibility, utilization, and stability. With the growing urbanization, the labour force available for agricultural work may become limited. In Sri Lanka, majority of population are engaged in agricultural related work, however, the changing demography (ageing population) and growing tourism industry may drive more young people towards the city (Matuschke, et al., 2014).

Urbanization also affects the composition of food demand. Since eating habits in cities are different from those in rural areas, a shrinking demand for staple food such as wheat, rice and millet is expected. In contrast, the demand for animal and protein-rich foods, such as milk products and meat, as well as for fruit and vegetables, will increase sharply. In Sri Lanka, the relative share of food expenditure in the total expenditure of households has reduced sharply over time (Table 10). This could be attributed to income rise, urbanization, and other related factors such as changing consumer preferences, supply variability, and changes in demographic conditions (IPS, 2013).

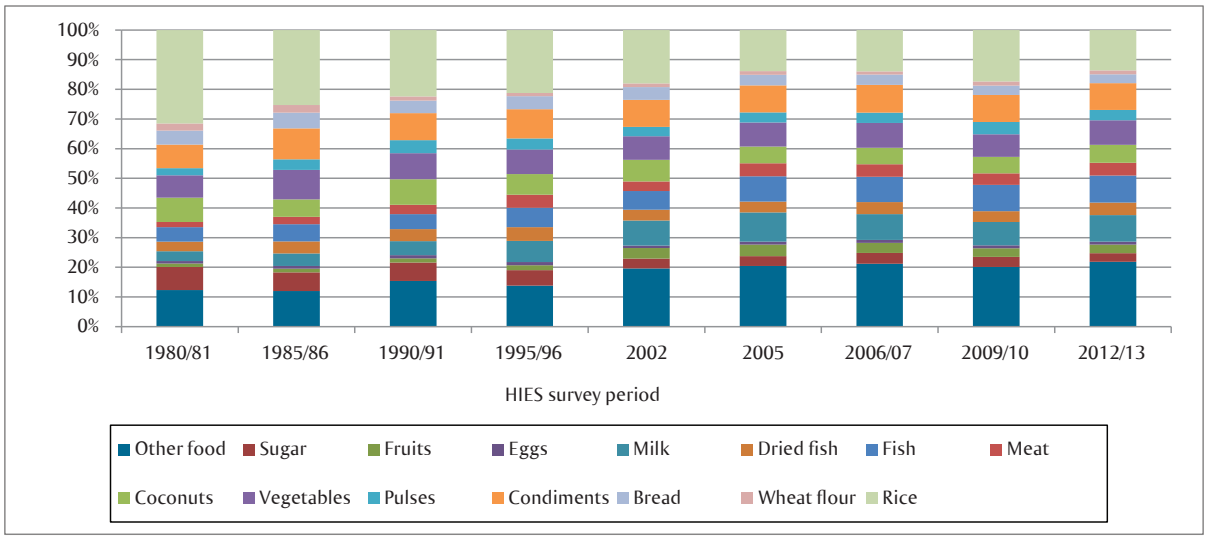
Table 10 : Proportion of Household (HH) Expenditure on Food

Year	1985/86	1990/91	1995/96	2002	2006/07	2009/10	2012/13
Mean HH expenditure per month (Rs.)	2,079	3,905	6,525	13,147	22,952	31,331	41,444
Food ratio (%)	57.6	64.6	54.4	44.5	37.6	42.3	37.8

Sources: DCS, HIES (various years), Department of Census and Statistics of Sri Lanka

Figure 12 highlights the consumption pattern changes in Sri Lanka over the years. As in the case of other Asian economies, Sri Lanka too has seen a decline in the consumption of its staple food – i.e., rice. At the same time, the consumption of meat, fish, and eggs has been increasing which means a move from the carbohydrate intake towards intake of more protein.

Figure 12 : Changes in food consumption pattern



Source: Department of census and statistics

[8] The Megapolis Master Plan - https://www.megapolis.gov.lk/downloads.php

Whereas greater food diversity and higher average incomes in urban areas result in an overall greater consumption of meat as well as fruits and vegetables, a parallel increase in the consumption of industrially processed foods causes a greater intake of fats, sugars, and salt (FAO, 2003). Thus increasing urbanization can lead to malnutrition based on too much energy-rich food and not enough complex carbohydrates and roughage. Weight increase, owing to prolonged over-nutrition, has been observed among an increasing share of the population, both in high and low-income countries. This frequently follows a common pattern: in countries with low average incomes, obesity is more frequent among people with a higher socio-economic status and among city-dwellers. By contrast, in high-income countries obesity is associated with a low socio-economic status and rural areas.

Due to urbanization and income growth, a large number of people partly rely on food from commercial food value chains. These comprise a mixture of traditional (e.g. street vendors, small merchants, farmers) and modern actors (e.g. supermarkets, food manufacturers, restaurant chains). Therefore, secure access to food for people in urban areas is closely linked to commercial value chain prices. There are no regulations for the sale of food at street stands, which frequently lack sufficient cooling, water, and sanitation. Often, street food vendors have not been trained in preparing, handling and storing food. As a result there is a belief that a strong link exists between the consumption of food at street stands and the incidence of food poisoning, particularly in developing countries. In addition to risking the intake of pathogenic microorganisms by eating food cooked in street stands, there may also exist an increased risk of consuming chemical-toxic substances, which are a long-term health hazard. These substances may come from cheap ingredients containing illegal or undesirable residues, poorly stored and spoilt commodities, metals leaching from cooking utensils, or process contaminants such as polycyclic aromatic hydrocarbons and acrylamide (Matuschke, et al., 2014). Even though Sri Lanka has food safety regulations on food preparation (colouring, sweeteners, iodized edible salt content, etc.), food packaging, and labelling, the extent to which these regulations are practiced is questionable. Also, the advertisements that promote fast food, particularly targeted at children tend to create an unnecessary supply-driven demand for those foods (IPS, 2016).

Policy and Programmatic Response to Food Security and Nutrition

Chapter 5

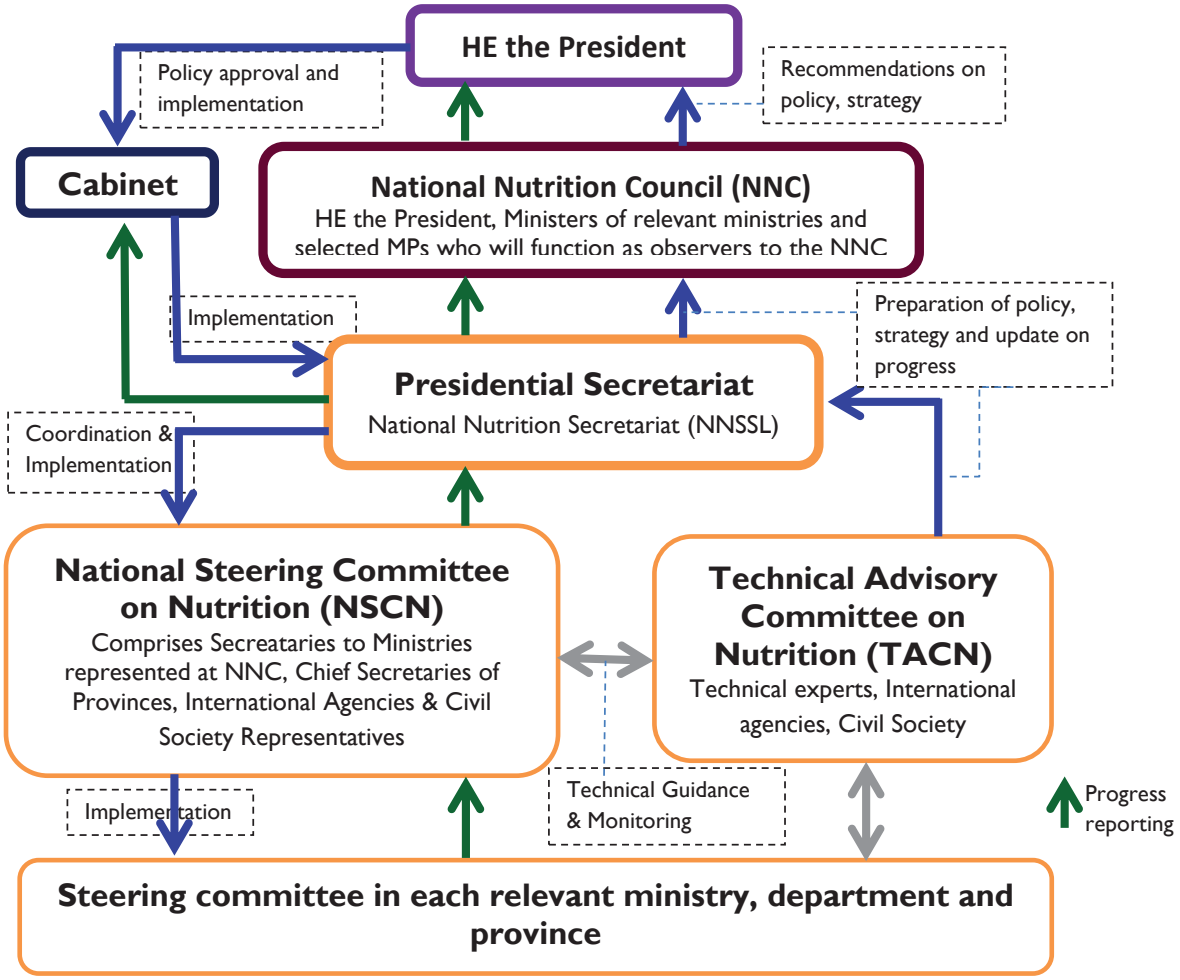
Policies and strategies focused on promoting food security and addressing malnutrition in Sri Lanka have consisted of poverty reduction programmes, direct food assistance programmes, and integrated maternal and child health and nutrition programmes. These programmes are mandated under specific line ministries including the Ministry of Health, Ministry of Agriculture, Ministry of Social Welfare, Ministry of Disaster Management, and others. Significant efforts have been made by the various stakeholders in Sri Lanka to address food insecurity and malnutrition in the country, and therefore this chapter aims at reviewing the different policies and programmatic responses by various institutions to identify gaps in achieving SDG2.

5.1. Institutional Framework

True to its commitment to address the issues of malnutrition and food insecurity, Sri Lanka's institutional framework has been set up with nutrition and food security centrally placed in the national development agenda. In 2011, the high-level National Nutrition Council (NNC), chaired by the President, brought together 16 line Ministers, Chief Ministers of Provinces, and Members of Parliament from all parties. The implementation body of the NNC is the National Steering Committee on Nutrition (NSCN) which is replicated at the sub-national level including at the provincial, district, and divisional levels. It convenes the Secretaries of Ministries, Chief Secretaries of Provinces, civil society representatives, and development partners, including UN agencies.

Within this context, the National Nutrition Secretariat of Sri Lanka (NNSSL) is the main body responsible for ensuring the coordination of activities contributing to nutrition security in the country. Its functions come under the direct purview of the President of Sri Lanka, thereby facilitating better coordination of nutrition-related activities of all relevant ministries. (Figure 13). Similarly, the Presidential Secretariat has also established a division for food security and national food production with a similar function to coordinate all the food security related activities.

Figure 13 : National Nutrition Council and Related Structures



Source: Vision 2016: Sri Lanka, A Nourished Nation: Multi-sector Action Plan for Nutrition (2013), National Nutrition Secretariat of Sri Lanka.

The table below strives to present a snapshot of some of the key ministries which have significant responsibilities and programmes related to nutrition and food security. These include the Ministry of Industry and Commerce; Ministry of Provincial Councils and Local Government; Ministry of Labour and Trade Union Relations; Ministry of Science, Technology and Research; Ministry of Parliamentary Reforms and Mass Media; Ministry of National Policies and Economic Affairs; Ministry of City Planning and Water Supply; and the Ministry of Home Affairs.

Table 11 : Summary of key Ministries involved in nutrition and Food security

Ministry of Agriculture Vision: Provides a vibrant and dynamic agriculture sector for food security and national prosperity. There are nine institutions under the purview of the Ministry of Agriculture, namely; • Department of Agriculture • Hector Kobbekaduwa Agrarian Research Training Institute (HARTI) • Department of Agrarian Development • Agricultural & Agrarian Insurance Board • Sri Lanka Council for Agriculture Research Policy (CARP) • Institute of Post-Harvest Technology (IPHT) • National Food Promotion Board (NFPB) • Colombo Commercial Fertilizer Co. Ltd • Ceylon Fertilizer Company Ltd.	**Ministry of Health, Nutrition & Indigenous Medicine** Responsible for safeguarding the health and nutrition status of all citizens in the country. Ministry of Health consists of several divisions working with nutrition objectives, including: • Nutrition Coordination Division (NCD) • Health Education Bureau (HEB) • Non-communicable Disease Unit • Nutrition Division (ND) • Family Health Bureau (FHB) • Food Control Administration Unit • Medical Research Institute (MRI) • Estate Sector Development • Non-Communicable Disease
Ministry of Education - School Health and Nutrition (SHN) division The main objectives of the division are: • to ensure active participation in education and minimize the existing high rate of malnutrition amongst school children, • to promote good practices in food consumption and promote good health practices • to increase the attendance rate of school children in remote areas • to provide guidance to consume a balanced diet	**Ministry of Social Empowerment and Welfare - Department of Divineguma** The Department of Divineguma Development was established in accordance with the Divi Neguma Act No. 01 of 2013, amalgamating five government institutions, The main aim of the Department is to eradicate poverty and to ensure social justice, through the promotion of livelihood and economic development activities centred on individuals, families, groups, and communities.

Ministry of Fisheries & Aquatic Resources Development Aims to increase the nutritional status amongst low income and food insecure families.	**The Ministry of Livestock and Rural Community Development - Department of Animal production and Health** Implementing the national food security strategies with the aim to: • achieve sustainable and equitable economic and social benefits to livestock farmers • increase the supply of domestic livestock products at competitive prices to the consumers • increase of current domestic production of poultry products by 2015 • increase the income levels of the rural community by providing infrastructure facilities • encourage self-employment and livelihood development and to strengthen community based organizations for rural community empowerment
The Ministry of Plantation Industries seeks to enhance productivity, profitability and sustainability of the plantation industry.,	**The Ministry of Mahaweli Development and Environment** of Sri Lanka is dedicated towards the management of the environment and natural resources of the country, maintaining the equilibrium between the trends in rapid economic development and use of the natural resource base.
The Ministry of Women and Child Affairs Focuses on formulation of policies, programmes and projects, monitoring and evaluation with regard to the subjects of women and children. Two sections of the Ministry: Child Development Sector and Women Development Sector are engaged in implementing food security programmes.	**Ministry of Primary Industries** The main objective is to develop the regional economies through enhancing income of the people in an integrated approach.
Ministry of Disaster Management Aims to facilitate harmony, prosperity and dignity of human life through effective prevention and mitigation of natural and man-made disasters in Sri Lanka.	**The Ministry of Finance** Has no specific goals relating to food security, but the Ministry is responsible for allocating money or budgeting for the food security programmes.
Ministry of Hill Country New Villages, Infrastructure & Community Development Aspires to promote wellbeing of the plantation community by improving the habitat, living conditions and socio-economic facilities to provide effective human resources to the plantation industry.	**The Ministry of Sustainable Development and Wildlife** The Mission of the Ministry is to plan and implement policy through the coordination of guiding institutions entrusted with the national commitment on Sustainable Development.

5.2. Policy and Programmatic Responses

5.2.1. Food Security

All the programmes implemented by the Ministry of Agriculture (MoAg) are driven by the National Agricultural Policy developed in 2001. The main goal and objectives of the policy are: 1) to increase domestic agriculture production to ensure food and nutrition security of the nation; 2) to enhance agricultural productivity and ensure sustainable growth; 3) to maximize benefits and minimize adverse effects of globalisation on domestic and export agriculture; 4) to adapt productive farming systems and improve agro-technology with a view to reducing the unit cost of production and increasing in profit; 5) to adopt technologies in farming that are environmentally friendly and harmless to health; 6) to promote agro-based industry and employment opportunities; and 7) to enhance income and the living standards of farming communities.

In order to carry out the vision stipulated in the Policy, the National Food Production National Programme (FPNP) 2016–2018 was introduced in September 2015. The main objectives of the programme are to increase food availability through increased food crop production and productivity. Two main approaches are employed including crop production programme and home gardening promotion. To support the programme fourteen areas have been employed such as input management, research, and technology development, and consumer health and satisfaction.

Furthermore, there are a few other programmes conducted by the MoAg to improve food availability and productivity in the country. These include: the food crop production and improvement programme (especially for rice, maize, green gram, onion, chili.); the farm mechanization programme to improve productivity; the fertilizer subsidy programme; and the renovation of small tanks, and minor irrigation programmes.

The fruit village programme of the Ministry of Agriculture has been designed to increase daily consumption of fruits from 100 to 200 g and also to promote traditional fruit varieties amongst people. The promotion of home gardens is also directed at encouraging people to: consume fresh fruits and vegetables, consume organic fruits and vegetables, and change consumption patterns. Furthermore, the establishment of "Hela Bojun" Sales Centers focus on promoting poison-free, nutritious local foods amongst consumers. Even though the main focus is to improve the access to food, the availability aspects are also taken into consideration by these programmes.

With regard to the FPNP of the Ministry of Agriculture, all the provincial councils have signed a declaration called "Wadduwa Declaration" to ensure the stability of the programme and also to develop a network system within the provincial councils for better implementation of the national food security programme. The preparation of an agricultural database was initiated to ensure sustainable implementations of NFSP and the fertilizer subsidy programme. It links 559 Agrarian Service Centres island wide and registered farmers via an online system. It expects to provide better coordination in project implementation, reporting, and monitoring. The 'Gamdora' programme was also introduced to build a link between service providers in the Agrarian Service Departments and to offer an efficient and sustainable service to farmers.

Some of the policy objectives of the Ministry of Livestock and Rural Community Development also focus on food security, especially food availability aspects. The main target of the Ministry of Livestock and Rural Community Development is to create self-sufficiency in all types of livestock products, mainly meat, eggs, and dairy products. The target years for self-sufficiency for meat and milk are approximately 2020 and 2025, respectively. The Master Plan (2010-2015) of Livestock Ministry consists of a: "Five Year Dairy Sector Development Plan"; "Five Year Poultry Sector Development Plan"; "Five Year Swine Sector Development Plan"; Five Year Goat Sector Development Plan; and "Plan for Potential Livestock Animal Species with Future Promising Economic Value". Encouraging breeder farmers is also done by providing financial support with technical assistance to improve existing farms and to upgrade them to commercial level farms.

The liquid milk consumption promotion programme of the Ministry of Livestock aims to encourage the consumption of fresh milk by school children. This programme was implemented island wide in 2004.

Even though the main objective of this programme is to improve the nutrition levels of school children, this programme indirectly improves access to food as well.

The 2013-2016 Strategic Development Objectives of the Ministry of Plantation Industries identified the importance of uplifting the living standards of the plantation communities and it is supporting the Multi- Sectorial Action Plan for Nutrition by conducting food security awareness programmes in the 33 regional plantation co-operations.

The main objectives of Ministry of Fisheries & Aquatic Resources Development are to improve nutritional status and food security of the people by increasing the national fish production and to minimize losses through appropriate storage while improving quality and safety of fishery products to acceptable standards. The fishery sector constitutes three major sub-sectors namely coastal/near-shore, off-shore and deep sea and inland and aquaculture. The total fish production of all three sectors was 520,190 mt in 2015. Of the total fish produce, 95 percent is used for domestic consumption, and the remaining is exported, earning the country RS. 25 billion in 2015. At the same time, however, 120,000 Mt of fish and fishery products are imported each year. A few of the programmes implemented by the Ministry include: training of fisher communities in production of fish-based products (dry fish, Maldive fish, Jaddi and smoked fish) as a livelihood option; encouraging domestic fish canning; encouraging the domestic production of fish and fisheries product through the Divineguma programme in collaboration with the Ministry of Social Welfare; and conducting awareness programmes for target groups to enhance the consumption of fish and fisheries products through the Ministry of Health.

Several activities are carried out by the Ministry of Plantation Industries for the development of the plantation sector in compliance with the policy framework of "Mahinda Chinthana Idiri Dekma (2010)". These include enhancing the productivity of cultivated lands in the plantation sector, increasing the annual rate of tea and rubber re-planting, promoting the new plantation in non-traditional areas, implementing research and development programmes and promotion, value addition for goods and services and promoting brand names, and the protection and conservation of the ecosystem through the sustainable use of lands. Even though the Ministry of Plantation Industries is not directly involved in the food security programmes, it is a facilitator for some of the food security programmes conducted by the other ministries. For example, the plantation ministry is contributing to the National Food Production Programme of MoAg by increasing coconut production to 28,000 million per year to be self–sufficient by the year 2018.

The Ministry of Sustainable Development and Wildlife mainly deals with wildlife conservation and in-situ conservation and assists the Department of Agriculture, Ministry of Fisheries, and Ministry of Livestock in food security related programmes. The Ministry of Primary Industries has initiated a programme on Regional Demonstrative Research Farming System Mechanisms (RDRFSM). Further, they are implementing an integrated approach with the Ministry of Agriculture, Fisheries and Livestock.

5.2.2. Health and Nutrition

The National Nutrition Policy (NNP) 2010-2018 **has six main objectives which are**: (1) to ensure optimal nutrition throughout the lifecycle; 2) to enhance capacity to deliver effective and appropriate interventions; 3) to ensure effective management of adequate nutrition to vulnerable populations; 4) to ensure food and nutrition security for all citizens; 5) to strengthen advocacy, partnership, and networking; and 6) to strengthen research and monitoring and evaluation.

Appropriate interventions include behaviour change communication, capacity-building of health staff and community-based workers and close collaboration with the media. The policy also attempts to ensure access to adequate, nutritious, safe and quality food at affordable prices throughout the year (**food based approach**), (2) promote consumption of a wide variety of foods, ensuring intake of all macro- and micro-nutrients to prevent deficiency disorders and diet related chronic diseases (**dietary diversification**), (3) promote and facilitate improvement of quality of commonly consumed food items (e.g. food fortification), to ensure micronutrient supplementation for vulnerable groups (**nutrient enhancement**) and (4) enact and implement appropriate legislations and other regulatory mechanisms to ensure provision of safe nutrition to all citizens of Sri Lanka (**food safety**). The NNP is currently being reviewed with a multi-stakeholder consultation. Nutrition is also mainstreamed into sectoral policies,

including, agriculture, livestock, non-communicable diseases, early childcare development, and school canteen guidelines.

In line with the NNP 2010–2018, the Ministry of Health, through its various departments, is implementing all of the essential nutrition actions recommended by the World Health Organization.

The Nutrition Division (ND) in the Ministry of Health is the department within the Ministry offering guidance in nutrition policy formation, planning and implementation of programmes, resource development, monitoring and evaluation. It is geared to monitor all nutrition-related activities in the country and carries out its own activities such as the formulation of food-based guidelines. The division also focuses attention on food-based approaches, hospital-based nutrition, and adult and elderly nutrition. The ND has already prepared guidelines for Dietary Guidelines & Nutrition Therapy for Specific Disease, Food Based Dietary Guidelines for Sri Lankans and a Food Guide. However, the FBDG is currently outdated and an updated version is needed. The Ministry of Health, with the support of District Medical Officers of Health (MOH) and mid-wives, implements National Supplementary Feeding Programme (Thriposha Programme) for all pregnant mothers, and all lactating mothers until children are six months old. This was started in 1973 and is continuing to date.

The Family Health Bureau's (FHB) mandate is to ensure satisfactory quality of life and health potential of all women, children, and their families. The national policy on Maternal and Child Health (MCH) was formulated towards the national commitment to adopt and implement the appropriate interventions in improving the MCH. This provides policy and strategic directions to address the emerging concerns and challenges in MCH whilst maintaining and strengthening already established services. It further provide policy guidance and directions to the provinces for effective implementation of the MCH programme. Some of the programmes conducted by FHB are training of trainers programmes on infant and young child feeding counselling; training of trainers programmes on child growth assessment (WHO new child growth standards). In addition, a few other nutritional programmes are conducted by the School Health Unit 'Adolescent & Youth Health Unit, Gender & Women's Health Unit and Planning, Monitoring & Evaluation Unit.

Health Education Bureau (HEB) is the centre of excellence in Sri Lanka for health education, health promotion and publicity of health information. The main role of the HEB is to empower and mobilize communities for the improvement of their quality of life through health promotion principles. To maintain stability in the food security system, HEB conducts health promotion programmes, life skills development programmes, and capacity development programmes for the personnel engaged in health development.

The National Strategic Framework for Development of Health Services (2016-2025) was developed to address the issues with the existing National Health Policy, which was prepared in 1996 and also to address new emerging health issues. Moreover, 2005-2015 JICA Health Master Plan does not cover the areas such as estate health, nutrition, curative services, and renal diseases, among others. Thus, the new framework has included all what was omitted in the previous framework. Several programmes were initiated and carried out by the SHN division of the Ministry of Education. All of the programmes are mainly focused on improving nutritional levels of school children.

5.2.3 Direct Food Assistance & Income Support

The main programme conducted by the **Ministry of Women and Child Affairs** is the **Programme to Provide Nutrition Allowance of Rs. 20,000 to Pregnant and Lactating Mothers.** This programme was introduced in 2015 to provide a Rs. 20,000 pregnancy term (Rs. 2,000/-per month) nutrition allowance for 10 months to every mother who is expecting or has given birth, with the aim of minimizing the number of low birth weight babies in Sri Lanka. Every mother registered under the above categories with the office of the Medical Officer of the Health was provided this allowance until April 2016 through the use of coupons as a nutrition pack consisting of all nutrients required by pregnant or lactating mothers. However, a new voucher method was introduced from May 2016 to replace coupons with the aim of making it more convenient for recipients to purchase the recommended food items and for convenient implementation of the programme. Under the new scheme, 10 vouchers with a value of Rs.

2,000 each are provided at once. It also is possible to obtain the entire pack of nutritious food items within the last six months of pregnancy and the first four months of lactation.

The Ministry of Women and Child Affairs programme to provide a Glass of Fresh Milk to Pre-School Children. This programme has been implemented from 2006 with two objectives: uplift the nutrition level of preschool children of low income families who suffer from malnutrition; and strengthen domestic dairy farmers. This programme has been implemented through the Early Childhood Development Centres/Preschools from 2011 and is coordinated by Early Childhood Development Officers at Divisional Secretariat Divisions. Since it has been proposed to provide a nutritious breakfast instead of this programme, the programme to provide a glass of fresh milk for Pre-schools/ Early Childhood Development Centre children is to be changed in 2017 in the divisions with the highest levels of nutrition deficiencies. **"Poshana Manpetha" Food and Nutrition Programme** aims to raise awareness amongst parents and pre-school teachers about food and nutrition of children in their childhood. Direct awareness programmes through distribution of handouts and booklets have been organized simultaneously with the programme. However, from 2017, the Ministry will shift from providing milk to providing meals to pre-school children in vulnerable areas currently funded by the World Bank.

School Meal Programme of the Ministry of Education and the **Supplementation of nutrition support programme** of the Ministry of Education, **consists of a 24 week treatment (e.g.: folic acid, Vitamin C)** focused on improving the nutrition and health of the school children.

In terms of ensuring food security, one of the main activities that the **Ministry of Disaster Management** is carrying out is the provision of cooked meals for disaster victims. The Ministry has granted funding to divisional secretariats and to Grama Niladharis to provide cooked meals to those affected in the event of a disaster without any prior approval.

The **Department of Divineguma** is carrying out several projects in terms of ensuring food security of those living below poverty line. They are Agricultural Development Projects, Animal Husbandry Projects, Fisheries Development Projects, Self-employment, and Industrial Development Projects. These projects are aimed at increasing the income levels of Divineguma (Samurdhi) families and low incoming earning families to enhance their health and nutrition status and to provide vocational training to make available labour appropriate to the job market. In this regard, a total number of 85,455 projects out of targeted 110,674 numbers of projects have been completed.

The **Ministry of Hill Country New Villages, Infrastructure & Community Development** has undertaken several programmes to empower the rural estate communities and uplift their livelihoods. Plantation Human Development Trust (PHDT) which comes under the purview of the ministry is engaged in several projects to improve the housing conditions and infrastructure. Besides the state finances, these programmes are supported by funding from different non-governmental organizations such as UNDP and World Bank and foreign governments like India.

5.2.4 Other Government Programmes

Water Sanitation and Hygiene (WASH) programme of the Ministry of Education are more focused on improving food utilization, nutrition, and health situation of school children. The WASH programme in schools refers to a combination of infrastructure and human development components which are necessary to maintain a healthy school environment. The main objective of the programme is to lead schools to focus on the health promotion of the school community, including the students and teachers, by utilizing fully its organizational capacity building. The programme was initiated in 2012 and has currently enabled more than 90,000 school children and 2,500 teachers in 360 schools in underserved areas to access water and sanitation.

The Food Control Administration Unit (FCAU) is mainly focusing on: (1) ensuring human safety and health (supply of safe and wholesome food, availability of food standards, regulations, issues related to irradiation, genetic engineering); (2) ensuring proper and good hygienic practices (prevent microbiological/chemical contamination, prevent adulteration and fraudulent practices in sale of food, rational use of chemical additives such as antioxidants, preservatives, emulsifiers, stabilizers, colours

and flavours, eliminate wrong practices, using colours, flavours, preservatives to make stale / decayed food appear fresh or of good quality); (4) ensuring adequate public health controls and implementation of food control programmes. **FCAU is governed by Food Act, No. 26 of 1980 as amended by Food Act (amended), No.20 of 1991**. This Act regulates and controls the manufacture, importation, sale, and distribution of food. FCAU's programmes are mainly focused on basic food laws to protect consumers against health hazards.

The social and economic behaviour of the increasing human population has presented a major threat to the achievement of sustainability objectives. The Ministry of Mahaweli Development and Environment has framed key policies for the adoption of management of environment and natural resources of the country. The biodiversity division of the Ministry is providing leadership for the nation in conservation of country's biodiversity without depleting natural stocks. The Ministry has being updating the National Environment Policy under the current Food Security National Programme for Biodiversity.

5.2.5 Development Partner Assistance

Several development partners such as the World Food Programme (WFP), the World Health Organization (WHO) the United Nations Children's Fund (UNICEF), the Food and Agriculture Organization (FAO), and international and local non-government organisations are providing funding for some programmes and are also directly involved in selected food/nutrition programmes. In addition, civil society organizations are directly involved in food security programmes, especially regarding utilization and nutrition aspects. Some of the programmatic interventions are as follows:

WFP provides nutritious meals daily to 160,000 primary and secondary students in 958 schools in the five districts of Northern Province, where primary education has been affected due to almost three decades of conflict that ended in 2009, the tsunami of 2004, and repeated climate shocks. WFP provides a food basket consisting of 75 grams of rice, 35 grams of pulses, 15 grams of oil, and 30 grams of canned fish. Pulses and canned fish are provided on rotational basis for a child per day. The Ministry of Education provides funding (Greenery Fund) to purchase vegetables from farmers. Targeted schools are assisted with the construction of school kitchens and stoves and the provision of kitchen utensils.

WFP also partners with Save the Children, which established the Scaling Up Nutrition – People's Forum (SUN-PF) for civil society organizations. The SUN-PF represents over 250 civil societies across the country. In 2016, the SUN-PF successfully carried out the review of the National Nutrition Policy from the perspective of the community. Further, they have also successfully developed an advocacy plan to enhance the state of nutrition in the country.

The goal of the Health and Nutrition (H&N) programme of **UNICEF** is to improve the health and nutritional status of children, pregnant and lactating women in the selected 11 UN focal districts with an emphasis on reduction of inequities among districts in health services and the nutritional status of women and children. This programme mainly focuses on maternal and child nutrition, maternal and neo-natal health, integration of prevention of mother-to-child transmission (PMTCT) into service and the restoration of basic health and nutrition services for populations in emergency situations.

The World Health Organization (WHO) too conducts several programmes to ensure food security in the country. For example, **Maternal, Infant and Young Child Nutrition Programme** to promote breastfeeding and to provide counseling, **Vitamin and Mineral Nutrition Programme** to provide calcium supplementation, and the **School-based Nutrition Programmes** to promote deworming, provide iron and folic acid supplementation, vitamin and mineral nutrition, and to conduct growth monitoring of school children.

The World Bank's (WB) **Food Subsidies and Poverty Alleviation Programme** is mainly targeted to people in the low-income category and provides them with food stamps to purchase rice, flour, sugar, milk powder, and kerosene. Further, the WB's **Direct Food Assistance and Supplementary Feeding Programme** is mostly for the people who are in the Northern and Eastern Provinces. This programme aims to mitigate hunger and under-nutrition in areas that were previously affected by the conflict. There are some other programmes targeting pregnant and lactating mothers and children, including the example; **Supplementary Feeding Programme, Integrated Maternal and Child Health and Nutrition**

Programme, and other **Programmes to Address Micronutrient Deficiencies and Food Fortification**.

5.3. Gaps in Policy and Programmatic Responses

Historically, actions and strategies focused on ensuring food security and nutrition in Sri Lanka were handled separately through the National Agricultural Policy of the Ministry of Agriculture, the National Nutrition Policy of the Ministry of Health and Indigenous Medicine, and several other policy documents of various ministries that are directly and indirectly related to food security and nutrition. Despite the multitude of different policies and programmes being implemented, the food security and nutrition objectives of the country are yet to be achieved due to the fragmented nature of the approach, insufficient coordination among the institutions and the absence of a central theme.

SDG2 has a series of interrelated components which include ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture. Agriculture is viewed as the central element of Goal 2, therewith endorsing sustainable approach to agriculture to assist in a food-based approach to address malnutrition and ensure food security of the population. However this is yet to achieve due to various policy constraints which include conflicting policy objectives, extreme political ideologies, uncertain policy environments, and lack of financial and human resources could be considered as the gaps in policy and programmatic responses for addressing the current and emerging issues.

There is a serious gap in dealing with conflicting policy objectives such as import substitution and export promotion, protecting producers and safe-guarding consumers, achieving food self-sufficiency and achieving self-reliance/food security, competitiveness and sustainable production. For example: the "self-sufficiency model" that has been adopted in the past agricultural policy and national strategies does not support the achievement of the country's expected economic growth rate. However, adopting "self-reliance model" where , the production of food commodities domestically to the extent they can be produced economically and with a comparative advantage, while ensuring nutrition has not been considered previously. Also, extreme political ideologies at times cause setting of targets without paying much attention on economic feasibility and affect designing and prioritization of policies to address present and future needs.

To achieve SDG 2.1, end hunger and ensure access by 2030, the country needs to increase the access to food for rural, urban, and estate populations including marginalized groups such as estate labourers and previously war-affected peoples in a sustainable manner. Thus, the problem of food insecurity does not lie in the domain of agricultural and food policy alone. Physical and financial causes affect food access and are restricted due to scarce non-agricultural income possibilities, limited access to productive resources, high cost of healthy diets, lack of functioning services, and substandard infrastructure. The coverage of these aspects, however, has been limited partly due to lack of financial and human resources.

Sri Lanka has achieved considerable progress in health due to sound governmental policies adopted by subsequent governments to strengthen the country's public healthcare system over the years. SDG 2.2 requires by 2030, *end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons*. Sri Lanka expects to reduce the number of children under 5 who are stunted and those born with low birth weight by 40 percent and 30 percent, respectively. Also, the country aspires to reduce and maintain childhood wasting at less than 5 percent. A comparison of SDG targets and the status quo indicates that Sri Lanka will need to pay considerable attention to necessary policy interventions to achieve some of the key SDG targets. Also, for Sri Lanka to achieve its given targets by 2025, further targeted investments in child and maternal health is central, especially to reduce gaps across geographic regions.

The nutrition-specific essential actions[9] as recommended by WHO are being implemented in Sri Lanka. However, there is a need to improve coverage and quality of these actions. Further, behavior change communication efforts are not well structured, and therefore, appropriate behavior communication

[9] The Lancet series 2008 and 2013, and WHO recommended a series of essential nutrition-specific actions that could reduce infant and child mortality, improve physical and mental growth and develop-ment. WHO recommended essential nutrition action throughout the life cycle, with focus on the first 1,000 days. The actions include micronutrient supplementation during pregnancy, appropriate IYCF practices from birth to 2 years of age, appropriate management of acute malnutrition, and food fortification

strategies and tools should be developed going forward.

Although the Multi-Sector Action Plan for Nutrition 2013–2016 was developed by the National Nutritional Secretariat, placing the integrated response as central to achieving nutrition security, there are gaps in the implementation of the action plan. Within this action plan, different ministries and other stakeholders have specific mandates to be implemented within their policy frameworks and strategies. However, there is little cross-sectoral collaboration at the community level across health, agriculture, education, and poverty reduction/social development sectors (IPS, 2016). To truly achieve the multi-sectoral aim, further advocacy is required to allow for better understanding on nutrition and the role that various ministries could undertake.

There is a gap in quality of the services provided by maternal and child health (MCH) programmes due to poor allocation of physical, human, and financial resources. Irregular supplies and the tendency to share food supplements such as Thriposha within the family results in some children and mothers receiving insufficient amounts of the food supplement. Knowledge and awareness of nutrition are very important components of any programme focusing on reducing malnutrition. There have been failures in providing adequate nutrition counselling and education due to lack of human resource capacities and issue of compliance from the recipients (IPS, 2016).

Moreover, health professionals are not equipped to provide counselling and to assess other potential causes of under nutrition. Therefore, the education system should play a major role in improving nutrition knowledge from early stages of life and to promote nutrition sensitive gardening programmes which may be included in school curricula. Nutrition sensitive approaches should be maintained in home gardening at the community and household levels. Strategies used to combat micronutrient deficiencies worldwide include supplementation and fortification of staples. While MCH programmes have proven to be effective for providing supplements as a targeted short term approach for high prevalence of deficiencies of micronutrients such as iron, zinc, vitamin A, and iodine,[10] very little has been done with regard to food fortification. Further, as pointed out in the SUN-PF review of the NNP, gaps in private-public partnership have been noted. The review also highlighted the need to strengthen coordination within MoH and between ministries. There is also a gap in data reporting and timely utilization of available data.

SDG 2.3 requires, by 2030, '*to double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment*'. There are, however, serious limitations in addressing inefficiencies in land and irrigation inputs; information asymmetry, limited financial services; market imperfections; and commercialization. Gender inequality in accessing land resources and livelihood also remains challenging and needs to be addressed if SDG targets are to be met.

With the opening up of Sri Lanka's economy, investment in research and development (R&D) and infrastructure in agriculture has been reduced and funds diverted to manufacturing and the services sector development. Also, ever-increasing government spending on popular measures such as inefficient subsidies on fertilizer has continuously crowded out the most important investments like R&D and agricultural infrastructure. Increasing the agriculture budget alone, without proper prioritization in allocation, may result in the extra resources not being spent effectively. Public spending on agricultural research as a percentage of agricultural GDP in Sri Lanka remains very low. Though the country has employed substantial efforts through an array of research institutions focusing on different crops, the output has been constrained by poor complementary investments in R&D.

SDG 2.4 requires by 2030 to "*ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality*". The Food Production National Programme 2016-18 provides some food production targets and plans of action to enhance agricultural production. One of the important strengths of this programme is the vast coverage of food products that include nutritious foods such as vegetables, fruits, livestock, and milk. The main focus of the above programme, however, is still

[10] http://siteresources.worldbank.org/SRILANKAEXTN/Resources/233046-1222978473355/ch4LKNutritionOct2008-2.pdf

achieving the coveted goal of self-sufficiency, which disregards the importance of balancing domestic production and trade in ensuring food availability and accessibility.

Despite the multitude of social protection programmes ranging from cash and in-kind transfers, insurance, old-age retirement benefits like pensions, education welfare programmes, nutrition programmes and livelihood development programmes, a number of gaps and weaknesses exist in Sri Lanka's social protection system. Low coverage due to budgetary constraints and poor targeting, mainly due to lack of clearly defined eligibility criteria and entry and exit mechanisms are the two most common weaknesses in many social protection programmes (Tilakaratna, 2014). The inadequacy of benefits is another limitation of many social protection programmes. For example, under the Samurdhi subsidy programme, the maximum amount received by a family is far below the minimum requirement to meet a family's basic needs, let alone its nutrition requirements. Also, the monthly allowances provided under the elderly assistance programme are far from adequate to cover basic expenses such as food and medical costs. Lack of coordination among institutions involved in the provision of social protection that include various ministries, departments, and provincial councils and duplication of programmes targeted toward certain vulnerable groups are two major gaps in Sri Lanka's social protection system.

There are some social issues such as the ageing population, gender inequality reflected in the low female labour force participation and informalisation of work which could impact the effectiveness of available social protection systems in safeguarding the poor against food security and nutrition risks. It is estimated that by 2041, the share of the population over the age of 60 will double and thereby, around one fourth of the population will be above 60 years of age (UNDP, 2015). Population ageing raises concerns about the ability of the social protection system to cater to the needs of the growing number of elderly persons. Also, it is expected that a larger share of women will be in the above 60 years age category due to the longevity of women over men. This will create important policy implications as many women are less likely to have adequate social protection due to the low female labour force participation rate in the country (Tilakaratna, 2014).

The labour participation rate for women in Sri Lanka is extremely low (around 35 %) mainly due to non-availability of suitable employment opportunities closer to their homes. Many individuals with low skills, in particular, remain trapped in precarious jobs, often in informal and unregulated economic activities.[11] Those who are employed in the agricultural sector have largely seasonal employment, do not secure year-round work, and suffer from a lack of non-farm income earnings (IPS, 2011).

[11] http://www.ips.lk/talkingeconomics/2016/06/03/can-sri-lanka-eradicate-poverty-and-reduce-income-inequality-by-2030/

Conclusions and Recommendations

The Strategic Review clearly reveals that food and nutrition security in Sri Lanka, as targeted by SDG2, remains an unachieved social and economic goal in spite of numerous interventions by the government and development partners.

The achievements of past food and nutrition policies, strategies, and programmes of Sri Lanka emanate from two main sources. Firstly, as this Review shows, the entire food and nutrition process is encapsulated in the macro economy and the polity which house it, which at the same time also constrains it. If the recommendations of this Review are to be adopted, the State will have to be adopted by the Polity as one of the top policy priorities and for a stipulated, extended time period, without being compromised due to other emerging, competing priorities.

Secondly, as is clear by now, large numbers of different government agencies and institutions have been involved in enforcing food and nutrition policies and implementing the programmes under them, which has resulted in serious problems of coordination and collaboration. In addition, due to the sheer number of entities, there are poorly defined operational boundaries, leading to conflicts and confusion and the overlapping of authority, which has often resulted in implementation failure.

In any attempts to reach the SDG2 in Sri Lanka, this fundamental problem of coordination and inter-agency friction has to be eliminated, starting at the highest levels. If the number of agencies and institutions cannot be reduced, the overall food security and nutrition initiative of Sri Lanka should essentially be placed under the command of a capable personality at the highest level of authority, possessing passion and commitment to stay the course. Needless to say, the National Agricultural Policy and Action Plan (2016-2020) and the National Nutrition Secretariat's planning activities, the Multi-Sector Action Plan for Nutrition, and other plans and programmes in individual ministries related to SDG2 in Sri Lanka need to be managed under a single institutional umbrella.

Implementing solely nutrition-specific interventions is not enough; according to the Lancet Series, the ten proven nutrition-specific interventions, if implemented together at large scale, could only reduce stunting prevalence by 20 percent. Achieving a sustainable decrease in malnutrition rates requires an integrated response and nutrition-sensitive programming across sectors. Working together across different sectors is challenging, but necessary. Effective behavior change communication strategies and actions are required to promote healthy food preferences.

Another important way to address the combined issues of food security and climate change is to ensure investment on disaster mitigation and climate adaptation that includes bridging the information and communication gap between farmers and policy makers, which is lacking at present. There is a need to improve the irrigation infrastructure, including major reservoirs and water harvesting systems and ensure that they are functioning well to meet the increased demand for water for agriculture, adapted to the future impact of repeated floods and droughts.

Furthermore, extensive investments in agriculture are required to ensure a sufficient and diversified supply of food for both urban and rural regions. An attractive agricultural industry safeguards the incomes of the rural population and actively contributes to combating poverty. Additionally, a flourishing agricultural industry can mitigate rural exodus and reduce population pressure on cities. Investment in training, infrastructure, modern technologies and cultivation methods, marketing, and banking and legal systems, as well as supporting women in agriculture are some examples of how agriculture can be strengthened and expanded. This Strategic Review offers eight key recommendations as priority areas with specific strategies for achieving the targets of SDG2 (Table 12).

Table 12 : Policy Recommendations and Strategies proposed to achieve the targets of Food Security and Nutrition in Sri Lanka

No	Detailed Recommendations:
1	**Adopt a cohesive sustainable agricultural approach by swiftly aligning the current agricultural practices and policies with the other food security and nutrition related policies to achieve the targets of SDG2 and to better face the serious contextual and climatic challenges ahead.**
	1.1 National Agricultural Policy and Action Plan (2016-2020) and National Nutrition Policy, should be implemented in tandem and with other relevant policy documents, targeting long term sustainability of food and nutrition security to ensure cohesion and correlation
	1.2 Improve the Total Factor Productivity (TFP) of crop production which would result in lowering production costs, increasing market competitiveness and meeting self-sufficiency in selected food commodities with a comparative advantage
	1.3 Create attractive climate-smart agricultural models in agricultural production
	1.4 Promote entrepreneurships in agriculture to encourage youth participation and to increase income among small-scale agricultural holders
	1.5 Strengthen relevant meteorological forecasting and early warning and real time surveillance systems for evidence-based agricultural production planning
	1.6 Promote modern technological interventions to increase agricultural productivity, profitability and sustainability
	1.7 Promote use of technology in the fishing sector targeting productivity, quality certification and compliance with international standards
	1.8 Promote sustainable agricultural practices with the main focus to minimize use of agro-chemicals and to encourage organic fertilizers for all crops
2	**Undertake innovative and integrated strategies to address stagnant levels of acute malnutrition and low birth weight, along with micronutrient deficiencies, and trends of increasing overweight and obesity linked to diet-related chronic diseases.**
	2.1 Coverage and quality of on-going evidence-based nutrition-specific interventions need to be strengthened
	2.2 Update / strengthen behavior change communication strategies, targeting the vulnerable population to address the underlying causes of malnutrition through multi-sector partnerships
	2.3 Create an enabling environment to promote and implement nutrition-sensitive programmes to address malnutrition at household and community levels
	2.4 Undertake systematic casual analysis of malnutrition, particularly for acute malnutrition to better inform nutrition response planning
	2.5 Implement the national micro-nutrient strategy, considering evidenced-based short-, medium-, and long-term interventions
	2.6 Strengthen and implement a health-medical-nutrition model to address the double burden of malnutrition
	2.7 Strengthen surveillance, and monitoring and evaluation using real-time data for nutrition programming while focusing on institutional capacity development

3	**Address the major gaps and weaknesses in current social protection systems and existing safety-net programmes to ensure the poorest and most vulnerable groups especially women, children and elderly, are targeted while institutional coordination is improved.**
	3.1 Address gaps and weaknesses in current social protection system and existing programmes, such as low coverage, targeting errors, inadequate benefits, and lack of coordination among institutions and programmes
	3.2 Increase the priority given to poor and marginalized groups in designing safety net programmes
4	**Embrace public-private partnership approaches to create a facilitatory environment, especially to improve healthy food preferences and efficient and stable supply chains.**
	4.1 Promote public-private partnerships to re-structure value chains, focusing on the concept of agricultural mega- zones
	4.2 Develop farmer-centric, large-scale, agro-organizations and cooperatives with respect to value addition, processing, and facilitating market interventions
	4.3 Improve market information systems and dissemination mechanisms to ensure the timely delivery of reliable information
	4.4 Promote the model of "small producer-large purchaser" through public-private partnerships in all agricultural sectors
	4.5 Encourage private sector to improve the use of renewable energy to meet power and energy requirements
5	**Strengthen public investment allocations for socially profitable interventions, particularly agricultural infrastructure development and agricultural research and extension while transitioning from output and input price subsidies.**
	5.1 Develop rural agricultural infrastructure specifically irrigation (micro-tanks, anicuts and canals), roads and transport and post-harvest storage facilities
	5.2 Increase government focus on agricultural research and extension in areas where private sector does not venture, e.g. agricultural research and development including bio-fortification, climate adaptation, and sustainable agriculture, and information management
6	**Develop a national strategic food reserve to ensure food availability and guarantee buffer stocks of essential commodities to stabilize prices for optimal consumption and sustenance of nutrition security.**
	6.1 Based on the SAARC Food Bank model, establish and maintain food reserves with adequate stocks of staple products at provincial level
	6.2 Implement improved systems to minimize post-harvest losses and promote value addition though food processing, with a focus on enhancing the supply chain and promotion of agribusinesses
	6.3 Encourage the establishment of non-profit, charity-based, community-level food banks
7	**Prioritize the implementation of the national climate adaptation plan, community-based resilience building, and emergency preparedness, together with livelihood diversification initiatives to better withstand repeated natural disasters and impacts of climate change.**
	7.1 Minimize the risk of crop and health damage due to biological agents using improved germ plasm, strengthened support services and promotion of best practices
	7.2 Enhance the resilience of communities to adapt to climate shocks through improved capacity in emergency preparedness and disaster risk reduction
	7.3 Enhance the resilience of crops, animals, fish and agro-ecosystems to extreme weather events by promoting varieties tolerant to extreme weather events

8 **Strengthen existing indemnity-based insurance programmes by focusing on improved affordability, accessibility, and trust of such programmes, and promote index-based agricultural insurance programmes.**

8.1 Develop and improve data infrastructure and increase availability and accessibility to information to promote index-based insurance programmes

8.2 Improve community awareness of index-based risk insurance programmes among farming populations

8.3 Initiate cooperation with parastatal or non-government organizations to reduce the cost of product design and implementation

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Annex II : Architecture of the consultative process for the Strategic Review

1. **Lead Convener: Hon. Madam Chandrika Bandaranaike Kumaratunga**

   Chair, South Asia Policy and Research Institute
   Former President of Socialist Democratic Republic of Sri Lanka

1. Research Team:

   a. Institute of Policy Studies - Dr. Manoj Thibbotuwawa (Lead researcher), Dr. Parakrama Samaratunga, Ms. Dilani Hirimuthugodage

   b. South Asia Policy and Research Institute – Ms. Geetha De Silva

   c. Medical Research Institute, Ministry of Health - Dr. Renuka Jayatissa

   d. Department of Census and Statistics - Mr. Anura Kumara, Ms. Dilhanie Deepawansa

   e. Hector Kobbekaduwa Agrarian Research and Training Institute - Mr. Sidath Bandara, Dr. Shantha Hewage

   f. United Nations World Food Programme - Ms. Brenda Barton, Mr. Laksiri Nanayakkara, Ms. Anusara Singhkumarwong, Mr. Musthafa Nihmath, Ms. Sashrika Jayasinghe

2. Pillar leads:

   a. Government: Presidential Secretariat – Mr. Kingsly Fernando, Mr. Rohana Keerthi Dissanayake, Mr. Nalaka Kaluwewa, Ms. A.M.G.C. Adikari

   b. United Nations: Ms. Una McCauley, UN Resident Coordinator, Ms. Nina Brandstrup, Dr. D.B.T. Wijeratne, FAO

   c. Private Sector: Mr. Ajith D. Perera- Chamber of Commerce

   d. Academia: Prof. Harendra De Silva – University of Colombo, Dr. Manisha Wanasinghe Pasqual – University of Colombo

   e. Non-government agencies: Dr. Sanath Mahawithanage - Sarvodaya

Annex III : List of all contributors

No.	Name	Designation	Organization
		Government Pillar	
1	Madam Chandrika Bandaranaike Kumaratunga	Lead Convener	Chair, South Asia Policy and Research Institute
2	Mr. Kingsly Fernando	Senior Additional Secretary	Presidential Secretariat (National Nutrition Secretariat)
3	Mr. Rohana K. Dissanayake	Senior Additional Secretary	Presidential Secretariat (Food Security)
4	Ms. K.W.S.P. Athukorala	Director Planning	Presidential Secretariat
5	Mr. Nalaka Kaluwewa	Senior Assistant Secretary	Presidential Secretariat
6	Ms. A.M.GayaC.Adikari	Assistant Secretary	Presidential Secretariat
7	Mr. E.M. Sisira Ekanayaka	Assistant Director	Ministry of Agriculture
8	Ms. Sepali Rupasinghe	Director	Ministry of Disaster Management
9	Ms. Renuka Pieris	Assistant Director- School Nutrition	Ministry of Education
10	Ms. Anoma Nandani	Director	Ministry of Finance
11	Mr. Kapila Gunarathne	Director (Development)	Ministry of Fisheries and Aquatic Resources Development
12	Dr. Renuka Jayatissa	Medical Research Institute	Ministry of Health, Nutrition, and Indigenous Medicine
13	Dr. Rasanjalee Hettiarachchi	Director	Ministry of Health, Nutrition. and Indigenous Medicine
14	Mr. I.A.S. Ranaweera	Additional Director	Ministry of Mahaweli Development and Environment
15	Mr. M. Rafeek	Secretary	Ministry of National Policies and Economic Affairs
16	Mr. K. Mahesan	Additional Secretary	Ministry of National Policies and Economic Affairs
17	Mr. H.P. Somathilake	Director	Ministry of National Policies and Economic Affairs
18	Mr. Rohana Wickramawardana	Assistant Director	Ministry of National Policies and Economic Affairs
19	Mr. W. Thilakarathne	Director - Development	Ministry of Plantation Industries
20	Mr. A. Tissa Seneviratne	Deputy Director	Ministry of Primary Industries
21	Dr. R.P.M. Pathiratna	Additional Secretary	Ministry of Rural Economic Affairs
22	Dr. N. Gamage	Director - Planning	Ministry of Rural Economic Affairs
23	Mr. M. Ramamoorthi	Director – Planning	Ministry of Social Empowerment and Welfare
24	Ms. Asoka Alawatte	Additional. Secretary (Development)	Ministry of Women and Child Affairs
25	Ms. Mano Dhammabandu	Assistant. Secretary	Ministry of Women and Child Affairs
26	Mr. P.B.W.S. Prasad	Assistant. Director	Ministry of Women and Child Affairs
27	Ms. S.N.A. De Abrew	Development Officer	Ministry of Women and Child Affairs
28	Mr. H.K. Ranaweera	Deputy Director	Department of Divineguma
29	Ms. M.A.G. Thushari	Assistant. Director	Department of National Planning
30	Ms. Ilusha Gallage	Assistant. Secretary	Department of National Planning
31	Mr. Sidath Bandara	Senior Research Officer	Hector Kobbekaduwa Agrarian Research & Training Institute
32	Dr. Shantha Hewage	Senior Research Officer	Hector Kobbekaduwa Agrarian Research & Training Institute
33	Mr. Anura Kumara	Director	Department of Census and Statistics
34	Ms. Dilhanie Deepawansa	Senior Statistician	Department of Census and Statistics

Provincial and District representatives			
35	Mr. G.V.C.U. Nanayakkara	Assistant District Secretary	Ampara
36	Mr. S.M. Saman Bandulasena	Additional District Secretary (Land)	Anuradhapura
37	Mr. M.K. Timson	Director Planning	Badulla
38	Mrs. P.S.M Charles	District Secretary	Batticaloa
39	Mr. Bharatha Wijethunga	Deputy Director - Planning	Central Province
40	Mr. Sunil Kannangara	District Secretary	Colombo
41	Dr. R. Gnanasegar	Director Planning	Eastern Province
42	Mr. Chathuranga Gunasekara	Additional District Secretary	Galle
43	Mr. P.S.K. Weerakoon	Additional District Secretary	Gampaha
44	Mr. S.H. Udaya Kumara	Assistant Director Planning	Hambantota
45	Mr. K. Sivachandran	Director Planning	Jaffna
46	Mrs. Darshani de Silva	Deputy Director	Kalutara
47	Mr. K.A.D.K Siriwardana	Director	Kalutara
48	Mr. P. Mudalige	Director Planning	Kandy
49	Mr. J. M. Herath	Director Planning	Kegalle
50	Mr. N.C. Wickramanayake	Assistant Director Planning	Kegalle
51	Mr. A. Ketheeswaran	Assistant Director	Kilinochchi
52	Mr. H.M.R. Bandara	Director (Agriculture)	Kurunegala
53	Mr. R.M.R. Ratnayake	Assistant District Secretary	Kurunegala
54	Mr. K. Sribaskaran	Deputy Director	Mannar
55	Mr. Ishan Wijethilaka	Additional District Secretary	Matale
56	Ms. Sajeewa Withanage	Director	Matale
57	Mr. D.P. Neel Fernando	Director - Planning	Monaragala
58	Mrs. R. Ketheeswaran	District Secretary	Mullaitivu
59	Mrs. H.L. Thenuwara	Deputy Director	North Central Province
60	Mrs. Geetha Dharmasiri	Deputy Chief Secretary	North Western Province
61	Mr. B.B.M.S. Dharmasena	Assistant Director - Planning	North Western Province
62	Mr. Patrick Diranjan	Provincial Secretary, Ministry of Agriculture	Northern Province
63	Mr. S. Vaseekaran	Provincial Director	Northern Province
64	Mrs. K.H.A. Meegasmulla	District Secretary	Nuwara Eliya
65	Mr. V. Pamunuwa	Director (Agriculture)	Polonnaruwa
66	Mr. K.B.D.B. Dissanayake	Assistant Director (Planning)	Polonnaruwa
67	Mr. I.W.K. Imbulgoda	Deputy Director (Agriculture)	Polonnaruwa
68	Mr. D.K.P Dissanayake	Deputy Director(Agriculture)	Puttalam
69	Mr. N.H.M. Chithrananda	District Secretary	Puttalam
70	Mrs. A.A.P. Sarojani	Director Planning	Rathnapura
71	Mr. Sunil Premachandra	Provincial Secretary, Ministry of Agriculture	Sabaragamuwa Province
72	Mr. G. Weerawickrama	Deputy Chief Secretary	Southern Province
73	Mr. D.L.M. Bandaranayaka	Deputy Chief Secretary	Uva Province
74	Ms. Lakmini Amarasekara	Assistant Secretary (Personnel & Training)	Uva Province
75	Mr. M. K. Kirubasuthan	Director Planning	Vavuniya
76	Mr. T. Thireshkumar	Additional District Secretary	Vavuniya

77	Mrs. K. Parmeswaran	Director Planning	Trincomalee
78	Mrs. Nanda Dissanayake	Deputy Chief Secretary Planning	Western Province
		7 United Nations	
79	Ms. Una McCauley	Resident Representative	United Nations, Sri Lanka
80	Ms. Brenda Barton	Representative	World Food Programme
81	Ms. Nina Brandstrup	Representative	Food & Agriculture Organization
82	Mr. Tim Sutton	Representative	UNICEF
83	Dr. D.B.T. Wijeratne	Assistant Resident Representative	Food & Agriculture Organization
84	Ms. Indra Tudawe	Programme Officer	International Labour Organization
85	Ms. Ramaaya Salgado	Programme Analyst	UNWOMEN
86	Mr. NguyenDuc Hoang	Deputy Country Director	World Food Programme
87	Ms. Anusara Singhkumarwong	Nutrition Officer	World Food Programme
88	Mr. Laksiri Nanayakkara	Programme Policy Officer	World Food Programme
89	Ms. Sashrika Jayasinghe	Programme Policy Officer	World Food Programme
90	Mr. Musthafa Nihmath	Government Partnership Officer	World Food Programme
		Corporate sector	
91	Mr. Sarath De Silva	Chairman	IFCO Group of Companies
92	Mr. Hiran Pieris	Director	Farm Broadcasting Service
93	Mr. Ajith D. Perera	Secretary General	Federation of Chambers
94	Mr. Thushara Jayawardena	General Manager (HR)	CIC Holding PLC
		Academia / Professional Organizations / Research Institutes	
95	Prof. Harendra de Silva	Professor	University of Colombo
96	Dr. Manisha Pasqual	Senior Lecturer	University of Colombo
97	Prof. U. Senarath	Professor	University of Colombo
98	Professor. Harendra Silva	Senior Professor	University of Colombo
99	Dr. Buddhi Marambe	Professor	University of Peradeniya
100	Dr. L.P. Rupasena	Senior Lecturer	University of Rajarata
101	Dr. Renuka Silva	Senior Lecturer	University of Wayamba
102	Prof. K.A.S.S. Kodithuwakku	Professor	University of Peradeniya
103	Prof. L.H.P. Gunaratne	Professor	University of Peradeniya
104	Dr. Manoj Thibbotuwawa	Research Fellow	Institute of Policy Studies
105	Ms. Dilani Hirimuthugodage	Research Officer	Institute of Policy Studies
106	Ms. Madunika Jayawardana	Project Assistant	Institute of Policy Studies
107	Mr. W.C. Dheerasekara	Consultant	Independent
108	Dr. Parakrama Samaratunga	External Collaborator	Institute of Policy Studies
109	Ms. Visakha Tillekeratne	President	Nutrition Society of Sri Lanka
110	Ms. Pujika Rathnayake	Junior Research Professional	Centre for Poverty Analysis
111	Mr. Eranga Amunugama	Program Development Specialist	Centre for Poverty Analysis
112	Dr. P.K. Joshi	Director, South Asia	International Food Policy Research Institute
113	Dinithi Warnasuriya	Undergraduate Student	University of Moratuwa
114	Neshan Weerawardana	Undergraduate Student	University of Moratuwa

Non-government organizations			
115	Dr. Sanath Mahawithanage	Consultant	Sarvodaya
116	Dr. Vinya Ariyaratna	General Secretary	Sarvodaya
117	Ms. Sanduni Ariyawanse	Assistant Director	South Asia Policy and Research Institute
118	Mr. Thanura Mendis	Program Officer	South Asia Policy and Research Institute
119	Ms. Aruni Samarakoon	Program Officer	South Asia Policy and Research Institute
120	Ms. Nayana Ihalahewage	Program Officer	South Asia Policy and Research Institute
121	Ms. Geetha de. Silva	Executive Director	South Asia Policy and Research Institute
122	Ms. Neluni Tillekeratne	National Committee	Sri Lanka Unites
123	Mr. M. Ramzi Zaindeen	National Director	Sri Lanka Unites
124	Ms. Dilka Peiris	Nutrition Officer	World Vision Lanka
125	Mr. Methsiri De Silva	Snr.Programme Advisor	Save the Children
126	Ms. G.S.Fernando	Programme Officer	OXFAM
127	Mr. Manu Tissera	Programme Officer	Plan International
128	Ms. Nishika Fonseka	Programme Officer	ZOA

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